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Abstract

The authors applied insights from the group-value theory of procedural justice to investigate minority students' disengagement of self-esteem from academic outcomes. African American college students completed the race-based rejection sensitivity (RS-race) questionnaire. The students were asked to write a position essay on a current topic. They were randomly assigned to complete a demographic form in which they disclosed or did not disclose their race and to receive negative or positive feedback. When race was undisclosed, performance self-esteem was greater after positive feedback relative to negative feedback, regardless of RS-race. When race was disclosed, feedback valence affected self-esteem only among those lower in RS-race. Following positive feedback, these participants showed the greatest gains in self-esteem. Consistent with group-value theory, changes in self-esteem were explained by participants' concerns and emotions around fairness, respect, and acceptance. The authors discuss implications for minority student achievement.

Keywords

attributional ambiguity, race-based rejection sensitivity, minority achievement, group-value, stigma

For minority students, and particularly those in institutions with a historical legacy of excluding certain students based on race, academic feedback can be threatening on several levels because it can reflect one's competencies, an evaluator's prejudiced attitudes, or both. Such *attributional ambiguity* (Crocker, Voelkl, Testa, & Major, 1991; Mendes, Major, McCoy, & Blascovich, 2008) has been posited to serve a potentially protective function for minority individuals, as attributions to discrimination (rather than one's ability) can lead to a discounting of negative feedback and thus protect self-esteem (Crocker & Major, 1989). At the same time, however, this discounting can lead to academic disengagement and disidentification (Major & Schmader, 1998; Steele, 1992, 1997).

In this research, we approach the impact of academic feedback on students' self-esteem from a parallel yet relevant literature on procedural justice. More specifically, the group-value model (Tyler & Lind, 1992) suggests that people's sense of how valued they are within a given group (in this case, the university or academic community) is central to their perceptions of the group's legitimacy. According to this model, people gauge how valued they are in a group through relational indicators such as fair and respectful treatment from members of that group. Independently of outcome favorability, people's concerns and emotions around fairness, respect, and acceptance can influence their willingness to trust the feedback and opinions of group members (Andersen, Downey, & Tyler, 2006;

Spears, Ellemers, Doosje, & Branscombe, 2006; Tyler & DeGoey, 1995; Tyler & Huo, 2002). From this perspective then, the imperviousness of self-esteem to negative academic feedback may reflect not only a process of attributional ambiguity, but also a type of *group-value ambiguity*—that is, doubts as to whether one is valued by the educational institution and its representatives.

Accordingly, we propose that minority students' concerns and emotions around being valued by professors and teaching assistants (TAs) may be critical in students' decisions whether to accept academic feedback as legitimate (Tyler, 2001; Tyler & Blader, 2003; Tyler, DeGoey, & Smith, 1996), and ultimately, whether to allow such feedback to affect self-esteem. This idea is consistent with burgeoning research demonstrating that relational concerns play a central role in determining minority students' success in historically White institutions (Aronson & Inzlicht, 2004; Bowen & Bok, 1998; Cohen & Garcia, 2008; Mendoza-Denton & Page-Gould, 2008; Walton &

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Cohen, 2007). Cohen, Steele, and Ross (1999) for example found that among minority college students, critical feedback by itself was related to decreased motivation to revise an essay, yet similarly critical feedback when combined with high expectations and encouragement resulted in a boost in both motivation and willingness to revise the essay. High expectations, particularly when coupled with an explicitly communicated belief in a student's ability, may have communicated a sense of acceptance and fairness that signaled a safe environment for students to become engaged.

Potential Moderators of Reactions to Feedback

Andersen et al. (2006) posit two potential moderators of the link between feeling valued by members of a given group and subsequent engagement with outcomes valued by the group. We examine and incorporate both here.

