



**An in-group advantage in detecting intergroup anxiety**

Journal:	<i>Psychological Science</i>
Manuscript ID:	PSCI-08-0491
Manuscript Type:	Research report
Date Submitted by the Author:	18-Apr-2008
Complete List of Authors:	Gray, Heather; Boston University School of Public Health, Health and Disability Research Institute Mendes, Wendy; Harvard University, Psychology Denny-Brown, Carrigan; Harvard University, Psychology
Keywords:	Intergroup Dynamics, Emotions, Face Perception, Stereotyped Attitudes, Stress Reactions



Only

Running Head: IN-GROUP ADVANTAGE

An in-group advantage in detecting intergroup anxiety

Heather M. Gray

Boston University School of Public Health

Wendy Berry Mendes & Carrigan Denny-Brown

Harvard University

Word count: 2495

Corresponding author:

Heather M. Gray

Health and Disability Research Institute

Boston University School of Public Health

580 Harrison Avenue

Boston, MA 02118

617-627-4667 (voice)

617-627-4824 (fax)

heather.gray@tufts.edu

## Abstract

We examined the possibility of an in-group advantage in detecting intergroup anxiety. Specifically, we videotaped White and Black participants while they engaged in same- or inter-race interactions. Then, we asked White and Black observers to view these videotapes (unaware of the racial context) and provide their impressions of participants' anxiety. Two results pointed to an in-group advantage in detecting intergroup anxiety. First, only same-race observers perceived a modulation of participants' anxious behavior as a function of racial context. This held true not only for relatively subjective perceptions of global anxiety, but also for perceptions of single, discrete behaviors tied to anxiety. Second, we found that only same-race observers provided descriptions of anxiety that tracked reliably with participants' cortisol changes during the task. These results suggest that White and Black Americans may have difficulty developing a sense of shared emotional experience.

### An in-group advantage in detecting intergroup anxiety

Presidential hopeful Barack Obama recently suggested that there is a “chasm of misunderstanding that exists between the races.” Could this be true? Is it more difficult for different-race individuals to understand, perceive, and detect each others' emotions and intentions? In this paper, we explored whether the ability to detect intergroup anxiety declines when perceptions are made across the racial divide.

Although intergroup interactions are becoming increasingly more common, they remain a source of anxiety for many people. Both majority group members (e.g., Whites in the United States) and minority group members (e.g., Blacks in the United States) show cognitive impairment and negatively-toned emotional and physiological responses during and after intergroup encounters (Mendes, Major, McCoy, & Blascovich, 2008; Richeson, Trawalter, & Shelton, 2005). For both groups, anxiety may stem from a concern about confirming negative stereotypes (e.g., Steele & Aronson, 1995; Vorauer, Main, & O'Connell, 1998). These anxious feelings can “leak out” via relatively uncontrollable behaviors (Waxer, 1977), including physical distancing, fidgeting, and vocal tension (Goff, Steele, & Davies, 2008; Shelton, Richeson, & Salvatore, 2005; Weitz, 1972).

This investigation focuses on observers' impressions of intergroup anxiety. Similar to the concept of an in-group advantage in recognizing emotions within cultures (see Elfenbein & Ambady, 2002; cf. Nowicki, Glanville, & Demertzis, 1998), we questioned whether there may exist an in-group advantage in detecting intergroup anxiety. Although many studies have examined observers' perceptions of intergroup anxiety (e.g., Vorauer & Turpie, 2004; Mendes, et al., 2008; Shelton et al., 2005), none, to our knowledge, have directly compared perceptions of same- versus different-race observers. Therefore, this experiment examined the extent to which

## In-group advantage, 4

White and Black observers are differentially attuned to intergroup anxiety among members of their own racial groups.

We asked White and Black participants to complete a stressful task in the presence of a panel of White or Black interviewers, thus manipulating intergroup context. We videotaped participants' reactions to this situation. Then, we asked White and Black observers to view the videotapes and gauge anxiety unaware of the racial context of the situation. We were interested in perceptions of (a) general anxiety and (b) two specific behaviors: vocal tension and reassurance seeking. Vocal tension is an unintentional sign of intergroup anxiety (Weitz, 1972). Reassurance seeking is a relatively uncontrollable activity expressed by those who are anxious and fear negative evaluation (Heerey & Kring, 2007; Joiner, Katz, & Lew, 1999). No work, to our knowledge, has explored the potential for an in-group advantage in the description of single, concrete behaviors such as these, which are ostensibly measured objectively (Burgoon & Baesler, 1991).

