

## Anxiety Perseverance in Intergroup Interaction: When Incidental Explanations Backfire

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Intergroup interactions are often anxiety provoking, and this can lead members of both majority and minority groups to avoid contact. Whereas negative consequences of experiencing intergroup anxiety are well documented, the role of perceived anxiety has received substantially less theoretical and empirical attention. We demonstrate in 3 experiments that the perception of anxiety in others can undermine intergroup interactions even when the anxiety can be attributed to a source that is unrelated to the interaction. Participants who learned that a cross-race partner's anxiety could be attributed to an upcoming evaluation (Study 1) or a stimulant (i.e., caffeine, Studies 2 and 3) expressed less interest in continuing an interaction (Studies 1 and 2), showed less self-disclosure (Study 2), and increased physical distance between themselves and their partner (Study 3) than did those given no source information and participants who interacted with a same-race partner. Moreover, compared to control participants, perceivers who were given an incidental explanation for their partner's anxiety perceived outgroup, but not ingroup, partners as more anxious (Studies 1 and 3) and showed heightened accessibility of anxiety words (Study 3), indicating that incidental source information enhanced accessibility of intergroup (but not intragroup) anxiety at early stages of information processing. Theoretical and practical implications for combating paradoxical effects of perceived anxiety in intergroup interactions are considered.

*Keywords:* interpersonal contact, intergroup anxiety, social inference, intergroup relations

Despite more positive racial attitudes in the United States and increasingly favorable views of racial integration, interracial interactions remain anxiety provoking for many (Plant, 2004; Plant & Butz, 2006; Toosi, Babbitt, Ambady, & Sommers, 2012; Trawalter, Richeson, & Shelton, 2009). Even brief encounters with a member of a racial or ethnic outgroup can be awkward and physiologically threatening for members of both majority and minority groups (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001; Mendes, Blascovich, Lickel, & Hunter, 2002). These experiences can lead even well-intentioned individuals to expect intergroup interactions to be stressful (Mallett, Wilson, & Gilbert, 2008) and can cause people to quickly disengage from intergroup interactions or avoid contact altogether (Plant, 2004; Plant & Butz, 2006).

More generally, anxiety is increasingly regarded as playing a central role in intergroup relations (for reviews, see Brown & Hewstone, 2005; Pettigrew & Tropp, 2008; Stephan, 2014; Stephan et al., 2002; and Trawalter et al., 2009). Whereas much of the work on intergroup anxiety has focused on its *experiential* role—how anticipating or experiencing anxiety in interactions with outgroup members affects intergroup attitudes and relations—the present research explored a perceptual route through which anxiety can impact intergroup interactions. We examined in particular how anxiety that is perceived in an interaction partner can undermine intergroup affiliation, even when it can be attributed to an irrelevant source (i.e., unrelated to the exchange).

### The Anxiety–Avoidance Link in Intergroup Interaction

There is growing interest in the processes through which anxiety can undermine interest in intergroup contact (see Shelton & Richeson, 2006, and Trawalter et al., 2009). In general, the experience of anxiety signals the presence of a potential threat, promotes negative construals of ongoing and future events, and initiates psychological processes aimed at reducing vulnerability to harm and social exclusion (Butler & Mathews, 1987; Perkins, Inchley-Mort, Pickering, Corr, & Burgess, 2012; Shepperd, Grace, Cole, & Klein, 2005; Young, Klap, Shoaib, & Wells, 2008). Within

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intergroup interactions, experiencing anxiety leading up to and during an interaction can increase hostility toward outgroup members (Plant & Devine, 2003), fuel negative intergroup attitudes (Tausch, Hewstone, Kenworthy, Cairns, & Christ, 2007), and lead members of both majority and minority groups to avoid intergroup contact altogether (Gudykunst & Shapiro, 1996; Murphy, Richeson, & Molden, 2011; Plant, 2004).

Moreover, intergroup anxiety can engage psychological mechanisms that hinder the development of interpersonal relationships. That is, felt anxiety increases vigilance and guardedness and elevates concerns about being rejected on the basis of one's group membership (Barlow, Louis, & Terry, 2010; Plant & Devine, 2003; Stephan & Stephan, 1985; Vorauer, 2006; Vorauer & Sasaki, 2010). For instance, in a 4-year longitudinal study, Levin, van Laar, and Sidanius (2003) found that the experience of intergroup anxiety reported at the end of the first year of college was negatively associated with cross-group friendship formation during the second and third years of college (see also Swart, Hewstone, Christ, & Voci, 2011).

Beyond the experience of anxiety, there is reason to suspect that perceiving anxiety in an interaction partner may also be harmful to intergroup relations. Dovidio, Hebl, Richeson, and Shelton (2006) noted that many of the verbal and nonverbal behaviors associated with anxiety (e.g., speech disfluencies, shifting eye gaze, closed body posture) are ambiguous in meaning and may therefore be susceptible to multiple interpretations as a function of the social context. When perceivers are particularly sensitive to rejection, such as during interracial interactions (Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002; Plant & Butz, 2006; Shelton & Richeson, 2006), anxious behaviors may be interpreted as a sign of rejection (i.e., as signaling avoidance; Dovidio, West, Pearson, Gaertner, & Kawakami, 2007; see also Vorauer, 2006). In a longitudinal field study of same- and cross-group roommate relationships, West, Dovidio, and Pearson (2014) found that the more anxious White and minority individuals perceived a cross-race roommate to be in their interactions, the more they underestimated their roommate's actual interest in living together. Perceived intergroup anxiety, above and beyond the experience of anxiety, may thus exert unique effects on intergroup relations.

Beyond shaping impressions, theoretical and empirical work suggests that perceiving anxiety in an outgroup member may also undermine dyadic affiliation in cross-group exchanges. Just as individuals cope with their own anxiety in interracial encounters by avoiding, freezing, or disengaging (Mendes et al., 2002; Trawalter et al., 2009; Wyer & Calvini, 2011), avoidant reactions may also occur when perceiving anxiety in an interaction partner. Vorauer and colleagues (Vorauer, 2006; Vorauer & Sakamoto, 2006) have found that anxious behavioral cues when expressed by a partner can prompt avoidant thoughts and behaviors ("defensive distancing") in dyadic cross-group exchanges. Moreover, in longitudinal studies, perceivers' assessments of a cross-race roommate's anxious behaviors (e.g., avoidance of eye contact, shifting attention) predicted lower levels of intimacy and a weaker desire to develop close interracial relationships (Trail, Shelton, & West, 2009).

In contrast, in same-race encounters, perceived anxiety may be a weak predictor of (or even positively related to) affiliation. Pearson et al. (2008), for instance, found that among new acquaintances, a subtle disruption in conversation (i.e., a 1-s delay over

closed-circuit television) led to lower levels of interest in continuing a cross-race interaction—an effect that was mediated by greater perceived anxiety in cross-race interaction partners—but had no effect on same-race interactions. Moreover, in a longitudinal study of college roommates, West, Shelton, and Trail (2009) found that in same-race roommate relationships, participants' reports of felt anxiety on a given day were positively correlated with a roommate's interest in maintaining their relationship the following day. Thus, perceived anxiety may be particularly detrimental to intergroup affiliation.

Although previous studies have documented negative effects of perceived anxiety on cross-group relationships, to date, few studies have explored underlying psychological mechanisms that may account for these effects. We argue in the present research that causal attributions for a partner's anxiety are one mechanism through which perceived anxiety can affect the quality of intergroup relationships. One reason that perceived anxiety may be detrimental to interracial interactions is because, absent a salient alternative explanation for a partner's anxiety, people may attribute the anxiety to the race-based nature of the interaction—as a sign that one's partner is uncomfortable with the exchange—and anticipate rejection due to their racial group membership (see Shelton & Richeson, 2006; Vorauer, 2006). In the present studies we test an alternative possibility, that even knowledge of an *incidental* source for a partner's anxiety—information suggesting that the anxiety is unrelated to the interaction context and therefore unrelated to the interaction partners' races—may undermine intergroup affiliation by heightening the accessibility of anxiety in these exchanges. That is, we reasoned that even an irrelevant explanation for a partner's anxiety may be detrimental to interracial interactions by orienting perceivers to anxiety cues. We reasoned that individuals in same-race interactions, in contrast, would be less affected by information about the source of their partner's anxiety, due to the lower relevance of anxiety as a relationship diagnostic for the quality of these exchanges (see West et al., 2009, and Wyer & Calvini, 2011).

People often have access to plausible nonracial explanations for others' anxiety, from perceived stress due to job interviews and public speaking engagements, to discomfort within everyday interactions with physicians, police officers, and new acquaintances. They may even emphasize situational explanations for their own anxiety (e.g., being anxious about an upcoming interview) as an impression management strategy. Given their ubiquity, understanding how such incidental explanations for a partner's anxiety impact intergroup affiliation has important implications for understanding how and when perceived anxiety may impact dyadic relationships across diverse settings in everyday life.

### Causal Inference and Interaction Assessments

Theoretical models of social inference suggest that incidental explanations for a target's behavior can affect impressions in a number of ways, depending on the nature of the explanation and the level of ambiguity of the target's behavior. We use the term *incidental* to refer to any situational explanation for a behavior that is unrelated to the immediate interaction context. Generally, for relatively unambiguous behaviors (e.g., harsh grading; Trope & Gaunt, 2000), when an incidental explanation for a behavior is specific, accessible, and salient (e.g., the professor could only give

a few As), perceivers may discount the behavior when forming subsequent judgments (e.g., in assessing how fair the professor is) even under suboptimal processing conditions (e.g., when the perceiver is cognitively depleted; Gilbert, Pelham, & Krull, 1988; Trope & Gaunt, 2000). A failure to take into account incidental source information may therefore occur when the specificity, saliency, or accessibility of explanatory information is low (Trope & Gaunt, 2000).

However, for more ambiguous behaviors, such as those related to anxiety, knowledge of an incidental source for the behavior may, in some cases, attenuate or even reverse discounting effects (Trope, 1986). In these cases, situational information can impact how behaviors are initially identified (i.e., behavioral identification; Trope, 1986) and lead to the assimilation of incidental information into judgments. For example, a target who is fidgeting (an ambiguous behavioral cue) might be perceived as either uncomfortable or eager by an interaction partner. Awareness of the interaction context (e.g., a cross-race exchange or a doctor visit) can facilitate the categorization of the behavior as nervous versus excited. This process will be particularly likely to occur when anxiety is initially made salient, even if due to an ostensibly irrelevant source (e.g., expressed concerns about a job interview; Trope & Gaunt, 2000). Additionally, beyond facilitating the categorization of ambiguous behaviors, incidental source information may lead to more extreme assessments of a given behavior (Trope & Alfieri, 1997; Trope & Gaunt, 2000). For example, a target may be perceived as exhibiting higher levels of anxiety to the extent that the incidental source information both facilitates the identification of ambiguous behaviors as “anxious” and is used to gauge the extremity of the behavior. In the present studies, we assessed both behavioral identification (e.g., the extent to which the category “anxious” is cognitively accessible) and perceivers’ self-reported assessments of their partner’s apparent level of anxiety as potential consequences of exposure to incidental source information.