Race-based rejection expectations. Prior research among African American college students has found that students higher in race-based rejection sensitivity (RS-race; Mendoza-Denton, Downey, Purdie, Davis, & Pietrzak, 2002), relative to their low RS-race peers, report greater experiences of discrimination in their past, experience heightened anger and frustration following negative race-related events, and exhibit greater stress reactivity following intergroup interactions with outgroup members (Mendoza-Denton et al., 2002; Page-Gould, Mendoza-Denton, & Tropp, 2008). RS-race has been shown to be moderately correlated with but independent from ethnic identification (Mendoza-Denton, Pietrzak, & Downey, 2008). We assessed individual differences in RS-race here.

Situational triggers of RS-race dynamics. Contextual cues can provide clues that one's valuation by the group may be in question or danger and may thus trigger—or prevent—the activation of individual difference dynamics such as RS-race (Mendoza-Denton & Mischel, 2007; Mischel & Shoda, 1995). Accordingly, we created an experimental condition in which students did or did not disclose their race to a potential evaluator.

The Present Study

We report findings from a laboratory study involving African American students at a selective, historically White university in the United States. They completed the RS-race and state self-esteem (SSE; Heatherton & Polivy, 1991) questionnaires prior to the manipulations. Combining procedures developed by Crocker et al. (1991) and Cohen et al. (1999), participants were asked to write an essay and either disclosed or did not disclose their race on a demographic form. They were then given positive or negative feedback on the essay. Following this, we assessed participants' attitudes and emotions related to feeling valued by the graduate teaching assistant evaluating their essay. We then measured participants' SSE again.

The effects of feedback on self-esteem have been studied most frequently under conditions of negative feedback.

Nevertheless, some students may suspect positive feedback to be patronizing and thus equally untrustworthy and rejecting as negative feedback (see Major, Feinstein, & Crocker, 1994; Mendes et al., 2008). A focus on trust and fairness allows us to consider a common explanatory mechanism that may apply to both positive and negative feedback. We examine both types of feedback here, with particular interest in the effects of positive feedback.

The use of the SSE scale confers two advantages. First, the measure was designed to assess change in self-esteem over a relatively short period of time. Second, recent research and theory suggest domain specificity in self-esteem, such that people stake their self-worth differentially within different domains (Crocker & Knight, 2005) and a threat to one domain may not affect another (Heatherton & Polivy, 1991). Accordingly, academic feedback may not affect one's sense of self-worth among one's friends or one's self-worth with regard to weight. In being able to differentiate performance state self-esteem from either social- or appearance-based self-esteem, the use of the SSE scale represents an improvement over the use of domain-free self-esteem measures.

Hypotheses. When race was undisclosed, we did not expect to find differences as a function of RS-race. Rather, we expected differences as a function of RS-race to emerge only in the presence of the relevant situational trigger for race-based rejection concerns—that is, when students disclosed their race. We hypothesized that in the race disclosure condition, students higher in RS-race would discount both negative and positive feedback, and as such, feedback valence should not be related to SSE changes. By contrast, we expected students lower in RS-race, who are chronically less concerned about discrimination, to take feedback at face value and experience rises and falls in performance self-esteem depending on the valence of the feedback. We examined whether students' concerns about being valued could help account for the relationship between the independent variables and change in performance self-esteem.

Method

Setting

The study was conducted at a predominantly White university. At the time the study was conducted, undergraduate enrollment by ethnicity was as follows: 48.0% White, 15.5% Asian, 6.5% Black, 7.3% Hispanic, and 22.7% other.

Sample

Participants were self-identified as African American, Black, and/or Caribbean Islander ($N = 71$; average age = 20.49, $SD = 2.08$; 28% male). Participants were compensated with \$15 or course credit for approximately 1 hour of their time.

Procedure

A White female experimenter greeted all participants. Following informed consent, participants completed preliminary questionnaires that included RS-race and baseline state self-esteem. The experimenter then informed participants that the goal of the study was to better understand how graduate TAs evaluate students' work. Participants were to write a position essay arguing for or against a controversial contemporary topic (e.g., curtailing civil liberties for the sake of security), after which they would receive written feedback on the essay's content, style, logic, and persuasiveness from an actual TA at the university. The experimenter informed the participant that a TA who had agreed to participate was sitting in an office on another floor (there was in actuality no such TA). The experimenter explained that separating the TA from the participant was necessary to ensure anonymity and that she would thus carry written material between the participant and the TA. This allowed the experimenter to provide participants with randomly assigned positive or negative feedback (see the following). When referring to the TA, the experimenter always matched the student's gender, but no other information was given about him or her.

