ARE MEN BALLERS AND WOMEN SCHOLARS? THE ROLE OF HYPERMASCULINITY, GENDER, AND ATHLETIC IDENTITY ON STUDENT-ATHLETES' ACADEMIC PERFORMANCE

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By

Victoria R. Narine

Dissertation Committee:

Kristin Pauker, Chairperson
Joni Sasaki
Kentaro Hayashi
Akihiko Masuda
George Harrison

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Abstract

Much of the research on student-athletes' academic performance has adopted a stereotype threat approach, assigning culpability to stigmatized identities. However, this line of research fails to acknowledge that student-athletes possess multiple identities that may interact, in turn impacting their academic performance. Specifically, this research project focused on an aspect of the male gender identity that may be enhanced by the athletic identity — hypermasculinity. The primary aim of these studies was to determine whether, how, and for whom hypermasculinity negatively impacts academic performance. Study 1 was a correlational study to examine if hypermasculinity and athletic identity were negatively related to academic performance for a sample of male student-athletes. The purpose of Study 2 was to show that male student-athletes' but not female student-athletes' academic performance was negatively affected because of the desire to confirm shared stereotypes (i.e., conceptual overlap) of their athletic and gender identities. This conceptual overlap between female-school and male-athlete was measured implicitly in Study 2, along with hypermasculinity. Finally, Study 3 experimentally manipulated hypermasculinity in a sample of traditional (non-athlete) students to determine the causal relationship between hypermasculinity and academic performance. Although there was no evidence that athletic identity or hypermasculinity predicted GPA or that athletic identity predicted hypermasculinity in Study 1, exploratory analyses in Study 2 found that hypermasculinity was negatively associated with GPA. Additionally, I found evidence to support the proposed female-school association using two different types of research methods. In a series of exploratory qualitative analyses, I found evidence for a female-school/male-athlete association (Study 1 and Study 2) using both implicit and explicit measures. A preliminary analysis to assess the manipulation in Study 3 indicated that the hypermasculinity manipulation had no effect on

hypermasculine attitudes. As a result, my main analysis indicated no mean differences in GRE success rates across the three conditions.

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Introduction

Although student-athletes enroll in colleges and universities in part to play at the highest amateur level of their sport, student-athletes face unique issues that traditional students do not: their academic performance is highly monitored and governed by the National Collegiate Athletic Association (NCAA). In order to continue playing their sports, athletes must excel in the classroom. Yet, research has found that student-athletes often struggle in the classroom and have lower GPAs compared to traditional students (Yopyk & Prentice, 2005). The dominant social psychological explanation for this decrement in academic achievement stems from the stereotype threat literature, arguing that student-athletes are negatively impacted by the stereotype of "dumb jock" (e.g., Harrison et al., 2009; Yopyk & Prentice, 2005). But not all student-athletes underperform to the same extent. Female student-athletes significantly outperform male student-athletes academically (NCAA, 2019). If both male and female student-athletes are affected by the negative stereotype of "dumb jock" in the same way, then we should see both male and female student-athletes equally affected academically. However, this is not the case. This dissertation hypothesized that the athlete identity functions differently for male and female student-athletes. Although this differential impact of the athlete identity has been previously established (i.e., Harrison et al.), the exact causal mechanism has yet to be examined.

This dissertation theorizes that an aspect of gender identity – specifically hypermasculinity, an intense identification with stereotypically masculine traits, in the male gender identity – is driving the differential impact of the athlete identity on female and male student-athletes. Research has shown that hypermasculinity is negatively associated with academic performance (Heyer & Kessels, 2013). Characteristics of hypermasculinity are

emphasized in the cultural norms of male athletes, but not female athletes. Therefore, identification as an athlete should activate hypermasculinity for male athletes, leading to decreased academic performance. The impact of hypermasculinity should differ between sports, with the relation between hypermasculinity and athlete identity exaggerated for historically high-masculine, high-prestige sports such as football, men's basketball, and baseball. A secondary prediction tested in this dissertation is that the athlete identity is oppositional to gender identity for female student-athletes, but the athlete and gender identities seem to conceptually overlap for male student-athletes because of their shared characteristics. Since hypermasculinity is an undesirable trait for females in general, their athlete identity remains separate from and conceptually dissimilar to their gender identity. Lastly, I tested whether the relationship between hypermasculinity and reduced academic performance is in part due to an implicit positive association between femininity and academic success (i.e., academic achievement is feminine and thus inherently conflicts with hypermasculinity).

Incompatibility of Athletic and Academic Identities

One of the most widely explored social psychological explanations for academic underperformance of student-athletes compared to traditional students is the role of athlete identity — or the extent to which athletes view their status as an athlete as central to their self-concept — and associated negative stereotypes about athletes. Specifically, the majority of this research focuses on how the athlete identity potentially conflicts with student identity, presupposing that athlete and student identities are in opposition to one another. This opposition is driven by the negative stereotypes about academic performance attributed to student-athletes, along with their *dedication* to athletic pursuits (e.g., time spent participating in their sport). Regardless of their perceived status on college campuses, student-athletes are not immune to

stereotypes. The most common stereotype about student-athletes is that of "dumb jock" (Harrison, 2002). Academic faculty and traditional students hold negative beliefs about student-athletes both within and outside of the sports domain. For example, people believe that student-athletes were admitted into the university despite receiving low test scores, received a scholarship to play their sport, and have access to special advising and tutoring not available to traditional students (Baucom & Lantz, 2001; Engstrom & Sadlacek, 1991; Engstrom et al., 1995). Student-athletes are also perceived as more likely to cheat on exams, receive special academic privileges such as help from faculty when writing papers or taking exams, or get special treatment from faculty in order to remain sports-eligible (Lapchick, 2001). Overall, student-athletes are stereotyped as being less academically inclined, less academically motivated, and less intelligent than their traditional peers (Sailes, 1996). It is no surprise, then, that the athlete and academic identities are perceived to be incompatible with one another.

The incompatibility of the athlete and student identities is known not only by perceivers, but also the student-athletes themselves, with the implicit activation of negative stereotypes associated with that identity leading to *stereotype threat*, or the fear of being judged, evaluated, or treated poorly in settings in which a negative stereotype about one's group is relevant (Inzlicht & Schmader, 2012; Steele et al., 2002). By varying the relevance of the stereotype linking African American with poor academic performance, Steele and Aronson (1995) showed that stereotype threat could hinder the academic performance of African American students when they were told that the test was diagnostic of their intellectual abilities. Stereotype threat, then, was found to occur only when the individual was afraid of confirming a stereotype that applies in a particular domain in which the individual is invested. When African American students were

told the test was *not* diagnostic of their intellectual abilities, their scores matched those of White students.

Yopyk and Prentice (2005) found that stereotype threat also applies to student-athletes. The authors found that scores on a challenging math test were significantly lower when participants were primed with their athlete identity compared to their student identity or no identity. Importantly, though, only male student-athletes were examined in this study, raising the question of whether stereotype threat associated with the athlete identity might impact males and females differently. One might hypothesize that female student-athletes should be equally affected by negative stereotypes associated with the athlete identity as male student-athletes. However, data suggest otherwise: male student-athletes consistently underperform academically compared to female student-athletes (NCAA, 2019). Therefore, a factor that differs between male and female student-athletes must be responsible for the difference in academic performance between the genders.

