



# Members of high-status groups are threatened by pro-diversity organizational messages<sup>☆</sup>



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## HIGHLIGHTS

- Pro-diversity (vs. neutral) messages seem unfair to whites, not minorities.
- White men underwent a hiring scenario at a pro-diversity (vs. neutral) company.
- We measured cardiovascular threat, discrimination concerns, interview impressions.
- More threat & concerns, worse impressions in pro-diversity (vs. neutral) company
- Findings were not moderated by several individual difference variables.

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## ABSTRACT

Members of high-status groups may perceive pro-diversity messages from organizations as threatening to their group's status. Two initial studies ( $N = 322$ ) demonstrate that when imagining applying for a job, whites—and not ethnic/racial minorities—expressed more concerns about being treated unfairly and about anti-white discrimination when the company mentioned (vs. did not mention) its pro-diversity values. In a third experiment, white men ( $N = 77$ ) participated in a hiring simulation. Participants applying to the pro-diversity company exhibited greater cardiovascular threat, expressed more concerns about being discriminated against, and made a poorer impression during the interview relative to white men applying to a neutral company. These effects were not moderated by individual differences in racial identification, racial attitudes, or system fairness beliefs. These findings suggest that high-status identities may be more sensitive to identity threats than commonly assumed, and that this sensitivity is robust to differences in higher-order beliefs and attitudes.

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*“Our diversity makes us a better company, a stronger company, by bringing in fresh ideas, perspectives, experiences and life responsibilities, and by fostering a truly collaborative workplace.” — (Ford Motor Company, 2014)*

## 1. Introduction

Organizational diversity messages—like the message from Ford Motor Company above—are often designed to be non-controversial, positive, vague, and inclusive (see Edelman, Fuller, & Mara-Drita, 2001). Pro-diversity messages have become ubiquitous in the US, appearing on company websites, promotional materials, and recruitment campaigns

(Dobbin, 2009). Remarkably, almost no research has examined the effects of these messages on actual or prospective employees. While these messages may have positive implications for lower-status groups such as women and ethnic minorities (Purdie-Vaughns, Steele, Davies, Dittmann, & Crosby, 2008), their implications for high-status groups (i.e., groups that tend to be favored or advantaged in society, such as whites and men) are less clear. The current research examined how whites respond to imagined and simulated job interviews at companies with or without pro-diversity messages in their recruitment materials. We predicted that white job applicants would be *threatened* when applying to work for a company that promoted diversity, as evidenced by self-reported concerns about unfair and anti-white treatment, cardiovascular reactivity, and impressions conveyed during an interview. See Table 1

## 2. High-status groups and diversity

American society generally regards the principle of diversity positively (Bell & Hartmann, 2007; Yogeewaran & Dasgupta, 2014). Yet

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**Table 1**  
Correlations between individual difference variables.

Scale	1	2	3	4	5	6	7
1. Identity centrality	—						
2. Private regard	.33**	—					
3. Modern racism	-.02	.11	—				
4. Internal motivation	-.29**	-.09	-.12	—			
5. External motivation	.13	-.001	-.15	.05	—		
6. System-justifying beliefs	.21 <sup>+</sup>	.35**	.26*	-.17	-.04***	—	
7. Discrimination experiences	-.04	.02	.06	-.09	.15	.10	—
Mean	3.31	5.66	2.15	5.25	4.22	3.82	3.70
Standard deviation	1.45	1.03	0.59	0.98	1.26	0.89	1.84

Note. All items measured on 1 (*strongly disagree*) to 7 (*strongly agree*) scales, except Modern Racism (1 *strongly disagree*–5 *strongly agree*).

<sup>+</sup>  $p < .10$ .

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

several recent lines of research converge to suggest that prospective employees that are members of high-status groups may respond negatively to companies that promote the value of diversity because they see efforts to foster diversity as coming at the expense of individuals such as themselves (e.g., Eibach & Keegan, 2006). Many whites in the U.S. view racism as “zero-sum,” in which less bias against minorities means more bias against whites (Norton & Sommers, 2011). And for many whites, perceptions of status gains for minorities lead to increased perceptions of anti-white bias (Wilkins & Kaiser, 2014). Thus, to the extent that diversity messages imply that low-status groups will be treated well (Kaiser et al., 2013), they may also imply that high-status groups will be treated poorly.

White North Americans also tend to respond negatively to the idea of increasingly diverse societies: after learning about increasing (vs. unchanging) demographic diversity, whites show greater fear and anger toward minority groups (Outten, Schmitt, Miller, & Garcia, 2012), greater implicit and explicit bias against racial and ethnic minorities (Craig & Richeson, 2014), and increased concern with their group's position in society (Danbold & Huo, 2014). These studies suggest that pro-diversity messages may prompt a threat to group-status. In other words, messages emphasizing the importance or presence of diversity may lead members of high-status groups to worry that their status, influence, and position in the hierarchy is under threat. That is, organizational efforts to promote diversity may be seen as a threat to the dominance of traditionally high-status groups.

Additional evidence for the possibility that high-status groups find pro-diversity messages threatening comes from research assessing responses to multicultural ideologies (which emphasize the importance of group differences) versus colorblind ideologies (which downplay the importance of group differences; Wolsko, Park, Judd, & Wittenbrink, 2000).<sup>1</sup> Although many whites endorse the idea of multiculturalism (e.g., Ryan, Hunt, Weible, Peterson, & Casas, 2007) and some research has found positive effects of priming multicultural ideologies (Richeson & Nussbaum, 2004), other research suggests that some whites respond to multicultural (vs. colorblind) messages with antagonistic and stereotypic attitudes about minority groups (Morrison, Plaut, & Ybarra, 2010). Whites also implicitly associate multicultural messages with exclusion more than inclusion (Plaut, Garnett, Buffardi, & Sanchez-Burks, 2011), suggesting that high-status groups may feel excluded by organizations with pro-diversity messages.

<sup>1</sup> Multicultural ideologies are similar to pro-diversity messages in that they both discuss the importance of bringing together people of different backgrounds and experiences. However, it should be noted that most modern organizational diversity messages utilize both multicultural ideologies (e.g., “we should celebrate our differences”) and colorblind ideologies (e.g., “at the end of the day, we are all the same”).

Within the context of organizations, previous work has demonstrated that the presence (vs. absence) of diversity policies leads whites and men to regard claims of discrimination from minorities and women as less legitimate (Dover, Major, & Kaiser, 2014; Kaiser et al., 2013). Whether diversity policies also increase the likelihood that high-status groups will perceive more (“reverse”) discrimination against their own groups has yet to be examined.

### 3. Current research

Based on the above research, we hypothesized that organizational messages promoting the value of diversity would be threatening to whites, leading to increased concerns about discrimination and unfair treatment, as well as cardiovascular and behavioral responses consistent with threat. Few studies have examined how whites respond to situations where they feel threatened because of their race. In contrast, many studies have examined how women and minorities respond to situations where they feel vulnerable to being a target of discrimination. These latter studies show that such contexts elicit a host of negative responses consistent with threat, including hypervigilance, avoidance, underperformance, and stress (Mendoza-Denton, Shaw-Taylor, Chen, & Chang, 2009; Shelton, Richeson, & Salvatore, 2005; Steele, 1997; Townsend, Major, Gangi, & Mendes, 2011). The current research investigated whether members of high-status groups show threat in response to a company's assertion that it values diversity. We expected whites applying to (or anticipating applying to) a pro-diversity (vs. neutral) company would report increased concerns about being treated unfairly, and would perceive higher likelihood of discrimination against whites and lower likelihood of discrimination against minorities. In contrast, we predicted that members of lower-status, non-white groups (i.e., Blacks, Latinos) would *not* perceive pro-diversity companies as unfair or biased against whites. We also expected whites participating in a simulated job interview for a pro-diversity (vs. neutral) company to show a physiological threat profile and make a less favorable impression during a job interview.