Participants were given 10 minutes to write the essay, after which they filled out a demographic form that either asked or did not ask for race information. Participants sealed their essays in an envelope that only the purported TA would open; similarly, the feedback was delivered in a sealed envelope to the participant. The race disclosure and feedback manipulations were introduced after participants wrote their essays to ensure that these manipulations did not influence the writing of the essays. Participants wrote an average of 20.40 lines ($SD = 6.59$); essay length did not differ as a function of condition (all F s < 1.29, ns).

Race disclosure manipulation. After writing the essay, participants filled out a brief demographic questionnaire that would be presented to the TA: For half of the participants, the demographic form asked participants to check off their race. This procedure has been successfully used in past research to increase identity salience (Wohl & Branscombe, 2005) and in evaluative contexts to prime concerns about being evaluated in light of a stigmatized identity (Crocker et al., 1991; Steele & Aronson, 1995). No such box appeared on the demographic sheet of the other half of the participants, thus precluding the activation of such concerns. The demographic questionnaire and the essay were collected from the participant as a packet and were purportedly taken to the TA for review in the sealed envelope.

Feedback manipulation. Feedback on the essay was both quantitative and qualitative. An essay evaluation form consisted of eight scales (organization, persuasiveness, structure, insight and originality, clarity, quality of arguments, internal consistency, and intellectual merit) from 1 (*poor*) to 7 (*excellent*). Participants in the negative feedback condition received ratings ranging from 2 to 4, averaging to 3. Participants in the positive feedback condition received ratings ranging from 4 to 6, averaging to 5 (pilot testing had revealed that extreme

positive or negative feedback was not credible). Following the scale score, the TA ostensibly provided comments. In the negative feedback condition, the comments read, "The essay was poorly written and not persuasive. The arguments were weak and many key arguments were ignored." In the positive feedback condition, the comments read, "The essay was clear and persuasive—the arguments were logically presented and well thought out."

Following the feedback, participants first indicated their attitudes and emotions toward the TA and then they provided state self-esteem again, embedded within other measures, so as to assess change in self-esteem. Participants were fully debriefed and thanked for their participation.

Measures

RS-race. The RS-race questionnaire (Mendoza-Denton et al., 2002) captures within-group variability in anxious expectations of race-based rejection, exclusion, or discrimination. Individuals respond on 6-point Likert-type scales about how anxious they would be and how much they would expect to be rejected across 12 race-relevant scenarios. The anxiety and expectation items are multiplied within each scenario to arrive at an index of anxious expectations; scores are then averaged across scenarios (range = 1 to 36). To reduce suspicion, we employed an 11-item measure that excluded one scenario about receiving feedback on a writing task ($M = 10.85$, $SD = 6.35$, $\alpha = .89$).

Outcome Measures

State self-esteem. Heatherton and Polivy's (1991) state self-esteem measure is by design sensitive to self-esteem change over short periods of time. The scale is divided into three related but theoretically distinct facets—performance, appearance, and social self-esteem. Participants rated their agreement to the items on a scale from 1 (*not at all*) to 5 (*extremely*), with higher scores indicating greater self-esteem.

The performance SSE subscale includes items such as "I feel frustrated or rattled about my performance" (reversed; premanipulation $M = 3.80$, $SD = .79$, $\alpha = .86$; postmanipulation $M = 3.61$, $SD = .87$, $\alpha = .80$). The appearance self-esteem subscale includes items such as "I am pleased with my appearance right now" (premanipulation $M = 3.69$, $SD = .70$, $\alpha = .80$; postmanipulation $M = 3.40$, $SD = .76$, $\alpha = .70$). The social self-esteem subscale includes items such as "I feel self-conscious" (reversed; premanipulation $M = 3.61$, $SD = .77$, $\alpha = .80$; postmanipulation $M = 3.35$, $SD = .83$, $\alpha = .78$). Prior research (Heatherton & Polivy, 1991, Study 3) has shown that performance feedback following a midterm exam affected students' performance SSE but not their appearance or social SSE.