One factor that can influence the behavioral identification of ambiguous behaviors is prior information about the target. Information can take the form of social category information (e.g., group membership) and/or expectations about a target. For example, the belief that higher status individuals are more intelligent can bias the identification of performance-related behaviors in a manner consistent with this expectation (Trope, 1986). In the present context, heightened vigilance and expectations for anxiety in cross-race exchanges (Mallett et al., 2008; Vorauer, 2006) may lead cross-race perceivers to interpret ambiguous behaviors in an anxiety-consistent manner, thus potentially making these individuals more susceptible than same-race perceivers to assimilation effects when presented with an incidental explanation for anxiety. Given the demonstrated association between anxiety and avoidance in cross-race encounters (e.g., Plant, 2004; Plant & Devine, 2003; Vorauer, 2006; West, Dovidio, & Pearson, 2014), identification of behaviors as reflecting anxiety may also undermine participants’ interest in cross-race compared to same-race interactions.

To summarize, from a discounting perspective, in which perceivers are able to use salient situational information to correct their judgments (e.g., Gilbert, 1998; Gilbert et al., 1988), we would expect that providing individuals with an explanation for an out-group partner’s anxiety that is irrelevant to the interaction would

lead perceivers to discount anxiety when assessing the interaction and facilitate interest in continuing a cross-race exchange (Gilbert, 1998; Gilbert et al., 1988). This possibility has intuitive appeal, as several researchers have suggested that resolving uncertainty over the source of a partner’s anxiety by providing perceivers with a nonracial explanation may be a particularly useful strategy for promoting interest in intergroup contact (Gudykunst, 1995; Olson, Roese, & Zanna, 1996). In contrast, from an assimilation perspective the inherent ambiguity of identifying behaviors as signs of anxiety coupled with the heightened vigilance that occurs in cross-race exchanges (particularly at initial acquaintance; Vorauer, 2006), might paradoxically lead perceivers who are provided with an incidental explanation for a cross-race partner’s anxiety to be more likely to identify behaviors as anxious and potentially express less interest in these exchanges. Thus, we hypothesized that providing participants with an ostensibly irrelevant explanation for a cross-race interaction partner’s anxiety might enhance the accessibility of anxiety for these perceivers and, consequently, hinder dyadic intergroup affiliation. We also tested the possibility that incidental explanations lead people to make more extreme assessments of perceived anxiety in their cross-race interaction partners. Given the lesser relevance of anxiety for same-race exchanges (see Vorauer, 2006; West et al., 2009), however, we hypothesized that an incidental explanation for a partner’s anxiety would have little or no effect on affiliation in these exchanges. We examined this possibility in the present studies.

## The Present Research

The present research extends social psychological research on intergroup anxiety in two fundamental ways. First, we move beyond traditional approaches to the study of affect in intergroup interactions, which have typically explored how anticipating or experiencing anxiety impacts intergroup relations (for reviews, see Pettigrew & Tropp, 2008; Toosi et al., 2012; and Trawalter et al., 2009), to examine how perceiving anxiety in one’s partner affects affiliation in same- and cross-race exchanges. Second, in three experiments, we examine how knowledge of an incidental source of a partner’s anxiety impacts intergroup affiliation. We examined in particular how salient situational explanations for a partner’s anxiety that are unrelated to the interaction context may nevertheless impact perceivers’ affiliative motives (interaction interest and willingness to self-disclose; Studies 1 and 2) and interaction behavior (physical proximity; Study 3).

### Study 1

Study 1 examined how providing Whites and minorities with an incidental explanation for a partner’s anxiety prior to the start of an interaction affected their interest in interacting with a cross- or same-race partner. For each dyad, one participant (the *partner*) was provided with instructions designed to elicit feelings of anxiety during the interaction. Prior to the interaction, the other participant (the *perceiver*) either was provided with a situational explanation for the partner’s anxiety (i.e., that her partner was expecting to have her personality and appearance evaluated by trained observers) or was given no such information. We expected, consistent with the anxiety induction, that partners would experience greater anxiety during the interaction than would perceivers.

Additionally, we tested the hypothesis that perceivers who receive an incidental explanation for their cross-race partner's anxiety would assimilate this information into their perceptions of their partner and perceive their interaction partner as more anxious and express less interest in the interaction than would those receiving no explanation for their partner's anxiety. Furthermore, we expected that these effects would not be found for perceivers taking part in a same-race interaction, because anxiety would be less anticipated (e.g., Mallett et al., 2008) and perceivers would be less vigilant for signs of rejection (Mendes et al., 2002; Trawalter et al., 2009).

## Method

One hundred thirty-six female students (79 White, 8 Black, 11 Latina, 33 Asian, and 5 non-White multiracial) participated in the study in exchange for partial course credit. *Same-race dyads* ( $n = 39$ ) comprised either two White or two minority participants of the same race; *cross-race dyads* ( $n = 29$ ) comprised one White and one minority participant. The study was a 2 (Role: perceiver vs. partner)  $\times$  2 (Feedback Condition: control vs. incidental source) design. Role varied within dyad (i.e., each dyad had a perceiver and a partner), and feedback condition varied between dyads.

**Procedure.** Participants were randomly assigned to the role of partner or perceiver. Participants were escorted into separate rooms and informed that they would have a videotaped interaction with another participant, during which they would take turns responding to questions that were designed to help them to get to know each other. Participants engaged in a 6-minute interaction in which they took turns asking and answer questions adapted from Aron, Melinat, Aron, Vallone, and Bator's (1997) Interpersonal Closeness Procedure. During the interaction, participants sat in a small room facing one other with a visible video camera in front of them. When the interaction was over, both participants completed a questionnaire, which included measures of anxiety and interest in the interaction, and were debriefed.

**Partner instructions.** Participants who were assigned to the role of partner were informed that they had been randomly assigned to have their video-recorded responses judged by trained observers. They were informed in particular that, after the study, observers would rate them on (a) how "boring" and "interesting" they appeared, (b) how attractive they were, and (c) how "put together" they appeared. These evaluative dimensions were chosen on the basis of pilot testing indicating that these traits were the most commonly reported as being anxiety-provoking among our student sample. Participants were informed that the researchers were interested in examining how these traits are expressed in different forms of communication. The participants were further informed that interaction partners (those assigned to the role of perceiver) would not be evaluated by the judges and were unaware of this aspect of the study. Thus, partners were instructed to not discuss this aspect of the study with their interaction partner (the perceiver). Of importance, all participants assigned to the role of partner received the same information regardless of the experimental condition to which the perceiver in their dyad was assigned.

**Perceiver instructions.** Perceivers were assigned to one of two experimental conditions: Perceivers in the *no-information* control condition were given no instructions beyond the basic study description. Perceivers in the *incidental source* condition were pro-

vided with identical information as partners, but they were told that their partner had been randomly assigned to have her videotaped responses evaluated and that their own responses would not be evaluated. The experimenter made it clear that the perceiver's partner had been informed that her portion of the video would be evaluated but had not been informed that both participants were privy to this information. Like the partners, perceivers were asked to avoid discussing the evaluation of the video during the course of the study.

**Measures.** Unless otherwise noted, all variables were measured on a 1 (*not at all*) to 7 (*very much*) scale.

**Anxiety.** After the manipulation but prior to the start of the interaction, participants rated how anxious they felt about being videotaped. After the interaction, participants again rated how anxious they felt about being videotaped; how anxious, nervous, awkward, and uncomfortable they felt in general (i.e., experienced anxiety) during the interaction; as well as how anxious they thought their partner felt (i.e., perceived anxiety) during the interaction, using the same anxiety items (for self-anxiety,  $\alpha = .88$ ; for perceived partner anxiety,  $\alpha = .87$ ; items drawn from Pearson et al., 2008; Stephan et al., 2002; Stephan & Stephan, 1985).

**Interest in the interaction.** After the interaction, participants responded to four items designed to assess their interest in interacting with their partner: "Would you want to have another interaction like this one with this person?" "Could you see yourself becoming friends with this person?" "How much did you like your partner?" and "I enjoyed the interaction" ( $\alpha = .84$ ; items were drawn from Pearson et al., 2008, and Mallett et al., 2008).

## Results

**Analysis strategy.** Because dyad members were nested within dyads, data were analyzed with the MIXED procedure in SPSS—a multilevel modeling procedure—to model the interdependence in dyad members' responses (Kenny, Kashy, & Cook, 2006). All models included the main effects of role (a within-dyad variable; perceiver vs. partner), feedback condition (a between-dyad variable; control vs. incidental source), and their interaction. To compare responses of participants in same-race versus cross-race dyads, in addition to the effect of participants' racial group membership, we employed an analytical procedure outlined by West, Popp, and Kenny (2008). Main effects of respondent race (White vs. minority), partner race (White vs. minority), role (perceiver vs. partner), and feedback condition (no-information control vs. incidental source) were included in all models along with their interaction terms. Note that the interaction between respondent race and partner race compares same-race to cross-race dyads. We refer to this interaction as dyad type. Recall that both participants in the dyad provided responses on all measures.

### Anxiety.

**Pre- and post-interaction experienced anxiety.** For pre-interaction anxiety, only one effect emerged: Partners reported being more anxious entering the interaction than did perceivers ( $M_s = 4.04$  and  $3.18$ ;  $SD_s = 1.99$  and  $1.77$ , respectively),  $t(60) = 2.38$ ,  $p = .021$ ,  $d = .45$ . For post-interaction ratings of anxiety about being videotaped and experienced anxiety during the interaction, no significant effects were found ( $p_s > .10$ ): Those assigned to the partner and perceiver roles were equally moderately anxious about being videotaped ( $M_s = 2.70$  and  $2.56$ ;  $SD_s = 1.79$

and 1.56, respectively), and both reported a moderate level of anxiety ( $M_s = 3.32$  and  $2.88$ ;  $SD_s = 1.50$  and  $1.43$ , respectively, on a 1 to 7 scale).

**Perceived anxiety.** For perceived anxiety, one effect emerged: a Role  $\times$  Feedback Condition  $\times$  Dyad Type interaction,  $F(1, 60) = 4.21$ ,  $p = .045$ . We tested the two-way Feedback Condition  $\times$  Dyad Type interaction separately for participants assigned to the role of partner and perceiver. As shown in Figure 1A, for those assigned to the partner role, there was not a Feedback Condition  $\times$  Dyad Type interaction,  $F(1, 60) = .03$ ,  $p = .86$ . However, as shown in Figure 1B, for those assigned to the perceiver role, a significant Feedback Condition  $\times$  Dyad Type interaction was found,  $F(1, 60) = 6.49$ ,  $p = .01$ . For perceivers in cross-race dyads, those in the incidental source condition rated their partners as more anxious than did those in the control group,  $t(60) = 2.19$ ,  $p = .03$ ,  $d = 1.00$ . However, for perceivers in same-race dyads, the source information did not have a significant effect on their ratings of how anxious their partner appeared,  $t(60) = -1.33$ ,  $p = .19$ . These results indicate that only perceivers in cross-race dyads viewed their partner as more anxious when provided with an incidental explanation for their partner's anxiety, relative to the control group, despite no effect of the source manipulation on the amount of anxiety that partners reported experiencing.

