

A Little Similarity Goes a Long Way: The Effects of Peripheral but Self-Revealing Similarities on Improving and Sustaining Interracial Relationships

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Integrating theory on close relationships and intergroup relations, we construct a manipulation of similarity that we demonstrate can improve interracial interactions across different settings. We find that manipulating perceptions of similarity on self-revealing attributes that are peripheral to the interaction improves interactions in cross-race dyads and racially diverse task groups. In a getting-acquainted context, we demonstrate that the belief that one's different-race partner is similar to oneself on self-revealing, peripheral attributes leads to less anticipatory anxiety than the belief that one's partner is similar on peripheral, nonself-revealing attributes. In another dyadic context, we explore the range of benefits that perceptions of peripheral, self-revealing similarity can bring to different-race interaction partners and find (a) less anxiety during interaction, (b) greater interest in sustained contact with one's partner, and (c) stronger accuracy in perceptions of one's partners' relationship intentions. By contrast, participants in same-race interactions were largely unaffected by these manipulations of perceived similarity. Our final experiment shows that among small task groups composed of racially diverse individuals, those whose members perceive peripheral, self-revealing similarity perform superior to those who perceive dissimilarity. Implications for using this approach to improve interracial interactions across different goal-driven contexts are discussed.

Keywords: similarity, intergroup anxiety, interracial interaction, diversity, groups and teams

Despite the increasing frequency of cross-race contact, for most people, interracial interactions are still experienced more negatively than are intraracial interactions (Brown & Hewstone, 2005; Pettigrew & Tropp, 2008; Plant & Butz, 2006). For example, for both majority and minority group members, interracial interactions are marked by higher levels of stress and anxiety than intraracial interactions (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001; Dovidio, 2001; Dovidio, Gaertner, Kawakami, & Hodson, 2002; Pearson et al., 2008; Trawalter, Richeson, & Shelton, 2009)—an effect that has remained fairly stable over the past four decades (Toosi, Babbitt, Ambady, & Sommers, 2012). The physiological and psychological discomfort of interracial interaction begins when anticipating the interaction (Mendoza-Denton, Page-Gould, & Pietrzak, 2006), thus reducing the likelihood that people will initiate (Shelton & Richeson, 2005) or maintain interest in prolonged contact (Pearson et al., 2008; Plant, 2004; Plant & Butz, 2006).

Although researchers have invested significantly in documenting these issues in interracial interactions, comparatively little investment has been made in figuring out how to reduce them, particularly within interpersonal interactions. This is not because the need to address these issues has gone unrecognized. Researchers have made repeated calls for methods that improve the quality of interracial relations across multiple interaction settings (e.g., Paluck & Green, 2009; Pettigrew, 1998; Pettigrew & Tropp, 2008; van Knippenberg & Schippers, 2006; Williams & O'Reilly, 1998). Among past approaches that have successfully improved interracial interactions, most were designed for specific interaction contexts (e.g., friendship forming; Mallett & Wilson, 2010; Page-Gould, Mendoza-Denton, & Tropp, 2008; Pines & Long, 2012), require preexisting common ground between partners (e.g., Nier et al., 2001), or necessitate repeated interactions before any improvement occurs (e.g., Page-Gould et al., 2008).

We aimed to address these limitations by developing an intervention that promotes positive interpersonal processes during the getting-acquainted stage of cross-race interactions and operates effectively across diverse interracial contexts (e.g., friendship building and task performance). We propose that research on the determinants of close relationship satisfaction can inform how to reduce the unsatisfying experiences common to cross-race interactions, and we adapt theory and methods from studies of friends and other intimate relationships to bring cross-race interaction partners closer. Although cross-race interactions among unfamiliar

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individuals are qualitatively different from—even seemingly opposite of—repeated interactions between close relationship partners, we argue that one of the core findings in research on the formation and maintenance of close relationships can be effectively integrated with theories of intergroup relations to address problems in interracial interactions. Specifically, we propose that the benefits of perceiving similarity to one's partner on attributes that are perceived as self-revealing (i.e., attributes that communicate something important about the self) (e.g., Lutz-Zois, Bradley, Mihalik, & Moorman-Eavers, 2006) can be extended from close relationships to interracial relationships.

How Can Research on Close Relationships Be Applied to Cross-Race Interactions?

Perceiving similarity with one's relationship partner facilitates close relationships in a number of ways (Lemay & Clark, 2008; Murray, Holmes, Bellavia, Griffin, & Dolderman, 2002). Individuals who believe that they are similar to their romantic partners on self-revealing dimensions, such as values, attitudes, emotional experiences, and personality traits, not only are more committed and satisfied in their relationships than those who perceive less similarity (Kenny & Acitelli, 2001; LaPrelle, Holyle, Insko, & Bernthal, 1990) but also have more satisfied and committed partners (Murray et al., 2002). Highlighting that the extent to which the dimensions are self-revealing is critical to the effects of perceived similarity, Lutz-Zois, Bradley, Mihalik, and Moorman-Eavers (2006) found that perceived similarity was positively associated with relationship satisfaction only when the dimensions of similarity were personally valued by the relationship partners.

The benefits of perceived similarity can also be found in less established relationships, even among new acquaintances. For example, Sunnafrank and Ramirez (2004) found that among a sample of newly acquainted undergraduates, perceived similarity in attitudes predicted long-term attraction and frequency of communication between partners 9 weeks later. The authors argued that partners' estimates of perceived similarity during the initial acquaintance stage predicted their desire to engage in future interaction and the development of a long-term relationship. Similarly, Selfhout, Denissen, Branje, and Meeus (2009) demonstrated that greater perceived similarity in personality profiles at initial stages of interaction predicts stronger relationships over time. These positive relational outcomes appear to have been generated by enhanced communication (i.e., the ease of communication and its frequency) between partners who perceived themselves as more similar.

Perceived similarity is beneficial even when it is not accompanied by actual similarity (Hoyle, 1993; Morry, Kito, Martens, Marchylo, & Stevens, 2005; Tidwell, Eastwick, & Finkel, 2012). When people believe they have found a partner who is similar in terms of traits, values, and emotional experiences, both partners report higher levels of relationship satisfaction, even if their perceived similarity is somewhat illusory (Murray et al., 2002; see also Selfhout et al., 2009; Tidwell et al., 2012). These findings converge with a meta-analysis demonstrating that in field studies, the effect of actual similarity on liking is small relative to the effect of perceived similarity (for a review, see Montoya, Horton, & Kirchner, 2008).

The tendency to perceive similarity between oneself and one's close partners is motivated by a desire to feel positively about one's close relationships in the face of an imperfect reality (Lemay & Clark, 2008; Murray et al., 2002). After all, partners find important bases of dissimilarity (Norton, Frost, & Ariely, 2007) and discover patterns of behavior they dislike in each other (Neff & Karney, 2005). These experiences can threaten close relationships, and perceived similarity provides a buffer for relationships by enhancing mutual understanding, communication, and conflict resolution (Holmes & Rempel, 1989; Linden-Andersen, Markiewicz, & Doyle, 2009; Murray et al., 2002). In close relationships (both established and developing), it makes a great deal of sense to perceive self-other similarity for relationship-protective reasons; however, in getting-acquainted contexts and temporary groups, in which individuals have much less psychological investment, it is less likely that partners and group members will perceive similarity, particularly if they have a visible marker of difference, such as race.

Perceiving Similarity in Cross-Race Versus Same-Race Interactions

Going into an encounter, racial differences serve as a strong basis of assumed dissimilarity (Byrne & Wong, 1962; Frey & Tropp, 2006; Robbins & Krueger, 2005; Rokeach & Mezei, 1966; Stein, 1966; Stein, Hardyck, & Smith, 1965; Vorauer, Main, & O'Connell, 1998). As such, race can be a powerful antecedent to negative experiences in interracial interactions, giving rise to elevated levels of anxiety and uncertainty in anticipation of interaction (Fiske, Lin, & Neuberg, 1999; Gaertner & Dovidio, 1986; Mallett, Wilson, & Gilbert, 2008; Plant, 2004; Stephan & Stephan, 1985) and misattributions of partners' intentions and behavior (Dovidio, Pearson, Smith-McLallen, & Kawakami, 2005; Shelton & Richeson, 2005; Trawalter & Richeson, 2006; Vorauer, 2006; West, Shelton, & Trail, 2009). As a result of these negative experiences, people have less interest in sustaining cross-race relationships than same-race ones, even after prolonged contact (Levin, van Laar, & Sidanius, 2003; Swart, Hewstone, Christ, & Voci, 2011; West et al., 2009).

In contrast, during the development of same-race relationships, a sense of similarity from the onset can provide a buffer against psychological and behavioral processes that could potentially hinder relationship formation. Robbins and Krueger (2005) found that individuals tend to assume that ingroup members share their attitudes and traits more than outgroup members, which might be one reason why they are motivated to affiliate more with ingroup members (Pettigrew, 1998; Robbins & Krueger, 2005). This tendency to perceive similarity to ingroup members can perhaps be beneficial when partners are faced with potential disruptions to the relationship, particularly in its early stages. For example, in one study involving interactions over closed-circuit television, same-race partners were actually less anxious when there was a disruptive 1-s delay than when there was no delay, and the delay did not hurt their desire to become friends with their partner (Pearson et al., 2008). Within interracial interactions, however, the delay induced more anxiety for both partners. A study by West et al. (2009) comparing same-race with cross-race roommates parallels these results. Among same-race roommates, anxiety experienced by one roommate *positively* predicted the other roommate's inter-

est in living together the following day, suggesting that people are inclined to give the “benefit of the doubt” to their same-race partners by not assuming that their partner’s anxiety is a signal of dislike (West et al., 2009). By contrast, within cross-race roommate relationships, anxiety experienced by one roommate *negatively* predicted the other roommate’s interest in living together. Presumably, the slack afforded to same-race roommates was not extended to different-race roommates. Furthermore, West, Pearson, and Stern (2014) found that within same-race interactions, anxiety expressed by one partner prompted individuals to engage in compensatory behaviors, such as increasing self-disclosure to help ease the interaction, whereas within cross-race interactions, anxiety expressed by one partner prompted individuals to disengage from the interaction (for a review, see West, 2011). Together, these findings demonstrate that cross-race interactions are more fragile than same-race interactions during early stages of relationship formation, and one apparent barrier to more successful cross-race interactions is an assumption of psychological difference between partners (Mullen, Dovidio, Johnson, & Copper, 1992; Rokeach & Mezei, 1966).

Theoretical Basis for Our Approach

The negative inferences that plague cross-race interactions might be reduced if individuals perceived greater similarity with their interaction partners. Indeed, the notion that finding common ground with outgroup members can improve intergroup relations has a long history in social psychology. In one classic study, Stein (1966) demonstrated that Whites who were prompted to think about being of the same religion as Blacks reported greater openness to cross-race contact (see also Rokeach & Mezei, 1966; Stein, 1966; Stein, Hardyck, & Smith, 1965).