Explanations for Gender Differences in Student-Athletes' Academic Performance

Contextual Influences and Athletic Identity

Some existing research has found that contextual influences, such as coach involvement and attitudes towards academics along with athlete versus academic identity, contribute to academic success of athletes more generally. These contextual factors vary across sport, division, and gender, however. Although these contextual factors are important when discussing gender differences in student-athletes' academic performance, pertinent to this dissertation are differences in athlete identity between the genders and how these differences impact academic performance. Importantly, most contextual factors are tied to the intensity of student-athletes' identification with their athlete identity (Beron and Piquero, 2016). For example, one contextual

factor that may drive the gender difference in GPA is the possibility of playing a sport professionally post-college. Male student-athletes generally have more opportunities than female student-athletes to play professionally post-college. However, research indicates that a student-athlete's prospect of having a career in their sport after college is positively correlated with athlete identity (Beron & Piquero, 2016). Thus, even when taking into account contextual factors, it is difficult to disaggregate those factors' unique contribution to the GPA differential from identification with the athlete identity.

In one of the most comprehensive studies to date, Beron and Piquero (2016) suggest that student-athlete GPA is directly linked to the intensity of their academic versus athlete identity, whereby students who strongly identify with their athlete identity are less likely to excel academically than those who strongly identify with their academic identity. In general, women report a lower level of athletic identity compared to men. This finding, though, is qualified by sport, whereby female athletes in revenue-generating, high-prestige sports (e.g., basketball) report being more committed to their athletics than female athletes in non-revenue-generating, low-prestige sports (e.g., tennis, swim and dive, and track and field; Poputo & O'Hanlon, 2007). A similar pattern is seen among male athletes: participation in revenue-generating, high-prestige sports, such as football and men's basketball, is positively correlated with athlete identity, at least partially explaining lower GPAs compared to their non-revenue-generating, low-prestige counterparts (Beron & Piquero, 2016).

Although these results further highlight the incompatibility of the athlete and academic identities between genders and offer evidence for the genders experiencing the impact of negative stereotypes differently, athlete identification alone still does not fully explain the gender gap in academic performance for student athletes. For instance, even female athletes in revenue-

generating sports, such as basketball, – who more strongly identify with their athlete identity compared to female athletes in non-revenue-generating sports – graduate at higher rates compared to their male peers: whereas 91% of Division I female basketball players graduated in 2019, only 83% of Division I male basketball players graduated (NCAA, 2019). Therefore, greater identification with the athlete identity does not adequately explain the gender difference in academic performance between female and male student-athletes. Rather, the athlete identity may be *interacting* with another social identity not widely examined.

Stereotype Threat and Multiple Identities

Everybody holds multiple identities, and it is possible that the athlete identity functions differently depending on another social identity. Using a stereotype threat framework, Stone et al. (2012) explored how multiple identities intersect to affect student-athletes' academic performance. They found that, when made aware of their status as a *student-athlete*, academically engaged African Americans experienced a significant decrease in academic performance. Specifically, those academically engaged African American student-athletes showed decreased academic performance compared to African Americans primed with only their *athlete* identity, academically engaged White student-athletes, and African American and White student-athletes who were *not* academically engaged. These results suggest that the simultaneous activation of *multiple* social identities with negative associations with that domain may exacerbate the stereotype threat process. This may especially be the case when those negative associations (i.e., negative stereotypes about African Americans and athletes in academics) conflict with their personal performance goals (i.e., wanting to do well in school). Thus, Stone et al.'s (2012) results underscore the possibility of specific stereotypes associated with another particular group identity – in the case of the current research, gender – functioning as a

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mechanism that may predict the academic performance differential for male and female student-athletes.

In a similarly designed set of studies, Harrison et al. (2009) expanded the research by Yopyk and Prentice (2005) by including female student-athletes, arguing that females are more academically engaged than their male counterparts and therefore should be more susceptible to the negative effects of stereotype threat associated with the social identity of athlete, an argument similar to that of Stone et al. (2012). To test this, Yopyk and Prentice (2005) adopted a *priming paradigm* wherein participants were exposed to a stimulus that unconsciously influenced how they responded to a subsequent stimulus (Wheeler et al., 2014). When their athlete identity was linked to their academic identity (i.e., they were primed to think of their *student-athlete* identity), female student-athletes' performance on a verbal reasoning task was significantly worse compared to when they were primed with only their *athlete* or *academic* identity, independently. This effect only occurred with female student-athletes, though, demonstrating that the relation between the academic and athlete identities functions differently for male and female collegiate athletes.

Harrison et al.'s (2009) work shows that the athlete identity is damaging to female student-athletes' academic performance, but only when it is explicitly linked to their student identity (i.e., priming with the identity *student-athlete*). Harrison et al. (2009) argues that this effect is driven by female student-athletes' being personally invested in the academic domain. Conversely, when primed with their athlete identity, male student-athletes performed significantly better on difficult test items, implying that the athlete identity may be associated with positive stereotypes for males but not for females.

Steele and Aronson (1995) argue that stereotype threat occurs when individuals are engaged in or care about the task at hand. Harrison et al. (2009) claim that male student-athletes are less academically engaged than female student-athletes, causing them to be less susceptible to the impacts of stereotype threat. However, these results run counter to data showing that female student-athletes significantly outperform male student-athletes academically (NCAA, 2019). If stereotype threat fully explained the gender difference in academic performance for male and female student-athletes, we would expect to see both genders equally affected by the negative stereotype of "dumb jock"; or we might expect to see female student-athletes impacted *more* by stereotype threat based on the claim that they're more academically engaged (Harrison et al., 2009). Instead, we see that a stereotype threat explanation is complicated by the athlete identity functioning differently for male and female student-athletes. Therefore, Harrison et al.'s (2009) findings further support the notion that a stereotype threat framework does not clearly explain why male and female student-athletes perform differently in an academic context. If anything, Harrison et al.'s (2009) results imply that the academic and athlete identities are *more* incompatible for female student-athletes than for male student-athletes. In fact, Stone et al. (2012) and Harrison et al. (2009) argue that the decrement in performance of academically engaged African American and female student-athletes is a result of having to mentally disentangle opposing performance expectations inherent in the word "student-athlete" (i.e., differences in performance expectations associated with "student" and "athlete" separately).

Although research by Stone et al. (2012) and Harrison et al. (2009) demonstrates that the effects of the athlete identity on academic success are dependent on other social identities (i.e., race and gender, respectively), the interaction between the athletic, academic, and other social identities only occurs when individuals are personally motivated to excel in academics. While

this line of research explicates the stereotype threat process for multiply stigmatized individuals, even a stereotype threat framework that takes into account multiple social identities still does not provide a sufficient explanation for the gender difference in academic performance among student-athletes. It is plausible, then, that a characteristic embedded in a relevant social identity is responsible for the effect. Specifically, a characteristic associated with the athlete identity – that also interacts with either male or female gender identity to enhance female or diminish male student-athletes' academic performance – may be responsible for the differences in academic engagement and, subsequently, academic performance.