Concerns and emotions around being valued. Based on Andersen et al.'s (2006) theoretical formulation, we created an index that captured participants' concerns and emotions around being valued. In particular, we were interested in capturing not only participants' sense of trust, fairness, and respect but also the interpersonal sentiments associated with feelings of acceptance and trust. Thus, we included ratings of participants'

perceptions of their treatment by the TA as well as the emotions they felt in association with such treatment. Participants were asked to rate on scales from 1 (*not at all*) to 7 (*extremely*) how much they trusted the TA, how politely (a variant of respect) the TA had treated them, and how much they thought the TA was fair. Participants also rated how rejected, comfortable, and angry they felt following the feedback, given the relationship of these variables to acceptance (Downey, Lebolt, Rincón, & Freitas, 1998), violations of fairness and trust (Cook & Medley, 1954; Greenglass & Julkunen, 1991), and procedural justice (Murphy & Tyler, 2008). Negative assessments were reversed so that higher scores indicate greater positivity ($M = 4.75$, $SD = 1.06$, $\alpha = .73$).

Covariates

RS-personal. The RS-personal measure (Downey & Feldman, 1996) assesses anxious expectations of rejection in situations where personal rejection may be relevant, such as asking a classmate out to coffee. The RS-personal was included to control for non-race-specific rejection concerns ($M = 8.68$, $SD = 2.83$, $\alpha = .78$). The correlation between RS-race and RS-personal was .14 ($p = .22$).

Perceived legitimacy of the university. Perceived legitimacy includes both trust (e.g., “the university’s administrative authorities can be trusted to make decisions that are good for everyone”) and obligation (e.g., “respect for university policies is an important value for people to have”) to the institution (Tyler & Degoe, 1995). These questions were included in the preliminary questionnaires ($M = 3.42$, $SD = 1.0$, $\alpha = .81$) to ensure any observed results were not attributable to participants’ preexisting attitudes along this dimension. The correlation between RS-race and perceived legitimacy was $-.10$ ($p = .38$).

Results

The data were analyzed using a series of general linear model analyses that tested main and interactive effects of feedback (2 levels: positive, negative), race disclosure (2 levels: disclosed, undisclosed), and RS-race (continuous). The dependent variables were change in state self-esteem from baseline and concerns and emotions around being valued. RS-personal, perceived legitimacy, and baseline state self-esteem were included as covariates in all analyses. Continuous predictor variables were first standardized; significant interactions were plotted at predicted values one standard deviation above and below the mean of the distribution. The covariates did not interact with RS-race in the models described in the following. No significant differences emerged as a function of gender, and this variable is therefore not discussed further.

We present the data patterns resulting from the three-way interactions of feedback, race disclosure, and RS-race by first discussing the findings in the race undisclosed condition and then in the race disclosed condition. Within this latter condition, we break down the observed Feedback \times RS-Race interactions by first presenting the effects of feedback for high and

low RS-race participants, respectively, and then presenting the effects of RS-race in the positive versus negative feedback conditions.

State Self-Esteem

Performance SSE. An analysis of performance self-esteem following feedback revealed the expected three-way interaction of feedback, race disclosure, and RS-race, $F(1,60) = 4.06$, $p < .048$, $b = -.74$ (see Figure 1). We next examined lower-order effects in the context of this three-way interaction using simple slope analyses.

In the race undisclosed condition, as predicted, the two-way RS-race by feedback interaction was not significant, $F(1, 60) = .01$, $p < .91$, $b = .03$. Rather, as expected, only a significant effect of feedback was observed, $F(1, 60) = 5.26$, $p < .025$, $b = .56$, such that positive feedback led to greater self-esteem relative to negative feedback. As predicted, without the eliciting cue of disclosure of race for the activation of RS-race, the main effect of RS-race was not significant, $F(1, 60) = .49$, $p < .49$, $b = .09$.