We indexed attunement to intergroup anxiety in two ways. First, we questioned whether observers detected a modulation of participants' anxious behavior as a function context (i.e., whether participants were being interviewed by a panel of same-race or different-race individuals). Second, we examined the extent to which observers' ratings predicted participants' objective stress responses, measured with cortisol changes. By examining correspondence between observers' ratings of anxiety and participants' cortisol reactivity, we could determine the relative accuracy of observers' ratings without concern for participants' attempts to present a more favorable image via self-report.

## Method

### *Participants*

1  
2  
3 We recruited Boston-area men and women ( $N=193$ ) between the ages of 18 to 55 who  
4 identified as White/Caucasian or Black/African-American, who were evenly distributed in  
5  
6 gender (54% female), and on average just past young adulthood (age:  $M = 28.7$ ,  $SD = 10.6$ ).  
7  
8

9  
10 *Procedure*

11  
12 All participants were scheduled for afternoon appointments to control for diurnal  
13  
14 fluctuations in cortisol. Following initial consent, participants viewed a neutrally-affective nature  
15  
16 documentary video to allow 30 minutes of quiet rest before collection of the first (baseline)  
17  
18 saliva sample. Next, the experimenter informed participants that they would be preparing and  
19  
20 then delivering an eight-minute speech to a panel of interviewers, which would be videotaped.  
21  
22 The participants were instructed to imagine that they were interviewing for a desirable job and to  
23  
24 describe the qualities that made them well-suited for the job.  
25  
26  
27

28  
29 At this point, the interviewers entered the room. Depending on condition assignment,  
30  
31 participants were evaluated by either two White or two Black interviewers (one male, one  
32  
33 female). After the brief introduction, the participant was left alone to prepare the speech (2 min).  
34  
35 The interviewers then re-entered the room and instructed the participant to begin the speech.  
36  
37 After eight minutes had elapsed, the experimenter returned to the room and ended the speech  
38  
39 task. Participants completed an additional 5-min stressor task and then provided the second  
40  
41 (reactivity) saliva sample. After 30 minutes had passed, the participant provided the final  
42  
43 (recovery) saliva sample. Participants were thoroughly debriefed, paid, and thanked.  
44  
45  
46  
47

48  
49 *Neuroendocrine measures.* We obtained saliva samples using IBL SaliCap sampling  
50  
51 devices, which were later assayed for salivary-free cortisol using commercial immunoassays kits  
52  
53 (IBL-Hamburg, Germany). Intra- and inter-assay coefficients of variance were less than 10%.  
54  
55 For each participant we calculated two cortisol change scores by subtracting baseline levels from  
56  
57  
58  
59  
60

## In-group advantage, 6

1  
2  
3 both reactivity and recovery period samples. We averaged these two values to provide a proxy  
4  
5 area under the curve or total amount of cortisol secreted as a consequence of the stressful task.  
6  
7

8 *Observers' ratings.* Self-identified White/Caucasian ( $n = 11$ ) and Black/African  
9  
10 American ( $n = 8$ ) undergraduate research assistants (observers) were trained to code the  
11  
12 videotaped performances of the speech delivery task. All observers were trained by the same  
13  
14 research assistant. During training, observers and the research assistant together viewed 10 pilot  
15  
16 participants, and the research assistant discussed how to code the various outcome measures.  
17  
18 Once the research assistant was satisfied with the quality of the coding, observers completed the  
19  
20 coding independently. Each videotape was coded by at least one White and one Black observer.  
21  
22 Observers made a global assessment of participants' anxiety, responding to the item "The subject  
23  
24 seemed anxious during the speech" on a scale from -4 (*strongly disagree*) to +4 (*strongly agree*).  
25  
26 When making ratings of anxiety observers viewed the videotapes silently. Observers also coded  
27  
28 the extent to which participants displayed vocal tension and reassurance seeking throughout the  
29  
30 speech delivery on a scale of -3 (*not at all*) to +3 (*very much*). When making ratings of these  
31  
32 variables, observers viewed the videotapes with the sound turn on.  
33  
34  
35  
36  
37