Gender Stereotypes and the Athletic Identity

The stereotype threat framework posits that negative academic stereotypes associated with the athlete identity undermine academic performance. However, this framework does not clearly account for gender differences currently seen in academic performance in student-athletes. The current research contends that a characteristic unique to and inherent in the athlete or gender identity for either gender forms the basis for the performance differential between male and female student-athletes. Specifically, this dissertation hypothesizes that differences in academic performance between male and female student-athletes could be due to concomitant positive stereotypes embedded in athletics and male gender identity, along with male student-athletes' desire to confirm these stereotypes.

The Overlap in Athletic Identity and Masculinity. Harrison et al. (2009) claims that the athlete identity may be self-affirming for males because stereotypes associated with the athlete identity are analogous to the stereotypes associated with the male gender identity. Male student-athletes are motivated to confirm positive stereotypes attributed to athlete and male gender identities. For example, if a male student-athlete were made aware of his group identity

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as an athlete, his gender identity would presumably be simultaneously activated, subsequently causing the male athlete to view himself through the lens of the shared positive stereotypes. Indeed, multiple positive characterizations exist for male athletes. Overall, the male athlete identity is characterized as being athletically superior, popular, and highly masculine (Messner, 2002). In other words, priming athlete identity for male student-athletes may lead to a decrement in academic performance vis a vis stereotype threat, but their "male ego" and self-regard will remain intact (McQueen & Klein, 2006). These positive characterizations, along with traditionally masculine norms, are reinforced and encouraged in the sports environment (Ramaeker & Petrie, 2019). Male athletes engage in desirable masculine social behaviors such as competing for status (i.e., playing time) and resources (i.e., athletic scholarships), thereby enacting and reinforcing traditional male norms. Meanwhile, male athletes adhering to hegemonic masculinity (i.e., practicing the legitimization and justification of men's dominant position in society) are rewarded for their efforts, thereby validating their masculinity (e.g., Herek, 1986; Kimmel, 1997).

Gender Stereotypes and Identity Bifurcation. Conversely, females engaging in athletics are arguably violating norms of their gender. Whereas women are commonly stereotyped as being likeable, nurturing, warm, and communal (Bosson & Michniewicz, 2013; Cuddy et al., 2015), female athletes are perceived as being "mannish" (Cahn, 1994). Moreover, past research shows that gender identity is related to sport participation: females who identify as androgynous (i.e., endorse both masculine and feminine characteristics) or masculine comprise most female sports teams (Chalabaev et al., 2013). These findings provide evidence for sports being a masculine domain. Thus, if athletics are tied to masculine characteristics, female gender stereotypes should be in opposition to the athlete identity, requiring female athletes who identify

as feminine to engage in compensatory behaviors to protect themselves from the effects of social backlash in the form of social or economic reprisals (Rudman & Fairchild, 2004).

One such recovery strategy is the activation/inhibition of the incompatible identities—a common strategy used by bicultural individuals navigating multiple, potentially competing identities (Benet-Martinez et al., 2002). For example, Pronin et al. (2003) found that female students who strongly identified with mathematics (a stereotypically male domain) disavowed stereotypically feminine characteristics when experiencing stereotype threat. That is, female students *activated* their math identity while simultaneously *inhibiting* their gender identity and associated characteristics, thereby protecting themselves from the effects of stereotype threat. A similar mechanism may be occurring between female student-athletes' gender and athlete identity, resulting in enhanced academic performance. Thus, in order for female student-athletes to preserve their egos and to regard themselves positively in the academic domain when their athlete identity is salient – while protecting themselves against the effects of social backlash – it is argued that they must "bifurcate" their conflicting identities (Pronin et al., 2003). Male student-athletes, however, do not bifurcate their identities; instead, the combination of athlete and academic identities is just as self-affirming as the athlete identity alone (Harrison et al., 2009), implying that the athlete identity may overpower any other social identity for male student-athletes.

If female athletes bifurcate their gender and athlete identities, thereby protecting themselves from the debilitating effects of negative stereotypes associated with the athlete identity, male athletes – who possess a gender identity with diametrically oppositional characteristics to those of the female identity – should theoretically do the exact opposite. Instead of disaggregating their gender and athlete identity, male athletes' gender and athlete identity

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reinforce one another. Indeed, male athletes are thought to represent an idealized version of masculinity (Cle'ment-Giuillotin et al., 2012), unambiguously enmeshing their athlete and gender identity. The current research argues that a characteristic unique to the overlap in gender and athlete identities for male athletes – hypermasculinity – is driving the interaction between gender and athlete identity.

Hypermasculinity — an exaggerated and toxic form of traditional masculinity — is a characteristic of athletics that is overlooked in the social psychological literature. Previous research has shown that traditional masculine behaviors contribute negatively to academic pursuits (Davis, 2020), yet are highly desired and encouraged by society – for men only. For this reason, hypermasculinity is hypothesized to represent the mutual reinforcement of the male gender and athletic identity, propelled by male student-athletes' motivation to confirm the positive stereotypes attributed to both gender and athlete identity. This interconnection between the identities should lead to increased levels of hypermasculinity and decreased academic performance for male student-athletes. Because a key assumption in the current research is that hypermasculinity is a characteristic embedded in male athletics but not female athletics, hypermasculinity may differentiate the academic performance of male athletes from that of female athletes and traditional male students.

Hypermasculinity

The unspoken rule that men and boys should eschew feminine behaviors, tendencies, and preferences is perhaps one of the most pervasive norms of the male gender role; and men exerting their status and superiority over others (other men and women alike) is an expectation of their gender (Bosson & Michniewicz, 2013). In her book *No Visible Bruises: What We Don't Know About Domestic Violence Can Kill Us*, Rachel Louise Snyder recounts a San Francisco

assistant sheriff saying, "men learn to be men by defining themselves as superior to each other and to women, and much of the violence in our communities is due to men's ongoing enforcement of this learned belief in their superiority…[Men] had learned that it was normal to use force and violence…to enforce their social obligation to be superior" (p. 161). This drive to remain "superior" to women while competing against other men is evident in the literature on compensatory behaviors (e.g., Cheryan et al., 2015), whereby threatened men actively disavow female preferences and embrace masculine attributes.

This drive is also evident in society's tendency to place greater value on overt masculinity compared to femininity, with status and power being awarded to individuals who best exemplify masculinity (Cuddy et al, 2013). Furthermore, men (and women) are encouraged to adhere to culturally ascribed gender stereotypes, whereby men are expected to exert their status and power (Rudman & Fairchild, 2004). Although gender stereotypes promote conceptions of masculinity and femininity in men and women, respectively, this dissertation focuses on an extreme version of masculinity – hypermasculinity.

Unlike traditional masculinity, whose tenets are projected onto all men, hypermasculinity is defined as a toxic form of masculinity that consists of hostile and aggressive attitudes towards women and sex and the perception that violence, aggression, and participation in dangerous activities are definitive of being a man (Burk, 2004). Hypermasculinity is correlated with sexual assault, poor relationships, and poor coping skills (Burk, 2004). Masculine traits that are expected of all men in a traditionally masculine environment are overemphasized and idealized in a hypermasculine environment.

