
The Role of Gender Identities and Stereotype Salience With the Academic Performance of Male and Female College Athletes

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An experiment was conducted to examine factors that moderate the experience of academic identity threat among college athletes who represent a stigmatized group on most college campuses (Yopyk & Prentice, 2005). It was hypothesized that because they are more engaged in academics, female college athletes would be especially threatened by the prospect of confirming the "dumb-jock" stereotype. As predicted, female college athletes performed more poorly when their athletic and academic identities were explicitly linked, but only on moderately difficult test items. The results also revealed that male college athletes performed significantly better (see stereotype reactance and self-affirmation) on more difficult test items when only their athletic identity was primed prior to the test. This is an important finding as there is little research on the impact of positive stereotypes on performance. The discussion focuses on the different *motivational processes* (i.e. self-affirmation) that impact the academic performance of male and female college athletes when aspects of their campus identity are primed within a classroom context.

Keywords: *self-affirmation; stereotypes; identity; academic performance; athletics*

College athletes represent a unique "nontraditional" group on a college campus. Unlike traditional students (i.e., those who do not participate in college athletics), they are part of a complex social and political system within the university. They attend college in part to excel at the highest amateur level of their sport. However, according to the National Collegiate Athletic Association (NCAA) regulations, to

play their sport, college athletes are required to perform well in the classroom. Consequently, college athletes face pressures not faced by many traditional college students. Understanding these pressures, how they affect the performance of college athletes in the classroom, and finding ways to help college athletes cope with the burdens these pressures place on them are vital to the sport and academic success of this unique group of college students.

One pressure facing college athletes on a college campus relates to the negative stereotypes that faculty, traditional students, and administrative personnel hold about them. Academic scholars, journalists, and former athletes have described a variety of stereotyped perceptions people have of college athletes (e.g., Bowen & Levin, 2003; Edwards, 1984; Harrison, 2002; Sellers, 1992). The negative stereotype most addressed in the literature on college athletes is that of the “dumb jock” (Edwards, 1984; Harrison, 2002). For example, Sailes (1996) surveyed 869 Indiana University students’ beliefs regarding stereotypes about Black athletes and college athletes. The data showed that White and male students believed that college athletes were not as intelligent as the typical college student and that they take easy courses to maintain their eligibility. Other research indicates that academic faculty and traditional student peers harbor negative attitudes toward college athletes in and outside of the sports performance context. Compared to traditional students, college athletes were rated more negatively by faculty and other students when they were presented as driving an expensive car, receiving a scholarship and special advising/tutoring, being admitted to the university despite low test scores, and missing class (Baucom & Lantz, 2001; Engstrom & Sedlacek, 1991; Engstrom, Sedlacek, & McEwen, 1995). Other research indicates that college athletes are perceived as more likely to cheat on exams, receive “special” privileges from academic tutors and faculty in writing papers and taking exams, and to receive leniency in grading so they can remain sports-eligible (Eitzen, 1999; Lapchick, 2001). Indeed, when put alongside anecdotes that appear in the popular press, it is clear that college athletes represent a group that may be especially at risk for experiencing subtle and overt discrimination by faculty and traditional students in the classroom (Comeaux & Harrison, 2002).

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How Negative and Positive Stereotypes Impact Behavior

It is well documented that negative stereotypes can impact students when they interact with someone who holds a negative stereotype about their group's potential (e.g., Harris & Rosenthal, 1985). However, recent research indicates that targets do not need to interact with a biased individual for negative stereotypes to have a powerful debilitating effect on behavior. According to the theoretical framework guiding research on stereotype or identity threat (e.g., Steele, 1997; Steele, Spencer, & Aronson, 2002), when a negative stereotype about a group becomes salient as the criteria for evaluating performance, individual group members may become concerned that their performance will confirm the validity of the negative stereotype. The increased concern imposed by the identity threat adds an additional psychological burden to the task, which in turn reduces an individual's ability to perform up to their potential. For example, Steele and Aronson (1995) showed that framing an academic test as diagnostic of "verbal ability" caused poorer performance among African American participants compared to when the same test was framed as nondiagnostic of a stereotype relevant dimension. Steele and Aronson (1995) also showed that the effect of identity threat on performance could be induced very subtly by simply asking African American participants to indicate their racial identity at the top of the test page. Similarly, Spencer, Steele, and Quinn (1999) reported that when performance on a standardized math test was linked to gender differences in math performance, female participants performed more poorly than when the same test was not linked to gender differences in performance.

