

Cultural Diversity and Ethnic Minority Psychology

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Online First Publication, March 27, 2023. <https://dx.doi.org/10.1037/cdp0000584>

CITATION

Rivera, L. M., & Nicole Young, D. (2023, March 27). Revisiting Black Americans' Self-Protective Strategies: The Effect of Negative Intelligence Feedback on Implicit (vs. Explicit) Self-Esteem. *Cultural Diversity and Ethnic Minority Psychology*. Advance online publication. <https://dx.doi.org/10.1037/cdp0000584>

Revisiting Black Americans' Self-Protective Strategies: The Effect of Negative Intelligence Feedback on Implicit (vs. Explicit) Self-Esteem

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Objectives: Black Americans use identity-based self-protective strategies to maintain their explicit self-esteem after a threat to their intelligence. This effect is consistent with the associative-propositional evaluation (APE) model, which suggests that self-protective strategies operate during a propositional process that results in no change in *explicit* self-esteem. However, the APE model also suggests that *implicit* self-esteem may be sensitive to an intelligence threat because it increases the accessibility of automatically activated evaluations about Black Americans, namely the stereotype that their group is unintelligent. These hypotheses are tested across two experiments. **Method:** Black American participants across both experiments (Experiment 1: $N = 57$; 40 females, $M_{\text{age}} = 21.60$; Experiment 2: $N = 79$; 64 females, $M_{\text{age}} = 24.86$) completed an intelligence test, then were randomly assigned to receive either negative feedback about their performance or no-feedback. Participants then completed measures of implicit and explicit self-esteem. Participants in Experiment 2 also completed a measure of subjective identity centrality. **Results:** In support of the hypotheses, Black American participants across both experiments who received negative performance feedback on an intelligence test exhibited lower implicit self-esteem compared to those who did not receive feedback. Experiment 2 further demonstrated that this effect emerged only among strongly identified Black American participants. Finally, and consistent with past research, explicit self-esteem was unaffected by negative performance feedback among all participants. **Conclusions:** This research demonstrates the boundary conditions of Black Americans' adoption of identity-based self-protective strategies to protect their implicit versus explicit self-esteem following an intelligence threat.

Public Significance Statement

Black Americans often experience systemic and interpersonal biases stemming from the stereotype that their group is unintelligent. In response to such experiences, Black Americans have developed and adopt self-protective strategies to maintain their explicit self-esteem. The current research suggests that there is a need to identify and develop additional self-protective strategies that protect and maintain implicit self-esteem when Black Americans experience bias.

Keywords: implicit social cognition, self-threat, self-image, ethnicity, stereotypes

Supplemental materials: <https://doi.org/10.1037/cdp0000584.supp>


Given Black Americans' disadvantaged history and frequent experiences with stereotyping, prejudice, and discrimination (Dovidio et al., 2010; Seaton et al., 2008; Takaki, 2008; Williams et al., 2003), one might expect them to internalize these biases. This

hypothesis is consistent with the looking-glass self approach, which posits that Black Americans' self-image is influenced by others' beliefs, feelings, and actions toward their group (Cooley, 1956; Mead, 1934). Similarly, research on the self-fulfilling prophecy

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This research was partially supported by a National Center on Minority Health and Health Disparities Grant (1P20MD002722) to Luis M. Rivera. The authors thank Mark Agars, Ken Shultz, and the Rutgers Implicit Social Cognition Lab for their thoughtful comments on an earlier version of this article. Also, the authors are grateful to Krishna Patel, Vrunda Modi, and Lisa Panila for their help with data collection.

Luis M. Rivera played lead role in writing of original draft and equal role in conceptualization and methodology. Delisa Nicole Young played supporting role in writing of original draft and equal role in conceptualization and methodology.

 The data are available at <https://osf.io/gdq6/>

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supports the notion that Black Americans should uniquely suffer from poor self-image (Merton, 1948). This perspective suggests that if a perceiver treats Black Americans consistent with their group's stereotypes, they will most likely behave in ways that confirm the perceiver's attitudes. Such behavior can "get under the skin" of Black Americans and negatively influence their self-image (Rivera & Paredez, 2014). These ideas are consistent with Clark and Clark's (1939, 1947) classic research in which Black American children identified themselves with the very same Black dolls they categorized as Black, bad, and did not wish to play with. Altogether, these perspectives suggest that Black Americans internalize racial biases that, in turn, may lead to low self-esteem (also see Baldwin, 1979; Porter & Washington, 1979).