This research makes several novel and important contributions to the literature. First, previous studies of whites' reactions to diversity have typically manipulated diversity-related information with abstract, general, or decontextualized statements about society (e.g., Craig & Richeson, 2014; Danbold & Huo, 2014; Outten et al., 2012; Kaiser et al., 2013; Wilkins & Kaiser, 2014; Wolsko et al., 2000). In contrast, the current study measured reactions to diversity cues using realistic recruitment materials (Studies 1, 2, & 3) and in the context of an ongoing, realistic, and engaging hiring simulation (Study 3).

Second, most research on whites' reactions to diversity has examined group-level beliefs, including whites' beliefs about and attitudes toward social groups or perceptions of bias against whites as a group (e.g., Morrison et al., 2010; Wilkins & Kaiser, 2014; Wolsko et al., 2000). Here, we examined the impact of pro-diversity messages on white job applicants' physiological reactions and nonverbal behavior, as well as their concerns about their own *personal* treatment and outcomes.

Third, in Study 3 we used a novel measure of threat that has been extensively validated in past research—patterns of cardiovascular reactivity (CVR). Cardiovascular measures obtained to assess physiological threat are dominated largely by the automatic activation of distinct physiological systems and are ideal for assessing the motivational state of individuals in demanding and evaluative contexts. Using CVR not only allows us to assess psychological states that are difficult or impossible to measure via self-report, but also allows us to investigate whether pro-diversity messages “get under the skin” to elicit maladaptive cardiovascular profiles among whites in a realistic hiring scenario.

### 4. Studies 1 & 2

Two initial experiments assessed self-reported responses to recruitment materials from companies that had pro-diversity (vs. neutral)

messages embedded within them. Study 1 compared responses of self-identified white and non-white US-residing adults exposed to online recruitment materials from both pro-diversity and neutral companies. Study 2 compared responses of self-identified white and non-white undergraduate students exposed to a recruitment video that either mentioned pro-diversity values or not. We expected that only the white participants would respond to the pro-diversity (vs. neutral) recruitment materials with more concerns about discrimination—both for themselves personally and for their ethnic/racial group more generally.

#### 4.1. Study 1

##### 4.1.1. Participants

Six hundred forty-four participants completed the study via Amazon's mechanical turk in exchange for a small fee. Of these participants, 31 did not correctly answer at least one of the three attention checks. We identified 95 participants who identified as non-white and non-Asian<sup>2</sup> minorities: Latino ( $n = 32$ ), Black ( $n = 46$ ), Native American ( $n = 3$ ), and mixed-race ( $n = 14$ ). We then sampled 95 non-Hispanic white participants at random from the larger sample in order to have equivalent sample sizes between white and non-white participants. The 190 participants in the final sample were 58% women, aged 18–69 ( $M = 34.3$ ,  $SD = 12.4$ ), fairly well-educated (80.5% attended at least some college), and fairly liberal (52% liberal, 23% moderate, 25% conservative). Non-white participants were on average older ( $M = 37.1$ ) than white participants ( $M = 31.6$ ),  $F(1188) = 9.72$ ,  $p = .002$ , but gender distribution, education level, and political orientation did not differ between the white and non-white samples ( $ps > .35$ ).

##### 4.1.2. Procedure

The study was presented as an investigation of companies' online recruitment materials. Participants saw recruitment materials from two companies, ostensibly pulled randomly from a large database, and reviewed them as if they were job-seekers. One company emphasized the importance of diversity (pro-diversity condition) and the other did not mention diversity (neutral condition). We counterbalanced the firm's industry (marketing vs. consulting), and the layout/color of the recruitment materials. All participants saw one pro-diversity and one neutral company (order counterbalanced), each one with a different layout/color, and each one from a different industry. After seeing both profiles and answering the corresponding dependent measures for each company, participants provided demographic information.

##### 4.1.3. Measures & results

Immediately after seeing each profile, participants indicated how positively they felt toward the company on a 0 (*extremely negative*) to 100 (*extremely positive*) slider scale. A 2 (white vs. non-white)  $\times$  2 (neutral vs. pro-diversity) mixed-factorial ANOVA revealed that overall, non-white participants ( $M = 71.1$ ) rated the companies more positively than white participants ( $M = 65.1$ ),  $F(1168) = 4.40$ ,  $p = .04$ . However, the neutral and pro-diversity companies were viewed equally positively,  $F(1168) = 1.12$ ,  $p = .28$ , and this did not differ by participant ethnicity,  $F(1168) = .96$ ,  $p = .33$ .

To assess concerns about unfair treatment, participants responded to three items for each company: "If I was working at (or applying to) [Company], I would worry that my race/ethnicity would put me at a disadvantage," "[Company] seems like a fair place to work" (reverse-scored), and "[Company's] message makes me think that [company] would be a good place for someone like me to work" (reverse scored;  $\alpha_{\text{diversity}} = .67$ ;  $\alpha_{\text{neutral}} = .65$ ). A mixed-factorial ANOVA revealed that overall, non-whites ( $M = 3.04$ ) tended to be more concerned about

unfairness than whites ( $M = 2.82$ ),  $F(1187) = 3.05$ ,  $p = .08$ , and that diversity condition did not influence concerns about unfair treatment ( $p > .80$ ). However, the hypothesized condition  $\times$  participant ethnicity interaction was found,  $F(1187) = 10.46$ ,  $p = .001$  (Fig. 1). Follow-up simple slopes analysis revealed that whites were more concerned about unfair treatment in the pro-diversity company ( $M = 3.00$ ) than the neutral company ( $M = 2.63$ ),  $F(1187) = 6.07$ ,  $p = .015$ . In contrast, non-white participants were more concerned about unfairness in the neutral ( $M = 3.20$ ) than the pro-diversity ( $M = 2.29$ ) company,  $F(1, 187) = 4.46$ ,  $p = .036$ .

For each company, participants responded to four items assessing how they believed each company would treat white and minority employees. Participants indicated on separate scales how likely they thought the company would be to (a) discriminate against whites and (b) unfairly favor minorities. These were combined into a measure of perceived anti-white discrimination ( $\alpha_{\text{diversity}} = .88$ ,  $\alpha_{\text{neutral}} = .92$ ). Participants also indicated on separate scales how likely the company would be to (a) discriminate against minorities and (b) unfairly favor whites. These were combined into a measure of perceived anti-minority discrimination ( $\alpha_{\text{diversity}} = .86$ ,  $\alpha_{\text{neutral}} = .89$ ). We performed a 2 (participant ethnicity: white vs. non-white)  $\times$  2 (diversity condition: pro-diversity vs. neutral)  $\times$  2 (discrimination target: whites vs. minorities) mixed-factorial ANOVA. Results revealed a significant interaction between diversity condition and discrimination target,  $F(1187) = 35.80$ ,  $p < .001$ . Overall, the pro-diversity company was seen as more likely than the neutral company to discriminate against whites,  $F(1187) = 16.89$ ,  $p < .001$ , whereas the neutral company was seen as more likely than the pro-diversity company to discriminate against minorities,  $F(1187) = 19.98$ ,  $p < .001$ .

Participant ethnicity did not significantly moderate this interaction ( $p = .30$ ). However, planned contrasts supported our hypothesis that for white participants, diversity condition influenced perceived likelihood of anti-white discrimination,  $F(1,94) = 19.01$ ,  $p < .001$ . Yet, for non-white participants, diversity condition did not influence perceived likelihood of anti-white discrimination ( $p > .40$ ; Fig. 2). None of the effects were moderated by participant gender ( $ps > .20$ ).

#### 4.2. Study 2

Study 1 demonstrated that whites—but not non-whites—were more concerned about being unfairly treated in a pro-diversity company compared to a neutral company. Moreover, whites saw pro-diversity companies as more likely than neutral companies to discriminate against whites (but not against minorities). In Study 2, we sought to test the same model in a more engaging hiring simulation, using a between-subjects manipulation of diversity condition, and using recruitment materials that were more realistic.