## Results

*Data Analytic Strategy*

38  
39  
40  
41  
42  
43 We questioned whether observers of the same race as the participant would be more  
44  
45 likely than observers of a different race to detect a modulation in intergroup anxiety. Therefore,  
46  
47 we explored the 3-way interaction between the participant's race, interviewers' race, and the  
48  
49 match between the observer's and participant's race. For each dependent variable, we conducted  
50  
51 a 2 (Observer Race: same or different than participant) by 2 (Participant Race) by 2  
52  
53 (Interviewers' Race) mixed-model ANOVA, with repeated measures on the first factor. We  
54  
55  
56  
57  
58  
59  
60

1  
2  
3 decomposed significant 3-way interactions by examining the effects of interviewers' race and the  
4 match between the observer and the participant separately for White and Black participants.

5  
6  
7  
8 Significant 2-way interactions were further examined by conducting simple effects tests within  
9 the repeated measures variable—the match or mismatch between participants' and observers'  
10 race.  
11  
12  
13

### 14 *Global Anxiety*

15  
16  
17 Observers' global impressions of anxiety yielded the expected 3-way interaction,  $F(1,$   
18  $138) = 9.15, p_{rep} = 0.99$ .<sup>1</sup> A significant 2-way interaction emerged for ratings of White  
19 participants,  $F(1, 138) = 3.89, p_{rep} = 0.88$ . White observers perceived more anxiety among  
20 White participants interacting with Black interviewers ( $M = 0.85, SEM = 0.30$ ) than with White  
21 interviewers ( $M = -0.47, SEM = 0.36$ ),  $F(1, 138) = 8.18, p_{rep} = 0.99$ . However, Black observers  
22 did not observe this difference,  $F(1, 138) < 1$  (Figure 1a). The 2-way interaction was also  
23 significant for ratings of Black participants,  $F(1, 138) = 5.31, p_{rep} = 0.93$ . From the perspective  
24 of Black observers, Black participants appeared more anxious when their interviewers were  
25 White ( $M = 0.05, SEM = 0.39$ ) than when their interviewers were Black ( $M = -1.03, SEM =$   
26  $0.41$ ),  $F(1, 138) = 5.17, p_{rep} = 0.93$ . White observers failed to detect this difference,  $F(1, 138) <$   
27  $1$  (Figure 1b).  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42

### 43 *Vocal Tension*

44  
45  
46 Analysis of vocal tension ratings revealed a significant 3-way interaction,  $F(1, 85) =$   
47  $8.80, p_{rep} = 0.99$ . When we restricted the analysis to White participants, a significant 2-way  
48 interaction between Observer Race and Interviewer Race emerged,  $F(1, 85) = 11.07, p_{rep} = 0.99$ .  
49 White observers perceived more tension in the voices of White participants who were being  
50 evaluated by Black interviewers ( $M = -0.17, SEM = 0.35$ ) than by White interviewers ( $M = -1.20,$   
51  
52  
53  
54  
55  
56  
57  
58  
59  
60



In-group advantage, 8

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

$SEM = 0.33$ ),  $F(1, 85) = 9.71$ ,  $p_{rep} = 0.99$ . However, Black observers perceived more tension in the voices of White participants who were being evaluated by White ( $M = 0.00$ ,  $SEM = 0.32$ ) than by Black interviewers ( $M = -0.80$ ,  $SEM = 0.34$ ),  $F(1, 85) = 4.52$ ,  $p_{rep} = 0.89$  (Figure 2a). The 2-way interaction was not significant for Black participants,  $F(1, 85) = 1.14$ .