Notwithstanding the contribution of the above research, Black Americans actually exhibit relatively high self-esteem (Twenge & Crocker, 2002). Twenge and Crocker's (2002) meta-analysis ($N = 354$ studies) showed that Black Americans self-report the highest levels of self-esteem when compared to White, Hispanic, Asian, and American Indian individuals. One compelling explanation for these data is that Black Americans intentionally adopt identity-based strategies that protect their self-esteem when faced with bias against their group (Crocker & Major, 1989, 2003; Major & O'Brien, 2005). An inescapable stigmatized past in combination with present subjective experiences with racism have shaped a "collective representation" among Black Americans that at its core is the belief that their group is frequently targeted by racial stereotyping, prejudice, and discrimination (Crocker, 1999, p. 92). This collective representation leads Black Americans to consciously acknowledge that negative outcomes may be the result of racial biases, as opposed to their own personal characteristics and abilities, and this in turn buffers their self-esteem. In support of this hypothesis, correlational data show that Black American students who frequently experience racial discrimination self-report high personal self-esteem (Crocker & Blanton, 1999). Furthermore, in a now seminal line of research, Black American students disengage their self-esteem from intelligence-related performance (Crocker et al., 1991; Crocker & Major, 1989; Major et al., 1998). Presumably, Black Americans' self-esteem is protected because they attribute a potentially poor performance to the well-known negative stereotype that their group is unintelligent, a strategy used to disengage their self-esteem from intelligence domains.

Interestingly, the above research measured Black Americans' self-reported self-esteem, or *explicit* self-esteem, which is important to examine because it suggests that Black Americans consciously engage in the process of attributing negative intelligence feedback to a stereotype of their group, thus deliberately protecting their self-image. Maintaining one's explicit self-esteem can benefit individuals when coping with self-threatening contexts, including the negative role of biases in psychological well-being (Barrie et al., 2016), mental health (Fischer & Shaw, 1999), and physical health (Rivera & Margevich, 2021). However, implicit social cognition theories and research suggest that negative intelligence feedback may negatively affect Black Americans' *implicit* self-esteem. That is, the same identity-based strategies that Black Americans consciously adopt to maintain their explicit self-esteem may be unable to protect their implicit self-esteem. Because implicit self-esteem, like implicit attitudes in general, is a nonconscious and automatically activated self-evaluation formed at an early age and through repeated experiences (see Rudman, 2004),

it may be impervious to consciously adopted self-image protective strategies. It is important to extend the research on self-protective strategies to implicit self-esteem because it is an attitude toward the self distinct from explicit self-esteem, but also because it is linked to defensive reactions (Jordan, Spencer & Zanna 2003; Jordan, Spencer, Zanna, Hoshino-Browne, et al., 2003), poor mental health (Ashburn-Nardo, 2010; Franck et al., 2007), low psychological well-being (Ashburn-Nardo, 2010), lower levels of positive mood (Bosson et al., 2000; Greenwald & Farnham, 2000), somatic symptoms such as breathing difficulties, disease, headaches, pains, and indigestion (Robinson et al., 2006), and nonverbal anxiety behaviors (Bosson et al., 2000).

Associative-Propositional Processes Underlying Black Americans' Implicit Versus Explicit Self-Esteem

We propose that the associative-propositional evaluation (APE; Gawronski & Bodenhausen, 2006) model provides a framework for explaining the processes underlying our a priori hypotheses about Black Americans' implicit versus explicit self-esteem. In general, the APE model assumes that individuals assess the "truth value" of information received from an environmental input or contextual cue via two types of processes—associative processes that influence implicit evaluations and propositional processes that influence explicit evaluations (Gawronski & Bodenhausen, 2006). During associative processing, an input activates automatic associations stored in memory leading to changes in an implicit evaluative outcome. Implicit evaluations can be activated regardless of whether the individual views the evaluation as true. By comparison, during propositional processing, individuals can consciously retrieve additional information from memory to assess the accuracy of an implicit evaluation. This may lead to propositions that challenge the implicit evaluation. If the additional information is inconsistent with the initial implicit evaluation, or propositions are considered that disconfirm this evaluation, individuals exhibit such changes on their explicit evaluations. To the extent that associative and propositional processes operate in these ways, they lead to a dissociation between implicit and explicit evaluations. Two such illustrations are when White individuals are presented with Black faces in their environment that activate the group Black people and the implicit stereotype evaluation that they are hostile and angry (Hugenberg & Bodenhausen, 2003), and when a contextual cue that reminds individuals of their past criminality activates the implicit evaluative association between criminal and the group Black people (Saad et al., 2023). In both empirical examples (and for a review of additional instances, see Gawronski & Sritharan, 2010) environmental inputs elicited associative processes and the resultant implicit evaluations, but such evaluations were explicitly rejected following propositional processing.