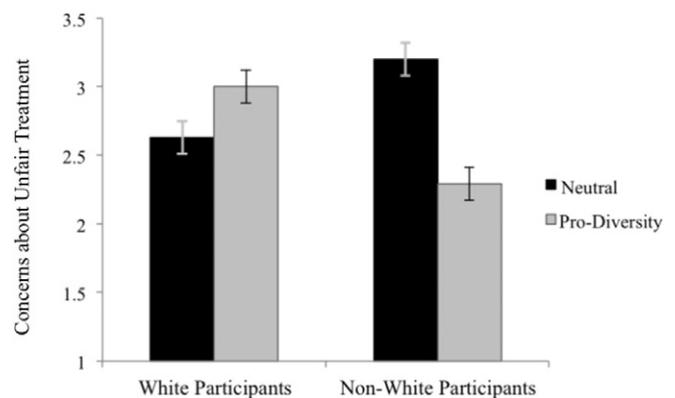


Fig. 1. Means for concerns about unfair treatment in the neutral and pro-diversity company for white and non-white participants (Study 1). Error bars represent Standard Errors (SEs).

<sup>2</sup> Asian-American participants were excluded because this particular minority group is not generally thought to benefit from diversity initiatives.

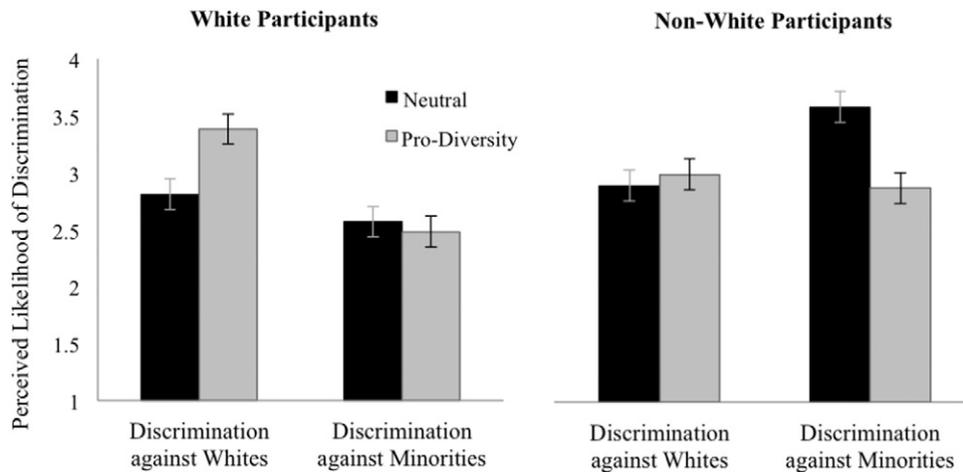


Fig. 2. Means for perceived likelihood of discrimination against whites and minorities as a function of diversity condition and participant ethnicity (Study 1). Error bars represent SEs.

#### 4.2.1. Participants

One-hundred thirty-two undergraduate students (75% women; age 18–36,  $M = 19.3$ ,  $SD = 2.17$ ) participated in exchange for course credit or a gift card. Sixty-one participants identified as non-Hispanic white, and 71 identified as Latino/a ( $n = 50$ ), Black ( $n = 3$ ), or mixed-race ( $n = 17$ ).

#### 4.2.2. Procedure

In the laboratory, participants were told they would be participating in a study of how potential employees evaluate companies' recruitment materials. Participants watched a brief recruitment video in order to "get to know" the company (CAST Technologies) and were asked to imagine they were applying to the company.

**4.2.2.1. Diversity manipulation.** The first half of the video presented information about the company and the specific position to which they would be "applying" (regional sales associate). This was identical for all participants. The second half of the video presented information about the company's corporate culture, and participants were randomly assigned to see or not see pro-diversity messages embedded within it. Participants in the *pro-diversity condition* learned that the company valued diversity without specific mention of race or gender (e.g., valuing a diversity of perspectives, values, and backgrounds) and had won a diversity-related award. Additionally, they saw stock photos of people of various ethnicities and genders throughout the presentation and were told that the workplace aimed to foster inclusion. Participants in the *neutral condition* saw a very similar video except that the description of corporate culture did not use the words "diversity" or "inclusion" but emphasized the importance of having "unique backgrounds and talents;" the company had won an award for being a "leader in service"; and the photos displayed were silhouettes or abstract drawings (i.e., did not depict ethnicity or gender). Overall, 93% of the words in the two conditions were identical, ensuring that the difference between conditions was subtle (see Supplemental Materials for full transcript, screenshots, links, and explanation of how the stimuli were developed).

Following the video presentation, participants answered two "interview questions" in which they wrote about the company culture and why they would make a good employee. They then answered dependent measures.

#### 4.2.3. Measures & results

As a manipulation check, participants responded to the item "the video from CAST made me think that the company valued diversity" on a 1–7 Likert-type scale. The expected main effect of diversity condition was significant ( $M_{\text{diversity}} = 6.14$ ;  $M_{\text{neutral}} = 5.32$ ),  $F(1,126) = 15.39$ ,  $p < .001$ , although a two-way interaction between condition

and participant ethnicity revealed that this effect was stronger for non-whites than for whites,  $F(1,126) = 6.41$ ,  $p = .013$ .

Participants reported the extent to which they would "like to work for a company like CAST" on a 1–7 Likert-type scale. A 2 (condition: pro-diversity vs. neutral)  $\times$  2 (participant ethnicity: white vs. non-white) between-subjects ANOVA revealed that overall, non-whites ( $M = 5.01$ ) wanted to work for the company more than whites ( $M = 4.64$ ),  $F(1,128) = 2.94$ ,  $p = .089$ . There was no main effect of diversity condition ( $p > .70$ ), nor an interaction between condition and ethnicity ( $p > .45$ ).

Three items assessed concerns about unfair treatment: "If I were applying for the position at CAST, I would worry that my personal characteristics would unfairly influence the decision," "If I were applying for the position at CAST, I would worry that my race/ethnicity would unfairly influence the decision," and "The video from CAST made me feel that members of my ethnic group would be unwelcomed" ( $\alpha = .79$ ). A 2  $\times$  2 ANOVA revealed a non-significant main effect for condition,  $F(1,128) = 3.47$ ,  $p = .065$ , and a significant condition  $\times$  participant ethnicity interaction,  $F(1,128) = 7.10$ ,  $p = .009$  (Fig. 3). Simple slopes analysis revealed that white participants reported more concerns about being treated unfairly in the pro-diversity ( $M = 3.08$ ) versus neutral ( $M = 2.60$ ) company,  $F(1,128) = 9.53$ ,  $p = .002$ . For non-white participants, unfairness concerns did not differ by condition ( $p > .55$ ).