Contemporary research has continued to emphasize the importance of perceiving similarities as a means of overcoming race-based biases. According to Gaertner and Dovidio’s (2000) common ingroup identity model, making similarities between ingroup and outgroup members salient is a cornerstone of improving intergroup interactions. For example, when members of different groups share a common identity, such as attending the same university, they extend the affective and cognitive benefits of ingroup categorization to members of the outgroup (West, Pearson, Dovidio, Shelton, & Trail, 2009). Though this model is noteworthy for its success at improving intergroup relations (e.g., Houlette et al., 2004; Nier et al., 2001; Penner et al., 2013), it has an important limitation: The groups must share a preexisting, meaningful common identity. In the prior example, individuals must have a strong identification with their university for recategorization to the superordinate identity to occur.

Other researchers have explored using attributes of similarity that do not depend on shared social category membership to enhance intergroup relations. Pinel and Long (2012) called attention to the distinction between two possible sources of interpersonal similarity—stable aspects of the self, such as personal and social identities (as in the common ingroup identity model) versus fleeting, subjective experiences, such as laughing at the same joke—and found that sharing subjective experiences increases intergroup attraction more than sharing common identities. Pinel and Long also found that the sharing of subjective experience only

needs to be perceived; if I think we have had a similar reaction to a situation, even if we have not, I will still like you more.

In their study of how to improve cross-race relations, Mallett, Wilson, and Gilbert (2008) also used an approach that deemphasizes social categories. In their studies, making incidental similarities to a different-race partner (e.g., sharing a preference for apples over oranges) salient to participants prior to an initial interaction was sufficient to reduce negative expectancies. Compared with Whites who focused on incidental differences from a cross-race partner, Whites who focused on similarities expected to like their partner more. However, the similarity manipulation had no effect on interpersonal processes *during* the interracial encounter. Although it is not clear why this was the case in the studies conducted by Mallett and colleagues, their findings are consistent with other research demonstrating that similarity manipulations tend to have large effects on attraction under conditions with no social interaction, but only small effects on attraction when social interaction is required (e.g., Sunnafrank, 1984, 1986; Sunnafrank & Miller, 1981; see also Montoya et al., 2008).

Combining elements of intergroup relations and close relationships research, our approach to improving interracial interaction is designed to improve both expectations prior to cross-race interactions and processes during those interactions. From research on intergroup relations, we borrow the basic notion that similarity improves cross-race encounters (Gaertner & Dovidio, 2000), but like Mallett et al. (2008) and Pinel and Long (2012), we emphasize the importance of perceived similarity over actual similarity. Although the notion that perceiving similarity is more important than actual similarity also has roots in the close relationships literature (Condon & Crano, 1988; Hoyle, 1993; Montoya et al., 2008; Murray, 1999; Selfhout et al., 2009; Tidwell et al., 2012), the key insight we import from research on close relationships to research on intergroup relations is proposing that the dimension of similarity must be perceived as self-revealing for it to improve relational processes (Lemay & Clark, 2008; Murray et al., 2002).

We also took into consideration the possibility that within cross-race interactions, individuals may be more sensitive about self-disclosure than within close relationships. Altman and Taylor (1973) found that revealing too much too soon is apt to disrupt new relationships, and this may be particularly true within cross-race relationships, in which individuals tend to spontaneously reveal less about themselves to their partners (Shelton, Trail, West, & Bergsieker, 2010). Thus, if information disclosed during the getting-acquainted stage of an interaction is too personally revealing, individuals might experience an increase rather than a decrease in discomfort and anxiety (Page-Gould et al., 2008), which could contribute further to contact avoidance. This research suggests that attributes of similarity that might bring cross-race relationships closer would only be somewhat revealing, rather than extremely revealing, about the self.

Furthermore, we reasoned that when the attributes on which self–other comparison occurs are peripheral to the interaction task, perceived similarity will improve interpersonal processes without interfering with the main goals of the interaction. As such, we reasoned that a manipulation of perceived similarity would not require participants to actively discuss their attributes of similarity during the encounter. This method of skipping over discussion of the similarities allows for perceived similarity not only to operate above and beyond any actual levels of similarity (and even if

partners are actually dissimilar) but also to improve interracial interactions across multiple contexts (e.g., when partners are casually becoming acquainted, or when they are trying to accomplish a task in a limited period of time). Our challenge, then, was to find a source of similarity that was both self-revealing *and* peripheral to the interaction in order to improve interracial interactions across different contexts.

Basic Prediction and Testing an Underlying Assumption

We predicted that our manipulation of perceived similarity would be particularly beneficial within cross-race interactions because in those interactions, individuals tend to assume significant dissimilarity from their partner. That is, we assumed that there is room to shift cross-race partners' perceptions toward greater similarity. In contrast, we reasoned that same-race partners would already perceive substantial similarity, putting a ceiling on the extent to which their judgments of similarity could be manipulated.

Although there is evidence that individuals perceive themselves to be more similar to racial ingroup than outgroup members (Robbins & Krueger, 2005), we first sought to directly establish that individuals perceive themselves to be more similar to same-race partners than to different-race partners in the nascent stages of interpersonal relationships. As part of another longitudinal study (West, Pearson, Dovidio, Shelton, & Trail, 2009), we asked 130 randomly assigned first-year roommates at a university in the northeastern United States to report how similar they felt to each other after they had lived together for 2 weeks. Twenty of the 65 roommate pairs were different-race (five Black–White, six Latino–White, nine Asian–White), and 45 were same-race (White–White) pairs. Participants individually completed an online questionnaire during the second week of the fall semester, and embedded within the questionnaire, participants were asked to report the extent to which they agreed with the following statement (from 1 = *not at all* to 7 = *very much*): “My roommate and I seem like similar people.”

We compared the responses of same-race (White–White) with cross-race (White–minority) roommates, and Whites with minorities within cross-race roommate pairs, adjusting for nonindependence of dyad members' responses (Kenny, Kashy, & Cook, 2006). As we expected, same-race roommates perceived more similarity to each other than did cross-race roommates, $t(63) = -3.41, p = .001$. Also consistent with our expectations, the similarity mean for same-race roommates was high in an absolute sense ($M = 5.33, SD = 1.25$), whereas the mean for cross-race roommates was around the midpoint of the scale ($M = 4.25, SD = 1.64$). Within cross-race roommate pairs, Whites and minorities were not significantly different from each other ($p = .23$).

Having established that people perceive more similarity to same-race than cross-race partners in the nascent stages of relationship formation and that same-race partners perceived similarity at a high absolute level, we turned to our hypothesis that a manipulation of perceived incidental similarity on a self-relevant attribute would positively influence cross-race interaction partners, but have a negligible effect on same-race interaction partners.

Overview and Predictions

In three experiments, we focus on improving the quality of interpersonal processes within cross-race interactions across different interaction contexts, all of which involve early stage interactions but different interaction tasks. We theorized that perceiving similarity on attributes that are self-relevant but peripheral to the interaction would enhance processes that are particularly important for intergroup relationship development (i.e., reduce anxiety and increase interest in future contact) and also enhance general communication processes between partners (i.e., increase empathic accuracy and improve behavioral coordination during a task that requires communication between partners). We focus on these outcomes in particular because they are widely associated with relationship maintenance and satisfaction in close and casual relationships and have been shown to be improved by perceived similarity within close relationships in particular.

In Experiment 1, we compared the influence of similarity attributes that are relatively high versus low in self-revelation on anxiety prior to delivering a speech to an ostensible cross-race (White–minority) versus same-race (White–White) partner. In Experiment 2, we explored whether making partners aware of actual similarities on self-revealing attributes reduces anxiety and increases interest in sustained contact in cross-race versus same-race getting-acquainted interactions. We also examined empathic accuracy in partners' perceptions of one another's interest in the encounter. In Experiment 3, participants worked together in racially diverse groups on a task that requires effective communication in order to perform well. We explored whether or not manipulating perceived similarity on peripheral self-revealing attributes influences behavioral coordination and performance within these groups.

Experiment 1

The goal of Experiment 1 was to directly test the hypothesis that attributes of perceived similarity must be self-revealing to benefit participants in an interracial interaction setting. We compare the extent to which similarity based on self-revealing versus less self-revealing attributes reduces anxiety in anticipation of an ostensible cross-race versus same-race encounter. We focused specifically on anticipatory anxiety given its negative effects on initiating and sustaining intergroup contact (Islam & Hewstone, 1993). Participants learned that they and their partner would each give a speech about why they would make a good friend, prior to interacting. This task has been found to be anxiety-provoking and physiologically stressful (Kirschbaum, Pirke, & Hellhammer, 1993), particularly in the context of cross-race interactions (Blascovich et al., 2001).

We hypothesized that the similarity and self-revealing manipulations would interact to reduce anxiety in anticipation of giving a speech to a cross-race but not a same-race partner. Specifically, we expected that learning that one's cross-race partner is similar to oneself on peripheral, self-revealing attributes would lead participants to experience less anxiety compared with learning that one's partner is similar on peripheral but less self-revealing attributes. However, based on our finding that individuals in same-race interactions are apt to assume similarity (see also Robbins & Krueger, 2005), we predicted the effects on anxiety would be

weaker for individuals anticipating giving a speech to a same-race partner.

Within the cross-race condition, we were also interested in whether similarity on self-revealing attributes would be equally effective at reducing Whites' and minorities' anxiety. Although some research has demonstrated that Whites and minorities are equally anxious during cross-race interactions (e.g., Pearson et al., 2008; West et al., 2009), other studies have revealed that, in cross-race interactions, minorities tend to experience less negative affect than Whites (and comparable levels to minorities in same-race interactions; for a meta-analysis, see Toosi et al., 2012). Some minorities might experience less negative affect in cross-race interaction because they are more accustomed than Whites to interracial interactions in their daily lives. Thus, we tested whether minorities and Whites would benefit equally from believing that they were similar on self-revealing attributes, prior to giving a speech on why they would make a good friend.

Method

Participants and design. Participants were 136 Black, White, Latino/a, Asian, and minority multiracial individuals (106 women; M age = 19.88) who were students recruited through the New York University psychology department participant pool ($n = 121$) and New York City community members recruited through craigslist.org ($n = 15$). The experiment was a 2 Similarity (high vs. low) \times 2 Self-Revelation (high vs. low) \times 3 Dyad Race Composition (White–White, White–Black, minority–White) between-subjects design. Whites believed they would interact with either a White partner ($n = 40$) or a Black partner ($n = 35$). All minorities ($n = 61$; 13 Black, 14 Latino/a; 30 Asian; four non-White multiracial) believed they would interact with a White partner. Men believed they would interact with a man, and women believed they would interact with a woman. In reality, no interaction actually took place.