In the race disclosed condition, the two-way interaction between RS-race and feedback was significant, $F(1, 60) = 6.32$, $p < .015$, $b = -.71$. Consistent with the notion that higher RS-race participants are particularly likely to discount information when concerned about discrimination (e.g., Mendes et al., 2008), feedback did not have a significant effect on self-esteem among high RS-race participants, $F(1, 60) = 1.12$, $p < .29$, $b = -.36$. By contrast, positive feedback was associated with a significantly higher level of self-esteem than negative feedback among low RS-race participants, $F(1, 60) = 6.68$, $p < .01$, $b = 1.07$.

Staying within the race disclosed condition, we next examined the effects of RS-race separately for positive and negative feedback. For positive feedback, we observed a main effect of RS-race, $F(1, 60) = 5.15$, $p < .027$, $b = -.48$, such that lower RS-race participants had higher self-esteem than did higher RS-race participants. For negative feedback, there was no significant difference between higher and lower RS-race participants, $F(1, 60) = 1.51$, $p < .22$, $b = .23$.

Appearance and social SSE. The three-way interaction of feedback, race disclosure, and RS-race was nonsignificant both for appearance self-esteem, $F(1, 60) = .59$, $p < .45$, and social self-esteem, $F(1, 60) = 2.27$, $p < .14$. This is in line with prior research (e.g., Crocker & Knight, 2005; Heatherton & Polivy, 1991) conceptualizing self-esteem as tied to particular domains. We do not discuss appearance or social self-esteem further.

Concerns and Emotions Around Being Valued. A parallel analysis for concerns and emotions around being valued mirrored the findings for performance state self-esteem. The analysis showed the predicted three-way interaction of feedback, race disclosure, and RS-race, $F(1, 60) = 4.63$, $p < .036$, $b = -1.0$ (see Figure 2). We again examined lower-order effects in the context of this higher-order interaction.