### *Reassurance Seeking*

Ratings of the tendency to seek reassurance during the speech revealed the expected 3-way interaction,  $F(1, 86) = 6.68$ ,  $p_{rep} = 0.95$ . Simple effects tests revealed no significant differences for ratings of White participants. However, for ratings of Black participants, the 2-way interaction was significant,  $F(1, 86) = 5.35$ ,  $p_{rep} = 0.93$ . From the perspective of Black observers, Black participants were more likely to seek reassurance when their interviewers were White ( $M = -0.60$ ,  $SEM = 0.33$ ) than when their interviewers were Black ( $M = -1.80$ ,  $SEM = 0.36$ ),  $F(1, 86) = 4.58$ ,  $p_{rep} = 0.91$ . White observers did not detect this difference,  $F(1, 86) < 1$ ; (Figure 2b).

### *Correspondence of Anxiety Ratings and Neuroendocrine Reactivity*

Our results show strong effects for the in-group advantage such that when observers' and participants' race matched, the observers detected modulation of anxiety based on the social context (the racial composition of the interview). But to what extent were observers' perceptions of participants' anxiety accurate? To address this question, we examined the extent to which observers' perceptions of anxiety predicted participants' changes in cortisol during the course of the experiment. We examined two predictors of participants' average cortisol secretion: global anxiety ratings from race-matched and race-mismatched observers.

We observed a significant overall model,  $F(2, 131) = 3.08$ ,  $p_{rep} = .88$ . When participants' race and observers' race were different, observers' anxiety ratings were *negatively* related to

1  
2  
3 participants' cortisol increases,  $b = -0.49$ ,  $p_{rep} = .91$ . In contrast, ratings of anxiety made by race-  
4  
5 matched observers were in the expected direction, such that higher observer ratings predicted  
6  
7 greater cortisol increases ( $b = 0.39$ ,  $p_{rep} = 0.85$ ) (Figure 3). That is, participant-observer matches  
8  
9 resulted in correspondence between anxiety ratings and cortisol responses, but participant-  
10  
11 observer mismatches resulted in significant effects in the opposite direction.  
12  
13  
14

### 15 Discussion

16  
17 This study revealed an in-group advantage in recognizing intergroup anxiety. Race-  
18  
19 matched observers—who were not aware of the racial context of the interviews—detected an  
20  
21 increase in anxiety during intergroup encounters; however, race-mismatched observers were  
22  
23 insensitive to this distinction. Race-matched observers appeared to draw upon subtle nonverbal  
24  
25 indicators of intergroup anxiety that were undetectable to race-mismatched observers. Moreover,  
26  
27 only race-matched observers were sensitive to cortisol reactivity, an internally-generated  
28  
29 response to stress.  
30  
31  
32  
33

34 The finding of an in-group advantage in recognizing intergroup anxiety is consistent with  
35  
36 the broader notion that emotion recognition is diminished when perceivers are asked to identify  
37  
38 emotions expressed by members of a different cultural group (Elfenbein & Ambady, 2002;  
39  
40 Nowicki et al., 1998). The in-group advantage has been attributed to nonverbal “accents,” subtle  
41  
42 differences in the appearance of emotional expressions of emotion across cultures (Marsh,  
43  
44 Elfenbein, & Ambady, 2003). While the general language of emotion expression may be  
45  
46 universal, members of a single cultural group appear to develop a defining style. As with verbal  
47  
48 accents, out-group members may have difficulty interpreting communications expressed in this  
49  
50 unique style.  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

## In-group advantage, 10

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

Examination of vocal tension ratings provides support for this explanation. White observers detected an increase in vocal tension when White participants were faced with an interracial encounter, and Black observers sensed the opposite pattern. This is interesting because vocal tension may be an especially diagnostic indicator of Whites' intergroup anxiety. The voice is a highly "leaky" channel of communication in that it readily transmits a signal that the expresser would prefer to conceal (Ekman & Friesen, 1969), and vocal negativity has been identified as a relatively uncontrollable indicator of Whites' discomfort during interracial interactions (Weitz, 1972). Together with more controllable signs of racial tolerance (e.g., increased smiling to Black interaction partners), vocal tension may constitute a pattern of "repressed affect," or tension that one would prefer to disguise as positivity (Shelton, Richeson, & Vorauer, 2006; Weitz, 1972). Here we demonstrate that only White observers detected the genuine sign of discomfort. Perhaps Black observers took controllable positive behaviors at face-value and perceived *more* positivity—and therefore less vocal tension—among Whites who were being interviewed by Blacks (Shelton et al., 2006; Vorauer & Turpie, 2004).