**Interest in the interaction.** The results for participants' reported interest in the interaction were largely consistent with those found for perceived anxiety. A main effect of feedback condition was found,  $t(60) = -2.15$ ,  $p = .04$ ,  $d = .50$ , which was qualified by the expected Role  $\times$  Feedback Condition  $\times$  Dyad Type interaction,  $F(1, 60) = 10.40$ ,  $p = .002$ . As with perceived anxiety, we tested the two-way Feedback Condition  $\times$  Dyad Type interaction separately for partners and perceivers. As shown in Figure 2A, for

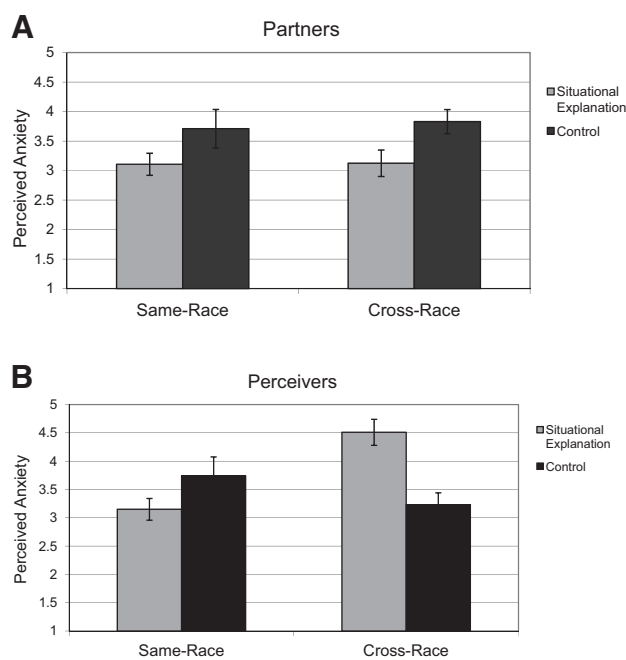


Figure 1. (A) Perceived anxiety for partners in Study 1. (B) Perceived anxiety for perceivers in Study 1. Error bars represent standard errors.

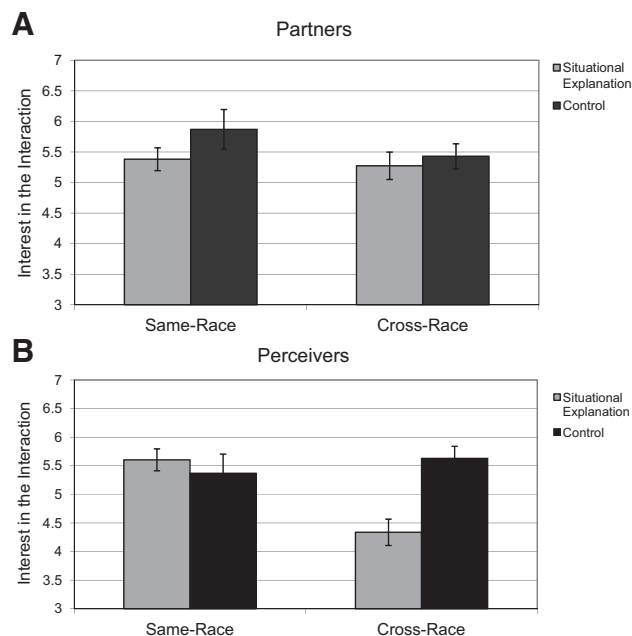


Figure 2. (A) Interest in the interaction for partners in Study 1. (B) Interest in the interaction for perceivers in Study 1. Error bars represent standard errors.

those assigned to the partner role, the Feedback Condition  $\times$  Dyad Type effect was not significant,  $F(1, 60) = .45$ ,  $p = .50$ . However, as shown in Figure 2B, for those assigned to the perceiver role, the Feedback Condition  $\times$  Dyad Type effect was significant,  $F(1, 60) = 9.34$ ,  $p = .003$ . For perceivers in cross-race dyads, those in the incidental source condition reported less interest in the interaction than did those in the control condition,  $t(60) = -3.26$ ,  $p = .002$ ,  $d = 1.50$ . For perceivers in same-race dyads, the effect of condition was not significant,  $t(60) = .75$ ,  $p = .46$ ; these individuals reported relatively high interest in the interaction, regardless of the feedback condition.

## Summary and Supplementary Analyses

The results of Study 1 demonstrate that, compared to not providing source information, providing participants with an incidental explanation for an outgroup partner's anxiety (i.e., the belief that one's partner is anticipating a personality evaluation by trained observers) can paradoxically lead participants to perceive their interaction partners as more anxious in anticipation of and during a cross-race interaction and to report less interest in continuing an interaction with that partner. Of note, those assigned to the partner role did not report feeling more anxious in cross-race than in same-race interactions. These findings suggests that perceived anxiety was "in the mind" of perceivers rather than due to partners' behavior.

Nevertheless, it is possible that partners in the cross-race and incidental source condition appeared anxious despite not reporting feeling anxious, suggesting that elevated levels of perceived anxiety are grounded in behaviors. To explore this possibility, three naive observers (all White) rated interaction partners' nonverbal behaviors on the same dimensions on which partic-

participants had rated each other (i.e., how anxious, nervous, awkward, and uncomfortable each partner appeared). Observers were naive to the experimental manipulation and study hypotheses. Ratings were made following every 30-s clip of the interaction for a total of 12 ratings per participant in each dyad (24 total for each dyad). These ratings were averaged across the 30-s time points ( $\alpha$  across time points = .92), resulting in a composite anxiety score for each participant. The composite was reliable across observers (average intraclass  $r = .59$ ; an acceptable value; see Heyman, Lorber, Eddy, & West, 2014). We note that because of a technical error with the recording equipment, data from only 52 dyads were available for coding.

Observers' judgments were significantly correlated with (all) participants' experienced anxiety ( $r = .23, p = .02$ ) but were not correlated with the participants' ratings of how anxious they perceived their interaction partner to be (for all participants,  $r = .05, p = .65$ ). Next, we conducted analyses analogous to those previously reported for interest in contact and perceived partner anxiety but with the observer anxiety index as the outcome measure. This analysis allowed us to test whether participants were perceived as equivalently anxious by outside observers in cross-race versus same-race dyads as a function of role (perceiver vs. partner) and source manipulation. Only one effect emerged: a Role  $\times$  Type interaction,  $F(1, 44) = 6.40, p = .02$ . This interaction was driven by a marginally significant dyad type effect for perceivers,  $t(44) = -1.67, p = .10, d = .50$ . Whereas cross-race perceivers were generally rated as more anxious than same-race perceivers (regardless of the feedback condition), partners were not perceived as differentially anxious as a function of either the type of interaction (cross-race vs. same-race) or the feedback condition. Taken together, these supplemental analyses suggest that the higher levels of perceived anxiety reported among those receiving incidental information in cross-race interactions were not reflected in the independent observers' perceptions.

## Study 2

In Study 1, we found evidence consistent with an assimilation account of how an incidental explanation for a partner's anxiety affects intergroup interactions; that is, perceivers assimilate knowledge of the source of their partner's anxiety into their subsequent affiliative intentions. When provided with an incidental source for an interaction partners' anxiety, participants in cross-race interactions saw their partners as more anxious and expressed less interest in interacting with their partners, relative to a no-explanation control group, suggesting that this information increased the salience of anxiety for these perceivers. Participants in same-race interactions were relatively unaffected by the source manipulation, consistent with a lower relevance of anxiety within these exchanges (see West et al., 2009; and Wyer & Calvini, 2011).

Although cross-race perceivers were generally rated as more anxious than same-race perceivers by naive observers, partners were not perceived as differentially anxious as a function of the feedback condition. Nevertheless, it is possible that providing perceivers with incidental information about anxiety in a live interaction context changed partners' behaviors in subtle ways that may not have been detected by observers. In Study 2, we sought to

more directly isolate perceptual processes by standardizing the behaviors of an interaction partner through the use of prerecorded partner responses. Perceivers interacted with an ostensible partner over closed-circuit television while receiving information about their partner's anxiety in the form of physiological feedback (a purportedly live visual of their partner's skin conductance) throughout the course of the interaction. In reality, their partner's responses (those of a confederate) and the physiological feedback were both prerecorded. The use of these recordings allowed us to standardize both the ostensible level of anxiety to which perceivers were exposed and their partner's responses.

We also sought to test the generalizability of the findings by using a different incidental explanation for an interaction partner's anxiety. To enhance the specificity and incidental nature of the source manipulation, in Study 2, we provided participants with an ostensibly irrelevant physiological explanation for their partner's anxiety, as due to prior caffeine consumption. Moreover, to strengthen the salience of the incidental explanation, information about the incidental source of their partner's anxious arousal (a form ostensibly completed by the partner indicating their caffeine consumption) was kept in front of participants for the duration of the interaction.

In Study 2, we also included a second indicator of motivations to affiliate: participants' willingness to self-disclose to their partners. Numerous studies have documented the importance of self-disclosure during relationship formation (Altman & Taylor, 1973; Reis & Shaver, 1988). Pettigrew (1998) argued that, within the intergroup domain, increased self-disclosure in part accounts for why cross-group friendships are particularly effective at reducing prejudice. Thus, willingness to self-disclose represents an important affiliation motive that is positively related to the quality and quantity of cross-race relationships (Turner, Hewstone, & Voci, 2007).

We anticipated, consistent with the findings from Study 1, that providing perceivers in same-race interactions with an incidental explanation for their partner's anxiety would have little or no effect on their interest in the interaction and willingness to self-disclose to their partner. In contrast, as in Study 1, we hypothesized that providing perceivers in cross-race interactions with an incidental physiological explanation for their partner's anxiety would lead them to express less interest in the interaction and less willingness to self-disclose to their partner than would those receiving no explanation for their partner's anxiety.

Finally, we included a condition in which participants were informed that their partner had not consumed caffeine. Participants in this condition were made aware of a possible incidental explanation for their partner's arousal and provided with the same physiological feedback as participants in the incidental source condition, but they were explicitly told that this explanation was not relevant (i.e., that their partner had not consumed caffeine). This allowed us to examine whether simply mentioning anxiety is sufficient for perceivers to assimilate it into their judgments, or if making the *irrelevance* of an incidental explanation highly salient prevents perceivers from assimilating it into their judgments because the source information is not perceived as being relevant to their partner.