The threat of confirming a negative stereotype has also been shown to influence performance in nonacademic settings, such as for African American and European American athletes in sports (Stone, 2002; Stone, Lynch, Sjomeling, & Darley, 1999), women during negotiations (Kray, Thompson, & Galinsky, 2001), and gay men during interaction with children (Bosson, Haymovitz, & Pinel, 2004). Some evidence suggests that the poor performance in identity threat situations is partially mediated by thoughts about stigma and self-doubt (Steele & Aronson, 1995; Stone, 2002), feelings of anxiety (Bosson et al., 2004; Spencer et al., 1999), and through its impact on working memory (Schmader & Johns, 2003). Thus, being the target of a negative stereotype engenders a threat to one's identity that may consume the very psychological resources that people need to overcome the potential negative characterization.

The available data indicate that (a) college athletes know the negative cultural stereotypes about their group, such as, that they are less intelligent, less academically prepared, and less academically motivated than traditional students (Sailes, 1996), and (b) most college athletes believe these negative stereotypes do not apply to them personally (Jackson, Keiper, Brown, Brown, & Manuel, 2002). This

suggests that college athletes who perceive that they are the target of a negative academic stereotype in a classroom situation may experience identity threat, and as a result, they may perform more poorly as compared to performing in a stereotype-neutral context. Research by Yopyk and Prentice (2005) recently supported this prediction. In their study, college athletes at a highly selective liberal arts college completed a difficult math test comprised of items taken from the quantitative Graduate Record Examination (GRE). To induce identity threat, participants were asked to write either about their most recent athletic competition (high threat) or about their recent academic success (low threat) prior to completing the math test. The results showed that college athletes completed significantly fewer of the difficult math items correctly when primed for their athletic identity compared to when primed for their academic identity. In addition, detailed analysis of the test performance showed that the athletic identity prime reduced the number of items attempted on the exam. Finally, the lower performance exhibited by college athletes when their athletic identity was primed was significantly mediated by its impact on self-regard; compared to the academic identity prime, the athletic prime apparently lowered their self-regard, which in turn, reduced their performance on the test.

Whereas the performance data reported by Yopyk and Prentice (2005) are consistent with an identity threat framework, one important aspect of this finding does not lend itself to an identity threat interpretation: College athletes primed for an athletic identity also withdrew effort by attempting fewer items on the test. Steele and Aronson (1995) originally proposed that stereotype threat should lead to the opposite response—targets under threat should be highly motivated to perform well on the task, and as a result, should maintain and even increase effort to defeat the negative characterization. They may not overcome the burden through increased effort, however, if the threat consumes the cognitive and other resources that are required to complete the task (Schmader & Johns, 2003). Several studies in the literature support this assumption by showing that targets under threat do not withdraw effort but still perform worse on challenging tasks (see Steele et al., 2002, for a review). This suggests that if other mechanisms were operating in the previous research, the antecedents of identity threat for college athletes have yet to be fully understood.

The Importance of Gender in Identity Threat Processes Among College Athletes

One purpose of the current study was to examine the interplay between gender, athletic identity, and negative academic stereotypes about college athletes in a classroom context. Previous research suggests that some groups of college athletes should respond differently to the salience of negative academic stereotypes tied their athletic identity. Research indicates that female college athletes, for example, tend to

outperform male college athletes academically (Birrell, 1988; Settles, Sellers, & Damas, 2002), they take more responsibility for the creation of their academic schedules (Bedker-Meyer, 1990), and they tend to graduate at a higher rate than male college athletes (NCAA, 2005). One reason for these gender differences may be that female college athletes have fewer opportunities than males to play their sport professionally after graduation (Coakley, 2004). The lack of professional opportunities beyond their NCAA sport career may cause female athletes to place less emphasis on their athletic identity and more emphasis on preparing for a career outside their sport (Harrison & Lawrence, 2004). As a result, female college athletes may represent an academic vanguard within the college athlete population—a subset of individuals within the stigmatized group that are the most prepared and invested or “psychologically engaged” in their academic performance outcomes (Steele, 1997).