Measuring Hypermasculinity

Central to this dissertation is the idea that hypermasculinity is antithetical to academic achievement because of its exaggerated promotion of the antifeminine (with femininity being implicitly linked to academic success), toughness, and impulsive decision-making (Lasane et al., 1999). Importantly, hypermasculinity is conceptually dissimilar from traditional masculinity, with traditionally masculine men endorsing masculine stereotypes and hypermasculine men endorsing *exaggerated* versions of masculine traits and stereotypes. Thus, factors typically associated with traditional masculinity are also conceptually different from those associated with hypermasculinity. For example, given the inhibitory effects of hypermasculine behaviors on academic performance, traits and behaviors associated with hypermasculinity are negatively correlated with academic achievement in general, whereas traits commonly associated with traditional masculinity, such as assertiveness and (healthy) competitiveness are associated with academic success (Heyder & Kessels, 2017).

Along with its negative impact on success in a school setting, hypermasculinity has been linked to increased hostility and aggression, increased sexual arousal and sexual aggression, callous attitudes towards women and femininity, a lack of emotional control, sexual aggression and violence, and more conservative male values (Burk et al., 2004). Moreover, hypermasculinity is also closely associated with the super-valuation of competitiveness, aggressive activities, and the devaluation of cooperative and collaborative behaviors as well as an increased desire to dominate others and the super-imposition of status over other men. In sum, when measuring the construct of hypermasculinity, it's important to acknowledge that it is multifaceted and divergent from traditional masculinity, encompassing traits, behaviors, and

attitudes that exude the exaggerated and intense identification and agreement with masculine gender stereotypes.

In a hypermasculine environment, idealized masculine traits are socially acceptable – and even encouraged – for men and boys (Blackburn & Scharrer, 2018). Attitudes that perpetuate negative gender stereotypes towards women serve as the foundation for hypermasculinity. Importantly, hypermasculinity is defined by the necessity to eschew femininity, thereby reinforcing the perpetuation of negative stereotypes towards women. It seems highly plausible, then, that men who conform to hypermasculine values will engage in extreme behaviors to exert their masculine influence and superiority over others, while actively engaging in gender dichotomization, or the tendency to distance masculine from feminine traits (Bosson & Michniewicz, 2013).

Hypermasculinity and Male Student-Athletes

Many contexts promote – and are even made possible by – hypermasculinity, including spousal abuse, gang turf wars, street assaults, armed robbery, and other forms of violent crime (Snyder, 2019). Another such context is contact sports, such as football and basketball, in which men are able to define, promote, and display hypermasculine tendencies disguised by competition and the expectation that an athlete should use his body as an instrument of aggression and violence (Ramaeker & Petrie, 2019). In many sports, physical superiority over the competition places an athlete at a greater advantage, often leading to higher status and more power. Additionally, participants in competitive sports are immersed in the hypermasculine culture, internalizing hypermasculine ideologies.

Because the culture of competitive sports and athletics promotes and encourages stereotypical male traits and since displays of aggression are consistently rewarded with status

and power by winning the competition, hypermasculinity is likely pervasive in athletics. Indeed, in a meta-analysis assessing available data relating athletic team and fraternity membership to hypermasculinity, sexual aggression, and rape myth acceptance, a statistically significant difference and moderately sized effect ($d = .63$) was found between athletic participation and hypermasculinity. This effect was larger than that of any other relationship between male-group membership and hypermasculinity, rape myth acceptance, or sexual aggression (Murnen & Kohlman, 2007). Thus, male athletes – especially those who highly identify with their athlete identity and/or participate in a highly masculine sport (e.g., football) – should be particularly likely to disavow stereotypically feminine attributes and place greater emphasis on stereotypically male preferences as a consequence of being subsumed by a hypermasculine culture.

This separation between the masculine and feminine is reinforced by the highly gender-segregated nature of competitive sports, which leads to a strong emphasis on hypermasculine pursuits and the devaluation of femininity (Murnen & Kohlman, 2007). The current research theorizes that, because of the overlap in desirable traits associated with the athlete and male gender identities, male student-athletes' athlete and gender identities would be intertwined. The intertwining of these identities may implicitly reinforce these desirable traits, resulting in hypermasculinity. The male-dominated team environment as well as the implicit reinforcement of hypermasculine behaviors and attitudes by sports institutions may lead to greater desire to confirm these overlapping stereotypes. Although evidence exists linking athletics to hypermasculinity (e.g., Murnen & Kohlman, 2007), the role of hypermasculinity in the relation between male student-athletes' gender and athlete identities and its subsequent effect on academic performance is a unique idea that has yet to be explored.

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Hypermasculinity and Academic Performance

Empirical evidence for gender differences in academic performance has historically been domain-specific, with the vast majority of literature focusing on women's decreased performance in the science, technology, engineering, and math fields as a result of stereotype threat (e.g., Pronin et al., 2003; Shih et al., 1999). Recently, a growing body of research has looked at the academic disengagement of male students in the United States (Marrs & Sigler, 2012; Wilson, 2007). Male students have been shown to display poorer study skills throughout their college career, earn lower grades, and drop out of college at higher rates than their female peers (Disprete & Buchmann, 2013; Kimmel, 2008; Marrs & Sigler, 2012).

A key theoretical assumption in this dissertation is that male student-athletes are motivated to confirm desirable stereotypes shared by the male gender and athlete identity. Thus, male athletes are especially pressured to avoid femininity given the requirements of satisfying the roles of both identities. Indeed, Bosson and Miichniewicz (2013) propose that men are motivated to maintain a distance between masculine and feminine traits, or to gender dichotomize. This effect is exacerbated when men highly identify with their male gender. In fact, some researchers have noted that – as a result of females graduating at a higher rate from college than males and succeeding academically – males are increasingly viewing academic work as "feminine," which suggests that an implicit association between academic achievement and femininity may exist (Heyder & Kessels, 2013; 2017).

The Overlap in Academics and Femininity. I argue that the overlap in male student-athletes' athlete and gender identities encourages hypermasculine attitudes and behaviors, motivating male athletes to gender dichotomize, or actively distance their masculine traits from feminine traits. Thus, if males are increasingly viewing academic work as feminine, then they

should be especially motivated to distance themselves from academics out of fear of being perceived – by themselves or by others – as being feminine. In fact, across two studies using sample of ninth graders in Germany, Heyder and Kessels (2013; 2017) showed that high-achieving students were perceived as more feminine compared to low-achieving students. Similarly, high-achieving students were perceived as significantly less masculine than low-achieving students overall.

Recent research has shown that young children as well as adolescents view female students as more academically diligent compared to male students, with females displaying better conduct, behaviors, and traits that are conducive to learning (Hartley & Sutton, 2013). On the other hand, male college students characterize the traditional way of studying (e.g., preparing for exams in advance, taking notes) as "feminine," unnecessary, and inefficient, and describe themselves as clever but lazy (e.g., Jackson & Dempster, 2009).