Ratings of reassurance seeking resulted in a different pattern: Black observers detected an increase in reassurance seeking among Black participants paired with White interviewers, but White observers failed to make such a distinction. Reassurance seeking is a compulsive "checking" behavior designed to forestall the occurrence of a feared outcome, such as a negative evaluation (Heerey & Kring, 2007). While both Whites and Blacks often enter intergroup encounters fearful of confirming negative stereotypes, the stereotype they fear confirming is race-specific: while Whites are concerned about appearing prejudiced and unfair (Sommers & Norton, 2006; Vorauer et al., 1998), Blacks are anxious about appearing unintelligent and incompetent (Aronson, 2002; Richeson & Shelton, 2007; Shelton et al., 2005; Steele & Aronson,

1  
2  
3 1995). Because the stereotypes are different, the expressions of intergroup anxiety may be  
4  
5 different, resulting in greater vocal tension for White participants who feared appearing  
6  
7 prejudiced and greater reassurance seeking for Black participants who feared appearing  
8  
9 unintelligent and incompetent. The current study reveals that only in-group observers were  
10  
11 sensitive to these manifestations.  
12  
13

14  
15 In sum, this work adds to a growing body of research addressing the emotional, rather  
16  
17 than cognitive, side of intergroup perceptions. Past work has demonstrated that people are  
18  
19 reluctant to attribute to out-group members a full range of emotional experiences, with harmful  
20  
21 consequences for helping, empathy, and other aspects of intergroup behavior (Cuddy, Rock, &  
22  
23 Norton, 2007; Leyens et al., 2001; Tam et al., 2007). Similarly, relative insensitivity to the  
24  
25 emotional states of out-group members may make it difficult to develop a sense of shared  
26  
27 emotional experience (Hatfield, Cacioppo, & Rapson, 1994). We suggest that future work should  
28  
29 investigate the extent to which sustained and meaningful interracial contact, which has the  
30  
31 potential to reduce racial prejudice (Pettigrew & Tropp, 2006), contributes to a reduction in the  
32  
33 emotion recognition gap.  
34  
35  
36  
37

### 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

#### References

- Aronson, J. (2002). Stereotype threat: Contending and coping with unnerving expectations. In J. Aronson (Ed.), *Improving academic achievement: Impact of psychological factors on education* (pp. 281–304). Oxford, England: Academic Press.
- Burgoon, J. K., & Baesler, E. J. (1991). Choosing between micro and macro nonverbal measurement: Application to selected vocalic and kinesic indices. *Journal of Nonverbal Behavior*, *15*, 57-78.

## In-group advantage, 12

- 1  
2  
3 Cuddy, A. J. C., Rock, M. S., & Norton, M. I. (2007). Aid in the aftermath of Hurricane Katrina:  
4  
5 Inferences of secondary emotions and intergroup helping. *Group Relations and*  
6  
7 *Intergroup Processes, 10*, 107-118.  
8  
9
- 10 Ekman, P., & Friesen, W. V. (1969). The repertoire of nonverbal behavior: Categories, origins,  
11  
12 usage, and coding. *Semiotica, 1*, 49–98.  
13  
14
- 15 Elfenbein, H. A., & Ambady, N. (2002). On the universality and cultural specificity of emotion  
16  
17 recognition: A meta-analysis. *Psychological Bulletin, 128*, 203-235.  
18  
19
- 20 Goff, P. A., Steele, C. M., & Davies, P. G. (2008). The space between us: Stereotype threat and  
21  
22 distance in interracial contexts. *Journal of Personality and Social Psychology, 94*, 91-  
23  
24 107.  
25  
26
- 27 Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1994). *Emotional contagion*. New York:  
28  
29 Cambridge University Press.  
30  
31
- 32 Heerey, E. A., & Kring, A. M. (2007). Interpersonal consequences of social anxiety. *Journal of*  
33  
34 *Abnormal Psychology, 116*, 125-134.  
35  
36
- 37 Joiner, T. E. Jr., Katz, J., & Lew, A. (1999). Harbingers of depressotypic reassurance seeking:  
38  
39 Negative life events, increased anxiety, and decreased self-esteem. *Personality and*  
40  
41 *Social Psychology Bulletin, 25*, 632-639.  
42  
43
- 44 Leyens, J. P., Rodriguez-Perez, A., Rodriguez-Torres, R., Gaunt, R., Paladino, M. P., Vaes, J.,  
45  
46 & Demoulin, S. (2001). Psychological essentialism and the differential attribution of  
47  
48 uniquely human emotions to in-groups and out-groups. *European Journal of Social*  
49  
50 *Psychology, 31*, 395-411.  
51  
52
- 53 Marsh, A. A., Elfenbein, H. A., & Ambady, N. (2003). Nonverbal “accents”: Cultural  
54  
55 differences in facial expressions of emotion. *Psychological Science, 14*, 373-376.  
56  
57  
58  
59  
60