Consequently, the importance of academics for female college athletes may cause them to be especially susceptible to suffer identity threat when their athletic identity is linked to their academic outcomes (Stone, 2002; Stone et al., 1999). Their concern about confirming the dumb-jock stereotype may cause females to perform more poorly without withdrawing effort on an academic test, compared to when their athletic identity is not linked to their performance in an academic context.

In contrast, it was hypothesized that the academic performance of male college athletes would not be negatively impacted when their athletic identity was made salient in the academic performance context. Research indicates that compared to females, male athletic identity has been characterized as highly masculine, superior athletically, highly competitive, and popular on campus (Burstyn, 2002; Coakley, 2007; Messner, 2002). To the degree they are treated as celebrities on campus and in the classroom, male athletic identity may serve as a positive resource with which to affirm the integrity of the self in the face of a negative academic stereotype. According to recent reviews of the self-affirmation literature (McQueen & Klein, 2006) across a wide variety of threatening situations, participants who were provided the opportunity to reflect on their positive self-attributes either before or after a threat to an important self-identity showed less defensiveness and discomfort compared to participants who do not reduce the threat via affirmation. Whereas there is some debate over the mechanisms by which affirmations reduce defensiveness (Simon et al., 1995; Stone & Cooper, 2001), the ability to reflect on positive self-attributes may provide a buffer against the threat imposed by the salience of negative stereotypes in a performance context. Thus, if athletic identity is a positive construct for males and often serves as a buffer against negative academic stereotypes, we hypothesized that the male college athletes would feel more affirmation with an athletic identity than the females in the experiment. Given that previous research only focused on the performance of male college athletes (Yopyk & Prentice, 2005), the role of gender in moderating identity threat processes has yet to be documented. Thus, one purpose of the current study was to examine whether female college athletes were more susceptible to experience identity threat than males when their athleticism is brought to mind in an academic performance context.

Identity Threat Cues in the Classroom

Another purpose of the current study was to learn more about the types of cues that cause college athletes to experience identity threat and/or affirm confidence in an academic context. Manipulations of identity threat have ranged from explicit statements in the performance context regarding the poor abilities of the target group (Spencer et al., 1999) to very subtle priming of the stigmatized identity (Steele & Aronson, 1995, Experiment 4) or of the negative stereotype (Wheeler, Jarvis, & Petty, 2001). In the Yopyk and Prentice (2005) study, identity threat was induced among male college athletes by asking them to “think about how they felt before, during, and after the competition; to recall some of the problems they faced during the competition, and what they did to solve them” (p. 331). Whereas this task likely made their athletic identity salient, its open-ended nature, combined with the conscious deliberation required to complete the task, may have introduced other information as well, including thoughts and feelings unrelated to academics that contributed to the lowered perceptions of self-worth and reduced effort on the math test. It is not clear, however, that conscious deliberation about a stigmatized identity is necessary to induce identity threat processes. Indeed, a number of studies have shown that very subtle cues in the context are capable of bringing to mind the concerns that appear to drive identity threat processes (see Steele et al., 2002, for a review). In the current study, we examined this question by inducing identity threat through a relatively subtle priming strategy—we simply had college athletes indicate their athletic identity on the front of the academic test form (see Steele & Aronson, 1995, Experiment 4).

However, there is reason to suspect that at least with some college athletes, simply priming the stigmatized identity may, by itself, fail to engage identity threat. Recent research suggests that college athletes vary in how much conflict they experience between their athletic and academic roles. Settles and colleagues (2002) reported that college athletes who separate or “compartmentalize” their role as an athlete from their role as a student report higher levels of psychological well-being compared to college athletes who suffer “interference” or overlap between their athletic and academic identities. The data also showed that female college athletes reported higher levels of stress and depression than males and a slight tendency toward greater role separation. This could suggest that female college athletes are more likely to cope with the conflict between their athletic and academic identities by cognitively isolating or bifurcating one identity from the other (Pronin, Steele, & Ross, 2003). If female college athletes tend to compartmentalize their conflicting identities, then simply priming their athletic identity alone may not activate the negative academic stereotypes associated with it. Instead, female college athletes may feel threatened when cues in the performance context break down their compartmentalization by explicitly linking their athletic and academic identities together. Thus, we hypothesized that female college athletes would be more likely to experience identity threat when cues in the performance context activated both their athletic and their academic identities together. We tested this hypothesis by varying the

link between their athletic and academic identities when participants completed the priming manipulation prior to completing the academic test.