As it relates to Black Americans' self-esteem, implicit self-esteem should be influenced by evaluative associations in memory developed throughout life during interpersonal and intergroup experiences and socialization in general (see Rudman, 2004). Once evaluative associations are learned, they are activated by contextual cues regardless of whether the perceiver views the evaluation as true. Thus, because Black Americans are socialized often about the long history of interpersonal, intergroup, and institutional forms of racism against their ethnic-racial group, these events should inform their implicit self-evaluations. One source of racism is the pervasive

stereotype that Black Americans are unintelligent, which is deeply rooted in the history of African slaves and the perception that they were intellectually inferior to Whites (Takaki, 2008). Black Americans are exposed to such information throughout their lives via cultural socialization about their ethnic-racial heritage, customs, and history (Hughes et al., 2006), media portrayals (Stroman, 1991), and their personal experiences with discrimination (McKown & Weinstein, 2003; Miller & MacIntosh, 1999; Phinney & Chavira, 1995; Sanders, 1997). For these reasons, we chose to provide a test of our hypothesis about implicit self-esteem by providing Black Americans with negative feedback about their performance on an intelligence test, which should automatically activate negative evaluative associations in memory and thus lead to relatively low implicit self-esteem.

By comparison, and considering the seminal work reviewed above by Crocker, Major, and colleagues, the APE model would posit that propositional processing should yield an effect of negative intelligence performance feedback on Black Americans' explicit self-esteem that is inconsistent with their implicit self-esteem. Because propositions function to question the validity of activated evaluative associations, they resolve what is believed to be an inaccurate evaluation. For Black Americans, adopting self-protective strategies such as disengaging their self-esteem from a domain in which their group is stereotyped (intelligence) should reduce Black Americans' trust in the validity of negative intelligence-related feedback. This process should lead to a rejection of the activated associative evaluations about the self as a valid basis for an evaluative judgment (i.e., the evaluation is not perceived as true to the individual), thereby leaving explicit self-esteem unchanged.

The Moderating Role of Subjective Ethnic-Racial Identification

The detrimental effect of negative intelligence feedback on implicit self-esteem, however, may depend on the strength of Black American perceivers' identification with their ethnic-racial group. According to social identity theory and its extended self-categorization theory (Tajfel & Turner, 1979, 1986; Turner et al., 1987), one important source of an individual's overall self-image is their social identification with groups. However, while individuals categorically identify with different social groups, they vary in their subjective identification with each group—some group members consider their social identity as more central and important to their self-concept than other group members (Luhtanen & Crocker, 1992; Phinney, 1992; Sellers et al., 1997, 1998).

Because their ethnic-racial group is more central and important to strongly identified Black Americans, they are more likely than weakly identified Black Americans to be sensitive to intergroup-related situational cues that have affective, behavioral, and cognitive implications (Phinney, 1992; Sellers et al., 1997, 1998). As it relates to the present research, because strongly identified Black Americans are more likely than weakly identified Black Americans to report frequent experiences with cultural socialization (Hughes et al., 2006) and discrimination (Sellers & Shelton, 2003), they should possess stronger evaluative associations in memory as well. Thus, the second main goal of the present research is to test if subjective ethnic-racial identification moderates the effect of negative intelligence feedback on implicit self-esteem. In the absence of any feedback, subjective Black American identification is not expected

to covary with implicit self-esteem. However, following negative intelligence feedback, strongly identified Black Americans should exhibit lower implicit self-esteem.

Experiment 1

The goal of Experiment 1 was to provide an initial test of the hypothesis that Black Americans will be unable to buffer their implicit self-esteem from a self-threat in the intelligence domain. We predicted that Black Americans who receive negative performance feedback on a test would exhibit lower implicit self-esteem when compared to a no performance feedback control condition. However, negative feedback will not affect Black Americans' explicit self-esteem, which, as discussed above, is consistent with past research showing that Black Americans adopt protective mechanisms to maintain their explicit self-esteem.

Method

Participants and Design

Fifty-seven (40 females, 17 males, $M_{age} = 21.60$, $SD = 6.82$, age range: 18–53 years) Black American undergraduate students from an urban public university completed the experiment for extra course credit. The sample size was determined based on an arbitrary range of 25–30 participants per condition. Using G*Power 3 (Faul et al., 2009), a post hoc sensitivity analysis that set α at .05 and power at .80 indicated that there was enough power to detect a medium effect size, $d = .76$, for the main effect of negative performance feedback on implicit self-esteem. The experiment adopted a one-factor two-level (Performance feedback: negative, none) between-participants design.

Procedure

A non-Black American research assistant informed participants that they would complete two separate and unrelated studies, one on cognition and another on personality. To enhance this cover story, participants reviewed and signed two different consent forms. In the "first study," participants were randomly assigned to one of the performance feedback conditions. In the "second study," participants completed the implicit and explicit self-esteem measures (counterbalanced). Finally, after the measures of self-esteem, all participants completed a demographics questionnaire, and then were fully debriefed.