## Method

**Participants.** Eighty-seven White female students participated in exchange for partial course credit. An additional 13 participants reported being suspicious and did not believe that they had engaged in a live interaction. They were excluded from the analyses.<sup>1</sup>

### Materials.

**Partner videos.** One White female actor (for the same-race condition) and one Black female actor (for the cross-race condition) were recruited from New York University's Tisch School of the Arts to play the role of the interaction partner. In the videos, the actors faced the camera and were shown with sensors attached to their left fingers, which were ostensibly collecting live skin conductance data (in reality, the sensors were not actively recording skin conductance). The videos began with a 5-minute baseline in which the actors were expressionless, followed by one minute of reading aloud and providing a scripted answer to the first question from the modified Aron et al. (1997) Interpersonal Closeness Procedure used in Study 1. After 1 minute elapsed, a buzzer sounded and the actors sat quietly for 1 minute. During this time, the actors engaged in behaviors characteristic of listening to another person speak (e.g., nodding, making eye contact with the video camera). After another minute elapsed, the actors then read and answered the second question. This procedure continued until all questions from Study 1 had been read and answered. The two actors were coached to provide similar scripted responses to the questions (e.g., both actors recalled a time when they had fallen in front of a group of friends) as well as to show a moderate level of anxiety throughout the interaction (e.g., moderate fidgeting).

To ensure that the videos of the actors were equivalent across two broad dimensions that are relevant to intergroup contact—*anxiety and warmth*—six trained observers (4 White and 2 Asian) independently judged the two actors. An anxiety score was created by averaging observers' ratings of how anxious, awkward, and tense each actor appeared in the video. A warmth score was similarly computed on the basis of observers' ratings of how warm and relaxed each actor appeared. All judgments were statistically reliable across observers, and the items were reliable within each construct ( $\alpha$ s from .75 to .89). No significant differences were found for observers' judgments of how anxious ( $M_{\text{White actor}} = 3.39$ ,  $M_{\text{Black actor}} = 3.67$ ,  $p = .65$ ) or warm (both  $M$ s = 4.33,  $p = 1.00$ ) the White and Black actors appeared.

**Physiological feedback.** Throughout the interaction, participants received continuous feedback on their partners' ostensible skin conductance response (SCR). In reality, all participants were shown a prerecorded video of electrodermal activity. Two SCR videos were created: One video showed continuous and substantial activity (high-anxiety SCR) and a second video showed little activity (low-anxiety SCR). Example images of each recording were shown to participants prior to the interaction to inform them of physiological responses corresponding to high and low levels of anxiety.

### Procedure.

**Interaction.** Participants were randomly assigned to ostensibly interact with either a Black (cross-race;  $n = 46$ ) or a White (same-race;  $n = 41$ ) partner. Prior to the start of the interaction, participants were informed that they would have a 6-minute getting-acquainted interaction with another participant who was in

a physiology lab on a different floor of the building. As such, the interaction would take place over wireless video cameras. Participants were informed that the researchers were interested in understanding how feedback about physiological states influences communication. As such, participants would see their partner on one computer monitor and a live recording of their partner's skin conductance response on another monitor. Participants were told that they would take turns responding to a series of questions and that they and their partner would each have 1 minute to answer the prompt. Participants were asked to not interrupt their partner while she was speaking so that the researchers would later be able to code her responses.

Just prior to the interaction, participants were given an information sheet to help them interpret their partner's SCR data. The form stated that SCR measures "emotional arousal," which is associated with the experience of anxiety. The information sheet further stated that physiological arousal can be induced both by social and nonsocial factors, such as caffeine, which can increase sympathetic activity. The sheet depicted images of SCRs representing high or low arousal. Participants were then escorted to the room in which the interaction would take place. Upon entering the room, they could see their ostensible interaction partner on a computer screen (a video recording of either the White or Black actor, who appeared to be waiting). A second monitor was turned off when participants entered the room. Participants were told that this monitor would contain a live feed of their partner's SCR. Participants were told that their partner could not yet see them, as the video camera had not yet been turned on.

**Source manipulation.** In all conditions, participants were informed that caffeine consumption can affect skin conductance. In the no-information control condition ( $n = 31$ ), participants were provided with no additional information before beginning the interaction. In the caffeine condition ( $n = 34$ ), participants were told that the partner had reported drinking three cups of coffee before the study. Thus, participants were provided with an incidental explanation for their partner's anxiety. In the no-caffeine condition ( $n = 22$ ), participants were told that their partner reported not drinking any coffee prior to the experiment.

In both experimental conditions, to enhance the salience of the incidental explanation throughout the interaction, participants were handed a sheet of paper to keep in front of them that was purportedly completed by their partner and that indicated how much coffee they had consumed (three cups or zero cups). The experimenter then turned on the monitor with the "live feed" of their partner's SCR, turned on the video camera to record the interaction, and left the room. In all conditions, participants viewed the high-anxiety SCR video throughout the interaction. After the interaction, participants completed a post-interaction questionnaire, were probed for suspicion about their interaction partner, and were debriefed.

**Measures.** As in Study 1, after the interaction, participants indicated their level of experienced anxiety, their perceptions of their partner's anxiety, and their level of interest in the interaction.

<sup>1</sup> If a participant did not believe she was engaging in an interaction, it was because she failed to follow instructions. For example, some participants spoke while their partner was reading and answering her question. When the interaction partner in the video did not respond to the participant, they became suspicious of the interaction.

All ratings were made on 1 (*not at all*) to 7 (*very much*) scales. The items in these composites were the same as those used in Study 1 ( $\alpha$ s = .85, .81, and .83, respectively). We also added a question that assessed participants' willingness to disclose personal information to their partner during the interaction: "How would you rate the amount of personal details you were willing to share? (1 = *no details*, 4 = *moderate amount of details*, 7 = *a lot of details*; item drawn from [Ensari & Miller, 2002](#)).

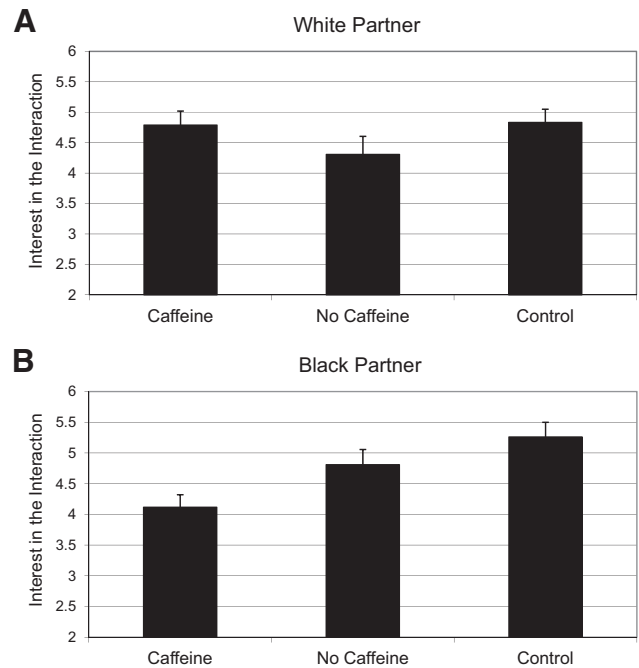
## Results

Data were analyzed with a 2 (Race of Partner: White vs. Black)  $\times$  3 (Feedback Condition: Caffeine, No-Caffeine, Control) between-subjects analysis of variance (ANOVA) for each of the four outcome variables. To examine effects of feedback condition for interactions with the White versus the Black actor, we report pairwise comparisons.

**Anxiety.** For self-reported anxiety, a Partner Race  $\times$  Feedback Condition interaction was found,  $F(2, 81) = 3.23, p = .045, \eta_p^2 = .07$ , which was driven by a marginal main effect of source condition in the White partner condition,  $F(2, 81) = 2.60, p = .08, \eta_p^2 = .06$ . That is, participants who interacted with the White actor felt marginally more anxious in the no-caffeine condition ( $M = 4.69, SD = 1.20$ ) than in the caffeine condition ( $M = 3.59, SD = 1.52$ ),  $p = .065, d = .80$ , and significantly more anxious than in the control condition ( $M = 3.37, SD = 1.41$ ),  $p = .03, d = 1.00$ . The caffeine and control conditions were not significantly different from each other ( $p = .66$ ). The main effect of feedback condition was not significant for participants in the Black partner condition ( $p = .45$ ;  $M$ s in the no-caffeine, caffeine, and control conditions = 4.11, 4.37, and 3.71;  $SD$ s = 1.56, 1.47, and 1.26, respectively). The main effects of feedback condition and partner race were not significant ( $p$ s = .63 and .57, respectively).

For perceived partner anxiety, there were no significant effects of partner race, feedback condition, or their interaction ( $p$ s = .79, .79, .11). Participants perceived both the White actor ( $M = 3.86, SD = 1.46$ ) and the Black actor ( $M = 3.82, SD = 1.19$ ) as moderately anxious, across conditions.

**Interest in the interaction.** A main effect of feedback condition was found for expressed interest in the interaction,  $F(2, 81) = 3.83, p = .03, \eta_p^2 = .09$ , which was qualified by a Partner Race  $\times$  Feedback Condition interaction,  $F(2, 81) = 4.06, p = .02, \eta_p^2 = .09$ . As shown in [Figure 3A](#), for participants who interacted with the White actor, the feedback manipulation had no effect on participants' interest in the interaction,  $F(2, 81) = 1.13, p = .33$  (condition pairwise comparison  $p$ s ranged from .16 to .89). In contrast, for participants who interacted with the Black actor, there was a main effect of feedback,  $F(2, 81) = 6.80, p = .002, \eta_p^2 = .14$ . As shown in [Figure 3B](#), participants in the caffeine condition reported significantly less interest in the interaction than did those in the control condition ( $p = .001, d = 1.12$ ) and those in the no-caffeine condition ( $p = .04, d = .48$ ). There was not a significant difference between the control and no-caffeine conditions ( $p = .20$ ). Thus, consistent with the results from Study 1, perceivers who were given an incidental physiological explanation for a cross-race partner's anxiety expressed less interest in continuing an interaction, relative to a control condition and relative to a condition in which the incidental cause was not applicable to one's partner.



*Figure 3.* (A) Interest in interacting with the White partner in Study 2. (B) Interest in interacting with the Black partner in Study 2. Error bars represent standard errors.

**Self-disclosure.** No main effects of race or source were found for self-disclosure ( $p$ s = .56 and .18, respectively); however, a Race of Partner  $\times$  Feedback Condition interaction emerged,  $F(2, 81) = 10.37, p < .001, \eta_p^2 = .20$ . For participants who interacted with the White actor, there was a significant effect of the source manipulation on self-disclosure,  $F(2, 81) = 5.81, p = .004, \eta_p^2 = .13$ . Those in the caffeine condition indicated greater willingness to self-disclose than did those in the no-caffeine condition ( $M$ s = 5.67 and 4.22;  $SD = 1.11$  and  $SD = .83$ , respectively),  $p = .002, d = 1.47$  and the control condition ( $M = 4.71, SD = 1.05, p = .01, d = .89$ ). The no-caffeine and control conditions did not significantly differ from each other ( $p = .28$ ). Thus, participants in the same-race condition who believed that their partner's anxiety stemmed from an incidental source were more willing to self-disclose than either those who were provided with no source information or those who were told that the incidental source did not apply to their partner.