As in Study 1, participants responded to four items assessing how likely the company would be to discriminate against whites and minorities. The anti-white discrimination composite contained two items:

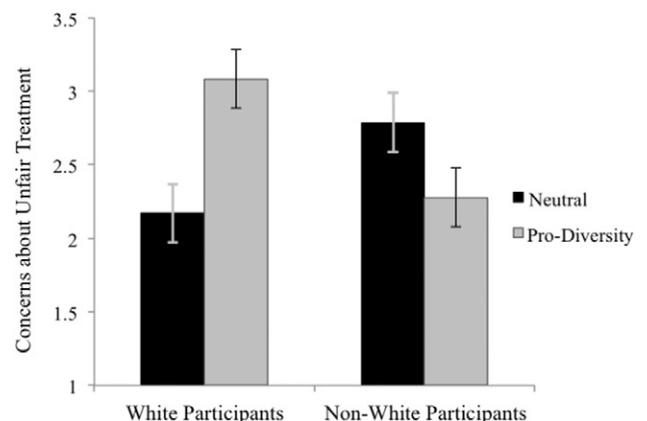


Fig. 3. Means for concerns about unfair treatment in the neutral and pro-diversity company for white and non-white participants (Study 2). Error bars represent SEs.

likelihood of (a) discriminating against whites and (b) unfairly favoring minorities ( $r = .63, \alpha = .77$ ). The anti-minority discrimination composite contained two items: likelihood of (a) discriminating against minorities, and (b) unfairly favoring whites ( $\alpha = .87$ ). A 2 (condition: pro-diversity vs. neutral)  $\times$  2 (participant ethnicity: white vs. non-white)  $\times$  2 (discrimination target: white vs. minority) mixed-factorial ANOVA revealed a significant condition by discrimination target interaction,  $F(1126) = 4.79, p = .031$ . As in Study 1, the pro-diversity company was seen as more likely than the neutral company to discriminate against whites,  $F(1126) = 6.93, p = .010$ . In contrast, the companies were seen as equally likely to discriminate against minorities ( $p > .80$ ).

Replicating Study 1, this interaction was not significantly moderated by participant ethnicity ( $p = .39$ ). Again, however, planned contrasts supported our hypothesis: for white participants, the pro-diversity company was seen as more likely than the neutral company to discriminate against whites,  $F(1,59) = 10.53, p = .002$ . However, likelihood of discrimination against whites did not differ depending on condition for the non-white participants ( $p < .65$ ; Fig. 4). Participant gender did not moderate any of these effects (all  $ps > .19$ ).

#### 4.2.4. Discussion

Two initial studies demonstrated that members of high-status groups (whites), but not low-status groups (ethnic minorities), perceive pro-diversity messages as cues of exclusion and discrimination. White men and women were more worried about being discriminated against and treated unfairly in the pro-diversity (vs. neutral) company, even though they rated pro-diversity and neutral companies as equally likable and attractive. Study 3 extends these findings to the context of an engaging laboratory hiring simulation. In addition, Study 3 assesses whether pro-diversity messages elicit cardiovascular threat among members of high status groups when applying to pro-diversity (vs. neutral) companies.

### 5. Study 3

White men participated in a hiring simulation in which they interviewed for and anticipated feedback from a pro-diversity (vs. neutral) company. We collected cardiovascular measures and coded behavioral responses throughout the interview. We focused on men only in this study because the nature of the cardiovascular indices—as well as our physiological recording equipment—makes collapsing physiological data across sexes somewhat less reliable. This decision was further justified by the absence of interactions with gender in the initial studies.

Study 3 also tested several potential individual difference moderators of responses to diversity messages. Of specific interest, individual differences in system-legitimizing beliefs, modern racism, and identity

centrality are known to influence how members of high-status groups perceive discrimination against their groups (Major, Kaiser, O'Brien, & McCoy, 2007; Wilkins & Kaiser, 2014), respond to multicultural messages (Plaut et al., 2011), and react to potential identity threats (Wilkins, Wellman, & Kaiser, 2013).

#### 5.1. Method

##### 5.1.1. Participants

Seventy-eight young white men (age 18–22;  $M = 19.20$ ) enrolled at a public university participated in exchange for payment (\$10) or course credit. Undergraduate students are similar in many ways to the typical applicants for entry-level positions like the hiring simulation used in this study. We excluded one participant a priori because he was an international student and thus not likely familiar with the meaning of diversity in the US, nor the political issues surrounding pro-diversity messages.

##### 5.1.2. Procedure

**5.1.2.1. Hiring simulation.** Participants arrived at a laboratory individually where a white female experimenter greeted them. After providing consent, participants were attached to the physiological recording equipment and sat for a 5-minute baseline recording. Participants were then introduced to the cover story. They were told that the study was part of a larger investigation of managerial decision-making and that they would take part in a hiring simulation. They would interview for a position at an actual technology firm, and managers from the firm would later evaluate these videotaped interviews and rate each candidate's suitability for the job. Researchers would then look at the decisions made by the managers and attempt to understand the factors that predicted which candidates were favored. As such, the study was described primarily as an investigation of managers, with participants merely providing stimulus materials. In order to incentivize good performance, however, participants were told that the candidate who received the highest scores from the managers would receive a \$100 cash reward.

Participants next filled out a preliminary application that would accompany their videotaped interview. They recorded their previous work experiences, ethnicity and gender, and were photographed. This ensured participants believed that the managers knew their ethnicity and gender.

**5.1.2.1.1. Diversity manipulation.** Participants next watched one of the two recruitment (pro-diversity or neutral) videos described in Study 2 in order to get to know the company and the specific position to which they were applying.

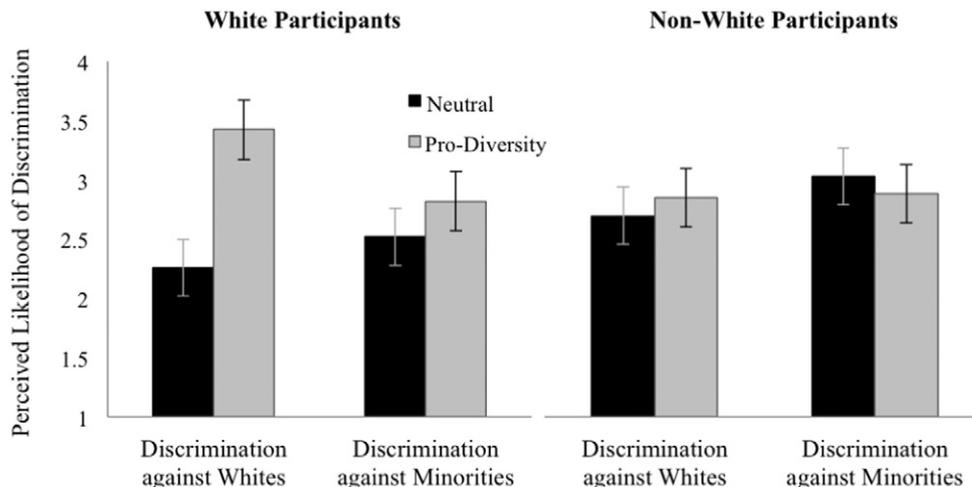


Fig. 4. Means for perceived likelihood of discrimination against whites and minorities as a function of diversity condition and participant ethnicity (Study 2). Error bars represent SEs.

5.1.2.1.2. *Interview.* Immediately following the recruitment video, participants gave a 5-minute videotaped job interview facing a camera while their cardiovascular responses were recorded. The experimenter was in a different room. A pre-recorded voice posed the interview questions (e.g., “What are your strengths and weaknesses, and how will they be reflected in your work?” See Supplementary Materials for full list of interview questions). Participants were instructed to speak for one minute per question. After one minute, participants were interrupted and asked the next question.

Immediately following the interview, participants completed a filler task and several self-report measures. They were then debriefed, probed for suspicion, and dismissed.

## 5.2. Measures

### 5.2.1. Cardiovascular measures

Cardiovascular measures were recorded during a 5-minute baseline period and the 5-minute interview. We operationalized threat within the context of the biopsychosocial model of challenge and threat (Blascovich, 2008; Blascovich & Mendes, 2010). Research based on this model has shown that distinct CVR profiles characterize the motivational states of threat vs. challenge. Furthermore, these profiles prospectively predict performance on similar tasks in the future, and are linked to differentially-adaptive coping strategies (see Blascovich, Seery, Mugridge, Norris, & Weisbuch, 2004; Seery, Weisbuch, Hetenyi, & Blascovich, 2010; Tomaka, Blascovich, Kibler, & Ernst, 1997).