Manipulated Variable

Negative Performance Feedback. As part of the introduction to the intelligence test, we first asked all participants to complete a brief demographics questionnaire in which they identified their age and ethnicity. In the experimental research on self-protective strategies (for reviews, see Crocker et al., 1991; Crocker & Major, 1989, 2003; Major et al., 1998), a contextual cue that reminds Black participants of their ethnic-racial identity makes salient both group membership, which is essential to considering themselves members of their stigmatized group, and self-protective cognitions. Using self-protective strategies is meaningful for Black individuals when they are confronted with group-based biases—in the present research, the stereotype that their ethnic-racial group is not intelligent. Although all Black participants in the present research may be

readied to use self-protective strategies after their ethnic-racial identity is made salient, it should only be functional after we manipulate negative performance feedback on an intelligence test.

After the brief demographics questionnaire, all participants were informed that the test had been administered to White college students only and that their participation would help determine if the test could be standardized for Black Americans. Next, all participants were informed that a “new form of a computerized intelligence test” of verbal and reasoning abilities was being administered nationally to numerous college students. After completing the test, only participants randomly assigned to the negative feedback condition were informed that they scored in the “47th percentile.” By comparison, participants in the no-feedback condition were informed that we were interested in “gathering data to enter in a bank for analyses later” and thus they would not receive performance feedback because we were interested in how individuals performed in general as opposed to their individual performance. This cover story was used because we wanted participants to complete the same test as the participants in the negative feedback condition, but we did not want their performance to have any relevance to their self-image. The above false feedback procedure was adopted from prior research (Laws & Rivera, 2012). In summary, Laws and Rivera (2012) recruited two samples to develop a test of 15 questions varying in difficulty so that test performance was ambiguous enough for participants to believe negative feedback. Moreover, two additional samples (Laws & Rivera, 2012, Experiments 2 and 3) demonstrated the validity of the negative intelligence feedback procedure as a manipulation of self-threat.

Measured Variables

Implicit Self-Esteem. We used an Implicit Association Test (IAT; Greenwald et al., 1998) to measure implicit self-esteem (SE-IAT). The SE-IAT measures the relative strength with which two target groups (the self vs. others) are associated with two opposing evaluations (good words vs. bad words) using response latency to operationalize attitude strength. For a complete description of the SE-IAT, see Greenwald and Farnham (2000). Research using the SE-IAT suggests that it is a reliable and valid measure of implicit self-esteem (Greenwald & Farnham, 2000; Jordan, Spencer, & Zanna, 2003; Laws & Rivera, 2012, 2014). Following Nosek et al. (2007), the reliability for the SE-IAT in this research was calculated by submitting difference scores between compatible and incompatible block latencies to a Cronbach’s α analysis ($\alpha = .85$). A SE-IAT score was calculated for each participant using a modified effect size such that a large positive IAT effect size (abbreviated as IAT D) indicates relatively high implicit self-esteem (Greenwald et al., 2003).

Explicit Self-Esteem. Consistent with past research on self-protective strategies and explicit self-esteem (see Crocker & Major, 2003, p. 233), we administered Heatherton and Polivy’s (1991) measure of state self-esteem because it should be better at tapping into changes in Black Americans’ self-esteem after an experimental manipulation of performance feedback than a measure of trait self-esteem (e.g., the Rosenberg Self-Esteem Scale, 1965). Experiments have demonstrated that negative performance feedback lowers state self-esteem assessed with Heatherton and Polivy’s (1991) measure (Heatherton & Vohs, 2000, Study 2; Hoefler et al., 2015).

Heatherton and Polivy’s (1991) measure contains 20 items divided into three self-esteem subscales (performance, appearance, and social) and includes items such as “I feel confident about my abilities” (performance), “I feel that others respect and admire me” (appearance), and “I am worried about whether I am regarded as a success or failure” (social). To emphasize any immediate change to the experimental manipulation, participants were asked to indicate the degree to which they agreed with each statement at *that very moment* (emphasis added) on a scale from 1 (*not at all*) to 5 (*extremely*). High scores on the measure mean higher explicit self-esteem ($\alpha = .89$).

Demographics. Participants completed a brief demographics questionnaire that included gender, age, and race/ethnicity to confirm their Black American identity.

Results and Discussion

Experiment 1’s data and syntax are available at the Open Science Framework (<https://osf.io/gdq6/>).

We ran two analyses of variance in which negative performance feedback was the independent variable and implicit self-esteem and explicit self-esteem were the two dependent variables. First, and consistent with our prediction, participants who received negative performance feedback ($M = .52, SD = .31$) exhibited lower implicit self-esteem compared to those who did not receive performance feedback ($M = .71, SD = .36$), $F(1, 55) = 4.17, p = .046, d = .56$ (medium effect size). However, the explicit self-esteem of participants in the negative performance feedback condition ($M = 3.91, SD = .49$) did not differ from those in the no-feedback condition ($M = 3.97, SD = .60$), $F(1, 55) = .18, p = .671$. Null effects persisted when the three explicit self-esteem subscales (performance, appearance, and social) were separately entered as dependent variables, $F_s < .82, p_s > .36$.