For participants who interacted with the Black actor, there was also a significant effect of source,  $F(2, 81) = 5.67, p = .005, \eta_p^2 = .12$ . Those in the caffeine condition were marginally less willing to self-disclose to their partners ( $M = 4.37, SD = 1.21$ ) than those in the no-caffeine condition ( $M = 5.00, SD = 1.08, p = .107, d = .54$ ) and significantly less willing to disclose to their partners than those in the control condition ( $M = 5.64, SD = 1.01, p = .001, d = 1.13$ ). The control and no-caffeine conditions did not significantly differ from each other ( $p = .13$ ). Thus, participants who believed that a cross-race partner's anxiety stemmed from an incidental source were less willing to self-disclose than either those who were provided with no information or those who were told that the incidental explanation did not apply to their partner.



## Summary and Discussion

The results of Study 2 lend further support to an assimilation account of how incidental information about a partner's anxiety affects interracial interactions. Replicating and extending the results from Study 1, we found that directing participants' attention to an incidental physiological explanation for an outgroup partner's anxiety (caffeine consumption) undermined Whites' interest in interracial contact. Moreover, the results demonstrate that the effects of incidental source information can extend beyond influencing interest in contact to undermine willingness to engage in intimacy-building behaviors, such as self-disclosure, that are critical for fostering close cross-group relationships (Pettigrew, 1998; Turner et al., 2007). In contrast, the source information had no effect on same-race perceivers' interest in continuing the interaction and led to greater self-disclosure within these dyads than among those who did not receive this information. Thus, despite holding partners' behaviors and the ostensible level of anxiety constant with the use of prerecorded images, an incidental explanation for anxiety uniquely undermined participants' interest in the interaction and willingness to self-disclose in a cross-race, but not same-race, exchange.

The results of Study 2 also reveal an important boundary condition for the effect of incidental explanations for a partner's anxiety on intergroup affiliation. Perceivers who were made aware of a possible physiological source for their partner's anxiety but were explicitly told that this explanation did not apply to their partner (i.e., that their partner had not consumed caffeine) expressed interest in the interaction at a level similar to the no-information control group. This finding suggests that directing perceivers' attention to the irrelevance of an incidental causal explanation for a partner's anxiety can attenuate its impact on intergroup interactions. On a broader level, this finding is also consistent with Higgins's (1998) *aboutness principle*, which states that perceivers seek to understand what a target's behavior is "about" when making social inferences. We explicitly told participants in the no-caffeine condition that their partner did not consume caffeine, which rendered caffeine an irrelevant source of information for understanding their partner's anxiety.

In contrast to Study 1, in Study 2, participants did not report significantly higher levels of perceived anxiety when receiving incidental source information than did the control group. To increase the salience of the incidental explanation, in Study 2, all participants received the identical skin conductance video and instructions suggesting their partner showed a high level of arousal throughout the course of the interaction. As such, we likely reduced variability in the amount of anxiety that could be perceived, which may account for the lack of effects of the source manipulation on this variable. Nevertheless, it is possible that anxiety was more cognitively accessible for cross-race perceivers in the incidental source condition, relative to control participants, consistent with an assimilation account of the effect of incidental source information in intergroup interaction. We explore this possibility in Study 3.

### Study 3

The results of Studies 1 and 2 provide initial support for an assimilation account of how situational explanations for a partner's anxiety impact intergroup affiliation. We sought to more directly

examine the psychological mechanism underpinning these effects in Study 3. We reasoned that if incidental source information facilitates the categorization of a cross-race partner's behavior as "anxious" in early stages of information processing, consistent with an assimilation perspective (Trope & Gaunt, 2000), the category "anxiety" should be more cognitively accessible under these conditions, relative to when no source information is provided and individuals are engaging in same-race interactions. In Study 3, we employed procedures identical to those used in Study 2 to manipulate incidental source information for a partner's anxiety. To measure the accessibility of anxiety, participants then completed a lexical-decision task (LDT; Neely, 1977; see also Lepore & Brown, 2002) in which they categorized letter strings containing anxiety-related words as words or nonwords. Lexical decision tasks have been used extensively to assess accessibility of anxiety and threat (e.g., MacLeod & Mathews, 1991; Mor, Hertel, Ngo, Shachar, & Redak, 2014; Richards & French, 1992; White, Ratcliff, Vasey, & McKoon, 2010) as well as emotion-specific responses in intergroup perception (Weisbuch, Pauker, & Ambady, 2009).

In addition, we sought to further rule out an alternative cognitive depletion account for the observed effects in Studies 1 and 2. Anxiety has generally been found to be associated with impairments in executive functioning (see Bishop, 2009; Eysenck, Derakshan, Santos, & Calvo, 2007). Moreover, several studies have documented that individuals are more cognitively depleted after taking part in a cross-race (vs. same-race) interaction (for a review, see Richeson and Trawalter, 2005). Therefore, it may be cognitive depletion, rather than the accessibility of anxiety per se, that prevents individuals from discounting incidental sources of anxiety in intergroup interactions (Gilbert, 1998). To explore this possibility, we assessed performance on the Stroop (1935) color-naming task, which has been used as a measure of cognitive depletion in prior interracial interaction research (e.g., Richeson & Shelton, 2003).

In Study 3, we also move beyond self-report measures of affiliation to include a behavioral measure of avoidance—seating distance—that previous research has successfully employed to assess affiliation motives in cross-race interactions (e.g., Goff, Steele, & Davies, 2008; Stern & West, 2014). Within interracial interactions, close physical proximity sets the stage for positive interactions by signaling interest in one's interaction partner (Goff et al., 2008; Henderson-King & Nisbett, 1996) and, thus, represents a particularly important behavioral marker of affiliation. In Study 3, we examined the extent to which participants physically distanced themselves from an ostensible cross-race or same-race interaction partner as a function of receiving an incidental explanation compared to no explanation for their partner's anxiety. As in Study 2, we used an incidental physiological explanation for perceived anxiety: caffeine. Consistent with Studies 1 and 2, the level of perceived partner anxiety was also measured. We did not provide explicit information about the level of partner anxiety, as we did in Study 2, and so we hypothesized that the effects of perceived partner anxiety would parallel those of Study 1.

We hypothesized that, to the extent that participants who expect to take part in a cross-race interaction persevere on anxiety when given incidental source information about their partner's anxiety, they should be faster to detect anxiety-related words (vs. nonwords) in a lexical decision task than should those in a no-

information control condition. We further hypothesized that anxiety accessibility would predict physical avoidance in interracial interactions, consistent with an avoidance coping response in these exchanges (Trawalter et al., 2009). Therefore, we hypothesized that anxiety accessibility would mediate the effect of incidental source information on participants' physical distance from a cross-race interaction partner. As in Studies 1 and 2, given the lesser implications of anxiety for affiliation in same-race exchanges (see West et al., 2009; Wyer & Calvini, 2011), we expected that individuals who expected to take part in a same-race interaction would not show evidence of heightened accessibility of anxiety or behavioral avoidance when provided with incidental source information.

## Method

**Participants.** One hundred forty-two undergraduate students (126 female; 58 White, 14 Black, 6 Hispanic, 52 Asian, 1 Native Hawaiian, and 7 Multiracial, and 4 "other race" reported) participated in the study.<sup>2</sup>

**Materials.** Participants were shown one of four videos used in past research (Stern & West, 2014; West, Magee, Gordon, & Gullett, 2014) that showed actors (an ostensible college student) describing why they think they would make a good friend. There were four videos in total (White male, White female, Black male, and Black female). Participants were randomly assigned to either a same- or cross-race partner of the same gender. All actors were recorded in the same room where participants completed the experiment, wore the same plain T-shirt, and used identical 1-minute rehearsed scripts.

**Procedure.** Participants were informed that they would be taking part in a study, composed of two parts, concerning how people form impressions. Participants learned that in the first part of the study they would receive some initial information about their partner via video, and in the second part of the study they would participate in a live conversation with their partner. Participants were told that their partner was participating in two studies and was presently completing a physiology study on another floor.

Participants completed an "information about me" form on which they reported their gender, race, and age. They were informed that their partner would complete the same form and that they would exchange forms to learn about one another before the interaction. Participants were also informed that, after exchanging forms, each would make a brief, 1-minute video explaining why they would make a good friend. Participants were told that the experimenter would exchange these videos so that each could learn more about their partner before interacting. The experimenter then left for several minutes to ostensibly collect the partner's information. Upon returning, the experimenter handed the participant her partner's information form that matched the participant's age and gender. The form also revealed that their partner was either of the same race ( $n = 42$ ) or of a different race ( $n = 100$ ) than the participant. Non-White participants were always assigned to a White (cross-race) partner.

**Source manipulation.** After reading their partner's information sheet, participants were randomly assigned to either a *no-feedback* ( $n = 70$ ) or a *caffeine feedback* ( $n = 72$ ) condition. In the caffeine feedback condition, participants were told that because their partner was also participating in an unrelated study about

physiological states, they would be provided with additional information about their partner for the purpose of that study. As in Study 2, participants in the *caffeine feedback* condition were then given a form explaining that individuals can experience anxiety when they consume drugs that increase sympathetic activity, particularly large quantities of caffeine. The experimenter explained that because caffeine can affect physiological states, the participant's interaction partner had been asked to indicate on the form how much caffeine he or she had consumed prior to the study. Participants in the *caffeine feedback* condition received a form ostensibly completed by their partner indicating that their partner had consumed 3 cups of coffee. Participants assigned to the *no-feedback* condition received no information about their partner's caffeine consumption prior to the study and continued to the next portion of the study.

**Interaction video and reported anxiety.** Next, all participants were told that they and their partner would each make a 1-minute video explaining why they would make a good friend and would then exchange videos. Participants were informed that their partner had been randomly assigned to record his or her video first. The experimenter then left the room to ostensibly obtain the partner's video. To increase the credibility of the interaction partner being real, when the experimenter returned, she inserted a flash drive into the participant's computer and opened a video that the partner had ostensibly just recorded. After watching the video, participants recorded their own video to be shown to their partner before the live interaction. After making their video, participants reported how anxious they felt and how anxious they perceived their partner to be in the video using the same items from Studies 1 and 2 (1 = *not at all* to 7 = *very much*; self-anxiety,  $\alpha = .88$ ; perceived partner anxiety,  $\alpha = .87$ ).

**Lexical decision task and Stroop task.** Next, participants completed a lexical decision task and Stroop (1935) task in counterbalanced order. All instructions were provided on the computer screen.