Similarly, academic stereotypes of boys and girls are reflected in students' and parents' perceptions of academic success. Across academic domains, girls view effort as more important to academic success than boys do (Lightbody et al., 1996; Mok et al., 2011) and parents attribute the academic success of girls to effort more often than they do for boys (e.g., Räty et al., 2002). Heyder and Kessels (2017) also showed that teachers ascribed more behavior that impeded learning to a student labeled male compared to a student labeled female. This ascription occurred even when both targets were described as displaying the same gender-neutral behavior (e.g., refusing to do the boring part of group work, never letting anybody copy from his/her work). Heyder and Kessels (2017) further showed that *gender enactment* (i.e., the display of behaviors that are strongly stereotyped as either masculine or feminine, whereby individuals can easily be identified as either male or female, respectively) significantly affected teachers' perceptions of

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the academic success of students. Specifically, when gender enactment was masculine, teachers relied heavily on the stereotype of the lazy and troublesome male student.

Others' perceptions of masculinity may also drive the association between academic success and femininity. For example, male college students presenting as less academically organized and more unconcerned about their test performance were judged by peers as more masculine and socially attractive than an academically engaged male student (Czopp et al., 1998). Moreover, through gender role socialization, young men are taught to be independent and active, traits that are at odds with those typically rewarded in academic settings (e.g., quietness, conformity, cooperation; Latane et al., 1999).

Alternatively, some research theorizes that a *within-gender* variable, notably conformity to masculine norms, may be a significant predictor of a lack of academic engagement for males. In other words, rather than looking at differences between genders, it has been argued that looking at *what* type of male is suffering academically may be a more pertinent question. Along this vein, increases in variables such as "playboy" and "violence" strongly predict decreases in intrinsic academic motivation (Kahn et al., 2011; Marrs, 2016).

To date, hypermasculine behaviors have been implicated in the decreased academic performance of male students. For example, Davis (2020) found that scores on the Hypermasculinity Index (Mosher & Sirkin, 1984), which contain items measuring the degree to which participants agreed with exaggerated, stereotypically masculine statements, were negatively correlated with positive academic outcomes. Importantly, scores on the Hypermasculinity Index were contrasted with scores on a measure of traditional masculinity, the Index of Masculinity (Davis, 2020), which assesses the degree to which participants endorse traditional masculine characteristics. It is important to note that traditional masculine traits such

as assertiveness and competitiveness are generally positively correlated with academic success. Issues arise academically, however, when male students adopt more exaggerated and toxic masculine traits such as high sensation-seeking, fearlessness, callous attitudes towards women, and an impenetrable code of beliefs surrounding what it is to be a man. Thus, there is evidence implicating hypermasculine tendencies – specifically driven by the desire to distance oneself from femininity – in decreased academic engagement.

I contend that male student-athletes constitute a subgroup of hypermasculine males who are more deeply invested in their gender (and athlete) identity than the traditionally masculine male, motivating them to eschew presumably feminine traits such as academic success. I predict that hypermasculinity should be related to poor academic performance in male student-athletes based on the existence of the implicit association between femininity and academic success (Heyder & Kessels, 2013; 2017) and the idea that hypermasculinity implies disavowal of femininity. Additionally, because male athletes exhibit exaggerated masculine traits, the negative association between academic achievement and masculinity should be exaggerated, especially in high-prestige, highly masculine sports such as football, men's basketball, and baseball.

Oppositional Identities

Up to this point, I have argued that male student-athletes' diminished academic performance compared to female student-athletes' is a consequence of hypermasculinity, itself a byproduct of the overlap in male student-athletes' gender and athlete identities. Adherence to hypermasculine attitudes and behaviors is a product of male athletes' desire to confirm desirable stereotypes, such as social dominance, physical strength, and high-status, attributed to both their gender and athlete identities. Thus, if hypermasculinity – a unique aspect of the athlete identity for male athletes – is the driving force behind the difference in academic performance between

male and female athletes, the athlete identity must be personally relevant to male student-athletes, allowing it to play an influential role in academic performance.

Construction of a social identity generally occurs when people attach meaning and importance to particular aspects of membership in that social category, whether socially advantaged or disadvantaged (e.g., Tajfel, 1982; Tajfel & Turner, 1979). This meaning is exemplified through behavior and interaction with other individuals of other social groups (Howard, 2000). Social identity itself is meaningful and important if it is both salient to the individual's self and if the individual is highly invested in maintaining this identity. Since social identity must be meaningful, relevant, and important to the individual, identity is usually constructed along the lines of ethnicity, race, sex, gender, or social class. However, other personally meaningful social identities – particularly the athlete identity – have been shown to exert comparable influence over behavior and performance (e.g., Yopyk & Prentice, 2005).

Nested within the framework of social identity theory, self-categorization theory (SCT; Turner et al., 1987) suggests that the salience of social identity is contextually and situationally dependent, allowing for psychological, behavioral, and cognitive flexibility (Turner et al., 1994). For example, Shih et al. (1999) found that Asian American women's math performance was differentially affected by their gender and ethnic identities. That is, performance depended on which identity was activated and the cultural stereotypes associated with that identity (e.g., women are bad at math versus Asians are good at math). Integral to this flexibility is the ability for individuals with multiple dominant (as in salient) social identities to effectively access the implicit knowledge associated with the most appropriate identity in a particular context.

As previously stated, individuals are not members of a single social group but rather hold positions in various socially meaningful groups simultaneously. A specific social identity

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becomes more salient when cued by aspects of the environment (Steele et al., 2002), but the process is complicated by the salient social identity most appropriate for the current context being devalued in that particular setting, potentially leading to social identity threat. Ultimately, this process can result in decreased performance or, in some instances, disidentification (Steele, 1997). Conversely, salience of an identity that is valued in that particular setting can lead to increased performance (e.g., Stone et al., 1998). Research by Harrison et al. (2009), Shih et al. (1999), and Yopyk and Prentice (2005) demonstrates that the existence of multiple identities can lead to contradicting performance outcomes because of differences in expectations associated with different social identities. That is, an individual may have multiple social identities with conflicting role expectations. The current research focuses on how the divergent role expectations of men and women may contribute to the creation of oppositional identities in certain domains, particularly in college athletics.

Specifically, I propose that traits and socio-cultural expectations associated with the social identity of athlete positively affect male student-athletes because those traits and socio-cultural expectations are analogous to those associated with their gender. The athlete identity for female student-athletes, though, is *contradictory* to their gender identity because of their opposing socio-cultural stereotypes, therefore resulting in bifurcation of the two identities. In other words, female student-athletes may have difficulty integrating their oppositional identities (i.e., gender and athlete) because behaviors, traits, and attitudes associated with one identity (i.e., gender) contradict behaviors, traits, and attitudes associated with another identity (i.e., athlete); the less overlap that exists between the two identities, the more difficult it might be for female athletes to accommodate aspects of both identities.

While research on the bifurcation of the athlete and student identities (e.g., Settles et al., 2002) and the dichotomization of gender (e.g., Bosson & Michniewicz, 2013) together offer support for my predictions, to my knowledge, these two processes have yet to be studied together in college athletics. To inform my predictions, the divergent role expectations of males and females are best illustrated in research explicating the ways in which men and women navigate the professional and parental domains (Hodges & Park, 2013). Hodges and Park (2013) state that, whereas the parental and professional identities may be oppositional in nature for women, they're more facilitative – or non-interfering – for men. Using priming techniques, Hodges and Park (2013) demonstrated that women shifted their social identities depending on the context. When thinking about their goals in the parent domain, women were more likely to associate themselves with images of baby bottles and cribs (i.e., objects ascribed to the role of parent) than with images of a laptop and briefcase (i.e., objects ascribed to the role of professional). When asked to think about their role as a professional, the opposite was shown, with women more easily associating themselves with the professional images. These results suggest that there is little overlap between the professional and parent identities for women, emphasizing their oppositional nature. This process is similar to that demonstrated by the research on female student-athletes by Harrison et al. (2009), in which female student-athletes had difficulty integrating the two opposing identities of athlete and student but could switch between the student and athlete identities when considered separately.