Consistent with Crocker and Major’s (1989) seminal research, Experiment 1 results suggest that Black Americans are motivated to use self-protective strategies to shield their explicit self-esteem from negative feedback about their intelligence, a domain in which their group is stereotyped. However, Experiment 1 also suggests that these same self-protective strategies are unable to maintain Black Americans’ implicit self-esteem. We interpret these divergent effects on implicit versus explicit self-esteem through the lens of the APE model (Gawronski & Bodenhausen, 2006, 2014), which posits that implicit self-esteem can be affected due to the activation of evaluative associations stored in memory regardless of their truth value, but explicit self-esteem should remain unaffected because of propositions considered such as adopting self-protective strategies.

Experiment 2

Experiment 2 first sought to replicate Experiment 1’s main effects of negative performance feedback on implicit and explicit self-esteem. Also, we conducted a priori statistical analyses in Experiment 2 to assure that we recruited a sample size that would provide adequate power to test our hypotheses. The second goal was to test if Experiment 1’s main effect is moderated by Black Americans’ subjective identity. The introduction posits that strongly (relative to weakly) identified Black Americans’ implicit self-esteem should be particularly sensitive to negative performance feedback. We

operationalize identification as racial centrality, which is defined by how strongly individuals identify with their ethnic-racial group. Research with Black Americans demonstrates that racial centrality moderates the effect of specific contexts on stigma-related beliefs and behavior in theoretically predictable ways (Rowley et al., 1998). Thus, we predicted that the detrimental effect of negative performance feedback on implicit self-esteem should emerge among Black American participants who strongly believe that their identity is central to their self-concept. Moreover, and consistent with Experiment 1 and past research, Black Americans, regardless of their identity centrality, should be able to shield their explicit self-esteem from negative feedback.

Method

Participants and Design

We used G*Power (Faul et al., 2009) to calculate an a priori power analysis. The analysis using a medium effect size (based on Experiment 1), α of .05, power of .80, and three predictors (two main effects and one interaction) in a linear multiple regression statistical test yielded a minimum sample size of 77. We recruited 79 (64 females, 15 males, $M_{\text{age}} = 24.86$, $SD = 7.50$, age range: 18–55 years) Black American undergraduate students from an urban public university who completed the experiment for extra course credit. These participants did not complete Experiment 1. The experiment adopted a Continuous Variable (Identity centrality) \times 2 (Performance feedback: negative, none) between-participants design.

Procedure, Manipulated Variable, and Measured Variables

The procedure and manipulated and measured variables (SE-IAT $\alpha = .83$; State Self-Esteem Scale $\alpha = .85$) were identical to Experiment 1 with one important addition. After completing the two self-esteem measures, all participants completed an individual difference measure of subjective identity centrality (described below) as part of the demographics questionnaire from Experiment 1, administered at the end of the experiment.

Identity Centrality

Participants completed a single item adopted from the Multidimensional Inventory of Black Identity (MIBI) scale (Sellers et al., 1997): “Being an African American is an important part of who I am.” Participants were asked to indicate their agreement with the statement on a scale from 1 (*not at all*) to 9 (*very much*) including the midpoint 5 (*somewhat*). This item is from the MIBI-Centrality subscale, which captures the extent to which ethnic-racial identity defines, and is a core part of, an African American’s self and identity. Moreover, identity centrality is considered to be chronically salient and relatively stable regardless of context (Leach et al., 2008; Sellers et al., 1997, 1998). Although we are not aware of any past experiments that use a single item specifically from the MIBI (Sellers et al., 1997), other studies have adopted single-item measures of social identity (Postmes et al., 2013; Reysen et al., 2013). Postmes et al. (2013) and Reysen et al. (2013) both used a single item from Leach et al.’s (2008) identity centrality subscale to demonstrate its validity across multiple social

groups, including its convergence with the MIBI’s identity centrality subscale (see Reysen et al., 2013, Study 1).

Results and Discussion

Experiment 2’s data and syntax are available at the Open Science Framework (<https://osf.io/gdq6/>).