**Lexical decision task.** Participants were informed that they would be shown a series of letter strings and that their task was to indicate, as quickly and accurately as possible, using the keyboard, whether each letter string was a word or nonword (see Lepore & Brown, 2002). Target words were preceded by an asterisk and remained on the screen until the participant provided a response. Participants completed six practice trials, followed by 54 experimental trials. Letter strings were presented sequentially and included six anxiety-related words (*anxious, worried, tense, uncom-*

<sup>2</sup> Fifty-seven additional participants completed the experiment but were excluded from analyses. Of these participants, 39 did not believe they would actually take part in an interaction or did not believe that the interaction partner was real, one did not believe that the partner consumed caffeine, 14 failed to follow instructions, and three were excluded due to experimenter error. Three additional participants failed to accurately recall how many cups of coffee their partner had consumed. We did not remove these participants from analyses, but results are completely consistent across all outcome measures if they are removed. To examine whether feedback condition and interaction type systematically related to whether a participant was excluded from analyses, we conducted a binary logistic regression with feedback condition ( $-1 =$  no feedback;  $1 =$  feedback), interaction type ( $-1 =$  cross-race;  $1 =$  same-race), and their interaction term as predictors. Whether a participant was included in analyses or not served as the dependent variable. There were no significant effects ( $ps \geq .61$ ), indicating that exclusion from analyses was unrelated to condition.

comfortable, uneasy, nervous), six negatively valenced words (upsetting, disturbing, awful, horrible, rotten, repulsive), six positively valenced words (appealing, wonderful, favorable, desirable, likeable, fabulous), and six distractor words (orange, example, things, information, number, sentence), as well as 18 nonwords, matched in length with the words (e.g., *cpaopahr*, *eoics*, *nera*). Positively valenced words were included to balance participant responses; negatively valenced words were included to assess whether incidental source information would increase accessibility of anxiety, specifically, compared to general negativity.<sup>3</sup>

**Stroop task.** Participants completed the Stroop task to assess whether receiving incidental source information led to cognitive depletion (Richeson & Shelton, 2003; Richeson, Trawalter, & Shelton, 2005). Participants read on the computer screen that their task was to indicate as quickly as possible the correct color of a stimulus word that would either be the name of a color (e.g., the word *blue*) or a color block (control trials). Participants read that they would use keys on the keyboard to indicate their response. Color names and control color blocks were shown on the screen one at a time and were shown in one of four colors: black, red, green, or blue. Participants completed 84 experimental trials. *Congruent* trials were those in which the font color matched the semantic meaning of the word (e.g., *green* appearing in green font). *Incongruent* trials were those in which the font color did not match the semantic meaning (e.g., *green* appearing in red).

**Seating distance.** Two chairs were stacked in the corner of the room. Following the methodology of Goff et al. (2008), upon entering the room with the participant the experimenter feigned frustration that the room was not set up for the interaction and stated that another experimenter had just used the room (see also Stern & West, 2014). The experimenter explained that they needed to check on the participant's partner and would appreciate if the participant could arrange the chairs for the interaction, with two chairs facing each other. Participants were asked to avoid further moving the chairs, once arranged, so that the experimenter could position the cameras to record the interaction. The experimenter then returned and measured the distance between the chairs, which was recorded as the distance (in inches) between two pieces of tape that had been placed under the front edge of the seat of each chair. Participants were then informed that the study had ended and were debriefed.

## Results

**Participant gender and race as moderators.** For all dependent variables, we first examined whether participant gender or race (in the cross-race interaction condition) moderated any effects. Neither participant gender ( $ps > .12$ ) nor race (Whites vs. non-Whites;  $ps > .37$ ) interacted with either of the experimental conditions.

**Experienced anxiety.** We examined whether the source manipulation and the type of interaction that participants expected to take part in predicted participants' level of anxiety experienced prior to the interaction. We conducted a 2 (Feedback Condition: caffeine feedback, no caffeine feedback)  $\times$  2 (Dyad Type: same-race, cross-race) ANOVA with the composite score of how anxious participants felt after watching their partner's video as the

dependent variable. No effects were significant ( $F_s < 2.10$ ,  $ps > .14$ ;  $M = 2.63$ ,  $SD = 1.35$ ).

**Perceived partner anxiety.** Next, we examined whether the incidental source manipulation and the type of interaction that participants expected to take part in predicted how anxious they perceived their partner to be in the video. We conducted a 2 (Feedback Condition: caffeine feedback, no caffeine feedback)  $\times$  2 (Dyad Type: same-race, cross-race) ANOVA with the composite score of how anxious the partner was perceived to be in the video as the dependent variable.<sup>4</sup> Neither the main effect of feedback,  $F(1, 137) = .50$ ,  $p = .48$ ,  $\eta_p^2 = .004$ , nor the main effect of dyad type,  $F(1, 137) = 2.38$ ,  $p = .13$ ,  $\eta_p^2 = .02$ , was significant. However, the predicted Feedback  $\times$  Dyad Type interaction was marginally significant,  $F(1, 137) = 3.25$ ,  $p = .074$ ,  $\eta_p^2 = .02$  (see Figure 4). Consistent with the findings from Study 1, participants who expected to take part in a cross-race interaction perceived their partner as more anxious after receiving feedback about the partner's caffeine consumption than when they did not receive this feedback,  $t(137) = 2.31$ ,  $p = .02$ ,  $d = .39$ . The feedback information, in contrast, did not affect participants' perceptions of same-race partners' anxiety,  $t(137) = -.66$ ,  $p = .51$ .

**Stroop interference.** Participants completed incongruent, congruent, and control trials on the Stroop task. As such, it is possible to calculate interference scores either by subtracting latencies on congruent trials from latencies on incongruent trials (Kerns et al., 2004; Meier & Kane, 2013) or by subtracting latencies on control trials from latencies on incongruent trials (Richeson & Shelton, 2003). We examined both types of interference. Consistent with previous research (Kane & Engle, 2003), incorrect trials and trials with response times below 200 ms or above 1,500 ms were excluded from analyses. Higher scores indicate greater Stroop interference (poorer performance).

A paired-sample  $t$  test comparing incongruent and congruent trial latencies yielded a significant difference between the trial types,  $t(141) = 13.77$ ,  $p < .001$ , such that participants responded more quickly on congruent trials ( $M = 835.65$ ,  $SD = 119.30$ ) than on incongruent trials ( $M = 929.05$ ,  $SD = 126.49$ ). We repeated this analysis using the incongruent and control trials as the paired variables. The model yielded a significant difference between the trial types,  $t(141) = 12.64$ ,  $p < .001$ , such that participants responded more quickly on control trials ( $M = 843.37$ ,  $SD = 107.49$ ) than on incongruent trials ( $M = 929.05$ ,  $SD = 126.49$ ). These results indicate that participants showed evidence of Stroop interference for incongruent trials compared to congruent or control trials.

We next conducted a 2 (Feedback Condition: caffeine feedback, no caffeine feedback)  $\times$  2 (Dyad Type: same-race, cross-race) ANOVA with the difference between incongruent and congruent response latencies as the dependent variable. The model did not

<sup>3</sup> The lexical decision task also contained six approach words (*approach*, *close*, *near*, *forward*, *toward*, *advance*) and six avoidance words (*avoid*, *away*, *distance*, *leave*, *hide*, *ignore*). No significant effects were found for activation of these constructs.

<sup>4</sup> One participant did not provide responses for how anxious the partner was perceived to be in the good friend video, and one participant did not have response latencies on the lexical decision task due to experimenter error. Results are consistent with those reported in the main text if these participants are excluded from all analyses.

yield any significant effects ( $F_s < .82, p_s > .36$ ). For the analysis with the same predictors and the difference between incongruent and control response latencies as the dependent variable, only a marginally significant main effect of feedback condition was found,  $F(1, 138) = 2.83, p = .095, \eta_p^2 = .02$ . Participants who received an incidental explanation for anxiety showed less Stroop interference ( $M = 76.35, SD = 82.52$ ) than did participants who did not receive this information ( $M = 95.28, SD = 78.31$ ). No other effects, including interactions with dyad type (same- vs. cross-race), were significant ( $F_s < 1.10, p_s > .29$ ).

**Anxiety accessibility.** We examined whether the feedback information affected response latencies for anxiety-related words for participants who expected to take part in a same-race versus cross-race interaction. Because each participant completed six trials, we utilized generalized estimating equations to adjust for interdependence in participants' judgments (specifying an exchangeable correlation matrix; [Ballinger, 2004](#)). The model included the main effects of feedback condition (1 = feedback; -1 = no feedback) and dyad type (1 = same-race interaction; -1 = cross-race interaction) and the two-way interaction between feedback condition and dyad type. The time taken to categorize the stimulus as a word or nonword was included as the dependent variable. Consistent with past research (e.g., [Sechrist & Stangor, 2001](#)), incorrect responses and response latencies that were less than 200 ms or greater than 2,000 ms were excluded from the analyses.<sup>5</sup>

No main effect of feedback condition was obtained ( $B = -1.09, SE = 8.45, z = -.13, p = .90$ ). However, the model yielded a marginally significant main effect of dyad type ( $B = 13.76, SE = 8.45, z = 1.63, p = .10$ ). Participants who expected to take part in a cross-race interaction responded more quickly to anxiety-related words than did participants who expected to engage in a same-race interaction. Of importance, this effect was qualified by a significant Feedback Condition  $\times$  Dyad Type interaction ( $B = 20.62, SE = 8.45, z = 2.44, p = .02$ ). As hypothesized, and seen in [Figure 5](#), participants who expected to engage in a cross-race interaction responded more quickly to anxiety-related words after receiving caffeine feedback compared to those who did not receive this information ( $B = -21.71, SE = 9.69, z = -2.24, p = .03$ ). In contrast, feedback information did not affect response latencies for participants in same-race interactions ( $B = 19.53, SE = 13.84, z =$

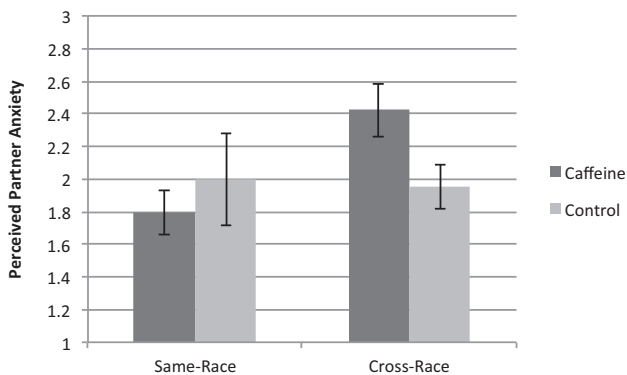


Figure 4. Perceived partner anxiety in Study 3. Error bars represent standard errors.

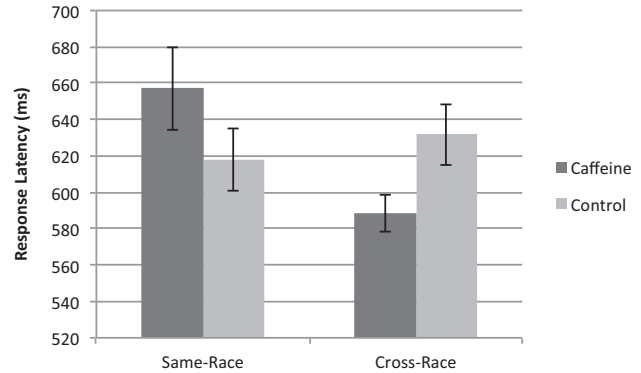


Figure 5. Response latencies for lexical decision task for anxiety-related words in Study 3. Error bars represent standard errors.

1.41,  $p = .16$ ). No significant effects were found for positive words. For negative words, only a marginally significant main effect of dyad type was found ( $p = .095$ ), indicating that participants in the same-race condition were marginally quicker at responding to negative words than those in the cross-race condition.