Procedure. Upon arrival, participants were informed that, after completing some initial surveys, they would each give a 1-min videotaped speech on why they would make a good friend to a new acquaintance who ostensibly had already arrived at the session. They were also informed that after watching each other's speech, they would interact with the new acquaintance. These aspects of the procedure raised the stakes of the interaction for participants, increasing the potential for them to experience anxiety about the task and the interaction. Participants who reported that they did not believe the interaction would take place were excluded from the analyses ($n = 2$).

Further, they were told that before the interaction, they would exchange some information about themselves. They completed an *information form*, which contained the manipulations. The experimenter then provided participants with a completed information form that was ostensibly from their partner (and were told that the partner would see their form). After having time to look at this form, participants completed the dependent measure of *anticipatory anxiety*.

Materials. The information form contained the manipulations of similarity, self-revelation of the similarity, and partner race.

Manipulations. We had two goals in selecting sets of attributes with which to manipulate similarity. First, we took into

consideration that learning “too much too soon” about a partner can increase rather than decrease anxiety in interracial interactions (Page-Gould et al., 2008), so we selected attributes that individuals felt comfortable disclosing to a new acquaintance. Second, we sought to select attributes for which there is no culturally endorsed or consensual preference. People prefer to interact with others who possess desirable traits, regardless of their similarity on those traits (e.g., regardless of their own level of neuroticism, people prefer to interact with others who are low on neuroticism; Anderson, John, Keltner, & Kring, 2001; Klein, Lim, Saltz, & Mayer, 2004). Thus, we avoided personality constructs (e.g., Big Five personality traits) and other highly desirable or undesirable attributes. Instead, we selected attributes for which individuals reported their own preferences without any sense of what other people preferred.

Pilot study to select attributes for the similarity and self-revelation manipulations. To select attributes that were relatively high versus low on self-revelation, participants (47 undergraduates from New York University and 82 Amazon Mechanical Turk participants) provided responses to a number of would-you-rather (WYR) questions in which they selected between one of two options. Forty-two potential high-self-revealing items were drawn from Horn (2001)—a book of social games—and 27 potential low-self-revealing items were drawn from Mallett et al. (2008).

Participants were first prompted with the following:

Imagine that you are about to interact with a new acquaintance. For each of the following Would-You-Rather questions, please think about how you would feel if this person saw your response before you interacted. You would not discuss your answers with this person, they simply would know which of the 2 choices you picked.

For each WYR dilemma, participants selected one of the two options and then responded to two additional questions. To select items that participants felt were high versus low on self-revelation, participants responded to the item: “Does your response convey anything about your personality?” To assess comfort with sharing one's preferences, participants responded to the item: “How comfortable would you be in knowing that this person [the interaction partner] is going to see your response?” These two questions were assessed on scales that ranged from 1 (*not at all*) to 7 (*very much*).

Participants rated seven of the 27 dilemmas from Mallett et al. (2008) as low on the extent to which they were revealing of their personality (at least 1 point below the midpoint of the scale; range = 2.30–2.97) and that they would be comfortable disclosing them to an interaction partner (range = 6.21–6.38). The average difference in frequency of the two responses was 16.8% (58.4 % vs. 41.6 %); a 0% difference would indicate that both options were chosen with equal frequency. These comprised the low-self-revealing WYR dilemmas (see Appendix A).

From the 42 dilemmas from Horn (2001), we selected seven (see Appendix B) that participants reported as moderately highly self-revealing to their personalities (range = 4.13–5.67). As with the dilemmas low on self-revelation, participants reported that they would feel comfortable disclosing their responses on these seven items to a new acquaintance (range = 5.28–6.24). The average difference in frequency of the two responses was 11% (55.5% vs. 44.5%). These comprised the high-self-revealing WYR dilemmas.

Important for our purposes, the dilemmas were significantly different on the extent to which they are self-revealing and similar on the extent to which participants would be willing to disclose their responses to interaction partners in our experiments.¹

Information form. On the information form, participants completed seven *high-self-revealing* or seven *low-self-revealing* WYR dilemmas. In the *high-similarity* condition, participants saw that they had five of seven answers in common with their partner, and, in the *low-similarity* condition, they saw that they had two of the seven answers in common. Two versions of the specific items of similarity/dissimilarity were counterbalanced to ensure that similarity on one set of items was not responsible for any effects of the manipulation.

To manipulate *partner race*, the partner's information form indicated the partner's race (White or Black) and name (Caitlin or Bradley in the White partner condition, Shanice or Darnell in the Black partner condition). The form held constant the partner's gender (same as the participant's), age (19), and nationality (American), which were included to make the partner's race appear as part of a standard presentation of demographic information.

Anticipatory anxiety measure. Following the prompt, "Before you give your speech and watch your partner give his/her speech, we would like to get a sense of how you are feeling," participants responded to the following four items on 7-point scales: *anxious*, *nervous*, *uncomfortable*, and *uncertain* (adapted from Britt, Boniecki, Vescio, Biernat, & Brown, 1996, and Stephan & Stephan, 2000). These items were averaged to create a composite measure of anticipatory anxiety ($\alpha = .81$).

Results

We analyzed the data with a general linear model that included terms for similarity, self-revelation, dyad race, and all two-way and three-way interactions. We also included a term for gender. In an initial analysis, we included the interaction between racial composition of the dyad (same- vs. cross-race) and gender, as other researchers have found gender differences in cross-race interactions (Toosi et al., 2012). However, this analysis revealed that men and women did not demonstrate a different pattern of effects in same-race versus cross-race dyads ($p = .15$), and this interaction term was not included in the analyses presented below. We did not have any expectations of differences among minorities, and an examination of the means suggested similar effects across races. However, we did not have sufficient power to compare the effect of the manipulation for minorities of different races.

Anticipatory anxiety. The hypothesized Dyad Race \times Similarity \times Self-Revelation interaction was significant, $F(2, 123) = 3.28$, $p = .041$. To decompose the three-way interaction, we conducted pairwise comparisons, which revealed that the Similarity \times Self-Revelation interaction was driven by Whites in the cross-race condition. As seen in Figure 1, top panel, for Whites in the high-self-revealing condition, those who believed they had high similarity with their Black partner felt significantly less anxious than did those who believed they had low similarity, $F(1, 123) = 5.62$, $p = .019$. However, for Whites in the low-self-revealing condition who anticipated an interaction with a Black partner, the main effect of similarity was not significant, $F(1, 123) = 1.96$, $p = .164$. We also note that for Whites in the

high-similarity cross-race condition, those in the high-self-revealing condition were marginally less anxious than those in the low-self-revealing condition ($p = .058$), consistent with our hypotheses.

For White participants in the same-race (White partner) condition and minority participants in the different-race (White partner) condition, there were no differences in anxiety as a function of similarity, self-revelation, or their interaction ($ps > .16$) (see Figure, middle and bottom panels). For these participants, anxiety was relatively low across conditions.

Only one other effect was noteworthy, although only marginally significant: Men felt marginally more anxious ($M = 3.61$, $SD = 1.24$) than women ($M = 3.16$, $SD = 1.33$) in anticipation of the speech, $F(1, 123) = 3.65$, $p = .058$.

Summary

Results of Experiment 1 provide evidence that learning that one's partner is similar to oneself on self-revealing attributes reduces Whites' anxiety in anticipation of trying to convince a prospective different-race partner of why he or she would be a good friend. Consistent with our theorizing that individuals within same-race encounters may be less affected by incidental similarity than individuals in cross-race encounters, we found that the similarity and self-revelation manipulations did not exert a significant influence on Whites' anxiety in the same-race conditions.

Also, in contrast to the effect for Whites in the cross-race condition, we found that minorities were not affected by the similarity and self-revelation manipulations. In fact, minorities in the cross-race condition experienced levels of anxiety similar to Whites' levels in the same-race condition. In addition to the possibility that minorities are more accustomed to interracial contact than are Whites, it is also possible that the manipulations only exerted their intended effects on Whites because Whites and minorities have different bases of intergroup anxiety and thus different impression management concerns in cross-race interaction. Whites with low levels of prejudice, which probably characterizes the vast majority of Whites in our sample, tend to feel significant anxiety due to a concern about appearing prejudiced to minorities. One way to allay this concern is to try to appear likable when interacting with minority partners (Bergsieker, Shelton, & Richeson, 2010). By contrast, minorities' anxiety stems more from a concern about being the target of prejudice (Shelton, Richeson, & Salvatore, 2005), and to reduce this concern, minorities might emphasize appearing competent versus likable to gain the respect of their White partner (Bergsieker, Shelton, & Richeson, 2010). We think it is likely that the speech topic—why they would make a good friend—appealed more to Whites' principal impression management concern of likability than to minorities' concern about being respected in cross-race interactions. Whites who anticipated that they would be similar on self-revealing attributes to

¹ Participants rated the high-self-revealing dilemmas as more revealing about their personalities ($M = 4.99$, $SD = 1.20$) than the low-self-revealing dilemmas ($M = 2.65$, $SD = 1.35$), $t(137) = -10.02$, $p < .01$. Participants were equally comfortable disclosing their preferences for the low-self-revealing dilemmas ($M = 6.32$, $SD = 1.62$) and to the high-self-revealing dilemmas ($M = 5.88$, $SD = 1.11$), $t(137) = 1.66$, $p = .10$.