Methods

Participants

Participants were 88 college athletes (45 male and 43 female) enrolled at two large state universities in the southwestern United States. Of the sample, 66% identified themselves as majority group members whereas 34% identified themselves as minority group members.¹ The samples were recruited from announcements made by research and team personnel in classrooms and team meetings. Participants were told that the study was a joint collaboration between athletics and the psychology department on the psychology of test-taking strategies. They were told that the educational issues being investigated were important for college athletes, and it was possible that the results may be used to improve the classroom atmosphere and performance of college athletes in the future. All college athletes were compensated for their participation in the study with their choice of either course credit or a payment of \$10 in return for 1 hr of their time.

Procedures

The test sessions were run a few days to weeks later in classrooms in the psychology building on each campus. To simulate a typical classroom environment, undergraduate noncollege athletes were also recruited to complete the procedures as part of a course requirement (although their data were not analyzed). Once they arrived for the study, participants were asked to sit at a desk that had an envelope on it. They were told that the envelopes contained an SAT-style analogies test and that they would have 15 min to complete the test. Participants were instructed to put the test back in the envelope and to raise their hand if they finished the exam early. At that point, the experimenter explained that they would receive a second packet with some questionnaires to complete. After questions were answered, the experimenter instructed participants to remove the test booklet and begin.

Identity Prime Manipulation

Different identities were primed prior to completion of the test by manipulating the information on the cover page of the test booklet. If randomly assigned to the *athletic-only prime* condition, the cover page of the exam booklet stated "If you participate in Division I intercollegiate sports, please indicate below": Participants were asked to check next to the statement "I am an athlete." If assigned to the *academic-athlete prime* condition, following the statement about participation in sports, participants were asked

to check next to the statement "I am a scholar-athlete." Finally, if they were randomly assigned to the *neutral prime* condition, no reference was made to participation in sports; the cover page simply said, "If you are a research subject, please indicate below," and participants were asked to mark next to the statement "I am a research-participant." In all conditions, a statement appeared in a box below the priming manipulation indicating that their test scores would be compared against all students who took the test on their campus, and if they wanted to receive their test score, contact information would be provided at the end of the test session (only one request was made).

After time expired, all participants completed some demographic questions and were then fully debriefed about the true purposes of the study. All were then compensated and thanked for their participation.

Test Performance Measure

The 40-item test of verbal analogies was constructed from 32 SAT and 8 GRE verbal analogy items taken from practice manuals. The GRE analogies appeared as items 1, 9, 13, 16, 18, 24, 27, and 31 on the test.

Results

To examine their performance on the test, the overall percentage of correct responses on the SAT and GRE items were computed separately by dividing the number of correct responses by the number of attempts on each subset of test items. These percentages were then subjected to a 2 (Gender) \times 2 (Status) \times 3 (Identity Prime) \times 2 (Test Items) mixed ANCOVA using incoming SAT scores as a covariate.² After controlling for their incoming SAT scores, $F(1, 75) = 38.80, p < .0001$, the results revealed a significant main effect for the Test Items, $F(1, 75) = 5.07, p < .02$, which was qualified by a significant mixed three-way interaction between participant Gender, Identity Prime, and the Test Items, $F(2, 75) = 3.94, p < .02$. As can be seen in Table 1, participants completed a higher percentage of the GRE items correctly when only their athletic identity was primed compared to when their academic-athlete or a neutral identity was primed, main effect for prime $F(2, 75) = 3.37, p < .04$. Planned comparisons revealed that this effect was significant for males, $F(2, 75) = 2.36, p < .04$, but not females, $p < .29$. Analysis of performance on the SAT items, however, was influenced by a marginal interaction between gender and the identity prime, $F(2, 75) = 2.79, p < .06$. Planned comparisons revealed that females got significantly fewer items correct when their academic-athlete identity was primed compared to when only their athletic identity or a neutral identity was primed, $F(2, 75) = 3.84, p < .03$. There were no performance differences for males on the SAT items across the identity prime conditions, $F < 1$. Thus, females performed worse on the SAT items when primed for the connection between their athletic and academic identities, whereas males performed better on the GRE items when only their athletic identity was primed.