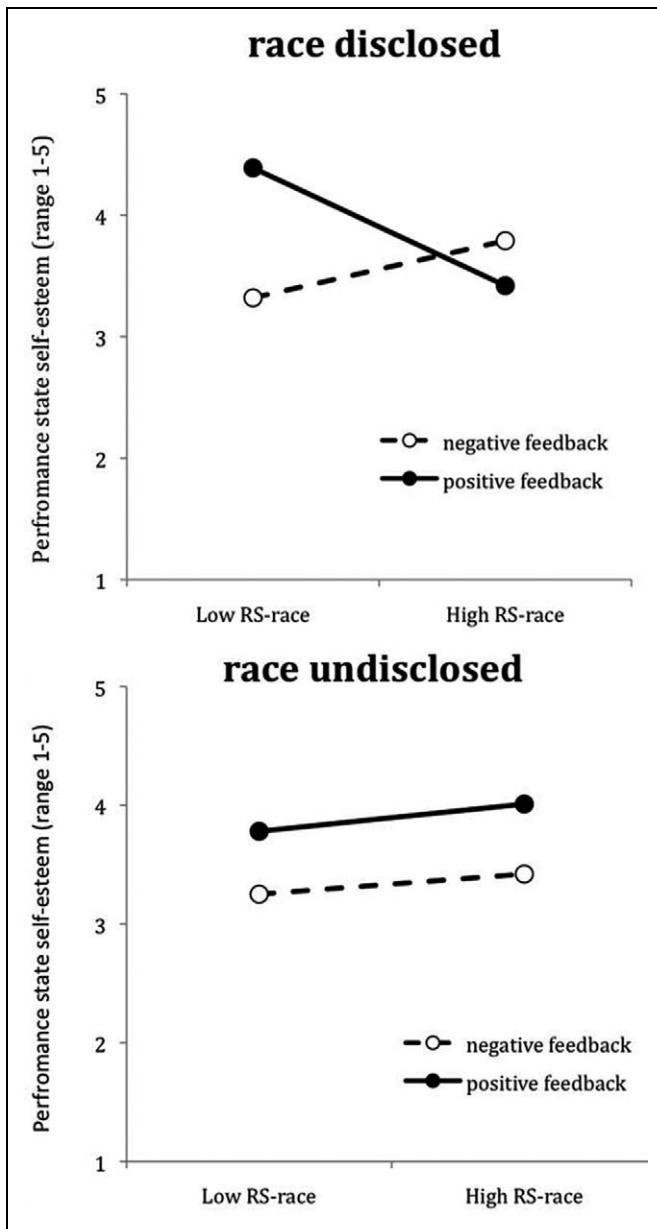


Figure 1. Performance state self-esteem as a function of race disclosure, feedback, and race-based rejection sensitivity (RS-race)
 Note: Plotted values represent predicted scores for individuals one standard deviation above and below the standardized RS-race distribution.

When race was undisclosed, there was a nonsignificant RS-Race \times Feedback interaction, $F(1, 60) = .04, p < .83, b = .06$. Rather, there was a significant main effect of feedback, $F(1, 60) = 13.30, p < .0006, b = 1.13$, and a nonsignificant main effect of RS-race, $F(1, 60) = .01, p < .94, b = -.01$.

In the race disclosed condition, the RS-Race \times Feedback interaction was significant, $F(1, 60) = 6.80, p < .012, b = -.94$. Among participants higher in RS-race, feedback did not have a significant effect, $F(1, 60) = .08, p < .77, b = .13$, but among participants lower in RS-race, emotions and concerns around being valued were positively related to feedback, $F(1, 60) = 14.66, p < .0003, b = 2.0$.

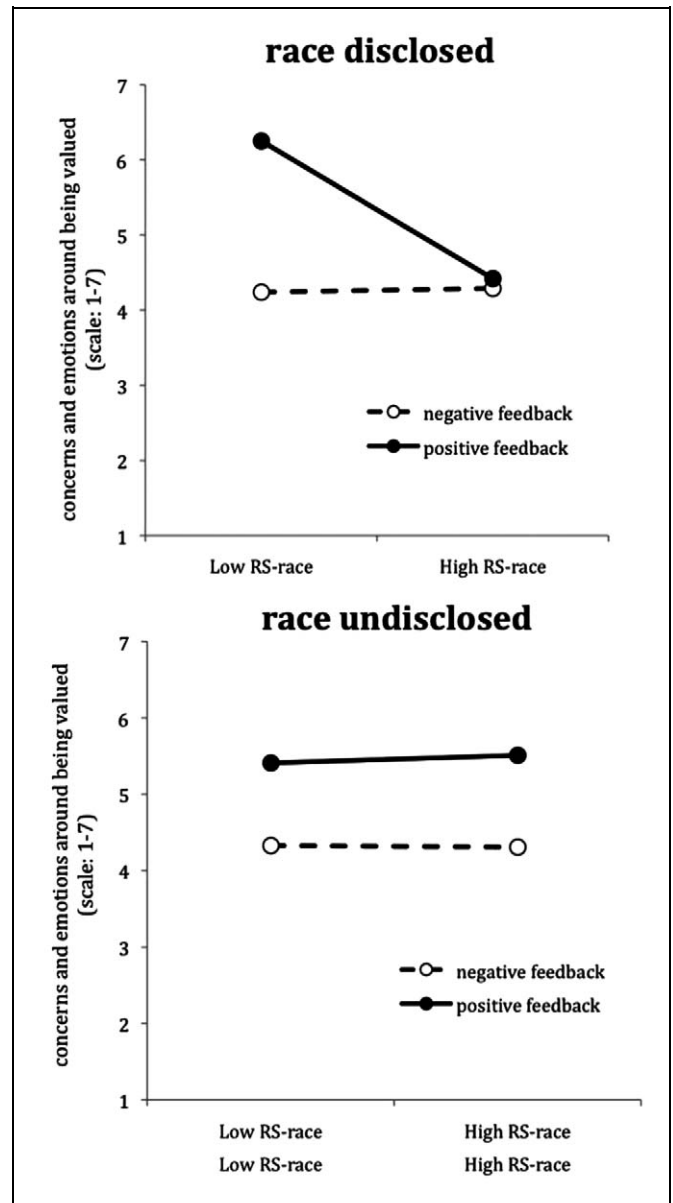


Figure 2. Concerns and emotions around being valued as a function of race disclosure, feedback, and race-based rejection sensitivity (RS-race)