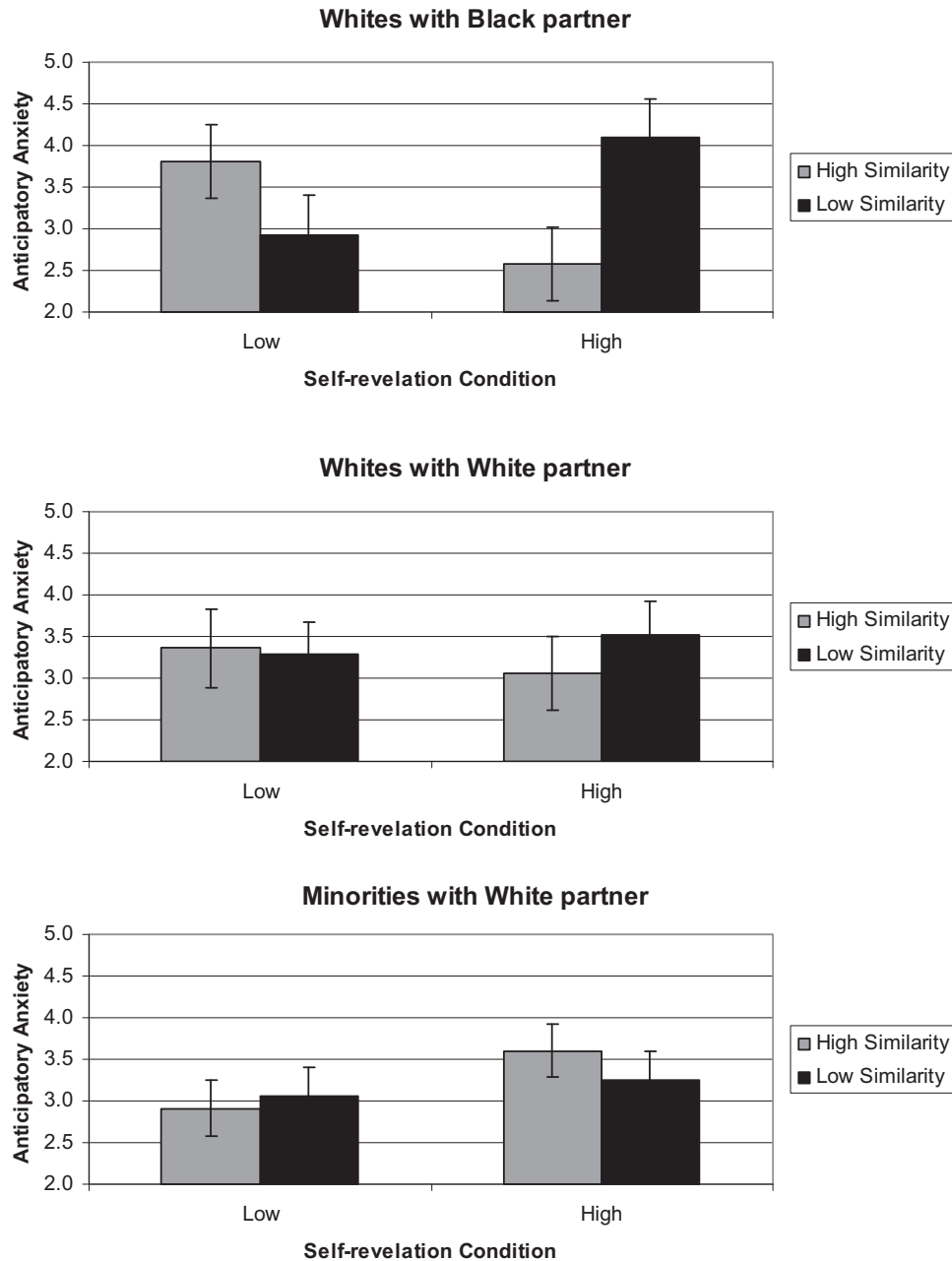


Figure 1. Top panel: Anticipatory anxiety for Whites anticipating an interaction with a Black partner as a function of similarity and self-revelation condition in Experiment 1. Middle panel: Anticipatory anxiety for Whites anticipating an interaction with a White partner as a function of similarity and self-revelation condition in Experiment 1. Bottom panel: Anticipatory anxiety for minorities anticipating an interaction with a White partner as a function of similarity and self-revelation condition in Experiment 1. Error bars represent standard errors of the means.

their cross-race partners might have had reduced concerns about appearing prejudiced and thus less anxiety than participants in the other conditions.

In the next experiment, to reduce the possibility that task demands would affect Whites and minorities differently, we used a task involving less explicit emphasis on appearing likable.

Experiment 2

In Experiment 2, we moved beyond the anticipation stage, to a dyadic interaction in which participants have a conversation with a new acquaintance, taking turns asking and answering a set of questions that encourage self-disclosure. This task has two distinct advantages over the task used in Experiment 1. First, it is similarly

anxiety provoking for both Whites and minorities in a cross-race setting (Page-Gould et al., 2008). Second, it allows us to explore the effectiveness of perceived similarity during actual encounters. This is important because the psychological experience of actual cross-race interactions diverges from the expectancy stage in some cases (Mallett et al., 2008; cf. Crisp & Turner, 2012). A getting-acquainted interaction context also afforded an opportunity to measure partners' interest in sustained contact, which is a necessary precursor to improving intergroup friendships (Pettigrew, 1998). We measured not only each participant's interest in sustained contact with their partner but also their empathic accuracy at detecting their partner's interest in sustained contact.

Empathic Accuracy in Intergroup Interactions

Several recent studies have documented the difficulties that cross-race partners face in reading one another's thoughts, feelings, and relationship intentions (Demoulin, 2008; Pearson et al., 2008; West & Dovidio, 2013). Whites and minorities underestimate the extent to which racial outgroup members are interested in forming relationships (Shelton & Richeson, 2005; Vorauer & Sakamoto, 2006) and assume that their social overtures communicate more interest to outgroup partners than they actually do (Vorauer, 2006). These inaccurate perceptions can inhibit Whites and minorities from interacting over time (Shelton & Richeson, 2005; West, 2011). Thus, improving empathic accuracy, particularly with respect to perceptions of interest in sustaining the relationship, is important for improving race relations in the long term; however, research on improving accuracy in reading outgroup partners' relationship interest is rare.

Why might perceiving similarity on self-revealing attributes improve accuracy within cross-race encounters? In close relationships, empathic accuracy stems in part from a motivation to understand one's partner's thoughts and feelings, particularly when individuals feel close to their partners and want to sustain a relationship (Gagné & Lydon, 2004; Luo & Snider, 2009; Neff & Karney, 2005). We reasoned that by bringing partners closer, our manipulation of similarity on self-revealing attributes would increase individuals' motivation to understand their cross-race partner's interest in becoming friends. In trying to understand their partner's relationship interest, we expected those who believed they were similar to attend more carefully to their partners' behaviors and thus to exhibit higher levels of empathic accuracy.

In the current experiment, we predicted that in cross-race interactions, greater levels of perceived similarity would be associated not only with less anxiety and greater interest in sustained contact but also with greater empathic accuracy. We also reasoned that within same-race interactions, perceived similarity would have a minimal effect on anxiety, sustained contact, and empathic accuracy, given relatively high levels of perceived similarity that already exist in these encounters.

Method

Overview. Having established in Experiment 1 that the attributes of similarity must be self-revealing to reduce anxiety, we used only self-revealing attributes in this experiment. We manipulated perceived similarity between previously unacquainted interaction partners in their responses to self-revealing WYR dilem-

mas by manipulating whether partners could see each other's responses prior to interacting. That is, in this experiment, any similarities (and differences) between partners were real, and the manipulation involved whether or not they were made *aware* of those similarities (and differences). When participants were not shown their partner's WYR responses, they were in a control condition (with respect to the manipulation of *perceived* similarity), which allowed us to directly compare dyads whose partners were equivalent in actual level of similarity but differed in whether or not they were aware of that level of similarity. We expected that awareness of similarity would be more important than actual similarity in benefiting cross-race interactions. Following the manipulation, participants completed a "getting-acquainted" exercise and then independently completed a questionnaire containing the dependent measures.

Participants and design. Participants were 100 previously unacquainted Black, White, Latina, and Asian female undergraduate students at New York University who made up 50 dyads (32 White-White, 18 White-minority; eight Black, eight Latino, two Asian). The participants were between 17 and 32 years of age ($M = 19.02$). The experiment was a 2 (partner's self-revealing WYR responses revealed vs. not revealed) \times 2 (dyad race: same-race vs. cross-race) between-dyads design with one measured variable that was central to our hypothesis, similarity in WYR responses.

Procedure. At the beginning of the session, the experimenter ensured that the participants did not know each other and then escorted them to separate rooms where they were informed that they would engage in a 6-min getting-acquainted conversation with their partner. They then completed one of two WYR questionnaires. Each questionnaire included six different WYR dilemmas that had been identified as self-revealing in the selection procedure described in Experiment 1. We used two versions of the WYR questionnaire in this study to ensure that any effects obtained were not dependent on a particular set of dilemmas.² Partners always completed the same questionnaire so that similarity could be measured and were given an *information sheet* on which they reported their age, their student status, and their race.

In the *WYR responses revealed* condition, participants were provided with their partner's information sheet and WYR form. These two forms were used in tandem to ensure that participants knew their partner's race prior to the start of the interaction. In the *WYR responses not revealed* condition, participants were only provided with their partner's information sheet. All participants then completed a preinteraction questionnaire assessing their feelings leading up to the interaction.

Prior to the start of the interaction, participants were independently told not to discuss the WYR dilemmas with their partners. Then, they were escorted to a room where they sat facing each

² We note that because we had two versions of WYRs, we used five additional questions (i.e., 12 in total; see Appendix B), which were also pilot-tested prior to Experiment 1. These five items were rated as equally self-revealing by participants as the seven items used in Experiments 1 and 2 ($p = .68$). There were no significant differences between the two versions of the WYR dilemmas on how comfortable perceivers felt revealing their answers to their partners ($p = .312$), or the extent to which they felt their answers were revealing about their personality ($p = .825$). Analyses predicting the dependent measures revealed no significant interactions between versions of the WYR dilemmas and race of the participant or racial composition of the dyad ($ps > .318$).

other with a visible video camera in front of them. Both individuals were given a list of six questions from Aron, Melinat, Aron, Vallone, and Bator's (1997) interpersonal closeness procedure designed for initial interactions between new acquaintances and were instructed to take turns asking and answering each question. At the completion of the 6-min interaction, participants were escorted back to their separate rooms where they completed a postinteraction questionnaire. Videotapes of the interactions were then coded to ensure that no one discussed the WYR dilemmas during the interaction.

Actual similarity. We calculated actual similarity by averaging the number of WYR responses that partners had in common. Actual similarity ranged from 1 (*I answer out of 6 in common*) to 6 (*all answers in common*). On average, partners responded identically to roughly half of the dilemmas ($M = 3.33$, $SD = 1.03$).

Anxiety. We measured anxiety prior to and after the interaction. Anticipatory anxiety was measured in the same way as in Experiment 1 ($\alpha = .85$). A similar set of items measured interaction anxiety on the postinteraction questionnaire. Participants reported how they felt "during the interaction" (*uncertain of how to behave, nervous, uncomfortable, and awkward*; $\alpha = .84$).

Interest in sustained contact. We measured participants' own feelings of interest in sustained contact and perceptions of their partner's interest with composites of 7-point scale responses to the following questions: "How much did you (your partner) enjoy the interaction?" "How much would you want to become friends with this person (would this person want to become friends with you)?" "How much did you like this person (did this person like you)?" and "Would you want to have another interaction with this person (would this person want to have another interaction with you)?" ($\alpha_{\text{self}} = .86$ and $\alpha_{\text{partner}} = .90$).

Analysis Strategy

To examine the primary variables of interest, we performed dyadic analyses using the MIXED procedure in SPSS for the analysis of indistinguishable dyadic data, which accounts for non-independence in dyad members' responses (Kenny, Kashy, & Cook, 2006). We note that this method can yield fractional degrees of freedom (see Kenny et al., 2006, for an explanation). In all models, whether WYR responses were revealed and similarity in WYR responses (grand mean centered) was treated as between-dyad variables.