Male student-athletes do not experience the same identity threat as female student-athletes when their student and athlete identities are combined (Harrison et al., 2009), effectively making bifurcation of their athlete and student identities unnecessary. One explanation given for this phenomenon is that the athlete identity is self-affirming for male student-athletes and is thus

self-protective. An additional explanation is that male student-athletes identify more with being an athlete (Harrison & Lawrence, 2004), resulting in the failure to activate the student identity in student-athlete altogether. Therefore, the student identity may have no effect on subsequent identity activation, with the more affirming identity always being active. The inactivation of the less affirming identity may contribute to decreased conflict between the oppositional identities for male student-athletes. Along a similar vein, Hodges and Park (2013) found that the professional identity was only slightly activated for men after the professional prime while the parent prime had no effect on men's social identities at all, indicating that the professional and parent identities are not oppositional for men. In fact, positive traits associated with "professional" were also associated with the concept of "dad" for men but not with the concept of "mom" for women. In other words, the professional identity for men overlaps with the parental identity. This pattern is not seen among women, with women clearly bifurcating their professional and parent identities.

In sum, these results demonstrate that (1) members of different groups experience different levels of oppositional identities and (2) activation of social identity is dependent on the context. These results also imply that men and women have different social experiences and role expectations that may be dependent on their respective gender identities. That is, men and women may treat gender identity as inherently categorical, with activation of their gender identity resulting in activation of associated behaviors and expectations. These behaviors and expectations for men and women are oppositional: the behaviors and expectations associated with men are the opposite of those associated with women.

Although bifurcation is cognitively cumbersome (Hodges & Park, 2013), early literature on self-complexity theory indicates that the presence of multiple, independent identities with

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little overlap in shared traits, attitudes, and behaviors may be beneficial to the individual (Linville, 1987). Since identities associated with a particular domain are relatively segmented from one another, self-complexity theory argues that individuals who are more complex (i.e., possess multiple, independent selves) are better able to handle threats to the self in one domain without that threat contaminating another domain. Along similar lines, self-affirmation theory argues that threats to the self in one domain can be buffered by activating the social identity in another, unrelated domain (Steele, 1988). The ability to disassociate one social identity from another should lead to positive outcomes, especially as they relate to subjective well-being (Sherman & Cohen, 2006). Thus, the act of bifurcating their gender identity from their athlete identity may protect female student-athletes from the negative stereotypes associated with the athlete identity, namely the effects of the "dumb jock" stereotype, as well as the assumptions of masculinity intertwined with the athlete identity.

Student-Athletes and Oppositional Identities

Student-athletes may experience their athlete and student identities as oppositional in order to cope with the contradictory expectations inherent in those two identities. In fact, Settles et al. (2002) found that student-athletes who viewed their roles as athlete and student separately experienced greater well-being compared to those who did not; and while Settles et al. (2002) found that student-athletes vary in how much they view their student and athletic identities as separate from or interfering with one another, there was no relationship between role interference or separation and gender, even though female student-athletes reported having significantly higher GPAs and feeling more stressed academically compared to male student-athletes.

To my knowledge, the bifurcation of the gender and athlete identities by female student-athletes as a result of the opposition inherent in the two identities is a process that has yet to be

explored. That is, although the existence of oppositional identities in student-athletes has been studied (Settle et al., 2002), the effect of a social identity other than the athlete identity on the degree of identity opposition has yet to be established. Since evidence suggests that men and women can possess different degrees of identity and role separation (Hodges & Park, 2013), it is possible that male and female student-athletes may also experience different degrees of identity opposition, resulting in differing levels of identity switching.

A key assumption in the current research is that the athlete and gender identities for female student-athletes are oppositional to one another because of the contradictory socio-cultural expectations attributed to the female gender and athlete identities. As a result, female student-athletes bifurcate these identities. The bifurcation serves two functions: first, it allows female student-athletes to maintain positive self-regard by adhering to the stereotypes associated with their gender identity and distancing themselves from hypermasculine stereotypes associated with the athlete identity. Second, it protects female student-athletes from the damaging effects of hypermasculinity embedded in the athlete identity. Because femininity is implicitly associated with academic success (e.g., Latane, 1999), male student-athletes' gender *and* athlete identities should be in opposition to academics. That is, for female student-athletes, traits that are ascribed to their gender identity conceptually overlap with traits associated with academics, while traits associated with the male gender *and* athlete identities should be *independent* from traits associated with academics. This dissociation is a result of the oppositional relationship between male gender identity and academic success and can be attributed to the gender role conflict inherent in the relationship.

The research by Hodges and Park (2013) and Settles et al. (2002) demonstrate that possessing two distinct social identities may be beneficial to the individual by providing positive

regard and reinforcement in two separate domains. If the two or more identities are seen as oppositional to one another – or are in constant conflict – the individual may feel the need to constantly shift which identity is active between the particular domains. This identity shifting is not necessarily negative, though. For example, Settles et al. (2002) posit that having separate, distinct identities might better facilitate goal directedness in the oppositional domains. Therefore, the bifurcation of the athlete and gender identities for female student-athletes may be protective. Female student-athletes' ability to bifurcate their gender and athlete identities – thereby separating their gender identity from the damaging effects of hypermasculinity embedded in the athlete identity – may potentially explain their increased academic performance compared to that of male student-athletes.

Study Overview

Across three studies that utilized both correlational and experimental designs, I assessed the relationship between hypermasculinity, the athletic and gender identities, and academic performance. Specifically, I aimed to explore the hypothesis that hypermasculinity – or the identification with intense and exaggerated stereotypic masculine behaviors, attributes, and attitudes – negatively impacts male student-athletes' academic performance. Study 1 was a correlational study to examine if hypermasculinity and athletic identity predicted academic performance, as measured by grade point average (GPA). GPA was used as the outcome variable because academic performance (i.e., 2.0 on a 4.0 scale) is necessary for athletes to remain eligible in their sports. Additionally, GPA is commonly cited as a valid predictor of future success outside of academics, thereby increasing the ecological validity of this study (e.g., Kansky et al., 2016).

A key tenet of this dissertation's theoretical argument is that the effect of hypermasculinity on male student-athletes' academic performance is driven by the implicit female-school association. That is, because school is deemed to be feminine, hypermasculine males actively disavow academic success. Thus, Study 2 used a widely accepted measure of implicit association — the implicit association test (IAT; Nosek & Greenwald, 2005) — to investigate the implicit female-school/male-athlete association in a sample of male and female student-athletes. In addition, Study 2 used a measure of role distinction (or bifurcation) to determine if the overlap in the male and athletic identities was responsible for the effect of the female-school/male-athlete association on hypermasculinity. Lastly, using a sample of male traditional (non-athlete) students, Study 3 manipulated hypermasculinity with novel primes adopted from real-world interventions to investigate the causal link between hypermasculinity and academic performance.