Table 1
Percentage of Correct Responses for the GRE and SAT Verbal
Analogy Item Sets Across the Experimental Groups

Identity Prime	Gender	<i>N</i>	GRE Items (%)	SAT Items (%)
Neutral	Male	18	35 ^a	48
	Female	15	32	55 ^a
Athlete	Male	13	46 ^b	51
	Female	12	42	55 ^a
Scholar-Athlete	Male	12	30 ^a	51
	Female	18	38	45 ^b

Note: Percentages with different superscripts differ at $p < .05$ from each other within each test item subset.

Examination of the number of items attempted indicated that the above performance findings were not because of differences in effort. A Gender \times Status \times Prime \times Test Items mixed ANOVA of the number of items attempted revealed no significant differences between the groups, greatest $F = 1.83$, $p < .16$. On average, participants provided answers to 7.49 of the 8 GRE items and 28.66 of the 32 SAT items.

Discussion

The data support the primary hypothesis that female college athletes—the academic vanguard of the group—would perform more poorly on a test of verbal ability when subtle reminders of their athletic identity were made salient in a classroom context. However, also as predicted, their performance suffered primarily when their athletic identity was tied directly to their academic identity by priming the concept of the “scholar-athlete.” This suggests that at least for *some* stigmatized individuals, cues that make only the stigmatized identity salient in the performance context may not be sufficient to induce identity threat processes. This finding extends previous research showing that the separation or compartmentalization of two conflicting identities acts as a buffer when the stigmatized identity and concomitant negative stereotypes are made salient in a performance context (Pronin et al., 2003; Settles et al., 2002). However, when both conflicting identities are made salient in the context, this coping strategy appears to be overwhelmed by concerns about confirming the negative stereotypes associated with the stigmatized identity. The outcome in this case for female athletes was a poorer performance on the test of verbal analogies compared to when only their stigmatized identity as athletes was primed in the classroom context.

The finding that the poor performance was not because of a withdrawal of effort also supports an identity threat account of these data; female students attempted the

same number of items as female college athletes and male college athletes in the nonthreat control conditions. Thus, the poor performance of females when their athletic and academic identities were tied together suggests that they were attempting to defeat the potential for a negative characterization, but that the threat of confirming the negative academic stereotype about college athletes impeded their ability to do so.

One potential caveat to a threat account of the data is the fact that female college athletes in the current study performed more poorly on the less difficult SAT items. Whereas the literature indicates that identity threat tends to occur primarily on difficult test items (O'Brien & Crandall, 2003; Spencer et al., 1999), the critical issue underlying these effects may be that threat is more likely to impact performance when targets perceive the task to be challenging. As in previous studies, we assumed that the GRE items would be more challenging than the SAT items to complete, and the data confirm this assumption in that the sample completed only 37% of the GRE items correctly overall. However, the data also suggest that the SAT items may have been challenging in their own right; the average overall incoming verbal SAT score reported by participants was 502, and 516 for females (the 60th percentile in 2002, Educational Testing Service [ETS], 2002). In addition, the entire sample completed only 51% of the SAT items correctly during the test. Thus, it is likely that even the SAT items represented a moderate challenge to our sample of female college athletes. If so, why did the threat of confirming the negative academic stereotype only reduce their performance on the less challenging test items?

Given that effort was not influenced by the experimental factors, we contend that the threat of confirming the negative academic stereotype impacted the overall test taking strategy employed by the female athletes. Some earlier empiricism with the rare inquiry of women athletes by Feltz and Weiss (1984) indicated that sports involvement ranked low among a variety of status criteria among high school students. Feltz suggests that this is because of the stigma associated with female athletes in the high school subculture. Wells and Picou (1980) found that among Louisiana high school students participating in athletics, students were more likely to identify with peers of the college-oriented crowd and to hold higher academic aspirations than nonathletes (Sabo, 2007).

Specifically, in response to the threat of confirming the negative stereotype, female college athletes may have focused more of their attention and cognitive resources on the more difficult GRE items, but they did so at the expense of completing the moderately difficult SAT items accurately. For example, when threatened by the prospect of confirming the negative stereotype, the time pressure created by the test possibly caused them to rush through the relatively easier items so they could spend more time on the relatively difficult items, which reduced their performance on the relatively easier items. This interpretation is consistent with the idea that identity threat consumes the cognitive resources that targets need to perform well on a challenging task (Schmader & Johns, 2003), but rather than focusing on how individual test items are solved, it highlights how threat impacts the broader strategies

that targets employ as they approach the task (Stone, 2002; Stone & McWhinnie, 2008). The female college athletes in the study may represent the tenuous relationship between the earlier studies in terms of status and academic identity. This is discussed later in the context of male athletes who have been validated with their athletic identity and social status to the point that athletic identity possibly affirms positive self-esteem, belonging, and confidence (Brewer, Van Raalte, & Linder, 1993).