As with Experiment 1, we had no expectations about differences between minorities, nor the statistical power to formally test for differences, but an examination of means indicated no differences within cross-race dyads on the outcomes of interest. Thus, we treated all minority racial categories as identical in our analyses (i.e., Black, Asian, and Latina were all treated as minority). To simultaneously examine differences between White/White and White/minority dyads and differences between Whites and minorities within these dyads, the following two contrasts were included in all analyses: between-dyad race, which compares same-race with cross-race dyads, and within-dyad race, which compares Whites with minorities within cross-race dyads. All models included WYR responses revealed condition (hereafter, responses revealed), similarity, between-dyad race, within-dyad race, and interactions between all of these variables. We included a contrast

code (1, -1) to indicate which of the two WYR questionnaires the dyad received.

Following the guidelines of Aiken and West (1991), in Figures 2 and 3, we plot predicted means for participants that were relatively similar to their partner (i.e., 1 *SD* above the similarity mean, or 4.63 WYR responses in common) and for those that were relatively dissimilar (i.e., 1 *SD* below the similarity mean, or 2.03 WYR responses in common).

Results

Anticipatory anxiety. The model for anticipatory anxiety revealed a main effect of similarity, $t(42) = -2.51$, $p = .016$. Important for our prediction that revealing similarity between partners would benefit cross-race interactions more than same-race interactions, we found a significant three-way Responses Revealed \times Similarity \times Between-Dyad Race interaction, $t(42) = -2.05$, $p = .046$. We did not find a significant Responses Revealed \times Similarity \times Within-Dyad Race interaction ($p = .311$), indicating that the patterns of effects for Whites and minorities within cross-race dyads were not significantly different from each other. Thus, in Figure 2, top panel, we collapsed the data for Whites and minorities within cross-race dyads and describe the different patterns of data for White/minority and White/White dyads below.

White/minority dyads. As shown in Figure 2, top panel, there was a significant two-way Responses Revealed \times Similarity interaction for participants in cross-race dyads, $t(42) = -2.09$, $p = .043$. Consistent with our hypotheses, for participants in cross-race dyads in which WYR responses were revealed, the more similar respondents were to their partners, the less anxiety they felt in anticipation of the interaction, $t(42) = -2.49$, $p = .017$. In contrast, when WYR responses were not revealed, there was no effect of similarity on anticipatory anxiety, $t(42) = -0.45$, $p = .65$. This finding indicates that when cross-race partners were actually similar in WYR responses, but were not aware that they were similar, there was no effect of similarity on anticipatory anxiety.

White/White dyads. As expected and shown in Figure 2, bottom panel, the two-way Responses Revealed \times Similarity interaction was not significant for participants in White/White dyads, $t(43) = .490$, $p = .627$.

Interaction anxiety. For interaction anxiety, we found a main effect of similarity, $t(42) = -3.82$, $p < .01$. As with anticipatory anxiety, the three-way Responses Revealed \times Similarity \times Within-Dyad Race interaction was not significant ($p = .255$). Also consistent with anticipatory anxiety, we found a significant three-way Responses Revealed \times Similarity \times Between-Dyad Race interaction, $t(42) = -2.38$, $p = .022$, which we decompose below by separating the effects for White/minority and White/White dyads.

White/minority dyads. The two-way Responses Revealed \times Similarity interaction was significant for participants in White/minority dyads, $t(42) = -3.13$, $p = .003$. Consistent with our hypotheses, for participants in cross-race dyads in which the WYR responses were revealed, the more similar participants were to their partners, the less anxiety they felt during the interaction, $t(42) = -3.74$, $p = .001$. When WYR responses were not re-

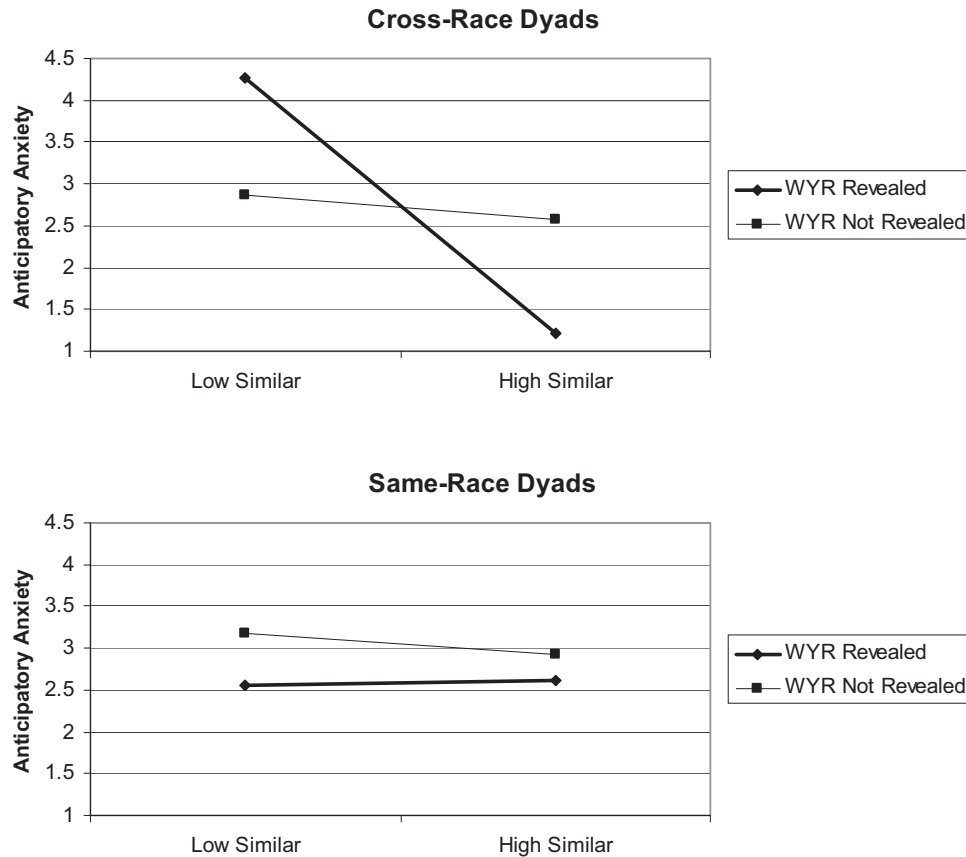


Figure 2. Top panel: Relationship between similarity and anticipatory anxiety by WYR revealed condition, cross-race dyads (combining Whites and minorities), in Experiment 2. Middle panel: Relationship between similarity and anticipatory anxiety by WYR revealed condition, same-race dyads, in Experiment 2. WYR = would you rather.

vealed, there was no effect of similarity on interaction anxiety, $t(42) = -0.85, p = .40$.

White/White dyads. Also consistent with the results for anticipatory anxiety, in White/White dyads, the two-way Responses Revealed \times Similarity interaction was not significant for interaction anxiety, $t(43) = -0.630, p = .532$.

Interest in sustained contact. The model for interest in sustained contact revealed a main effect of similarity, $t(42) = 2.18, p = .035$. In contrast to the results for interaction anxiety, the Responses Revealed \times Similarity \times Between-Dyad Race interaction for interest in sustained contact was not significant, $t(42) = 1.56, p = .126$; however, the Responses Revealed \times Similarity \times Within-Dyad Race interaction was significant, $t(427) = 2.35, p = .023$, indicating that the Responses Revealed \times Similarity interaction differed for Whites and minorities within cross-race dyads.

Specifically, in White/minority dyads, the Responses Revealed \times Similarity interaction was not significant for minorities, $t(83.74) = -0.314, p = .754$, but it was significant for Whites, $t(83.74) = 2.67, p = .009$ (see Figure 3, top and bottom panels). As seen in Figure 3, top panel, for Whites in cross-race dyads in which the WYR responses were revealed, the more similar respondents were to their partners in their WYR responses, the more interested they were in sustaining contact, $t(83.64) = 2.89, p =$

.005. When WYR responses were not revealed in cross-race dyads, Whites experienced no effect of similarity on interest in sustained contact, $t(84.02) = -0.022, p = .983$ (see Figure 3, bottom panel). This finding is consistent with Experiment 1.³

Also consistent with Experiment 1 and as seen in Figure 3, top and bottom panels, the Responses Revealed \times Similarity interac-

³ For anticipatory anxiety, when Whites and minorities were relatively high in similarity (1 SD above the mean), they were less anxious when WYR responses were revealed than when they were not, although this difference was not significant, $t(42) = -1.46, p = .15$. In contrast, when they were relatively low in similarity (1 SD below the mean), they were more anxious when responses were revealed than when they were not, $t(42) = 2.03, p = .049$. For interaction anxiety, when Whites and minorities were relatively high in similarity (1 SD above the mean), they were less anxious when responses were revealed than when they were not, $t(42) = -2.29, p = .027$. In contrast, when they were relatively low in similarity (1 SD below the mean), they were more anxious when responses were revealed than when they were not, $t(42) = 2.88, p = .006$. For interest in sustained contact, when Whites and minorities were relatively high in similarity (1 SD above the mean), they were more interested in contact when responses were revealed than when they were not, although not significantly so, $t(85.16) = 1.52, p = .13$. In contrast, when they were relatively low in similarity (1 SD below the mean), they were less interested in contact when responses were revealed than when they were not, $t(84.76) = -3.22, p = .002$.