Cardiovascular measures were collected continuously using non-invasive impedance cardiography (with a Biopac amplifier Model NICO100C), electrocardiography (with a Biopac amplifier Model ECG100C) and continuous blood pressure (using a BioPac monitor and amplifier Model NIBP100D). All signals were acquired using MP150 data acquisition hardware and AcqKnowledge software (Biopac, Goleta, CA). We followed established procedures for collecting these indices (see Sherwood, Dolan, & Light, 1990). All signals were calibrated using AcqKnowledge software and edited by one of three coders in MindWare. Reliability among the coders was established on a subset (20%) of participants. One participant did not consent to us using his cardiovascular measures. Thus, we had cardiovascular data for 76 participants.

With the resultant waveforms, we calculated the indices of interest using standard formulas (see Sherwood et al., 1990; Mendes, Blascovich, Major, & Seery, 2001). The four relevant indices were: heart rate (HR), ventricular contractility (VC), total peripheral resistance (TPR), and cardiac output (CO). HR and VC are expected to increase from baseline during states of challenge and threat, indicating task engagement. A challenge response is marked by an increase in CO from baseline (i.e., greater blood flow) but little change or a decrease in TPR (i.e., low vasoconstriction). In contrast, a threat response is marked by either a slight increase or no increase in CO from baseline, and an increase in TPR from baseline (i.e., increased vasoconstriction). This latter threat response is theorized to occur when perceived demands outweigh perceived resources (see Blascovich & Mendes, 2010; Seery, 2013 for an overview).

### 5.2.2. Interview impression

To assess the impression that participants made during their interview we selected a random 20-second clip from the third minute of each participant's recorded interview (see Ambady, Bernieri, & Richeson, 2000; Ambady & Weisbuch, 2010). Two participants did not consent to letting us use their video data; thus only 75 interviews were coded. We removed the audio from each clip and cropped the frame to show just the face and shoulders. Four female undergraduate students with no knowledge of the study (2 white, 1 Asian-American, 1 Latina) watched all clips three times. On one day, they rated all clips for a single trait—anger, nervousness, or engagement—on 0–6 scales, in a randomly-presented order. The next day, coders rated all clips

again on a second trait, in a different random order. And on a third day they rated all clips on the third trait, again in a different random order. Inter-rater reliability for each trait was acceptable, with the highest agreement on how engaged the participant appeared:  $\alpha_{\text{anger}} = .71$ ,  $\alpha_{\text{nervousness}} = .75$ ,  $\alpha_{\text{engagement}} = .87$ .<sup>3</sup> To create a composite measure of positive impressions, we averaged across the four coders for each trait, reverse-coded the nervousness and anger ratings, and computed a composite of each participant's ratings. As such, interviewees with higher scores made a more positive impression during their interview, being seen as more engaged, less nervous, and less angry. The full scale had good reliability ( $\alpha = .86$ ).

### 5.2.3. Self-report measures

All self-reported items were responded to on Likert-type scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

To assess the extent to which participants thought discrimination against whites and minorities was likely, we asked them the same four items from the previous studies: anti-white discrimination consisted of perceived likelihood of (a) discrimination against whites and (b) unfairly favoring minorities ( $\alpha = .92$ ). Anti-minority discrimination was measured with perceived likelihood of (a) discrimination against minorities and (b) unfairly favoring whites ( $\alpha = .87$ ).

We also assessed participants concerns about their own potential for being a target of discrimination with three items: “I’m worried that my gender will hurt my chances;”<sup>4</sup> “I’m worried that my race/ethnicity will hurt my chances;” and “I think the managers will evaluate my performance fairly” — reverse coded). This scale had adequate reliability ( $\alpha = .76$ ).

Self-reported affect and interest in working for the company were also assessed. These measures and findings are described in the Supplementary Materials.

### 5.2.4. Individual differences

In an online survey administered several days prior to participation in the hiring simulation, participants completed measures of: Ethnic Identity and Private Regard, from the Collective Self-Esteem Scale (Luhtanen & Crocker, 1992); Modern Racism (McConahay, 1986); Feeling Thermometers about various minority groups; System Justifying Beliefs (Jost & Major, 2001); Internal and External Motivation to Respond without Prejudice (Plant & Devine, 1998); and Experiences with Discrimination. Scale items, reliabilities, means and standard deviations, as well as correlations among scales, are presented in Supplementary Materials.

## 6. Results

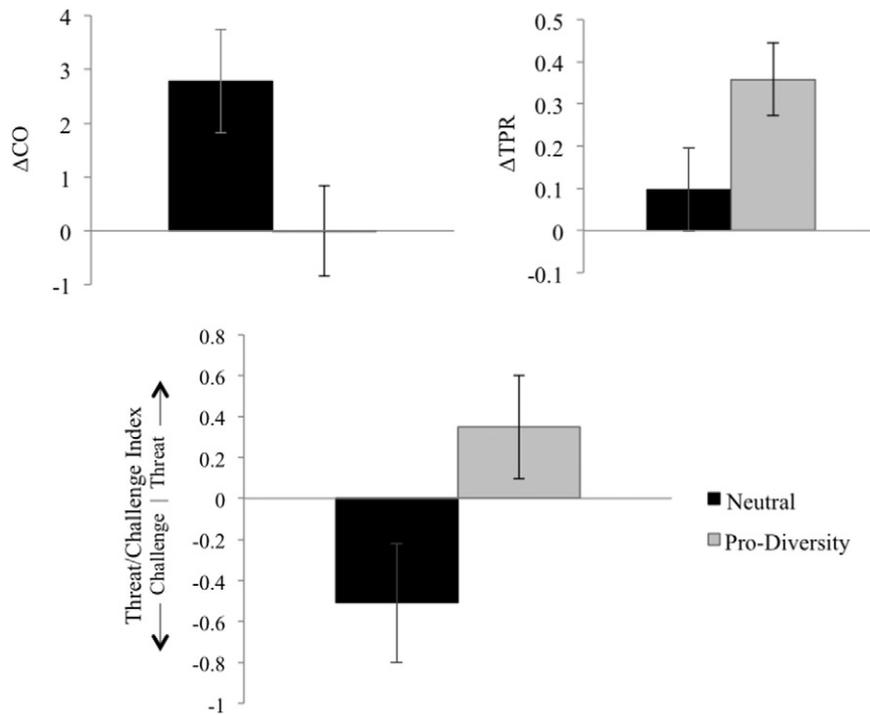
### 6.1. Cardiovascular reactivity

#### 6.1.1. Baseline differences

A MANOVA with all baseline cardiovascular measures (HR, VC, CO, and TPR) as dependent variables and condition as the independent variable indicated no multivariate condition differences at baseline. However, looking at the indices separately, baseline TPR was marginally higher in the pro-diversity condition ( $M = 3.17$ ,  $SE = .15$ ) than in the neutral condition ( $M = 2.77$ ,  $SE = .17$ ),  $F(1,75) = 3.16$ ,  $p = 0.08$ . While not significantly different, baseline CO also had slightly higher values in the pro-diversity (vs. neutral) condition ( $p < 0.20$ ). We thus controlled for baseline levels of TPR and CO in all analyses of cardiovascular data.

<sup>3</sup> One coder's anger ratings degraded reliability substantially (item-total correlation =  $-.31$ ), so her anger ratings were removed from the composite measure of interview impressions.

<sup>4</sup> We included concerns about gender discrimination in this composite because gender may be another dimension on which these white male participants are concerned about. Results do not change if this item is excluded from the composite.



**Fig. 5.** Covariate-adjusted means for change in cardiac output from baseline ( $\Delta\text{CO}$ ; top left panel), change in total peripheral resistance from baseline ( $\Delta\text{TPR}$ ; top right panel), and Threat/Challenge Index (bottom) during the five-minute interview (Study 3). Covariates include baseline TPR and baseline CO. Error bars represent SEs.

### 6.1.2. Task engagement

In order to establish task engagement, we computed HR and VC reactivity scores by subtracting baseline values from mean values during the interview for each participant. We then conducted single sample t-tests against zero. Both VC and HR reactivity scores were greater than zero during the interview ( $p < .005$ ), indicating task engagement.