Furthermore, Shulman and Bowen (2001) indicate, from their longitudinal study of 30 institutions and 90,000 undergraduates, some interesting major findings in relation to the present study. These researchers contend that women in sport are "new players" and a new identity on campus since Title IX. These researchers expected those with higher SAT scores to have more intellectual self-confidence than those with lower scores and thus made the following conclusions based on their empirical findings:

1. Women appear to undervalue (or at least to underreport) their intellectual ability relative to men with comparable SAT scores.
2. Women athletes are even less likely than other women to express the highest level of intellectual self-confidence (it should be noted that women athletes graduate at a higher rate than women in the general student body; NCAA, 2005).
3. Male high-profile athletes, at the other extreme, exhibit higher intellectual self-confidence in relation to their test scores than do other students.

These three points from their major findings is best summarized in a lengthy quote that has implications for our present study:

Given time, the women athletes may, like the male athletes in High Profile sports, learn to feel confident—perhaps even overly confident—about their intellectual prowess, rather than understate it. This could well be the case, especially if our culture ends up bestowing upon young girls who play sports the same sort of approbation showered upon young boys who excel at sports. Such support could go a long way in helping women gain the confidence that men derive from sports. (Shulman & Bowen, 2001, p. 134)

There are other explanations for why the female college athletes in the current study performed poorly and were less successful on the items than the men. These interpretations help us answer the question, Why are the females experiencing stereotype threat and thus feeling less confident about being a scholar-athlete—the identity that best fits their academic performances and matriculation patterns in higher education? Researchers such as Bowen and Levin (2003) suggest that the academic and athletic divide has been impacted by Title IX as a symbol and indicator that it was time "to recalibrate the entire athletics enterprise so that it would be more congruent with educational goals" (p. 214). In reality, these same researchers indicate that Title IX actually served to exacerbate the national forces that were already

operating to widen the divide. Commercialism, recruiting, and NCAA competitive athletics are what Bowen and Levin point to as factors that women are increasingly internalizing as sport leaders and athletic participants.

The present data also supported the prediction that male college athletes would not be negatively impacted by priming their athletic identity prior to completely the test. Indeed, when primed for their *athletic identity*, male student athletes performed significantly better on the relatively difficult test items compared to when males were primed for both the identities or when primed for a stereotype-neutral identity. We believe this finding is consistent with recent research showing that males take more pride in being a college athlete than females (Harrison & Lawrence, 2004). In the current study, the athletic identity prime apparently focused male college athletes on a more positive image than the one brought to mind by the other priming conditions in the current and previous research. The positive image then served as a source of self-affirmation that freed up cognitive resources for the task, which subsequently boosted their performance (McIntyre, Paulson, & Lord, 2003). This suggests that the impact of negative stereotypes on college athletes in an academic context may depend not only on what identity representations are primed in the context, but also on factors associated with the structure and function of their athletic identity, as well as on individual differences in how college athletes cope with the prospects of confirming a negative stereotype through a poor performance (see Yopyk & Prentice, 2005, for a similar point).

As the positive effect for male college athletes is opposite that reported by Yopyk and Prentice (2005), it is worth discussing how differences between the two studies may have contributed to the different outcomes. For example, whereas both studies were conducted at campuses whose athletes compete at the Division I level, the two male samples differed in several ways. One difference is that the current data were collected at two large state universities whereas the previous data were collected at one highly selective liberal arts university. If the athletes from the more selective campus were more invested in their academic outcomes than those from the less selective campuses, then the difference between the studies may reflect the influence of a vanguard effect among male college athletes. That is, like the female college athletes in the current study, the male college athletes from the more academically engaged campus were more threatened by thoughts about the dumb-jock stereotype and the possibility of confirming it via a poor performance, and as a result, they performed more poorly than the less engaged group. However, whereas this may account for the identity threat effect among the male college athletes in the previous study, differences in task engagement seems hard pressed to account for the increased performance by male athletes when an athletic identity was primed among the current "less-engaged" group.