I hypothesized the following: (1) Because of the conceptual overlap in gender and athletic identities for male student-athletes, hypermasculine tendencies and attitudes would be positively associated with athlete identity in male student-athletes and negatively related to academic performance as measured by GPA (Study 1). (2) The relationship between hypermasculinity and diminished academic performance for male student-athletes would result from the implicit association between academics and femininity. The active disavowal of femininity, a guiding principle of hypermasculinity, would encourage male student-athletes to abandon academics (Study 2). Decreased academic performance should also be present among traditional (non-athlete) male students when hypermasculinity is manipulated and they are made to think that hypermasculinity is analogous to what it is to "be a man", suggesting a causal relationship between hypermasculinity and decreased academic performance (Study 3). (3)

Because of the oppositional stereotypes existing between the female gender identity and athlete identity, female student-athletes would bifurcate their athlete and gender identities, thus protecting them from the negative stereotypes associated with the athlete identity and the implied masculine trope embedded in the athlete identity (Study 2). (4) Finally, I expected the positive relationship between athlete identity and hypermasculinity to be more pronounced in traditionally highly masculine and high-prestige sports such as football, men's basketball, and baseball (Studies 1 and 2).

Study 1

Study 1 was a correlational study investigating the relation between athlete identity, hypermasculinity, and academic performance as measured by self-reported GPA in a sample of male collegiate student-athletes. Thus, the purpose of Study 1 was to establish the link between athlete identity, hypermasculinity, and academic performance. Based on previous research indicating that athletes in high-prestige contact sports such as men's basketball, football, and baseball more strongly identify with the athlete identity (Beron and Piquero, 2016), Study 1 also examined variation in levels of hypermasculinity and athlete identity across sports. Lastly, an exploratory analysis of qualitative data was conducted to explicate the presumed relation between femininity and academics. It was hypothesized that athletes in high-prestige sports such as football, men's basketball, and baseball would more strongly identify as an athlete than athletes in low-prestige sports such as men's volleyball, swim and dive, and golf. It is important to mention that high-prestige sports are so defined because of their tendency to generate more revenue for universities and therefore get more attention nationally. I argue, though, that the generation of revenue is merely a byproduct of the association between masculinity and sports whereby viewers are more interested in watching male athletes in high-prestige sports because

these athletes satisfy society's standards and what it is to be the "ideal man" (Cle'ment-Guillotin et al., 2012). Therefore, revenue generation and hypermasculinity are inextricably related. It was also hypothesized that athletes in the high-prestige sports would show higher levels of hypermasculinity than those in low-prestige sports. Additionally, levels of hypermasculinity (higher versus lower) would moderate the relation between athletic identity and GPA. Finally, in the exploratory analysis, it was predicted that perceiving academics as feminine would positively correlate with hypermasculinity.

Method

Participants and Procedure

  Participants. A power analysis using G*Power Version 3.1 (Faul et al., 2007) was conducted prior to data collection. For the main analysis — a regression model to test the moderating effect of hypermasculinity on the relationship between athletic identity and GPA — 68 participants would be needed for an effect size of $f^2 = .15$, $\alpha = .05$, and a power level of .80. A total of 90 male student-athletes completed the online survey. These student-athletes were recruited through the Qualtrics recruitment service ($N = 75$; 85.22%) and the University of Hawaii at Mānoa's participant recruitment service, Sona Systems ($N = 13$; 14.77%). The Qualtrics recruitment service actively advertises and solicits participants that meet the research requirements. To participate in the study, Qualtrics ensured that potential participants self-identified as male and student-athletes at an NCAA-governed institution. Similarly, to participate in the study via Sona, participants were pre-screened to be male and student-athletes. Prior to any analyses, one participant (1.14%) was dropped due to failure to answer the survey and open-ended questions (i.e., typing a string of random letters). Another participant (1.14%) was dropped because he answered the open-ended questions in French. An undergraduate research

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assistant responsible for coding the qualitative data attempted to translate the responses using Google translate but the responses were irrelevant to the question. The final sample size included 88 male student-athletes, all of whom passed an attention check (see materials section for a description of the attention check). Participants recruited by Qualtrics received $30 and participants recruited by Sona Systems received one course credit for their participation in the study.

Procedure. After providing consent, participants completed five demographic measures and self-reported their GPA (see Table 1 for breakdown of demographics). After completing the demographic measures and self-reporting their GPA, participants were presented with the Auburn Differential Hypermasculinity Inventory (ADHI; Burk et al., 2004) to assess hypermasculinity and the Athletic Identity Measure (AIM; Brewer et al., 1993) to assess the extent to which they identify as an athlete, in random order. Participants were then asked to answer a series of open-ended questions to qualitatively assess the implicit link between femininity and academic performance. These open-ended questions included "Would you describe yourself as doing well in school? Why or why not?" and "What type of person does well in school? Why?" Next, participants completed another pair of open-ended questions to assess the more explicit link between femininity and academic success. These questions included "Doing well in school is feminine. Do you agree or disagree? Why or why not?" and "Females do better in school than males. Do you agree or disagree? Why or why not?" Answers to these questions were used in exploratory analyses only and did not affect my formal hypothesis. Because of the presumed interconnectedness between hypermasculinity and athlete identity, the order of the ADHI and AIM was randomized so as to avoid any carry-over effects that could have unconsciously impacted participants' responses on the subsequent measures. The questions

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assessing the implicit association between femininity and academic success were always presented before the explicit questions for the open-ended responses and these open-ended questions were randomized with the ADHI and AIM in terms of the order in which each measure was presented.

Materials

Demographic Measures and GPA. Five demographic measures relevant to this project and the main dependent variable (GPA) were assessed by self-report (see Appendix A). These demographic measures included: male gender identification (0 = no, 1 = yes), their current year in school, whether they are currently receiving athletic aid (i.e., no athletic scholarship, partial athletic scholarship, full athletic scholarship), their major or intended major, and what sport they play (see Table 1). Since the current sample was collected from various colleges and universities across the United States with the help of a Qualtrics panel, there was great variability in self-

Table 1
Sport by Receipt of Athletic Scholarship

Sport	No athletic scholarship		Partial athletic scholarship		Full athletic scholarship		Total	
	n	%	n	%	n	%	N	%
Football	9	10.2	12	13.6	11	12.5	32	36.4
Baseball	1	1.1	6	6.8	0	0.0	7	8.00
Track/field	1	1.1	1	1.1	1	1.1	3	3.4
Golf	0	0.0	1	1.1	0	0.0	1	1.1
Lacrosse	1	1.1	0	0.0	0	0.0	1	1.1
Swimming/diving	0	0.0	1	1.1	0	0.0	1	1.1
Sailing	1	1.1	0	0.0	0	0.0	1	1.1
Soccer	5	5.7	7	8.0	4	4.5	16	18.2
Volleyball	1	1.1	3	3.4	0	0.0	4	4.5
Wrestling	1	1.1	0	0.00	0	0.0	1	1.1
Basketball	1	1.1	11	12.5	4	4.5	20	22.7
Total	25	28.4	42	48.9	20	22.7	88	100.0

reported declared and intended majors. As a result, this demographic variable was not included in any analyses. I also asked participants to self-report their present cumulative GPA on the traditional 4-point grading scale ($M = 3.53$, $SD = 0.51$). Participants were instructed to look-up their GPA if they did not know it.