To test our hypotheses, we regressed implicit and explicit self-esteem scores on the mean-centered identity measure, negative performance feedback condition (coded no-feedback = 0, negative feedback = 1), and their interaction. Regression results by model are summarized in Table 1 (implicit self-esteem) and Table 2 (explicit self-esteem). When the dependent variable was implicit self-esteem, the regression analyses revealed a main effect of performance feedback. Replicating Experiment 1, but with a larger sample (based on power analyses), participants who received negative performance feedback ($M = .51$, $SD = .36$) exhibited lower implicit self-esteem compared to those who did not receive feedback ($M = .72$, $SD = .36$), $b = -.269$, $p = .018$, $d = .58$ (medium effect size), $F(2, 76) = 3.132$, $p = .049$. Moreover, this main effect was qualified by a significant Identity Centrality \times Negative Performance Feedback interaction, $\Delta F(1, 75) = 7.62$, $\Delta R^2 = .085$, $p = .007$. To examine the nature of these effects, we conducted simple slopes analyses and estimated the values of implicit self-esteem at 1 SD above and below the mean of the identity scores at each level of the performance feedback condition (Aiken et al., 1991). As per Figure 1, and consistent with our prediction, strongly identified Black American participants who received negative performance feedback exhibited lower implicit self-esteem ($M_{\text{estimated}} = .35$) when compared to those who did not receive feedback ($M_{\text{estimated}} = .79$), $b = -1.04$, $p = .001$. However, among low identifiers, implicit self-esteem did not vary as a function of feedback, $b = .02$, $p = .214$. Also, in the negative performance feedback, strongly identified Black American participants ($M_{\text{estimated}} = .35$) exhibited lower implicit self-esteem than weakly identified Black American participants ($M_{\text{estimated}} = .71$), $b = -.08$, $p = .015$. However, in the no-feedback condition, individual differences in identity centrality did not covary with implicit self-esteem, $b = .03$, $p = .230$. Finally, when the dependent variable was explicit self-esteem, the regression analyses revealed neither main nor interaction effects, $F_s < .10$, $-.25 < t_s < .43$, $p_s > .673$ (see Figure 2 and Table 2). Null effects persisted when the three explicit self-esteem subscales (performance, appearance, and social) were separately entered as dependent variables, $F_s < 1.47$, $-.39 < t_s < 1.22$, $p_s > .23$.

Experiment 2 results provide additional support for our predictions. First, with an adequately powered sample size, we replicated Experiment 1’s main effect of negative performance feedback decreasing implicit self-esteem. Furthermore, Experiment 2 demonstrated that this effect emerges only among participants who strongly believe that their Black American identity is central to their self-concept. Finally, and consistent with Experiment 1 and past research, Black American participants’ explicit self-esteem is unaffected, suggesting that they adopt identity-based protective strategies.

Supplemental Analyses: Experiments 1–2

One limitation of the present research is that the method of sample size determination across the two experiments is inconsistent.

Table 1
Experiment 2: Hierarchical Regression Analysis Predicting Implicit Self-Esteem (N = 77)

Variable	R^2	b	t	p
Model 1	.076			.049
Identity centrality		-.035	-.313	.755
Negative performance feedback		-.269	-2.42	.018
Model 2	.161 ($\Delta R^2 = .085$)			.007
Identity centrality		.160	1.25	.214
Negative performance feedback		-.254	-2.38	.020
Identity Centrality \times Negative Performance Feedback		-.353	-2.76	.007

Because the two experiments administered the same feedback manipulation and self-esteem measures, we retested our main hypotheses by combining the data from both experiments. Consistent with our a priori hypotheses, Black American participants who received negative performance feedback ($M = .52$, $SD = .34$) exhibited lower implicit self-esteem compared to those who did not receive performance feedback ($M = .71$, $SD = .36$), $F(1, 134) = 10.56$, $p = .001$, $d = .54$ (medium effect size). Furthermore, post hoc analysis yielded power = .89, suggesting that the observed effect is meaningful. However, the explicit self-esteem of Black American participants in the negative performance feedback condition ($M = 3.91$, $SD = .57$) did not differ from those in the no-feedback condition ($M = 3.87$, $SD = .52$), $F(1, 134) = .18$, $p = .674$.

General Discussion

The current research examined the boundary conditions of negative intelligence feedback effects on Black Americans' implicit and explicit self-esteem. Experiments 1 and 2 reliably demonstrated that Black American participants who received negative performance feedback on a test of intelligence exhibited lower implicit self-esteem, but the same feedback did not affect their explicit self-esteem, when compared to Black American participants who completed the same intelligence test but did not receive feedback. We adopted the APE (Gawronski & Bodenhausen, 2006, 2014) model to provide a parsimonious explanation of why Black Americans' implicit self-esteem decreases but explicit self-esteem is maintained following intelligence-related feedback. The APE model is a dual process framework that hypothesizes that automatically activated associative processes should affect implicit evaluative outcomes and that propositional processes under conscious control should affect explicit evaluative outcomes. As it relates to

Black Americans' self-esteem, negative test performance feedback cues are expected to automatically activate evaluations stored in memory learned from lifetime experiences with the stereotype that their group is unintelligent and cultural socialization about their ethnic heritage and history. By comparison, the APE model would posit that propositional processing should lead Black Americans to conclude that these activated evaluative associations are inaccurate and thus disengage their explicit self-esteem from intellectual domains.