Another difference is that the male college athletes in our study were recruited from several sports including tennis, swimming, track, cross-country, baseball, and basketball, whereas the previous study only recruited male athletes on the hockey

and football teams at one Ivy League institution. Thus, this difference in our sample consisting of more diverse athletes and “nonrevenue” sport athletes than the previous research must be accounted for. There is some evidence to suggest that the dumb-jock stereotype is *perceived* to be a more accurate description of college athletes who compete in revenue sports (e.g., football and basketball) than of athletes who compete in nonrevenue sports (Engstrom et al., 1995; Shulman & Bowen, 2001). It follows that if nonrevenue athletes believe that they are highly counter-stereotypic of the dumb-jock stereotype, when their athletic identity was brought to mind before the academic test, it may have caused a contrast priming effect (Marx, Stapel, & Muller, 2005) or it may have motivated them to work harder at defeating the negative characterization (Bowen & Levin, 2003). Some research exists that academic motivation, regardless of athletic motivation, is important in determining future academic success (Gaston-Gayles, 2004). This body of research also contradicts previous work that suggests that athletic motivation or the desire to pursue a proathletic career negatively impacts academic success (Simons et al., 1999). Could athletic identity when primed in a specific context foster better competition in academic settings?

This latter analysis suggests that the athletic identity prime may have engaged stereotype reactance rather than identity threat among the current sample of male college athletes. Stereotype reactance is defined as the engagement in behaviors that are counter to those prescribed by a negative stereotype when people perceive limitations to their ability to perform (Kray et al., 2001). However, Kray and colleagues (2001) proposed that this process is likely to occur when negative stereotypes are explicitly activated in a performance context. It is possible that despite our efforts to be subtle, the athletic identity prime procedure may have caused many of our revenue and nonrevenue male college athletes to become more consciously aware of the limitations implied by the negative academic stereotypes tied to their athletic identity. But rather than giving up or entertaining thoughts of self-doubt and concern, they responded by competing and becoming more focused and efficient in their problem solving on the test. In comparison, the identity priming manipulation in the Yopyk and Prentice (2005) study focused participants on images of doubt and defeat, as suggested by the lowered effort and self-esteem effects. Future research can address this difference by varying the self and identity constructs that are primed when college athletes think about their athleticism in a classroom context. Some authors such as Gerdy (2006) and Bowen and Levin (2003) have articulated the cultural divide between academics and athletics by highlighting that there is virtually little mass media representation between the two.

Limitations and Future Directions

There are important limitations to the present study that should also be addressed in future research. One concerns how the racial and ethnic identity of college athletes

impacts their responses to the salience of negative stereotypes in an academic domain. Whereas the current study did not find effects for racial and ethnic differences, the small sample size of minority college athletes may have reduced the power to detect effects. There is some evidence that minority college athletes, especially those who play the revenue sports, are at higher risk for disidentification and withdrawal from the academic community (Uptegrove, Vincent, & Charles, 1999). Examining the extent to which race and ethnicity place additional burdens on college athletes in the classroom is a critical question for fully understanding the role of identity threat in the academic performance of college athletes (Duderstadt, 2000).

Another important limitation to the current study is the lack of evidence for mediation of the observed performance differences. For example, we have suggested that female college athletes were negatively impacted by the scholar-athlete prime because thinking about the link between their athletic and academic identities broke down the psychological compartmentalization that helps them avoid experiencing identity threat in academic situations. Future research could test this mechanism by measuring how priming both identities reduces perceived separation of the two identities. Furthermore, if the breakdown of their coping mechanism subsequently impacted their overall approach to the test by influencing how quickly they completed the less-difficult items, this process could be tapped by examining how long participants take to complete both difficult and easy test items. Future studies might also employ a "female" prime with female athletes to see if this identity boosts their performance in a similar experiment such as our study. As mentioned earlier, some researchers have found evidence that women perform better on verbal tests when their female identity is made salient versus other identities (Shih, Pittinsky, & Trahan, 2006).