Note: Plotted values represent predicted scores for individuals one standard deviation above and below the standardized RS-race distribution.

Staying within the race disclosed condition, we next examined the effect of RS-race separately for positive and negative feedback. When participants were given positive feedback in this condition there was a strong effect of RS-race, $F(1, 60) = 11.72, p < .001, b = -.92$; however, no effect of RS-race was evident when participants were given negative feedback, $F(1,60) = .11, p < .84, b = .03$.¹

Mediational Analyses. We hypothesized that participants' concerns and emotions around being valued could account for the changes we observed in self-esteem. To test this possibility, we

first established that the proposed mediator (concerns and emotions around being valued) was positively associated with performance self-esteem, $F(1, 66) = 62.21, p < .0001, b = .48$. In the second step, we regressed performance self-esteem onto feedback, race disclosure, RS-race, and their interactions while simultaneously entering concerns and emotions around being valued into the model (maintaining the covariates constant). While the effect of concerns and emotions around being valued remained significant, $F(1, 59) = 43.99, p < .0001, b = .51$, the previously observed three-way Feedback \times Disclosure \times RS-Race interaction was no longer significant, $F(1, 59) = .59, p < .44, b = -.22$, Sobel's $z = -2.04, p < .04$. This suggests that concerns and emotions around being valued are a potential mediator of the effects of the independent variables on changes in performance self-esteem.²

General Discussion

This research was undertaken to better understand the psychological processes that can help explain the link between feedback and minority students' self-esteem in reaction to such feedback. Applying insights from the group-value model to this area, we found that students' changes in self-esteem following negative as well as positive feedback were explained by participants' concerns and emotions around fairness, respect, and acceptance. Consistent with predictions, we found that participants' prior expectations of race-based rejection influenced their reaction to the feedback when students' race was disclosed, but not when their race remained undisclosed.

The present findings highlight the need for structural changes to foster safe academic environments that promote equality and give students—even those chronically concerned about discrimination—the security that their race is not used against them in their academic endeavors. In light of this, it is important to note that the interactions reported here are driven by the self-esteem gains of low RS-race students when they were given positive feedback and their race was *known*. Indeed, specifically for positive feedback, the Race Disclosure \times RS-Race interaction (i.e., comparing the slopes of the solid lines across the two panels within each figure) was significant both for performance self-esteem change, $F(1, 60) = 4.21, p = .04$, and concerns and emotions around being valued, $F(1, 60) = 6.88, p = .01$. Whereas high RS-race students may have discounted the positive feedback as suspicious or illegitimate (e.g., Mendes et al., 2008), positive feedback may have verified lower RS-race students' worldview where one's race does not necessarily condemn one to negative outcomes (see Major, Kaiser, O'Brien, & McCoy, 2007).

The findings thus hint at the possibility that under some conditions, students may not regard group valuation and race disclosure as necessarily incompatible. Consistent with this notion, prior research shows greater belonging and engagement among minority individuals in environments that value multiculturalism (Plaut, Thomas, & Goren, 2009; Purdie-Vaughns, Steele, Davies, Dittmann, & Randall Crosby, 2008). Experiencing identity safety (Steele, Spencer, & Aronson, 2002) when

race is known may translate to students feeling like they can maintain both their cultural group membership and an academic group membership and foster the formation of a common ingroup identity in ethnically or racially diverse student groups (Gaertner, Dovidio, Nier, Ward, & Banker, 1999). More generally, the findings speak to the interconnection between people's social identities and individual-level outcomes such as self-esteem (see Ellemers, Spears, & Doosje, 2002; Postmes & Jetten, 2006).