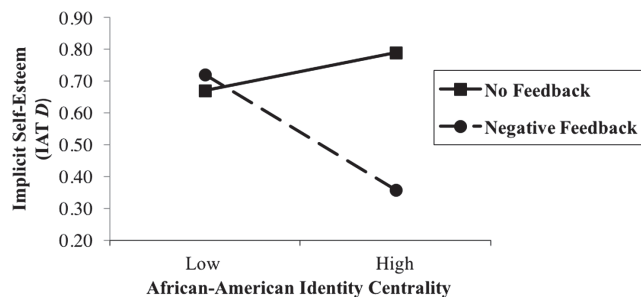
Experiment 2 demonstrated that negative performance feedback only affects the implicit self-esteem of Black Americans who highly identified with their ethnic-racial group, but not among those who weakly identify. This is generally consistent with the broader research demonstrating that Black Americans who consider their ethnic-racial group more central and important to their self-concept are especially sensitive to ingroup-related situational cues that have affective, behavioral, and cognitive implications (Phinney, 1992; Rivera & Benitez, 2016; Sellers et al., 1997, 1998). Our perspective is that strongly identified Black Americans are more likely to exhibit low implicit self-esteem following negative intelligence feedback because they have more frequent experiences with cultural socialization (Hughes et al., 2006) and discrimination (Sellers & Shelton, 2003).

Our explicit self-esteem findings are consistent with Crocker, Major, and colleagues' seminal work in which they demonstrate that Black Americans who are in contexts in which they feel they may be negatively judged on their performance adopt self-esteem protective strategies such as attributing negative feedback to discrimination and disengaging their self-esteem from performance domains in which their ethnic-racial group is stereotyped to be unintelligent (Crocker et al., 1991; Crocker & Major, 1989, 2003; Major et al., 1998). Adopting such strategies protects their explicit

Table 2
Experiment 2: Hierarchical Regression Analysis Predicting Explicit Self-Esteem (N = 77)

Variable	R^2	b	t	p
Model 1	.003			.899
Identity centrality		.049	.422	.674
Negative performance feedback		-.028	-.239	.812
Model 2	.003 ($\Delta R^2 = .001$)			.819
Identity centrality		.031	.223	.824
Negative performance feedback		-.029	-.249	.804
Identity Centrality \times Negative Performance Feedback		.032	.230	.819

Figure 1
Experiment 2: Effect of Identity Centrality and Performance Feedback on Implicit Self-Esteem

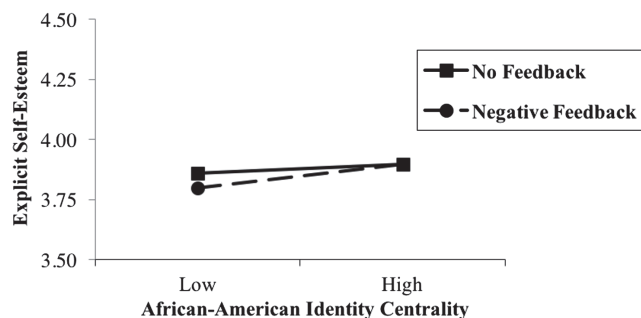


Note. Interaction effect plotted at 1 SD above and below the mean of identity (Aiken & West, 1991). Larger IAT *D* (Implicit Association Test *D* effect size) scores indicate higher implicit self-esteem.

self-esteem (also see Twenge & Crocker, 2002). This hypothesis is tested in the present two experiments, but in a new context in which Black Americans receive negative feedback about their individual performance on a presumably standardized test of intelligence. Complementing prior work, when Black American participants are informed that they performed relatively poorly, their explicit self-esteem remains unchanged. The past and present research examining explicit self-esteem continue to contradict earlier views on the detrimental role of stigma in Black Americans' self-image (e.g., looking-glass self approach; Cooley, 1956; Mead, 1934).

Moreover, the null effect on explicit self-esteem was consistent across Black American participants' who varied in their subjective ethnic-racial identity. Following our theorizing, strongly identified Black American participants' explicit self-esteem was not harmed. However, why would this effect be exhibited among weakly identified Black American participants as well? Black Americans who vary in their identity centrality strength are all well-aware of the long history of racism against their ethnic-racial group, including the pervasive stereotype that Black Americans are unintelligent (Scott, 2003; Thomas et al., 2010). Thus, it is plausible that our Black participants, regardless of their subjective ethnic-racial identity, attributed the negative intelligence feedback as an artifact

Figure 2
Experiment 2: Effect of Identity Centrality and Performance Feedback on Explicit Self-Esteem



Note. Interaction effect plotted at 1 SD above and below the mean of identity (Aiken & West, 1991). Larger scores indicate higher explicit self-esteem.

of racism. However, strongly identified Black individuals are more likely than weakly identified Black individuals to report personal experiences with bias (Scott, 2003; Thomas et al., 2010) and its stressors (Thomas et al., 2010). Consistent with our theorizing and Experiment 2's data, this chronic bias exposure may lead strongly identified Black individuals in particular to be susceptible to automatically activated self-evaluations in a performance feedback context that highlights bias against their group.