### 6.1.3. Threat/challenge scores

To compute reactivity scores for the indices of interest, we subtracted baseline values from TPR and CO values for each minute of the interview.

We then computed the Threat/Challenge Index for each minute by computing z-scores for both CO and TPR reactivity, and subtracting the resultant CO value from the resultant TPR value. We then averaged the Threat/Challenge Index across the five minutes of the interview to compute an average Threat/Challenge score using the following formula:

$$\text{Threat/Challenge Score} = \frac{\sum_{i=1}^5 [z(\text{TPR}_i - \text{TPR}_{BL}) - z(\text{CO}_i - \text{CO}_{BL})]}{5}$$

where  $i$  corresponds to the minute of the interview and  $BL$  to baseline levels (see Blascovich et al., 2004).

To test whether interviewing at a pro-diversity company was more threatening than interviewing at a neutral company, we performed an ANCOVA on the Threat/Challenge Index during the interview. We entered baseline CO and TPR values as covariates because reactivity scores can depend on initial values and because baseline values for CO tended to be higher in the pro-diversity than neutral condition (see Blascovich et al., 2004; Dover et al., 2014; Kamarck et al., 1992). As expected, both baseline CO and TPR were significant predictors of Threat/Challenge ( $F_s > 8.00$ ,  $p_s < .01$ ). More importantly, we observed a significant effect of condition (Fig. 5, bottom panel). Participants in the pro-diversity condition exhibited more threat during their interview ( $M = 0.35$ ,  $SE = .25$ ) than those in the neutral condition ( $M = -0.51$ ,  $SE = .29$ ),  $F(1,72) = 4.85$ ,  $p = .031$ ,  $d = .35$ .

### 6.1.4. Interview impression

We observed a marginal main effect of condition on the composite measure of coded interview impression,  $F(1,73) = 3.00$ ,  $p = .081$ ,  $d = .41$ . Independent coders rated participants in the pro-diversity condition ( $M = 3.46$ ,  $SE = .17$ ) less favorably (less engaged, more nervous and more angry) than participants in the neutral condition ( $M = 3.92$ ,  $SE = .20$ )<sup>5</sup>.

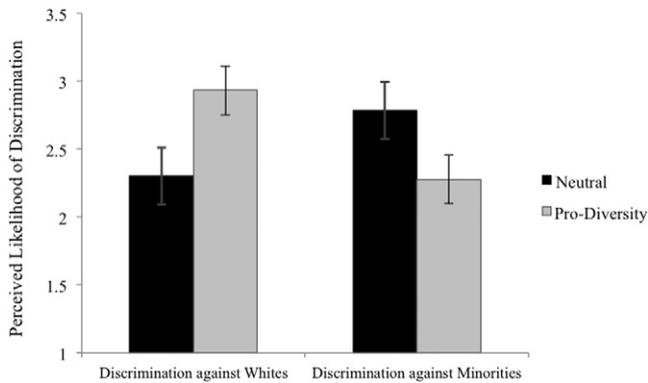
## 6.2. Self-report

### 6.2.1. Perceived discrimination potential

Although overall levels of perceived discrimination potential were low in both conditions, a 1-way ANOVA revealed that participants were more concerned about personally being a target of discrimination in the pro-diversity condition ( $M = 2.64$ ) than in the neutral condition ( $M = 1.98$ ),  $F(1,75) = 7.84$ ,  $p = .006$ ,  $d = .64$ .

We assessed perceived likelihood of discrimination against whites vs. minorities within the company with a 2 (condition: pro-diversity vs. neutral)  $\times$  2 (discrimination target: whites vs. minorities) mixed ANOVA. There was neither a main effect of condition ( $p > .80$ ) nor of target group ( $p > .50$ ). However, the predicted interaction between condition and target group was significant,  $F(1,76) = 15.53$ ,  $p < .001$ , partial  $\eta^2 = .17$  (Fig. 6). Simple slopes analyses revealed that in the neutral condition, participants perceived greater potential for discrimination against minorities than against whites ( $M_{\text{diff}} = .49$ ,  $SE_{\text{diff}} = .22$ ),  $t(76) = 2.23$ ,  $p = .030$ . However, in the pro-diversity condition, participants perceived greater potential for discrimination against whites than against minorities ( $M_{\text{diff}} = .66$ ,  $SE_{\text{diff}} = .19$ ),  $t(76) = 3.49$ ,  $p = .001$ . They also revealed marginally greater perceived potential for discrimination against minorities in the neutral company than the pro-diversity company ( $M_{\text{diff}} = .51$ ,  $SE_{\text{diff}} = .27$ ),  $t(76) = 1.89$ ,  $p = .062$ , but significantly greater perceived potential for discrimination against whites in the pro-diversity company than the neutral company ( $M_{\text{diff}} = .63$ ,  $SE_{\text{diff}} = .29$ ),  $t(76) = 2.16$ ,  $p = .033$ .

<sup>5</sup> We also ran this analysis on the three different traits separately. All of these analyses revealed non-significant results ( $.11 < p_s < .21$ ), though in the predicted directions.



**Fig. 6.** Graph of interaction between condition (pro-diversity vs. neutral) and target group (white vs. minority) on perceived likelihood of discrimination (Study 3). Error bars represent SEs.

### 6.2.2. Exploratory moderation analyses

In addition to the above tests of our primary hypotheses, we conducted exploratory analyses to assess whether theoretically-relevant individual difference measures moderated the effect of condition on our dependent variables. To do so, we performed a series of moderated regressions on each dependent variable. Any relevant covariates were entered on Step 1; Condition (dummy-coded: 0 *neutral*, 1 *pro-diversity*) and the moderator variable of interest (mean-centered) was entered on the next step, and their cross product (interaction term) was entered on the final step.<sup>6</sup> Notably, none of the seven individual difference variables moderated the effect of the diversity condition on physiological threat. Full analyses are presented in the Supplementary Material.

## 7. Discussion

Young white men interviewing for a pro-diversity company displayed a cardiovascular profile characteristic of threat, made marginally poorer impressions during the interview, were more worried about personally experiencing discrimination, expected more discrimination against whites, and expected less discrimination against minorities compared to those interviewing for a company that did not mention diversity. These effects of diversity condition were not moderated by theoretically-relevant individual difference variables, suggesting that the threatening nature of pro-diversity messages is quite robust to beliefs about status and feelings toward one's group. This lack of moderation differs from research using self-report proxies for group status threat (Danbold & Huo, 2014; Wilkins & Kaiser, 2014), and suggests that perhaps even those white men who do not claim to be threatened by diversity actually do experience threat to some degree.

### 7.1. General discussion

Our first two studies revealed that members of high-status groups (whites) reported more concerns about unfair treatment and perceived greater likelihood of anti-white (but not anti-minority) discrimination after seeing recruitment materials from a company that valued (vs. did not mention) diversity. In contrast, members of low-status groups (non-white ethnic/racial minorities) did not interpret pro-diversity messages as indicative of unfair treatment or anti-white discrimination. In fact, replicating past work (e.g., Purdie-Vaughns et al., 2008), non-white participants exposed to pro-diversity (vs. neutral) messages in general were *less* concerned about unfair treatment, though they reported equivalent positivity toward the companies regardless of the

company's stance on diversity. Our third study replicated the perceptions of potential unfair treatment and discrimination among white men in a hiring simulation at a pro-diversity (vs. neutral) company, and further showed that these men exhibited a cardiovascular threat profile and made a marginally poorer impression while interviewing at a pro-diversity company.

Together, these findings suggest that for members of high-status groups, pro-diversity messages may function as a cue that members of their group are unwelcome or under-valued. We theorize that the resultant threat may be akin to the identity threat often experienced by low-status and negatively stereotyped groups, whereby contextual cues signal to individuals that they may be treated poorly, devalued, or made to feel that members of their group do not belong (see Crocker, Major, & Steele, 1998).