- 1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60
- Mendes, W. B., Major, B., McCoy, S., & Blascovich, J. (2008). How attributional ambiguity shapes physiological and emotional responses to social rejection and acceptance. *Journal of Personality and Social Psychology, 94*, 278-291.
- Nowicki, S. Jr., Glanville, D., & Demertzis, A. (1998). A test of the ability to recognize emotion in the facial expressions of African American adults. *Journal of Black Psychology, 24*, 335-350.
- Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology, 90*, 751-783.
- Richeson, J. A. & Shelton, J. N. (2003). When prejudice does not pay: Effects of interracial contact on executive functioning. *Psychological Science, 14*, 287-290.
- Richeson, J. A., Trawalter, S., & Shelton, J. N. (2005). African Americans' implicit racial attitudes and the depletion of executive function after interracial interactions. *Social Cognition, 23*, 336-352.
- Shelton, J. N., Richeson, J. A., & Salvatore, J. (2005). Expecting to be the target of prejudice: Implications for interethnic interactions. *Personality and Social Psychology Bulletin, 31*, 1189-1202.
- Shelton, J. N., Richeson, J. A., & Vorauer, J. D. (2006). Threatened identities and interethnic interactions. *European Review of Social Psychology, 17*, 321-358.
- Sommers, S. R., & Norton, M. I. (2006). Lay theories about White racists: What constitutes racism (and what doesn't). *Group Processes and Intergroup Relations, 9*, 117-138.
- Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology, 69*, 797-811.

## In-group advantage, 14

- 1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60
- Tam, T., Hewstone, M., Cairns, E., Tausch, N., Maio, G., & Kenworthy, J. (2007). The impact of intergroup emotions on forgiveness in Northern Ireland. *Group Processes and Intergroup Relations*, 10, 119-135.
- Vorauer, J. D., Main, K. J., & O'Connell, G. B. (1998). How do individuals expect to be viewed by members of lower status groups? Content and implications of meta-stereotypes. *Journal of Personality and Social Psychology*, 75, 917-937.
- Vorauer, J. D., & Turpie, C. A. (2004). Disruptive effects of vigilance on dominant group members' treatment of out-group members: Choking versus shining under pressure. *Journal of Personality and Social Psychology*, 87, 384-399.
- Waxer, P. H. (1977). Nonverbal cues for anxiety: An examination of emotional leakage. *Journal of Abnormal Psychology*, 86, 306-314.
- Weitz, S. (1972). Attitude, voice, and behavior: A repressed affect model of interracial interaction. *Journal of Personality and Social Psychology*, 24, 14-21.

## Author Note

Heather M. Gray, Health and Disability Research Institute, Boston University School of Public Health; Wendy Berry Mendes and Carrigan Denny-Brown, Department of Psychology, Harvard University. The research was funded by the National Heart Lung and Blood Institute (RO1 HL079383: WBM) and a National Institute on Disability and Rehabilitation Research fellowship (HMG).