We expected that in the race disclosed condition, lower RS-race students (who are chronically less concerned about discrimination) would take feedback at face value: Their self-esteem would rise with positive feedback and fall with negative feedback. While this was indeed the case for positive feedback, lower and higher RS-race students did *not* show different reactions to negative feedback. This suggests different processes for positive versus negative feedback among lower RS-race students. Negative feedback in combination with race disclosure may have aroused suspicions of bias strongly enough to override individual differences and suggests that lower RS-race students are not simply "blind" to discrimination. Even lower RS-race students may discount feedback given a strong elicitor of discrimination concerns.

Research suggests that mentors sometimes avoid providing negative feedback to avoid being seen as biased and foster stigmatized students' motivation (Cohen & Steele, 2002; Crosby & Monin, 2007). The meditational effects of group value on self-esteem underscore that mentors' treatment of students as valued persons with good prospects (see Steele, 1992), rather than the valence of feedback per se, may be the key component in fostering students' engagement.

Declaration of Conflicting Interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

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Notes

1. Given research demonstrating that relational concerns are especially important to those who are highly identified with the group (Ellemers, Spears, & Doosje, 2002; Smith & Tyler, 1997), we also tested whether university identification moderated the findings. To do so, we used the Inclusion of Other in the Self-Institution (IOSI) Scale, a pictorial measure previously used by Mendoza-Denton, Pietrzak, and Downey (2008) to approximate university identification. Participants were asked which of 10 pairs of increasingly overlapping circles, one labeled *self* and the other labeled *university*, best described their relationship with the university. A higher score on this measure reflects greater overlap between self and the institution ($M = 5.38, SD = 2.13$).

The four-way interaction of university identification, race-based rejection sensitivity (RS-race), feedback, and race disclosure was

not significant either for self-esteem, $F(1, 52) = 2.17, p = .146$, or emotions and concerns around being valued, $F(1, 52) = 2.45, p = .124$. Including university identification only as a main effect continued to yield the significant RS-Race \times Feedback \times Disclosure interaction both for self-esteem, $F(1, 59) = 4.56, p = .037$, and concerns and emotions around being valued, $F(1, 59) = 4.34, p = .042$, with essentially identical data patterns. Thus, the patterns here seem to hold independently of university identification. Nevertheless, the fact that the four-way interactions had F values greater than 2 despite low power, as well as the single-item nature of the IOSI, suggests the need for further investigation.

- An alternative model in which self-esteem is conceptualized as the mediator between the predictors and concerns and emotions around being valued was rejected on two grounds. First, though not impossible, the alternative model would likely require us to invoke some kind of dissonance reduction or self-questioning process (e.g., "Why am I feeling low self-esteem? It must be that I'm not valued.") that in our view would lack external validity and would be inconsistent with the literature.

Second, structural equation modeling (SEM) analyses suggest a better fit for the hypothesized model. The alternative model's results are similar to the hypothesized model and also suggest mediation; that is, when we regress concerns and emotions around being valued onto the independent variables while also entering Time 2 self-esteem, the effect of Time 2 self-esteem remains significant, $F(1, 59) = 1.12, p = .29$, but the three-way interaction of interest does not, $F(1, 59) = 43.99, p < .0001$, Sobel's $z = 1.93, p = .053$. Nevertheless, SEM analyses revealed that the chi-square value of our hypothesized model ($\chi^2 = .81, p = .67$) supports the null hypothesis that the model fits the data. By contrast, the chi-square of the alternative model ($\chi^2 = 21.17, p < .01$) suggests that this model deviates significantly from the data. In addition, for the hypothesized model, the goodness-of-fit (GFI) index and the normed fit index (NFI) yielded values of .9996 and .995, respectively, indicating acceptable fit for the hypothesized model (Hu & Bentler, 1998). By contrast, the alternative model yielded GFI and NFI values of .91 and .81, respectively, both of which indicate a poorer fit relative to the hypothesized model.

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