There are several additional possibilities to consider when interpreting these effects. It is possible that our white participants were not experiencing identity threat per se, but rather were angry, disgusted, or upset that a company seemed to be bowing to pressures to be "politically correct" by promoting diversity. While we cannot completely rule out this possibility, we saw no evidence that high-status participants disliked the pro-diversity company. In fact, mean levels of positivity toward the company across all studies were relatively high and did not differ depending on condition.

Another possibility is that members of high-status groups did not know what to say or how to act in a pro-diversity (vs. neutral) context. However, we did not find differences in speaking rate or speaking fluency depending on condition (see Supplementary Materials). This suggests that participants did not find it more difficult to speak in a pro-diversity context compared to a neutral context.

It is also possible that rather than experiencing identity threat, white participants were responding "rationally" to a changed job market in which obtaining employment may be less likely if the company is seeking to increase its diversity. Although it is possible that members of high-status groups may feel that their chances of getting a job are reduced at a company that values diversity, we might expect them to try harder in the interview if they believed they had to compensate for being white. Our data, however, provide no evidence that those in the diversity condition were more engaged than those in the neutral condition (see Supplementary Materials).

Importantly, the pro-diversity messages in these studies were non-controversial, did not explicitly mention race or gender, and were similar to those often found on company websites. Only 24 of 500+ words differed between the pro-diversity and neutral company descriptions in the recruitment videos. This suggests that even subtle, inclusive, and non-controversial forms of diversity messages—messages that indicate that a company values all types of people—can be experienced by members of high-status groups as threatening. Many companies in the US specifically design their diversity messages so that they reflect many forms of diversity beyond race or gender—such as diversity of experience, background, and expertise. Although companies may be defining diversity broadly in order to avoid making high-status groups feel left out, our research suggests that whites may still see this language as "code" for anti-white sentiment even if gender or race is never mentioned (see Unzueta & Binning, 2010). It is important to note, however, that the pro-diversity messages used in this research, although designed to be typical of company websites, may not generalize to all pro-diversity messages and diversity initiatives. There may be other ways of framing diversity that may be less, or more, threatening to whites (see, e.g., Stevens, Plaut, & Sanchez-Burks, 2008).

### 7.2. Future research

More research needs to address the downstream consequences of diversity policies and perceived discrimination among high-status groups, particularly regarding their effects on attitudes and behaviors toward lower-status groups. The threat whites experience from pro-

<sup>6</sup> The one exception to this was for the analysis with Internal and External Motivations to avoid prejudice as the moderator. For this analysis, we regressed the dependent variables on IM (mean-centered), EM (mean-centered), condition, and all subsequent two- and three-way interactions (please see Supplementary Materials).

diversity messages could potentially create resentment and negativity toward members of groups whites believe are disproportionately advantaged by diversity policies. Research is also needed to identify potential interventions that reduce the negative effects of diversity messages on members of high status groups. In particular, it is important to understand how to make diversity messages less threatening while still asserting the importance of diversity and creating a more inclusive workplace for all groups. In addition, research is needed to investigate how diversity messages within organizations affect the cognitive, affective, behavioral, and physiological experiences of members of low-status groups within those organizations. Unlike members of high status groups, members of low-status groups may find such messages comforting because they increase a sense of belonging (e.g., Purdie-Vaughns et al., 2008).

### 7.3. Conclusion

As the number of companies that explicitly value diversity continues to rise, it becomes increasingly important to rigorously evaluate the impact of diversity messages on all potential employees. Our findings suggest that in organizational contexts, members of high-status groups, such as whites and men, are threatened by messages that promote diversity and appreciation for all. Given that whites disproportionately occupy positions of power within American organizations, these findings are troubling. The burden of “reverse discrimination” cases on the US legal system is likely to increase unless companies and educational institutions find ways to make all employees feel included. Members of high-status groups are unlikely to adopt the corporate culture or take steps to provide a more inclusive atmosphere if they feel threatened and excluded by the workplace’s message.

### Appendix A. Supplementary data

Supplementary data to this article can be found online at <http://dx.doi.org/10.1016/j.jesp.2015.10.006>.