For Review Only

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60



In-group advantage, 16

## Footnote

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

1. Reductions in sample size resulted from a video malfunction, which reduced the sample size available to code.

For Review Only

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60

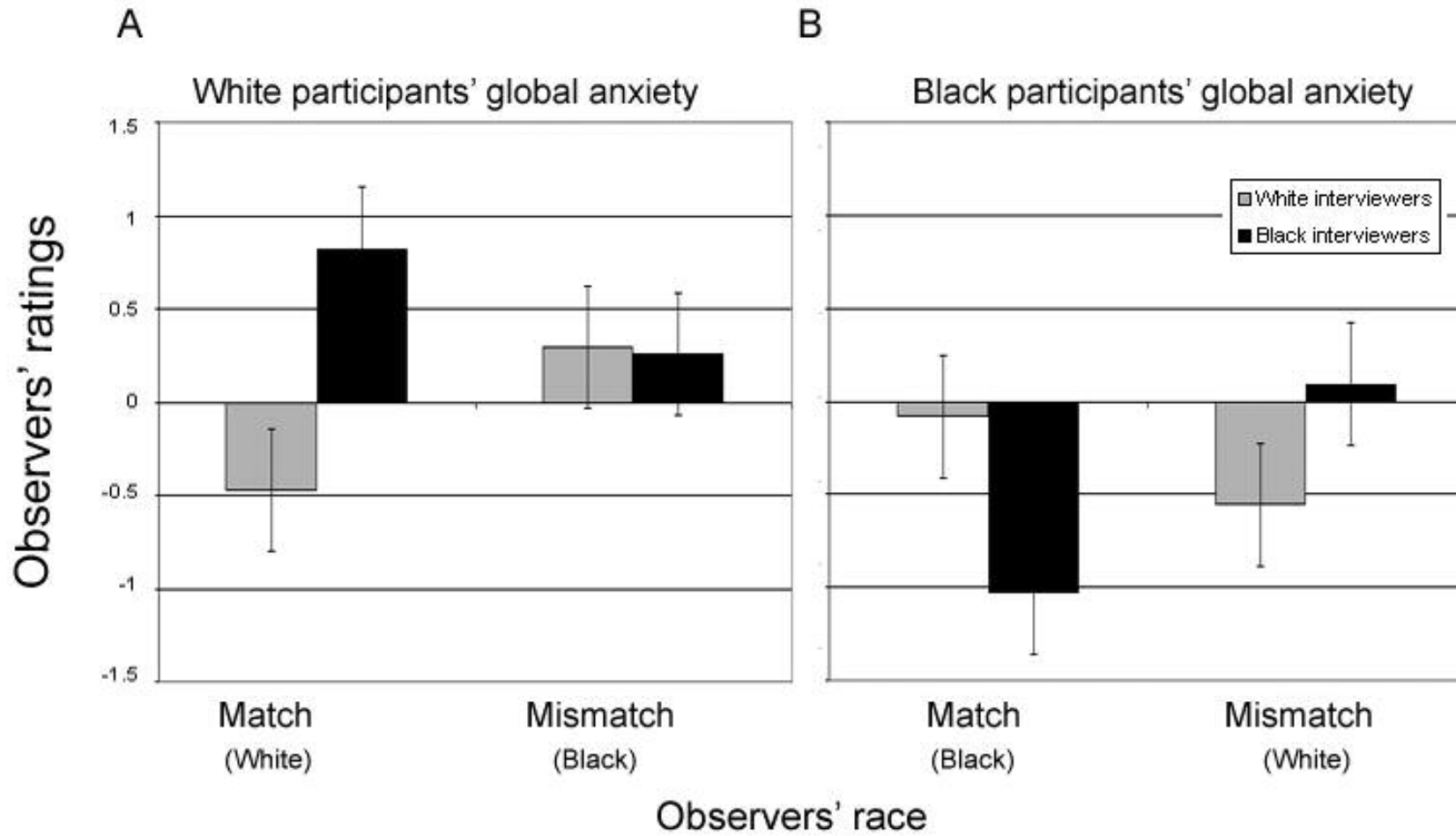
### Figure Captions

Figures 1a and 1b. White and Black observers' ratings of (A) White participants' and (B) Black participants' global anxiety. Separate bars are used to indicate participants who were evaluated by White and Black interviewers.

Figure 2a and 2b. White and Black observers' ratings of (A) White participants' vocal tension and (B) Black participants' reassurance seeking. Separate bars are used to indicate participants who were evaluated by White and Black interviewers.