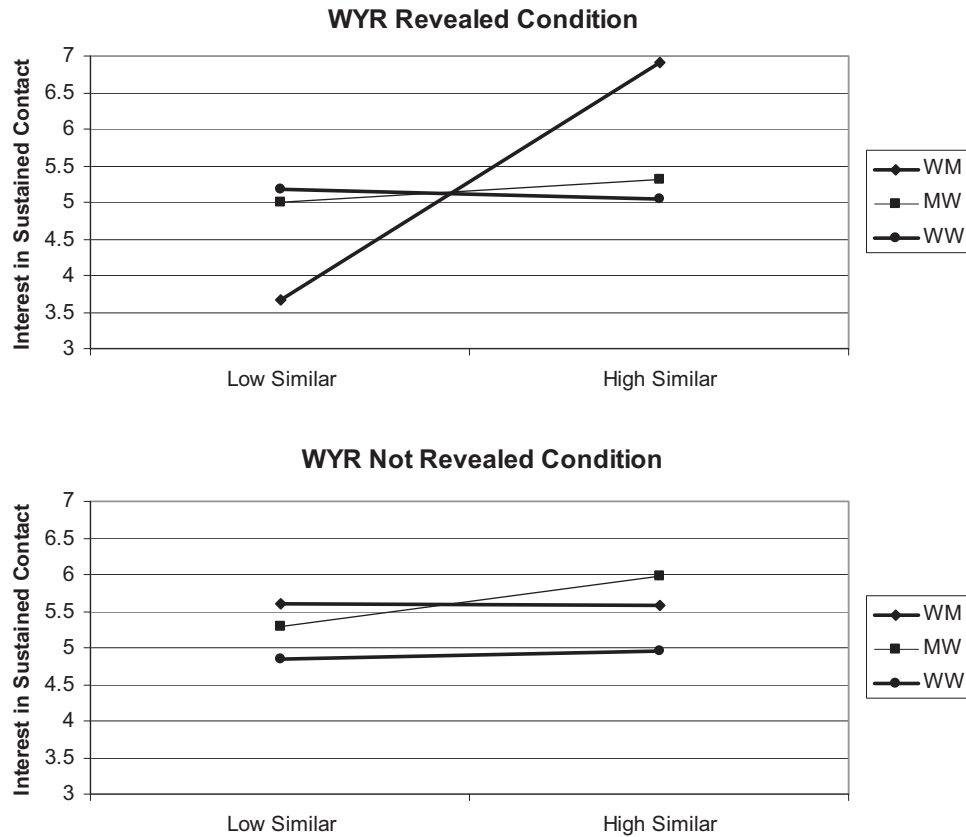


Figure 3. Top panel: Relationship between similarity and interest in sustained contact for White participants with minority partners (WM), minority participants with White partners (MW), and White participants with White partners (WW), WYR revealed condition, in Experiment 2. Bottom panel: Relationship between similarity and interest in sustained contact for White participants with minority partners, minority participants with White partners, and White participants with White partners, WYR not revealed condition, in Experiment 2. WYR = would you rather.

tion was not significant for Whites in same-race dyads, $t(42) = -0.447, p = .66$.

Accuracy in reading partners' interest in sustained contact. To examine whether similarity in WYR responses influenced accuracy in perceptions of partners' interest in sustained contact, we used West and Kenny's (2011) truth and bias model. Note that in this model, all participants are *perceivers* and *partners*. The model simultaneously estimates two "forces": the *truth force*—the effect of the *truth variable* (i.e., the partner's interest in contact) on the judgment (i.e., the perceiver's evaluations of their partner's interest in contact)—measures accuracy; the *bias force*—the effect of the *bias variable* (i.e., the perceiver's interest in contact) on the judgment—measures assumed similarity (e.g., If I am interested in contact, I assume my partner is also interested in contact). We adjusted for assumed similarity to allow for an examination of *direct* accuracy—the amount of accuracy left over once we account for accuracy that is achieved *indirectly* (i.e., through correctly assumed similarity; see West & Kenny, 2011). This way of measuring accuracy provides a cleaner test of our hypotheses because it leaves us with a measure of accuracy that is directly attributable to correctly inferring the partner's interest in sus-

tained contact, above and beyond that which is achieved by relying on one's own feelings of interest in contact (Fletcher & Kerr, 2010; Overall & Hammond, 2013; West & Kenny, 2011, for a review).

Preliminary analyses revealed no differences in accuracy and assumed similarity between Whites and minorities within cross-race dyads. Thus, we describe the results of a simplified model excluding the within-dyad race contrast. To examine whether accuracy (the truth force) and assumed similarity (the bias force) varied as a function of whether responses revealed condition, similarity, or the between-dyad race variable, we included terms for the interactions between these variables and the partner's self-ratings of interest in contact and the perceiver's own interest in contact (for a similar strategy, see Case 4 in West & Kenny, 2011).

Assumed similarity was positive and significant, $t(9.85) = 84.84, p < .001$. Overall, perceivers showed no direct accuracy, $t(82.17) = 0.12, p = .91$. There was a significant two-way interaction between the truth variable and responses revealed, $t(79.42) = 2.54, p = .013$, which was qualified by a significant Truth Variable \times Responses Revealed \times Similarity \times Between-Dyad race interaction, $t(84.10) = -2.69, p = .009$. The pattern of

results for this effect revealed that similarity in WYR responses facilitated accuracy in perceptions of interest in contact for cross-race dyads but hindered accuracy in same-race dyads, as we describe in further detail below.

White/minority dyads. For White/minority dyads, there was a marginally significant Truth Variable \times Responses Revealed \times Similarity interaction, $t(83.11) = 1.98, p = .052$. When WYR responses were revealed, the Truth Variable \times Similarity interaction was significant and positive, $t(84.50) = 2.12, p = .037$, indicating that there was a significant positive effect of similarity on accuracy. However, when WYR responses were not revealed, the Truth Variable \times Similarity interaction was not significant, $t(75.95) = -0.29, p = .773$, indicating that there was no effect of similarity on accuracy. Thus, as hypothesized, individuals in cross-race dyads were more accurate in reading their partners' relationship intentions when their responses were revealed and were similar.

White/White dyads. For White/White dyads, the Truth Variable \times Responses Revealed \times Similarity interaction was significant, $t(80.24) = -2.28, p = .025$. When WYR responses were not revealed, the Truth Variable \times Similarity interaction was not significant, $t(77.09) = 0.77, p = .446$, indicating that there was no effect of similarity on accuracy. However, when WYR responses were revealed, the Truth Variable \times Similarity interaction was significant and negative, $t(81.70) = -2.48, p = .016$, indicating that similarity was associated with *less* accurate perceptions of partners' interest in contact. Surprisingly, learning that one's same-race partner was similar to oneself decreased accuracy for White perceivers with White partners.

Summary

In Experiment 2, we found that when partners within cross-race interactions realized they were similar on self-revealing attributes, they experienced a number of benefits. Whites experienced reduced feelings of anxiety both in anticipation of and during their interactions with minority partners, were more interested in sustaining contact, and perceived their partners' level of interest in contact more accurately. In summary, Whites in interracial interactions benefited across all measured outcomes from perceiving similarity to their partners.

We reasoned that Whites' and minorities' impression management concerns within interracial interactions would be better balanced during the getting-acquainted task than during the friendship speech task of Experiment 1, thereby creating a context in which minorities could also benefit from perceiving similarity. Consistent with this reasoning, we found that minorities who perceived similarity to their White partners experienced less anxiety in anticipation of and during the interaction, and were more accurate in reading their partners' interest in contact. Contrary to hypotheses, however, minorities' own interest in contact was no different from the interest in contact reported by minorities in the other conditions. In fact, we were surprised to find that minorities' interest in contact was relatively high across conditions. We suspect this might be due to the experience that minority group members have with a disproportionate number of interactions occurring across race lines. We discuss this possibility for why the manipulation of perceived similarity had different effects on Whites versus minorities in more detail in the General Discussion.

Whites' anxiety and interest in contact with other Whites were unaffected by perceiving similarity to their partners. However, we found that Whites who perceived more similarity to their White partners were surprisingly less accurate at interpreting their partners' interest in sustained contact. Why might this be the case? We have argued throughout that perceiving similarity on self-revealing attributes would motivate perceivers to attend to their partners, which would increase accuracy. However, it may be the case that in same-race interactions, because there is already a strong basis of similarity, partners were less attentive to each other's behaviors that signal interest in contact, leading to weaker "direct" accuracy (i.e., accuracy adjusting for any accuracy achieved through correctly assumed similarity). Although this explanation might seem counterintuitive, it has support in the close relationships literature. As relationships progress and partners become more familiar with each other, accuracy declines (Kenny, 1994; Kilpatrick, Bissonette, & Rusbult, 2002), presumably because partners are confident that they understand each other, and so they stop attending closely to each other's behaviors (Kenny, 1994).

We demonstrated in Experiments 1 and 2 that perceived similarity improves outcomes for cross-race partners within friendship-building contexts. In Experiment 3, we examined how our manipulation of perceived similarity influences interpersonal outcomes in another type of context—one that requires individuals to communicate effectively as members of a team working together on a complex task.

Experiment 3

There were several goals for Experiment 3. First, we wanted to demonstrate the broad applicability of our approach. To date, nearly all research on the benefits of perceiving similarity in interracial interactions has focused on affiliative measures, such as liking and the desire for interpersonal contact (Mallett et al., 2008; Pines & Long, 2012). Task groups provide an opportunity to explore performance outcomes and analyze coordination processes that contribute to performance.

Second, we chose to investigate *racially diverse* task groups, including many groups with more than two members from different minority groups. Despite repeated calls for more carefully crafted methods that could improve outcomes for racially diverse groups (Paluck & Green, 2009; Van Knippenberg & Schippers, 2006; Williams & O'Reilly, 1998), there remains a shortage of empirical research on the topic. Racially diverse groups tend to perform worse than racially homogenous groups on many tasks (Stahl, Maznevski, Voigt, & Jonsen, 2010), in part because their members are less effective at communicating and coordinating with each other (Milliken & Martins, 1996). A possible cause of relatively poor communication and coordination in diverse groups is that Whites and minorities tend to infer psychological dissimilarity (e.g., on attitudes and preferences) from demographic dissimilarity (e.g., on race and sexual orientation) (Chen & Kenrick, 2002; Phillips, 2003). We reasoned that perceiving similarity on self-relevant attributes might diminish communication and coordination difficulties in diverse groups. After all, perceived similarity on self-relevant attributes motivates individuals to understand one another's perspectives and enhances communication (Holmes & Rempel, 1989; Linden-Andersen et al., 2009; Murray et al., 2002). Therefore, we expected that our manipulation of

self-revealing similarity to improve coordination and thus performance in diverse task groups.

Third, we wanted to examine the extent to which any effect of the manipulation on task performance was attributable to the perceived contributions of White versus minority group members. At the end of the task, participants made judgments of one another's task contributions, which allowed us to explore (a) whether the perceived similarity manipulation influenced task performance—a group-level outcome in this context—through perceptions of individual group members' task contributions and (b) whether perceived similarity equally affected Whites' and minorities' perceived contributions to the group's performance.

In this experiment, groups were randomly assigned to perceived similarity condition such that all members within a group believed either that they were similar or that they were dissimilar in their WYR responses. We hypothesized that groups would perform more efficiently when they were told that their members were similar, and this effect would hold for all groups, given that they were all diverse (i.e., no groups were composed of members who were of one race or ethnicity). We also expected that the effect of group performance would be mediated by members' task contributions, as rated by fellow group members. Assuming that both Whites and minorities would infer equivalent levels of psychological dissimilarity from demographic dissimilarity, as previous research has demonstrated within task groups (Chen & Kenrick, 2002; Phillips, 2003), we reasoned that the similarity manipulation would improve ratings for Whites and minorities equally.

Method

Participants. Participants were 110 (71 female) graduate students enrolled in an introductory management course at New York University (for a different analysis of these data, see West, Heilman, Gullett, Moss-Racusin, & Magee, 2012). The mean age was 26.41 years (range = 20–46), and the majority of participants had between 3 and 5 years of work experience. The sample was racially diverse (62 White, 48 racial minorities, among which there were 10 Blacks, 11 Latinos, 11 Asians, 13 multiracials, and three "others"). They completed the experiment in 22 groups of five that we designed to be racially heterogeneous; participants were randomly assigned to groups with respect to all other variables. The mean number of Whites per group was 2.81, and the minorities within each group were always of different races (e.g., no group had two Asians, two Blacks, or two Latinos).