**Seating distance.** We conducted a 2 (Feedback Condition: caffeine feedback, no caffeine feedback)  $\times$  2 (Dyad Type: same-race, cross-race) ANOVA with distance (in inches) placed between the chairs as the dependent variable. No main effect of feedback was found,  $F(1, 138) = 0.05, p = .82$ . However, a main effect of dyad type was obtained,  $F(1, 138) = 5.12, p = .03, \eta_p^2 = .04$ . Participants in cross-race interactions placed the chairs farther apart than did participants in same-race interactions. Of importance, this main effect was qualified by a significant Feedback Condition  $\times$  Dyad Type interaction,  $F(1, 138) = 4.87, p = .03, \eta_p^2 = .03$ . As shown in [Figure 6](#), participants who expected to engage in a cross-race interaction placed the chairs farther apart after they received feedback about their partner's caffeine consumption than did those who received no feedback,  $t(138) = 2.25, p = .03, d = .38$ . In contrast, the feedback manipulation had no effect on seating distance in the same-race interaction condition,  $t(138) = -1.18, p = .24$ .

**Mediation analysis.** Finally, we examined whether greater accessibility of anxiety explained, in part, why participants in cross-race interactions placed the chairs farther apart in the caffeine feedback condition than did those in the control condition.

<sup>5</sup> We examined whether the pattern of effects using the mean response latencies as the dependent variable was consistent with the pattern of effects from the multilevel analysis. We conducted a 2 (Feedback Condition: caffeine feedback, no caffeine feedback)  $\times$  2 (Interaction Type: same-race, cross-race) ANOVA with mean response latencies for anxiety-related words as the dependent variable. Neither the main effect of feedback,  $F(1, 137) = .003, p = .96, \eta_p^2 < .000$ , nor the main effect of interaction type,  $F(1, 137) = 2.11, p = .15, \eta_p^2 = .02$ , was significant. Consistent with the multilevel analysis, the model yielded a significant Feedback Condition  $\times$  Interaction Type interaction,  $F(1, 137) = 5.74, p = .02, \eta_p^2 = .04$ . Participants who expected to take part in a cross-race interaction responded more quickly to anxiety-related words when they received feedback about the partner's caffeine consumption than if they did not receive this information,  $t(137) = 2.25, p = .03, d = .38$ . The feedback information did not significantly affect response latencies to anxiety-related words for participants who expected to take part in a same-race interaction,  $t(137) = -1.39, p = .17, d = .24$ .

We tested a moderated mediation model in which the Feedback Condition  $\times$  Dyad Type interaction predicted seating distance through anxiety response latencies. Hayes's (2013) PROCESS macro (Model 8) was used to estimate indirect effects for participants in cross-race relative to same-race interactions with 5,000 bootstrap replications. As shown in Figure 7 (Panel A), for participants in cross-race interactions, the 95% bias-corrected confidence interval of the indirect effect of feedback on seating distance did not contain zero [.0594, .8559], indicating significant mediation at  $\alpha = .05$ . In contrast, as shown in Figure 7 (Panel B), for participants in a same-race interaction, the 95% bias-corrected confidence interval of the indirect effect contained zero [-1.0380, .0228], indicating no significant mediation. Thus, caffeine feedback heightened accessibility of anxiety for perceivers who expected to take part in a cross-race interaction, which in turn led them to create greater physical distance between themselves and their partner than did those who did not receive this information.<sup>6</sup>

**Summary and Discussion**

The results of Study 3 provide further support for an assimilation account of how incidental source information for perceived anxiety affects intergroup affiliation. Study 3 also points to a cognitive mechanism for these paradoxical effects. That is, in Study 3, incidental source information (providing feedback that one's partner had consumed caffeine) heightened the accessibility of the category "anxious" in cross-race but not same-race interactions, and this heightened accessibility of anxiety mediated the effect of incidental source information on physical avoidance (seating distance) in cross-race interactions.

Moreover, consistent with the findings from Study 1, participants in cross-race interactions also perceived their partners as more anxious after receiving incidental information, relative to a no-explanation control group. Nevertheless, we found that the accessibility of anxiety, based on response latencies, rather than participants' reported level of perceived anxiety in their partner mediated the effects of incidental source information on behavioral avoidance in the cross-race interactions. This finding provides an important insight into how incidental sources of anxiety impact avoidance in intergroup interactions. Work by Trope and colleagues (e.g., Trope & Gaunt, 2000) suggests that biases at the

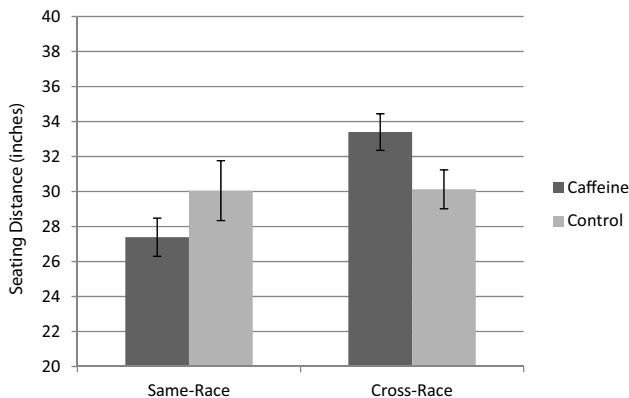


Figure 6. Distance placed between chairs in Study 3. Error bars represent standard errors.

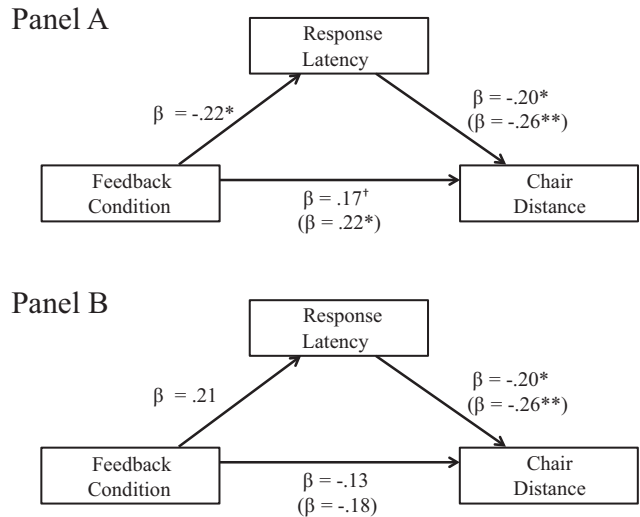


Figure 7. Mediation models showing feedback condition predicting seating distance through anxiety response latencies in expected cross-race interactions (Panel A) and same-race interactions (Panel B). All values are standardized coefficients. Values in parentheses represent direct relationships; values without parentheses represent relationships after all variables were included in the model. Asterisks show significant paths (\*  $p < .05$ , \*\*  $p < .01$ ) and  $^{\dagger} p < .10$ .

behavioral identification stage can also result in more extreme judgments of a given behavior (in our study, greater perceived anxiety on self-report measures) but that this need not be the case for incidental causal information to nevertheless impact behavior. Consistent with this work, our findings suggest it may not be the extremity of perceived anxiety per se but, rather, its accessibility as a category for observed ambiguous behaviors that accounts for interaction avoidance. Even explanations suggesting that anxiety has an external source (irrelevant to the interaction) provide a behavioral label of "anxious" for ambiguous behavioral cues, and it is this labeling process that appears to be problematic for intergroup affiliation.

As in Studies 1 and 2, participants who expected to take part in same-race interaction, in contrast, were unaffected by the source manipulation. These participants showed no heightened accessibility of anxiety or physical distancing in response to incidental source feedback, consistent with a lower importance of anxiety for affiliation within same-race exchanges (see West et al., 2009, 2014; Wyer & Calvini, 2011).

In addition, we sought to further rule out a cognitive depletion account for the effects observed in Studies 1 and 2, specifically, that deficits in inhibitory control, rather than accessibility of anxiety per se, prevented perceivers in intergroup interactions from discounting incidental source information for their partner's anx-

<sup>6</sup> We also tested a moderated mediation model in which the Feedback Condition  $\times$  Dyad Type interaction predicted seating distance through perceived partner anxiety in the video. The 95% bootstrapped confidence intervals for both the same-race interaction condition [-.1052, .5039] and the cross-race interaction condition [-.4880, .1928] contained zero, indicating that perceived partner anxiety did not significantly mediate the effect of condition on seating distance.

iety. We found no evidence of impaired Stroop performance as a function of the same- versus cross-race context (indeed, participants who received an incidental explanation for anxiety generally showed less Stroop interference than participants who did not). Nevertheless, incidental information showed uniquely detrimental effects for perceivers who expected to engage in a cross-race interaction. Taken together, our results are consistent with an assimilation account of how incidental source information affects cross-race exchanges. We found that an incidental explanation for a partner's anxiety heightens the accessibility of anxiety as a behavioral category and fuels avoidance in intergroup interactions.

### General Discussion

The present studies demonstrate that the perception of anxiety in others can undermine intergroup interactions, even when the anxiety can be attributed to an incidental source. Across three experiments, providing perceivers in cross-race interactions with an explanation for their partner's anxiety that was incidental to the interaction not only consistently failed to promote interest in continuing an interaction but backfired, resulting in less interest in intergroup interactions (Studies 1 and 2), less willingness to self-disclose (Study 2), and reduced physical proximity (Study 3) than in conditions in which perceivers either received no explanatory information or were explicitly told that an incidental explanation did not apply to their partner. Moreover, our results point to a perceptual mechanism for the detrimental effects of situational explanations for perceived anxiety in intergroup interaction. When provided with an incidental explanation for their partner's anxiety, participants in cross-race interactions showed heightened accessibility of anxiety on a reaction time measure (Study 3) and paradoxically perceived their partners as more anxious (Studies 1 and 3) than did those who received no explanatory information or who engaged in a same-race interaction.

Together, these findings point to the persistence and durability of perceived anxiety and its implications for avoidance coping within interracial exchanges (see Kawakami, Phillips, Steele, & Dovidio, 2007; Murphy et al., 2011; Plant & Butz, 2006; and Trawalter et al., 2009). Detrimental effects of incidental source information for perceived intergroup anxiety were obtained in both dyadic exchanges (i.e., two-participant; Study 1) and video-mediated exchanges (Studies 2 and 3) employing two different incidental explanations (i.e., that a partner's anxiety could be attributed to an upcoming evaluation in Study 1, or a stimulant in Studies 2 and 3). Of importance, these effects emerged despite holding partners' actual behaviors constant through the use of standardized, prerecorded responses (Studies 2 and 3) and providing participants with visual feedback about their partner's level of arousal throughout the course of an interaction (Study 2). In contrast, in all three studies, participants in same-race interactions were unaffected by the source manipulation—with one exception, they expressed a greater willingness to self-disclose when provided with the incidental explanation—consistent with the lower relevance of experienced and perceived anxiety for rapport in these exchanges (Pearson et al., 2008; Trail et al., 2009; and West et al., 2009, 2014).