Future Research

Although the present data are consistent with the APE model of dual processes, one limitation of the present research is that we do not test the assumption that Black Americans are unable to use self-protective strategies to shield their implicit self-esteem from intelligence-based threats. As noted earlier, this assumption stems from our view of our research as an important extension of the seminal work of Crocker, Major, and colleagues. Their work has focused on measures related to Black Americans' understanding of the roles of institutional and individual racism against their group in rationalizing their individual and their group's negative outcomes (e.g., Crocker & Blanton, 1999). Indeed, strong beliefs expressed on such measures are associated with higher levels of explicit self-esteem. These measures, however, do not tap into the failure of using self-protective strategies, which we might expect to correlate with implicit self-esteem. This is an empirical question that future research can explore.

Alternatively, when conceptualizing the protective strategies of *implicit* self-esteem, relying on strategies that are consciously held and under volitional control may prove futile. For example, individuals who self-monitor are able to control or adjust their attitudes and behavior to present themselves positively across a variety of situations (Frandt & Ferris, 1990; Turnley & Bolino, 2001). One plausible prediction is that Black Americans who are high self-monitors will be less likely than those who are low self-monitors to express low implicit self-esteem after negative intelligence feedback as a way to present their self-image in a positive light. However, this would be theoretically inconsistent with the APE model because the ability to self-monitor in this case should occur during propositional processing. In other words, self-monitoring, like the self-esteem protective strategies discussed above, should maintain explicit but not implicit self-esteem.

In line with the APE model, we suggest that self-protective strategies activated during associative processing might be more promising. For example, while some Black Americans may not be aware of the harm that negative intelligence feedback may have on their implicit self-esteem, some may acknowledge this possibility. This may be the case because some Black Americans realize that frequent exposure to racism can potentially get "under their skin" if they do not preemptively protect their self-image. Future research should explore these and related "implicit" self-protective strategies in greater depth.

Future research should also examine the downstream consequences of changes in implicit self-esteem on Black Americans' physical and mental health, as well as their psychological and emotional well-being. Under certain conditions, low implicit self-esteem is associated with lower levels of psychological well-being, mental health, and physical health (Ashburn-Nardo, 2010; Bosson et al., 2000; Franck et al., 2007; Greenwald & Farnham, 2000;

Robinson et al., 2006). Thus, Black Americans who are in situations in which their performance abilities are questioned may be vulnerable to a host of affective, cognitive, and behavioral outcomes beyond, but related to, their implicit self-esteem. To the extent that this is the case, documenting and understanding these outcomes are important, in addition to testing well-known (e.g., self-affirmation) and innovative interventions that can alleviate Black Americans from the sting of negative stereotypes.

A final area of future research is to test if the effects demonstrated in the present research are limited to Black Americans or if they generalize to individuals from other ethnic-racial groups. In theory, the predicted effects should extend to others who meet the conditions put forth by both Crocker and Major (1989, 2003) and the present work rooted in the APE model. Most relevant to the present research, Latinx individuals in the United States are also stereotyped to be unintelligent (Weyant, 2005), and Latinx individuals are aware of this stereotype (Gonzales et al., 2002; Rivera & Paredes, 2014). If Latinx individuals, like Black Americans, have developed self-protective strategies via cultural socialization about their ethnic-racial heritage, customs, and history, then we would expect them to protect their explicit self-esteem by attributing negative performance feedback to bias against their group. However, and consistent with our rationale, these same strategies may not be able to protect their implicit self-esteem. But whether Latinx individuals and individuals from other ethnic-racial groups that are stigmatized have developed the same self-protective strategies as Black Americans and use them when confronted with stigma are largely unanswered empirical questions. Suggesting that they have not, Latinx individuals, on average, have lower explicit self-esteem than Black Americans (Twenge & Crocker, 2002). Testing the generalizability (and the boundary conditions) of the present effects to other ethnic-racial groups, and even to other stereotype domains, such as those that are positive but potentially harmful (e.g., Asian Americans are stereotyped to be especially smart), can be fruitful areas for future theoretical and empirical research.

Conclusion

Two experiments demonstrate when a performance feedback context that highlights the stereotype that their group is unintelligent affects Black Americans' implicit versus explicit self-esteem. By doing so, the present research sought to make theoretical and empirical contributions to the seminal work on self-protective properties of stigma. The past and present research suggests that developing and knowing when to adopt self-protective strategies that maintain both explicit and implicit self-images is important as Black Americans continue to face multiple forms of ethnic-racial biases.

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Received March 8, 2022

Revision received December 31, 2022

Accepted January 11, 2023 ■