Design and procedure. The study was conducted in four classes with between three and nine groups working simultaneously. All groups within a class were in the same condition: perceived similarity or perceived dissimilarity. Prior to the start of the first class of the semester, participants completed a questionnaire that contained basic demographic questions and six high-self-revealing WYR dilemmas (see Appendix B). One week later, they were put into groups and were told that their goal was to correctly build a Legoperson puzzle using Lego™ blocks. They were told they would have 30 min to plan as a group, and 30 min to build the puzzle. To facilitate coordination during the building phase, it is beneficial for group members to communicate about integrating the various component parts of the Legoperson during the planning phase (Heath & Staudenmeyer, 2000). Prior to the start of the planning period, groups were told that they were

formed on the basis of having similar responses (in the similarity condition) or dissimilar responses to the WYR dilemmas (in the dissimilarity condition). In fact, we did not form groups on the basis of their WYR responses. Group members received no additional information about the WYR questions or about their group members.

The Legoperson exercise required groups to build an exact replica of a figure (the model) resembling a person out of 49 blocks of various sizes. The instructor provided each group with a set of materials, including an instruction sheet and a bag of 49 blocks. On the instruction sheet, students were informed that the exercise was "designed to provide a simulated experience of trying to maximize the efficiency and effectiveness of a work team."

Groups of students were located at workstations throughout the classroom, and the model was located at the front of the room. Each group was assigned an observer, who monitored and enforced the rules of the exercise, including making sure the group members did not discuss their WYR responses. When groups believed they had completed an exact replica, they brought their Legoperson to the front of the room to be checked against the model by a judge. If the Legoperson was not perfect, the judge told the group that it was incorrect without telling them any more information about the defect(s). Groups continued to bring the model to the judge until it was built correctly. At the end of the study, participants reported on each group member's task contributions.

After completing measures of task contribution, participants were probed for suspicion. None reported being suspicious that their groups were not actually formed on the basis of similarity.

Performance. We measured performance as the number of times the group's Legoperson was rejected by the judge before they submitted a perfect replica (i.e., number of attempts minus one). Scores ranged from 0 to 4.

Postinteraction ratings. Group members were randomly assigned to wear a nametag with the letter A, B, C, D, or E and rated each group member on the extent to which they "contributed to," "were focused on," and "helped the team complete" the task. These three items formed the composite measure of *perceived task contribution* ($\alpha = .85$). All items were measured on a 1 (*strongly disagree*) to 7 (*strongly agree*) scale.

Analysis Strategy

We used different analysis strategies for the judgments of the group as a whole and for judgments of individual team members. For ratings of each group member's task contribution, which were made at the level of the dyad (e.g., Person A rated Person B, and Person B rated Person A), we examined the main effect of experimental condition and estimated the random effects of perceiver, target, dyad, and group (i.e., a social relations model analysis; see Livi, Kenny, Albright, & Pierro, 2008, for a full discussion of the strategy using the MIXED procedure). We also adjusted for gender composition of the group (see West et al., 2012), which did not have a significant effect on performance.

Consistent with Experiment 2, for ratings of individual group members, we considered actual similarity in WYR responses between the perceiver and target. We also created a group-level index of actual similarity by averaging the similarity scores of all of the dyads in the group. As we expected, actual similarity at the dyadic

and group levels was not a significant predictor of any of our dependent measures (ps ranging from .166 to .797). To simplify our models, we omit actual similarity from all models that we report.

Results

Perceived task contribution. Consistent with our hypothesis, participants in teams in the similarity condition perceived that their team members made greater contributions to the Legoperson task ($M = 6.47$, $SD = 0.58$) than did those in the dissimilarity condition ($M = 6.28$, $SD = 0.69$), $t(287.57) = 2.48$, $p = .018$.⁴ To test whether minorities and Whites were perceived as contributing equally to the task, we compared whether evaluations of task contributions varied as a function of target race (White vs. minority). We also included effects of perceiver race (i.e., Did Whites and minorities perceive team members' contributions differently?) and the interaction between perceiver and target race (i.e., Did team members perceive other members of the same race differently than those of a different race?). There were no effects of perceiver's race, target's race, or their interactions with similarity condition ($ps > .530$). Thus, the manipulation equally affected the extent to which Whites and minorities were perceived as contributing to the task.

Team performance. The number of rejections for Legoperson replicas was normally distributed, so we analyzed these team-level performance data using linear regression (treating group as the unit of analysis). Similar to the results for perceived task contribution, we found a main effect of similarity condition, $t(1) = 2.16$, $p = .043$. Groups in the similarity condition had fewer rejections ($M = 1.10$, $SD = 1.37$) than did groups in the dissimilarity condition ($M = 2.33$, $SD = 1.30$; $B = 1.23$, $SE = .57$).

Mediation analyses. Recall that we found no difference between Whites and minorities in how much they were perceived to have contributed to the task, demonstrating that one demographic group likely did not drive performance effects. We next examined whether the effect of similarity on performance was mediated by individual team members' perceived task contributions. To do so, we created a team-level average of ratings of individuals' task contribution and included it in a model predicting team performance. The effect of perceived task contribution on performance was significant ($B = -.448$), $t(1) = -2.25$, $p = .036$, and the effect of similarity was no longer significant ($p = .224$). The bootstrap confidence intervals did not include zero (CI upper bound = .040; lower bound = .382; significance of indirect effect, $p = .022$), indicating that perceived task contribution mediated the effect of similarity on team performance.⁵ This test of mediation provides evidence that the manipulation improved performance through the contributions of all team members.

Summary

In Experiment 3, we found that in a setting involving racially diverse teams, manipulating perceived similarity both improved team members' perceptions of their teammates' contribution to a task and improved teams' performance. These findings move beyond Experiments 1 and 2 by demonstrating that the effects of our manipulation generalize from the subjective experience of dyadic cross-race interactions to objective performance in diverse

groups wherein group members needed to communicate effectively with one another to perform well. In the context of these diverse groups, we found that Whites and minorities were perceived as contributing equally to the task, suggesting that the manipulation had similar benefits for Whites and minorities. Against the backdrop of previous research on groups and teams, our results are a rare example of a simple manipulation that can improve outcomes for diverse groups without Whites benefiting more than minorities, or vice versa.

General Discussion

Over the past several decades, there has been considerable interest in improving race relations. Some approaches to this issue have focused on how similarities can be highlighted to overcome barriers to successful cross-race interactions (Gaertner & Dovidio, 2000; Mallett et al., 2008; Pines & Long, 2012); however, to our knowledge, none has been shown to improve these interactions on as many different psychological and behavioral outcomes or in as many different interaction settings as the one we have explored here.

In three distinct experimental contexts, we demonstrated that perceptions of similarity on self-revealing attributes that are peripheral to the interaction improve dyadic- and group-level interracial interactions in a number of ways. We demonstrated that our approach can reduce feelings of anxiety with respect to one's partner (Experiments 1 and 2) and increase interest in sustaining contact with one's partner (Experiment 2). We also move beyond the outcomes of interest in most prior research concerned with improving interracial interactions, namely, decreasing negative emotion and increasing liking. Specifically, in Experiment 2, perceived similarity improved accuracy at inferring one's partner's relationship intentions, and in Experiment 3, perceived similarity benefited groups on an objective measure of task performance. The generalizability of our approach across dyadic and group contexts is important given that there is very little dialogue between those who study interracial dyads and those who study racially diverse groups, despite the fact that interpersonal issues that arise in interracial dyads and diverse groups are similar (Sommers, Warp, & Mahoney, 2008).

We have argued that the attributes of similarity are most effective at overcoming issues in cross-race interactions when they have two basic characteristics. First, the attributes must be perceived as *self-revealing*. Building on research on close relationships, we proposed that the attributes must communicate something important about the self, and we demonstrated empirically that when they do not, the benefits of similarity are not realized by individuals at the initial stages of relationship formation. We argued that in the initial stages of interracial interactions, perceiving similarity across self-revealing attributes can "set the stage" for a positive

⁴ We found that there was consensus in team members' perceptions of each other's task contributions, as indicated by significant target variance in the social relations model analysis (absolute target variance = .060, $SE = .012$; $p = .001$).

⁵ This test of mediation does not imply causation between experimental condition (the predictor) and perceived task contributions (the mediator) but rather demonstrates that the effect of the manipulation on performance at the group level can be explained in part by participants' subjective perceptions of one another's contributions to the task.

encounter by creating a sense of psychological closeness. Indeed, we found that our manipulation facilitated positive encounters within a relatively short time frame, and in Experiments 1 and 2, led to more positive expectancies leading up to encounters.

Second, the basis of similarity should be *peripheral* to the goals of the interaction; the attributes in and of themselves ought to have no bearing, and ought to be perceived to have no bearing, on success within any given interaction context. Because peripheral attributes are tied neither to individuals' own goals nor to the goals of the dyad or group, similarity on these attributes can yield benefits across relational contexts. Moreover, because peripheral attributes are unlikely to be revealed through behavior, the perception of similarity on those attributes can easily be manipulated without interference from actual similarity. Had the attributes of similarity been central to participants' interactions (e.g., personal values in Experiment 2, or conscientiousness in Experiment 3), participants might have been able to detect the level of actual similarity to their partners, which we would have expected to exert a greater influence on our psychological and behavioral outcomes (or would have revealed our manipulation to be disingenuous). These arguments emphasize the utility of using attributes of similarity that are peripheral to the goals of the interaction, but future research could systematically test whether the effectiveness of manipulating similarity hinges on the attributes being peripheral.

The Effects and Functions of Perceived Similarity

In Experiment 2, we found that Whites and minorities were less anxious and more empathically accurate when they perceived similarity to their cross-race partners. It is possible that perceiving similarity improves accuracy for Whites and minorities *because* it facilitates anxiety reduction. Anxiety during cross-race encounters can inhibit information processing, making it difficult for perceivers to attend to their partners' behaviors during interactions (Richeson & Shelton, 2003). Moreover, the behaviors that communicate anxiety are interpreted as signs of disinterest (Dovidio et al., 2002), but anxious individuals are not necessarily disinterested ones (West, 2011; West, Dovidio, & Pearson, *in press*). These connections between anxiety and perceptions of relationship interest are reflected in a growing body of research suggesting that anxiety can interfere with both the reading of one's partner's relationship intentions and the expression of these intentions, particularly within cross-race interactions. For example, West et al. (*in press*) found that within cross-race roommate relationships, the more Whites and minorities perceived their roommates as anxious, the more they systematically underestimated roommates' interest in the relationship. Future research could test how perceiving similarity uniquely affects the target's and perceiver's anxiety, and the extent to which their levels of anxiety, in turn, influence accuracy.