Finally, if male college athletes are affirmed or angered by the athletic identity prime, these responses may show up on self-report measures of affect or self-regard. Uncovering the mediating mechanisms will not only enhance our understanding of the threat processes that inhibit performance, but also provide insight into potential interventions for reducing them. Based on the previous research and the current study, it may be instructive as Gaston-Gayles (2004) suggests for sport management leaders and practitioners to develop new initiatives, provide services, and create programs that include ways to enhance academic motivation and ultimately improve academic performance:

Institutions and athletic programs must accept that such interventions can and do help student athletes develop confident attitudes in the classroom in the same way they learn to feel confident about their skills in their sport. The ability to transfer skills from the athletic domain to the academic domain can make a significant difference in how student athletes approach academics. (Gaston-Gayles, 2004, p. 82)

A unique approach that is salient to the role of scholar and athlete may buffer the increased involvement and subjection to stress by this dual role: a unique approach we might call "role transfer" where college athletes approach each identity with academic

and athletic skills developed from both domains that lead to a superior performance in any given task. We believe the current study has made a solid contribution to the theory and practice with the role of gender identities and stereotype salience with the academic performance of male and female college athletes.

Conclusions

The present research sheds new light on how a unique stigmatized group—college athletes—may respond to cues in the classroom that bring to mind negative stereotypes linked to their academic performance. The results extend previous research by showing that identity threat processes for college athletes are a function of gender, the way in which the stigmatized identity is brought to mind, and the difficulty of the test items. Specifically, female college athletes, who may represent the academic vanguard of the group, can suffer identity threat when the link between their athletic and academic identities is made salient prior to completing a moderately challenging task. In contrast, male college athletes, who have been previously shown to perform more poorly when they elaborate on their athletic experience, can also perform better on highly challenging test items if primed for their athletic identity. Future research will be necessary to more fully delineate the factors that can induce or reduce identity threat for male college athletes in a classroom context.

The coping strategies that college athletes use to battle identity threat in the classroom may offer new insights into how other stigmatized targets respond in similar situations. For example, to the degree the academic climate explicitly or implicitly conveys exclusion, college athletes may feel like they are not welcome in the classroom, in office hours, or in study groups, and some may eventually disidentify with education as a way to cope with this frustration (Steele, 1997). Others may resign themselves to “passing” by disguising their athletic identity from professors, graduate teaching assistants, and other students (Bell, 2003). Even this response is likely to put additional burdens on college athletes that negatively affect their performance in the classroom. To achieve academically, a negative climate in the classroom forces college athletes to work much harder and suffer more stress, and this has the potential to reduce their academic success. Thus, research on college athletes can provide much needed insight into how cultural, contextual, and intrapersonal factors influence the performance of stigmatized college students as they navigate the rapid transition they must undertake when they enter life at the university.

Notes

1. Of the minority group members, 14 identified themselves as African American, 9 as Hispanic, and 7 as Asian American. Despite the small sample of minority college athletes, we included group status (i.e., majority vs. minority) as a variable in the analysis of the test performance data.

2. There were no significant interactions between incoming SAT scores and the experimental factors on the SAT or GRE performance scores, all F s < 1.50. Thus, the homogeneity of regression assumption was upheld. The data were examined for differences between the two campuses (Arizona State University [ASU] and University of Arizona [UA]) in academic preparation that might relate to the primary measure of test performance. Analysis of the self-reported demographics collected at the end of the testing session revealed multiple differences: Overall, the ASU sample was composed of older students, $F(1, 77) = 20.44$, $p < .0001$, who classified themselves as juniors or sophomores, $F(1, 77) = 56.11$, $p < .0001$, compared to the UA sample that was primarily composed of student athletes in their first year of college. However, age and year in school did not correlate significantly with the primary performance measures. Thus, we did not statistically control for age or year in school in the analysis of the test performance data. Measures of academic preparation revealed that incoming SAT scores were not equally distributed across the two samples. A main effect for campus, $F(1, 80) = 3.96$, $p < .05$, showed that students at the UA had significantly higher incoming SAT I verbal scores compared to the ASU sample. There were also two interactions regarding incoming SAT scores. First, females on the UA campus had higher incoming SAT scores compared to the other groups, gender \times campus interaction, $F(1, 80) = 3.84$, $p < .05$. Second, whereas majority student athletes at both campuses reported similar incoming SAT scores, minority students at the UA campus reported significantly higher SAT scores than minority college athletes at ASU, campus \times status interaction, $F(1, 80) = 4.67$, $p < .03$. However, when campus was entered into the analysis of the test performance with the experimental variables, no significant effects for this variable emerged. Thus, campus was dropped as a variable in the analysis of the test performance data.

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