### References

- Ambady, N., & Weisbuch, M. (2010). Nonverbal behavior. In S.T. Fiske, D.T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (pp. 464–497) (5th ed.). New York: John Wiley & Sons, Inc.
- Ambady, N., Bernieri, F.J., & Richeson, J.A. (2000). Toward a histology of social behavior: Judgmental accuracy from thin slices of the behavioral stream. *Advances in Experimental Social Psychology*, 32, 201–271. [http://dx.doi.org/10.1016/S0065-2601\(00\)80006-4](http://dx.doi.org/10.1016/S0065-2601(00)80006-4).
- Bell, J.M., & Hartmann, D. (2007). Diversity in everyday discourse: The cultural ambiguities and consequences of “happy talk”. *American Sociological Review*, 72(6), 895–914.
- Blascovich, J. (2008). Challenge and threat appraisal. In A.J. Elliot (Ed.), *Handbook of approach-avoidance motivation* (pp. 432–444). New York: Psychology Press. <http://dx.doi.org/10.1177/000312240707200603>.
- Blascovich, J., & Mendes, W.B. (2010). Social psychophysiology and embodiment. In S.T. Fiske, D.T. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology* (pp. 194–227) (5th ed.). New York: John Wiley & Sons, Inc.
- Blascovich, J., Seery, M.D., Mugridge, C.A., Norris, R.K., & Weisbuch, M. (2004). Predicting athletic performance from cardiovascular indexes of challenge and threat. *Journal of Experimental Social Psychology*, 40(5), 683–688. <http://dx.doi.org/10.1016/j.jesp.2003.10.007>.
- Craig, M.A., & Richeson, J.A. (2014). More diverse yet less tolerant? How the increasingly diverse racial landscape affects White Americans’ racial attitudes. *Personality and Social Psychology Bulletin*. <http://dx.doi.org/10.1177/0146167214524993>.
- Crocker, J., Major, B., & Steele, C. (1998). Social stigma. In S. Fiske, D. Gilbert, & G. Lindzey (Eds.), *Handbook of social psychology*, Vol. 2. (pp. 504–553). Boston, MA: McGraw Hill.
- Danbold, F., & Huo, Y.J. (2014). No longer “all-American”? Whites’ defensive reactions to their numerical decline. *Social Psychological and Personality Science* (doi: 1948550614546355).
- Dobbin, F. (2009). *Inventing equal opportunity*. New Jersey: Princeton University Press.
- Dover, T.L., Major, B., & Kaiser, C.R. (2014). Diversity initiatives, status, and system-justifying beliefs: When and how diversity efforts de-legitimize discrimination claims. *Group Processes & Intergroup Relations*, 17(4), 485–493. <http://dx.doi.org/10.1177/1368430213502560>.
- Edelman, L.B., Fuller, S.R., & Mara-Drita, I. (2001). Diversity rhetoric and the managerialization of law. *American Journal of Sociology*, 106(6), 1589–1641. <http://dx.doi.org/10.1086/321303>.
- Eibach, R.P., & Keegan, T. (2006). Free at last? Social dominance, loss aversion, and white and black Americans’ differing assessments of racial progress. *Journal of Personality and Social Psychology*, 90(3), 453. <http://dx.doi.org/10.1037/0022-3514.90.3.453>.
- Ford Motor Company (2014). Diversity in the workplace [website]. Retrieved from <http://corporate.ford.com/careers/diversity/ford-diversity-445p?releaseld=1244754317443&ccode=US>
- Jost, J.T., & Major, B. (Eds.). (2001). *The psychology of legitimacy: Emerging perspectives on ideology, justice, and intergroup relations*. New York: Cambridge University Press.
- Kaiser, C.R., Major, B., Jurcic, I., Dover, T.L., Brady, L.M., & Shapiro, J.R. (2013). Presumed fair: Ironic effects of organizational diversity structures. *Journal of Personality and Social Psychology*, 104(3), 504. <http://dx.doi.org/10.1037/a0030838>.
- Kamarck, T.W., Jennings, J.R., Debski, T.T., Glickman-Weiss, E., Johnson, P.S., Eddy, M.J., & Manuck, S.B. (1992). Reliable measures of behaviorally-evoked cardiovascular reactivity from a PC-based test battery: Results from student and community samples. *Psychophysiology*, 29(1), 17–28. <http://dx.doi.org/10.1111/j.1469-8986.1992.tb02006.x>.
- Luhtanen, R., & Crocker, J. (1992). A collective self-esteem scale: Self-evaluation of one’s social identity. *Personality and Social Psychology Bulletin*, 18(3), 302–318. <http://dx.doi.org/10.1177/0146167292183006>.
- Major, B., Kaiser, C.R., O’Brien, L.T., & McCoy, S.K. (2007). Perceived discrimination as worldview threat or worldview confirmation: Implications for self-esteem. *Journal of Personality and Social Psychology*, 92(6), 1068. <http://dx.doi.org/10.1037/0022-3514.92.6.1068>.
- McConahay, J.B. (1986). Modern racism, ambivalence, and the modern racism scale. In J.F. Dovidio, & S.L. Gaertner (Eds.), *Prejudice, discrimination, and racism* (pp. 91–125). Orlando, FL: Academic Press.
- Mendes, W.B., Blascovich, J., Major, B., & Seery, M. (2001). Challenge and threat responses during downward and upward social comparisons. *European Journal of Social Psychology*, 31(5), 477–497. <http://dx.doi.org/10.1002/ejsp.80>.
- Mendoza-Denton, R., Shaw-Taylor, L., Chen, S., & Chang, E. (2009). Ironic effects of explicit gender prejudice on women’s test performance. *Journal of Experimental Social Psychology*, 45(1), 275–278. <http://dx.doi.org/10.1016/j.jesp.2008.08.017>.
- Morrison, K.R., Plaut, V.C., & Ybarra, O. (2010). Predicting whether multiculturalism positively or negatively influences White Americans’ intergroup attitudes: The role of ethnic identification. *Personality and social psychology bulletin*, 36(12), 1648–1661. <http://dx.doi.org/10.1177/0146167210386118>.
- Norton, M.I., & Sommers, S.R. (2011). Whites see racism as a zero-sum game that they are now losing. *Perspectives on Psychological Science*, 6(3), 215–218. <http://dx.doi.org/10.1177/1745691611406922>.
- Outten, H.R., Schmitt, M.T., Miller, D.A., & Garcia, A.L. (2012). Feeling threatened about the future whites’ emotional reactions to anticipated ethnic demographic changes. *Personality and Social Psychology Bulletin*, 38(1), 14–25. <http://dx.doi.org/10.1177/0146167211418531>.
- Plant, E.A., & Devine, P.G. (1998). Internal and external motivation to respond without prejudice. *Journal of Personality and Social Psychology*, 75(3), 811–832. <http://dx.doi.org/10.1037/0022-3514.75.3.811>.
- Plaut, V.C., Garnett, F.G., Buffardi, L.E., & Sanchez-Burks, J. (2011). “What about me?” perceptions of exclusion and whites’ reactions to multiculturalism. *Journal of Personality and Social Psychology*, 101(2), 337. <http://dx.doi.org/10.1037/a0022832>.
- Purdie-Vaughns, V., Steele, C.M., Davies, P.G., Dittmann, R., & Crosby, J.R. (2008). Social identity contingencies: how diversity cues signal threat or safety for African Americans in mainstream institutions. *Journal of Personality and Social Psychology*, 94(4), 615. <http://dx.doi.org/10.1037/0022-3514.94.4.615>.
- Richeson, J.A., & Nussbaum, R.J. (2004). The impact of multiculturalism versus colorblindness on racial bias. *Journal of Experimental Social Psychology*, 40(3), 417–423. <http://dx.doi.org/10.1016/j.jesp.2003.09.002>.
- Ryan, C.S., Hunt, J.S., Weible, J.A., Peterson, C.R., & Casas, J.F. (2007). Multicultural and colorblind ideology, stereotypes, and ethnocentrism among black and white Americans. *Group Processes & Intergroup Relations*, 10(4), 617–637. <http://dx.doi.org/10.1177/1368430207084105>.
- Seery, M.D. (2013). The biopsychosocial model of challenge and threat: Using the heart to measure the mind. *Social and Personality Psychology Compass*, 7(9), 637–653. <http://dx.doi.org/10.1111/spc3.12052>.
- Seery, M.D., Weisbuch, M., Hetenyi, M.A., & Blascovich, J. (2010). Cardiovascular measures independently predict performance in a university course. *Psychophysiology*, 47(3), 535–539. <http://dx.doi.org/10.1111/j.1469-8986.2009.00945.x>.
- 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(9), 1189–1202. <http://dx.doi.org/10.1177/0146167205274894>.
- Sherwood, A., Dolan, C.A., & Light, K.C. (1990). Hemodynamics of blood pressure responses during active and passive coping. *Psychophysiology*, 27(6), 656–668. <http://dx.doi.org/10.1111/j.1469-8986.1990.tb03189.x>.
- Steele, C.M. (1997). A threat in the air: How stereotypes shape intellectual identity and performance. *American Psychologist*, 52(6), 613. <http://dx.doi.org/10.1037/0003-066X.52.6.613>.
- Stevens, F.G., Plaut, V.C., & Sanchez-Burks, J. (2008). Unlocking the benefits of diversity all-inclusive multiculturalism and positive organizational change. *The Journal of Applied Behavioral Science*, 44(1), 116–133. <http://dx.doi.org/10.1177/0021886308314460>.
- Tomaka, J., Blascovich, J., Kibler, J., & Ernst, J.M. (1997). Cognitive and physiological antecedents of threat and challenge appraisal. *Journal of Personality and Social Psychology*, 73(1), 63. <http://dx.doi.org/10.1037/0022-3514.73.1.63>.
- Townsend, S.S., Major, B., Gangi, C.E., & Mendes, W.B. (2011). From “in the air” to “under the skin”: Cortisol responses to social identity threat. *Personality and Social Psychology Bulletin*, 37(2), 151–164. <http://dx.doi.org/10.1177/0146167210392384>.

- Unzueta, M.M., & Binning, K.R. (2010). Which racial groups are associated with diversity? *Cultural Diversity and Ethnic Minority Psychology, 16*(3), 443. <http://dx.doi.org/10.1037/a0019723>.
- Wilkins, C.L., & Kaiser, C.R. (2014). Racial progress as threat to the status hierarchy implications for perceptions of anti-white bias. *Psychological Science, 25*(2), 439–446. <http://dx.doi.org/10.1177/0956797613508412>.
- Wilkins, C.L., Wellman, J.D., & Kaiser, C.R. (2013). Status legitimizing beliefs predict positivity toward whites who claim anti-white bias. *Journal of Experimental Social Psychology, 49*(6), 1114–1119. <http://dx.doi.org/10.1016/j.jesp.2013.05.017>.
- Wolsko, C., Park, B., Judd, C.M., & Wittenbrink, B. (2000). Framing interethnic ideology: Effects of multicultural and color-blind perspectives on judgments of groups and individuals. *Journal of Personality and Social Psychology, 78*(4), 635. <http://dx.doi.org/10.1037/0022-3514.78.4.635>.
- Yogeeswaran, K., & Dasgupta, N. (2014). The devil is in the details: Abstract versus concrete construals of multiculturalism differentially impact intergroup relations. *Journal of Personality and Social Psychology, 106*(5), 772. <http://dx.doi.org/10.1037/a0035830>.