Our research also suggests that not all participants benefit from perceiving similarity. In same-race interactions, too much similarity may be problematic in the early stages of relationship formation. We found that participants in Experiment 2 were less accurate (in terms of direct accuracy, which adjusts for accuracy achieved via correctly assumed similarity) in reading one another's relationship intentions when they perceived relatively high levels of similarity in same-race encounters. This finding is consistent with West and Kenny (2011), who found that among newly acquainted

college roommates, as closeness increased, direct accuracy decreased (see also Kenny, 1994). Perhaps when participants were of the same race, perceiving additional similarity on self-revealing attributes decreased their motivation to attend carefully to their partner's behavior for clues about their actual level of interest in the relationship because they instead assumed that they could accurately gauge their partner's interest, which would indeed result in weaker *direct* accuracy (vs. total accuracy, which includes accuracy achieved indirectly via correctly assumed similarity). Future research could explore the conditions under which perceived similarity leads to a false sense of understanding one's partner in newly forming relationships.

In all of our experiments, when partners learned they were similar, they simultaneously learned that their partners were also made aware of their similarity. As such, our manipulation of perceived similarity might have reduced participants' concerns about what their partner(s) thought of them, which could have paved the way for a more positive encounter. Indeed, these meta-concerns can detrimentally affect cross-race encounters, particularly for Whites (see Vorauer 2006), and future research could benefit from directly measuring the effects of perceiving similarity on meta-concerns. It would also be worth testing whether perceived similarity across self-revealing attributes improves relational outcomes when individuals are apprised that they are similar to their partners but are also informed that their partners are not aware of their similarities.

Divergent Effects for Whites and Minorities Within Cross-Race Interactions

In comparison to research focused on Whites' experiences, surprisingly few studies have explored minorities' experiences within interracial encounters (Toosi et al., 2012). In our experiments, we directly compared the extent to which perceived similarity benefited Whites and minorities within interracial interactions and found that Whites were more consistent benefactors of perceiving similarity to their partners. Minorities were not adversely affected by perceived similarity. Indeed, on some measures minorities benefited appreciably, but their responses to the manipulation were more uneven. In considering how the pattern of effects for Whites and minorities varied across the three experiments, we think it is important to note that the effects of perceived similarity on Whites compared with minorities were more similar from Experiments 1 to 2 and from Experiments 2 to 3. We discuss two possibilities for the divergent effects between Whites and minorities as well as for the reduction in the extent of the divergence across our experiments.

First, in our interpretation of the results of Experiment 1, we suggested that Whites may be more susceptible to the beneficial influence of perceived similarity in contexts in which liking concerns are most salient. It is possible that concerns with appearing likable decreased and became more balanced with competence concerns from Experiment 1 to Experiment 3. In Experiment 1, participants were trying to present themselves as good friends. By Experiment 3, participants were trying to present themselves as good teammates—likable, but also competent at the task.

In Experiment 1, using a task in which participants faced strong demands to appear likable to an ostensible partner, Whites' greater

emphasis on appearing likable to their different-race partner might explain why perceiving similarity was only effective at reducing anticipatory anxiety for Whites and not for minorities. In Experiment 2, we sought to reduce the salience of likability concerns in the interaction and indeed found that minorities who perceived more similarity experienced less anxiety, much like their White counterparts. In that experiment, there was a lingering difference between minorities and Whites: Minorities who perceived more similarity to their partner did not report greater interest in sustained contact, whereas Whites who perceived more similarity did express more interest in contact. By Experiment 3, these concerns were more balanced, as participants needed to be competent to complete the task, especially because teammates were under time pressure to complete the project. In this study, Whites and minorities appeared to benefit equally from perceiving similarity to their group members in terms of their perceived contributions to the task. Although the salience of liking concerns is one interpretation for why Whites and minorities responded more similarly to the manipulation of perceived similarity in some contexts than in others, future research could systematically vary the extent to which those concerns are salient in combination with manipulating perceived similarity.

Second, it is possible that features of our particular White and minority samples contributed to the patterns of effects for Whites and minorities. It might be the case that minorities had more cross-race close friendships than Whites prior to participating in our studies—a difference that would be particularly important within Experiments 1 and 2 in which friendship formation was the goal. Individuals who have more outgroup friends tend to be more trusting of outgroup members (Tropp, 2008) and perceive stronger overlap between the outgroup and the self (Page-Gould, Mendoza-Denton, Alegre, & Siy, 2010). Thus, a manipulation of perceived similarity in the nascent stages of a cross-race relationship might have less influence on outcomes for individuals who have racially diverse friendship networks. We were able to explore this possibility with the data in Experiments 1 and 2.

For Experiments 1 and 2, we examined prestudy data in which participants reported the extent to which their close friends were from their own versus other racial groups (i.e., the extent of homophily in their close friendship networks) (1 = entirely people of my racial group; 5 = entirely people of another racial group [not my racial group]; for a similar measure, see Page-Gould et al., 2008). In both experiments, Whites reported significantly more homophilic friendship networks (Experiment 1 $M = 2.45$, $SD = .69$; Experiment 2 $M = 2.51$, $SD = .772$) than minorities (Experiment 1 $M = 2.74$, $SD = .95$; Experiment 2 $M = 2.92$, $SD = .796$; $ps < .041$). Although we had insufficient statistical power to test whether homophily moderated the effects observed for Whites and minorities in these two studies, we think this preexisting difference is important to note and could have contributed to minorities experiencing consistently low levels of anxiety across conditions in Experiment 1 and relatively high levels of interest in sustained contact in Experiment 2. Future research could test this hypothesis more systematically by examining the moderating role of friendship network homophily on interventions designed to improve interpersonal processes within interracial contact contexts.

Additional Directions for Future Research

In addition to the future research directions already suggested, which could help illuminate the roles that similarity plays in new relationships and help establish the necessary and sufficient conditions to improve cross-race interactions, we see a number of other interesting avenues for researchers to build on the results of our studies.

Our experimental designs focused on interaction processes exclusively during the early moments of relationship development, so it remains to be seen whether the effects of our similarity manipulation are sustained over time. Given that initial interaction processes often shape later intergroup relational processes (e.g., Shook & Fazio, 2008; West, Shelton, & Trail, 2009), we suspect that improving initial interracial encounters sets the stage for more positive interactions in the long term. Moreover, within close relationships, perceptions of similarity from the onset can help protect the relationship from eventual dissolution if and when important bases of dissimilarity are discovered. It would be interesting to examine whether within cross-race interactions, perceiving similarity on self-revealing attributes from the onset also protects relationships when partners uncover sources of dissimilarity.

We also note that consistent with contemporary research on interracial interactions (Mallett et al., 2008; Toosi et al., 2012), we did not find any evidence of overall differences between cross-race and same-race interactions (i.e., there were no main effects of the racial composition of the dyad). Differences emerged only under conditions of manipulated dissimilarity and similarity. It may be the case that in interpersonal contexts designed to be fairly positive experiences (e.g., Mallett et al., 2008), differences between same-race and cross-race interactions are quite small and variable enough for a manipulation of perceived similarity to benefit partners. It would be interesting to extend the present research to contexts in which partners are more likely to experience negative affect, such as emotional conflicts.

Our studies used samples drawn from New York City, a multicultural city in which people have more cross-race encounters than people in most other locations. Although many New Yorkers (both Whites and minorities) experience some discomfort in their daily interracial interactions, future research should test whether our findings replicate for populations that have less prior, and potentially less positive, interracial contact, outside of New York City. We would expect that our manipulation of perceived self-revealing similarity would be more effective among individuals with less positive interracial contact experience.

Conclusion

By pairing previously isolated research traditions on intergroup relations and close relationships, we have developed a method that improves cross-race interactions in two different interaction contexts—getting-acquainted dyadic interactions and small task groups. Our findings suggest that perceiving similarity with one's racial outgroup partners may operate in much the same way as does psychological interdependence in close relationships. This research is an important step toward developing simple interventions that can improve intergroup relations and demonstrates the power of perception in altering processes that often go awry in cross-race interactions. Individuals need not actually be similar to

their partners; they just need to believe they are, and this belief can promote anxiety reduction, increased interest in sustained contact, accuracy in interpersonal perception, and behavioral coordination in racially diverse contexts.

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(Appendices follow)

Appendix A

Would-You-Rather Items: Low Self-Revealing

Item no.	Item	Self-revelation <i>M (SD)</i>
1	Have A) An apple or B) An orange?	2.30 (1.69)
2	Have A) A waffle or B) A pancake?	2.49 (1.44)
3	Go to A) Burger King or B) McDonald's	2.82 (1.87)
4	Have A) Broccoli or B) Corn	2.97 (1.77)
5	Have A) A pear or B) A banana	2.44 (1.69)
6	Have A) Satellite or B) Cable	2.55 (1.70)
7	Drink A) Pepsi or B) Coke	2.78 (1.69)

Appendix B

Would-You-Rather Items: High Self-Revealing

Item no.	Item	Self-revelation <i>M (SD)</i>
1	A) Die before your spouse of fifty years does, knowing that he/she will be healthy but heartbroken for another twenty years? or B) Watch your spouse die before you after fifty years together?	5.15 (1.56)
2	Be confronted on the street by A) A loud, angry panhandler for a week straight? or B) An unbearably persistent grassroots activist?	4.13 (1.52)
3	Be A) Extremely lucky? or B) Extremely smart?	5.67 (1.65)
4	A) Be granted the answers to three questions? or B) Be granted the ability to resurrect one person?	4.91 (1.66)
5	A) Only be able to tell lies? or B) Scream out every true thought that comes across your mind?	5.02 (1.71)
6	A) Be able to walk on water forever? or B) Fly for three hours three times in your life?	4.56 (1.90)
7	Marry someone A) Who is kind but not really in love with you? or B) Who treats everyone else terribly and disrespectfully but adores you?	5.48 (1.55)
8	A) Never have people take you seriously? or B) Always have people think you are no fun?	5.22 (1.66)
9	A) Be forever homeless but free to roam the Earth? or B) Live the life of luxury in a mansion you could never leave?	5.24 (1.52)
10	As a 25 year old, A) Forget your entire childhood until age 15? or B) Forget the last 5 years?	4.85 (1.67)
11	A) Be able to fly? or B) Be invisible?	4.98 (1.98)
12	After having run 10 miles, learning you have to A) Run 3 miles more? or B) Walk 10 miles more?	4.43 (1.83)

Note. Items 2, 3, 8, 9, 10, 11, and 12 were used for Experiment 1. For Experiment 2, Items 1–6 were used for Would-You-Rather (WYR) Version 1, and Items 7–12 were used for WYR Version 2. For Experiment 3, Items 3, 4, 8, 9, 10, and 11 were used.

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