Conceptually, the present studies extend research on intergroup contact in two important ways. First, the present studies move beyond past approaches to the study of intergroup anxiety, which

have traditionally focused on the negative effects of anticipated and experienced anxiety on intergroup contact (e.g., Pettigrew & Tropp, 2008; Plant & Devine, 2003; and Toosi et al., 2012) to highlight how anxiety perceptions and causal attributions for anxiety impact intergroup affiliation. Second, whereas intergroup anxiety has often been explored as a consequence of intergroup contact (e.g., Aberson & Haag, 2007; Turner et al., 2007; see also Pettigrew & Tropp, 2008), the present research sheds light on the inverse process: how perceived anxiety and incidental source information can contribute to contact avoidance in dyadic exchanges. In particular, our findings point to anxiety perseverance as an important antecedent of avoidance coping in intergroup exchanges. They suggest that even well-intentioned individuals who seek out intergroup interactions and successfully manage their own felt anxiety may nevertheless process information in ways that undermine cross-group dyadic relations.

### Assimilation and Correction Revisited

The present studies also extend research on social inference and causal attribution to the domain of intergroup interactions. We examined in particular whether providing an incidental explanation for anxiety would attenuate or enhance negative outcomes (e.g., contact avoidance, reduced willingness to self-disclose) within intergroup interactions. Conceptually, a focus on incidental explanations for anxiety can offer insights into attributional processes that may shape cross-race affiliation in subtle but consequential ways.

According to late stage correction models of social inference (e.g., Gilbert, 1989; Gilbert et al., 1988), perceivers may discount their partner's anxiety if given a salient and specific explanation for anxiety that is ostensibly unrelated to the interaction context. Assimilation models of social inference (e.g., Trope, 1986; Trope & Alfieri, 1997), in contrast, suggest that focusing attention to irrelevant situational features can, in some cases, impact how the behaviors are initially categorized, particularly when the behavior being evaluated is ambiguous and subject to multiple interpretations. Our findings suggest that intergroup contexts may enhance the likelihood that incidental source information will be assimilated into person judgments. That is, social category information (e.g., same- vs. cross-race interactions) may augment the impact of incidental factors (e.g., caffeine) in social perception, with unique consequences for intergroup relations.

To maximize the possibility that perceivers would correct for incidental sources of anxiety, in all three studies, perceivers were given salient and specific source information about their partner's anxiety prior to the interaction. Additionally, in Study 2, participants were reminded of this explanation repeatedly during the course of the interaction in an effort to ensure that the incidental source information remained salient. Nevertheless, our findings provide support not simply for insufficient correction but for the assimilation of incidental information about a partner's anxiety in cross-race interactions. In Studies 1 and 3, we found that incidental source information led perceivers in cross-race interactions to view their partners as more anxious, relative to control participants, even when partners' behavior was held constant through the use of prerecorded images (Study 3). Moreover, in Study 3, incidental source information uniquely heightened accessibility of anxiety cues in cross-race but not same-race interactions.

The present findings have important implications for understanding how salient source information affects intergroup relationships in a variety of social settings. Scholars have theorized that one reason why anxiety may be detrimental to intergroup encounters is because its source is ambiguous, and so people attribute it to the cross-race nature of the encounter (West et al., 2009). However, our findings suggest that even when an incidental source is salient, perceiving a partner as anxious can be detrimental to intergroup relations.

### Alternative Accounts

The present research sought to isolate one mechanism underlying the negative effects of incidental source information on intergroup affiliation: the heightened accessibility of anxiety. However, an alternative explanation for our findings is that perceivers in cross-race interactions did not have sufficient cognitive resources to adjust their responses once provided with incidental source information for their partner's anxiety. Anxiety has generally been found to be associated with impairments in executive functioning (see Eysenck et al., 2007; see also Bishop, 2009). Moreover, several studies have documented depleting effects of interracial interactions (for a review, see Richeson and Shelton, 2007). Therefore, it may be deficits in inhibitory control, rather than the accessibility of anxiety, that leads to a failure to use the incidental source information to discount anxiety in intergroup interactions.

Several findings in the present research provide evidence against a cognitive depletion account for our findings. In Study 2, perceivers who were made aware of a possible physiological source for their partners' anxiety but were explicitly told that this explanation did not apply to their partner showed no attenuated interest in contact, relative to the control group. This finding suggests that the assimilation of incidental source information likely cannot be attributed to a mere priming effect of anxiety or a lack of cognitive ability (i.e., cognitive depletion; Richeson & Shelton, 2007), as perceivers appeared to process the relevance (or irrelevance, in this case) of explanatory information, rather than simply its content. Moreover, when we included a measure of cognitive depletion (Stroop performance) in Study 3, we found no evidence of depletion as a function of the same- versus cross-race context.

Nevertheless, we caution that these findings do not rule out the possibility that cognitive depletion may impact the processing of explanatory information for anxiety in interactions that unfold over an extended period of time. For example, heightened activation of anxiety may lead perceivers to attempt to down-regulate their partner's or their own anxiety, which may exact cognitive resources (see Pearson, Dovidio, Phillips, & Onyeador, 2013; and West et al., 2009). Thus, depletion may be a downstream consequence of anxiety perseveration in extended or repeated interactions.

There may be other psychological processes that may also help to account for (or complement) our findings. One possibility is that the incidental source information provided participants with an ostensibly nonracial excuse to disengage from a cross-race exchange. This explanation is consistent with an aversive racism perspective (Gaertner & Dovidio, 1986), in which Whites who are motivated to act and appear nonprejudiced may discriminate when their actions can be attributed to nonracial factors. Although we

cannot fully rule out this possibility, several findings are not easily accounted for from an avoidance-justification account; namely, why participants in cross-race interactions perceived their partners as more anxious (Studies 1 and 3) and showed increased accessibility of anxiety (Study 3) after being provided with an incidental explanation than did those in the control condition. Nevertheless, it is possible that some participants used situational explanations as an ostensibly nonracial justification to disengage from intergroup interactions *because* they were perseverating on anxiety. Future studies might explore this possibility by examining the potential roles of racial attitudes and participants' justifications for affiliation in shaping how people respond to situational explanations for perceived intergroup anxiety.

Another possibility is that participants in the intergroup interaction felt less confident in their ability to help their partners manage their anxiety and therefore disengaged from these interactions. In contrast, those in same-race encounters may have felt more able to help their partners regulate their anxiety. In Study 2, participants in the caffeine condition showed a greater willingness to self-disclose to a same-race partner than did those in the no-information control and no-caffeine conditions. These findings are also consistent with prior research demonstrating that interacting with an anxious partner can actually lead to more positive evaluations of a same-race interaction (Pearson et al., 2008; West et al., 2009). Although we did not assess participants' perceived ability to regulate their partner's anxiety, these factors may well have contributed to the reduced affiliation and contact avoidance observed in the present research. As such, future studies might explore whether greater perceived ability to regulate one's partner's anxiety buffers effects of incidental source information in cross-race exchanges.

### Implications for Managing Intergroup Anxiety and Facilitating Intergroup Contact

Our findings join a growing list of seemingly promising interventions (e.g., color-blind mindsets, Apfelbaum, Sommers, & Norton, 2008; antiprejudice messages, Legault, Gutsell, & Inzlicht, 2011; commonality focus; Saguy, Tausch, Dovidio, & Pratto, 2009; perspective taking, Vorauer, Martens, & Sasaki, 2009) that can backfire when implemented in intergroup interactions. In particular, our findings suggests that methods that may be effective for reducing experienced anxiety may prove ineffective or even problematic for addressing negative effects of perceived anxiety. For example, although attributional interventions (e.g., providing a race-irrelevant explanation for one's own anxiety; see Richeson & Trawalter, 2005) can be potentially useful for combating experienced anxiety, the present findings suggest that such interventions may actually backfire when targeting perceived anxiety by amplifying vigilance for anxiety in intergroup exchanges. This process is consistent with research by Vorauer and colleagues (e.g., Vorauer et al., 2009; Vorauer & Sasaki, 2009), which suggests that directing attention to one's partner (vs. oneself) in intergroup interactions can hinder intergroup relations by magnifying rejection concerns in these exchanges.

Because associations between anxiety and avoidance in intergroup interactions may be well learned (see Johnson, Olson, & Fazio, 2009; Kawakami et al., 2007; Trawalter et al., 2009; Wyer & Calvini, 2011), they may be difficult to override using deliber-

ative coping strategies. In contrast, interventions that target the appraisal of anxious behavior, rather than aim to reduce perceptions of anxiety, may be more effective at promoting more positive interaction assessments. One especially promising method for combating effects of perceived anxiety may be the use of implementation intentions: habitual “if-then” action plans that specify when and how to respond to a specified behavioral cue. Implementation intentions have been shown to effectively promote behavioral change across a wide variety of domains (e.g., nutrition, Jackson et al., 2005; academics, Bayer & Gollwitzer, 2007; athletic performance, Stern, Cole, Gollwitzer, Oettingen, & Balcetis, 2013), including the reappraisal of experienced anxiety in intergroup interactions (Stern & West, 2014). Unlike interventions that direct attention to ostensibly benign explanations for intergroup anxiety, implementation intentions do not require perceivers to assess the relevance of the explanation or consciously deliberate when and how they should respond to perceived anxiety, and so they may be particularly fruitful for combating anxiety perseverance in intergroup interactions. Future studies should explore other psychological factors that might similarly buffer individuals against the negative impact of perceived anxiety in dyadic intergroup interactions. For instance, Page-Gould, Mendoza-Denton, and Tropp (2008) found that prior positive contact experiences (e.g., cross-group friendships) can attenuate negative effects of intergroup anxiety. Future studies might also assess how the quality of prior contact impacts how intergroup anxiety is perceived.

Perceived anxiety may also have other downstream consequences beyond affiliation. For example, future studies might examine whether perceptions of outgroup members’ interest in contact (e.g., intergroup pluralistic ignorance, Shelton & Richeson, 2005), expectations for future interactions (e.g., rejection sensitivity; Mendoza-Denton, Page-Gould, & Pietrzak, 2006), and more general intergroup attitudes are also shaped by situational explanations for perceived anxiety. Prior research, for instance, has demonstrated that the experience of intergroup anxiety can amplify negative outgroup attitudes (e.g., Turner et al., 2007) and implicit evaluative associations (Amodio & Hamilton, 2012), and it remains to be seen if the same is true of perceived anxiety.

## Conclusion

Intergroup relations researchers have long been interested in elucidating psychological processes that undermine the benefits of intergroup contact (see Pettigrew & Tropp, 2008; Shelton & Richeson, 2006; Trawalter et al., 2009). Whereas past work has examined negative effects of experiencing anxiety on intergroup relations, the present research highlights the importance of considering perceptual and attributional processes that contribute to its harmful effects in dyadic interactions. Given the myriad situations in which perceivers may be confronted with plausible incidental explanations for another’s anxiety (e.g., speaking engagements, job interviews, performance reviews), identifying conditions under which perceivers are able to process intergroup anxiety in ways that diminish its negative impact is a critical avenue for future research. Examining how anxiety is not only personally experienced but also perceived and interpreted may offer new insights into the important and complex role that affect plays in shaping contemporary race relations.

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