Figure 3. Average change in cortisol secretion (n/mol) as a function of participant/observer race matching plotted at  $\pm 1$  SD at the mean of global anxiety ratings.

Figures 1a and 1b.



1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49

Figures 2a and 2b.

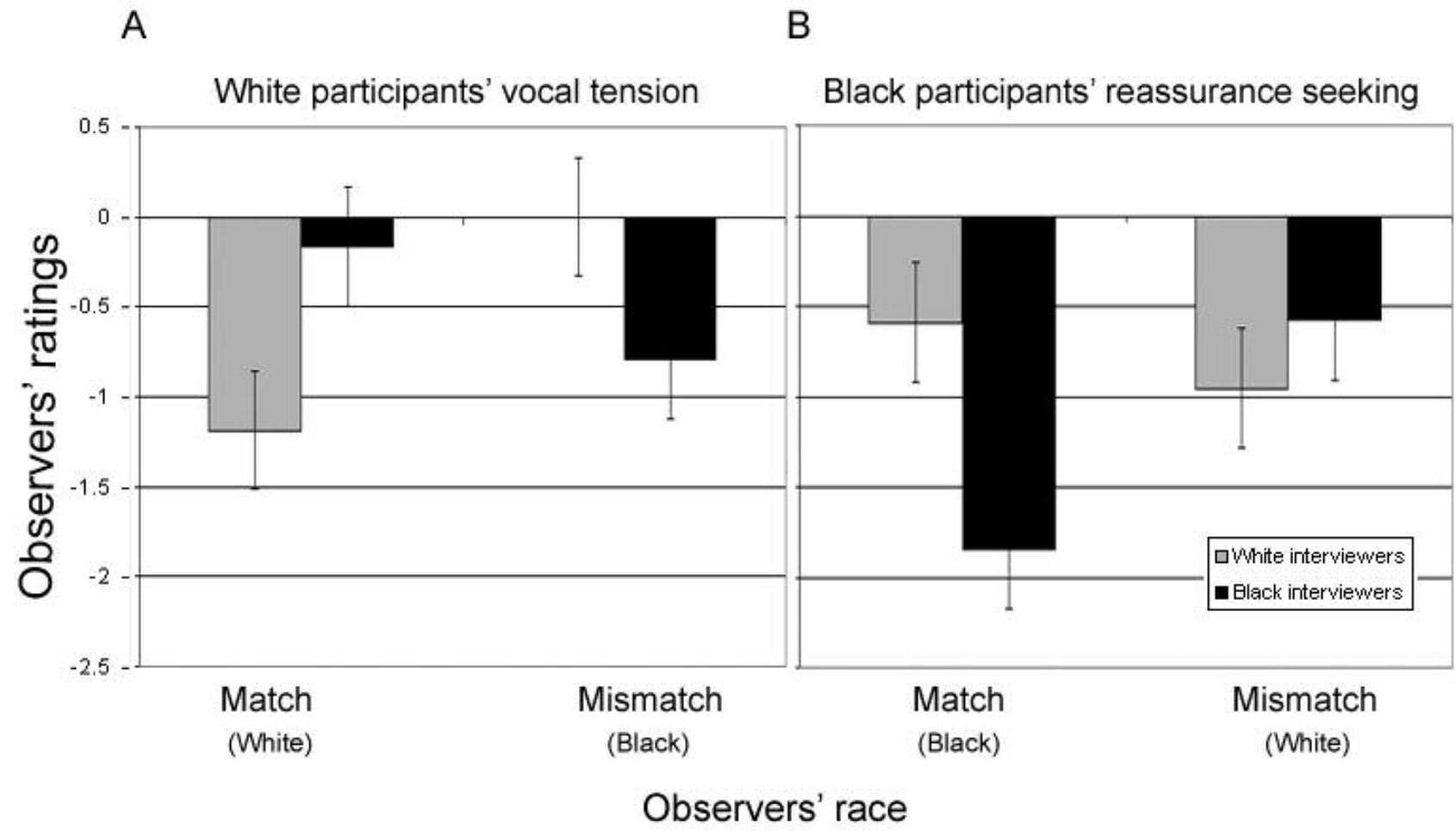


Figure 3.