Of the 88 participants, 26.7% were freshmen, 22.2% were sophomores, 30% were juniors, and 21.1% were seniors. A range of sports were represented in the sample, with the plurality being from football (36.4%). 24.7% of the sample played basketball, 18.2% played soccer, 8.00% played baseball, 4.5% played volleyball, and 3.4% were track and field athletes. 1.1% identified as playing golf, lacrosse, swim and dive, sailing, or wrestling. Most student-athletes (48.9%) received a partial scholarship for participation in their sport while 28.4% and 22.7% received no scholarship and a full academic scholarship, respectively.

Auburn Differential Hypermasculinity Inventory. Participants' levels of hypermasculinity were measured using the Auburn Differential Hypermasculinity Inventory (ADHI; Burk et al., 2004; see Appendix B). The standard version of the ADHI includes 60-items measured on a 5-point Likert-type scale (A = *very much like me*, B = *like me*, C = *a little like me*, D = *not much like me*, E = *not at all like me*). Each response is assigned points: E = 0, D = 1, C = 2, B = 3, A = 4. Appropriate items are reverse scored. Total scores and subscale scores (see below) are typically summed, with higher scores indicating greater identification with hypermasculinity and the subscale constructs, respectively. Since the assignment of points to letter responses denotes an ordinal scale of measurement, making mean comparisons between groups is inappropriate (Stevens, 1946). However, summing total scores and sub-scale scores treats missing responses as a score of 0, biasing the distribution of data.

To account for these shortcomings, the scale of measurement was treated as an interval scale rather than an ordinal scale in the present study (Bandalos, 2014). By doing this, the differences between the intervals can be treated as meaningful and allow for mean comparisons. On the interval scale of measurement, items were re-coded on a 5-point Likert-type scale (5 = *very much like me*, 4 = *like me*, 3 = *a little like me*, 2 = *not much like me*, 1 = *not at all like me*).

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Total scores were averaged, with higher scores indicating greater identification with hypermasculinity and the constructs, respectively.

To construct a robust measure of hypermasculinity, Burk et al. (2004) expanded on previous measures of hypermasculinity by including items measuring the need for personal power, interpersonal competition, and sexual coercion and aggression. The ADHI was created in response to criticisms surrounding numerous measures of hypermasculinity, notably the use of outdated phrasing, biased language, and forced-choice items. Specifically, phrases such as "It's natural for men to get into fights" paired with "Physical violence never solves an issue," which pose "good/bad" extremes, setting up participants to likely choose the "good" option, were removed in the development of the ADHI. Moreover, objectionable language and phrasing, such as "Get a woman drunk, high, or hot and she'll let you do whatever you want" was also removed based on research indicating that men, especially college students, are likely to temper their response so as to not appear overtly sexist (Spence & Hahn, 1997). Because hypermasculinity is correlated with sexual assault, poor relationships, and poor interpersonal coping, the ADHI includes five subscales. These subscales are (a) hypermasculinity (e.g., "I know feminists want to be like men because men are better than women"), (b) sexual identity (e.g., "I like to tell stories about my sexual experiences to my male friends"), (c) dominance and aggression (e.g., "I think men should be generally aggressive in their behavior"), (d) devaluation of emotion (e.g., "I think men who cry are weak"), and (e) conservative masculinity (e.g., "If I had a son I'd be sure to show him what a real man should do").

The ADHI is a psychometrically sound measure with a reliability of $\alpha = .83\text{-}.85$ reported in past studies (CITE) with evidence of convergent and discriminant validity, such that scores on the ADHI were significantly positively correlated with the Antisocial Practices Scale (APS;

Gynther et al., 1979), Hostility Towards Women Scale (HTWS; Marshall & Moulden, 2001), and Sensation Seeking Scale (SSS; Zuckerman, 1976) and significantly negatively correlated with the Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965, 1979), Marlowe-Crowne Social Desirability Scale (MCSDS; Crowne & Marlowe, 1960), and Balanced Emotional Empathy Scale (BEES; Mehrabian, 1996), supporting its use as a valid measure of hypermasculinity. In previous research, the ADMI was found to be strongly correlated with other measures of hypermasculinity, including the Hypermasculinity Index (HMI; Mosher & Sirkin, 1984) and measures consistent with the construct of hypermasculinity, including antisocial tendencies, hostile attitudes towards women, and sensation seeking. The present sample yielded a Cronbach's $\alpha = .95$ for the ADHI.

Athletic Identity Measure. I used the Athletic Identity Measure (AIM; Brewer et al., 2003; see Appendix C) to assess athlete identity. The AIM is a 10-item measure that assesses the extent to which the athlete identity is central to the individual's overall identity. Sample items include "I consider myself an athlete" and "I need to participate in my sport to feel good about myself." Participants rated each item on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A mean score was computed with higher scores indicating a stronger athletic identity. The current sample yielded a Cronbach's $\alpha = .82$.

Association Between Femininity and School. Participants completed four open-ended questions. Two questions intended to measure the implicit association between femininity and school while the second pair measured the association more explicitly. Two trained undergraduate research assistants independently coded the responses for the questions, "What type of person does well in school? Why?" by counting the number of previously pretested gendered adjectives used by the participants (Diekman & Eagly, 2000; Hodges & Park, 2013).

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This was meant to measure the implicit association between femininity and school. That is, male student-athletes who used more feminine adjectives were hypothesized to possess an implicit association between femininity and school. The use of synonyms was permitted as long as the research assistants indicated to which pretested gendered adjective the word was synonymous. Masculine (e.g., competitive) and feminine (e.g., gentle) adjectives were counted separately (the coders demonstrated interrater reliability; Cohen's $\kappa = 0.66$ and 0.74 for masculine and feminine, respectively) for the single qualitative item. Another two trained research assistants coded the more explicit items to assess the association between femininity and school: "Doing well in school is feminine. Do you agree or disagree? Why or why not?" and "Females do better in school than males. Do you agree or disagree? Why or why not?". For each explicit statement, the research assistants rated the extent to which each participant agreed with the statement using a 5-point Likert scale with 5 indicating *strong agreement* and 1 indicating *strong disagreement*. Discrepancies between the research assistant's ratings were resolved through discussion of the raters' rationale. Agreement between the two raters yielded Cohen's $\kappa = 0.82$ and $.071$, respectively for each explicit item. The coders' ratings were averaged to create an overall rating of agreement for the explicit items and average frequency for the implicit items. Answers to these questions were used in exploratory analyses only and did not affect my formal hypotheses.

Attention Check. One attention check measure was included in Study 1. Participants were presented with the statement, "The color test is simple. When asked for your favorite color you must enter the word pink in the text box below." Then they were asked the question, "Based on the text you read above, what color have you been asked to enter?" Participants who categorically failed the attention check were excluded from analyses. 100% of participants

correctly entered the word "pink" when prompted to do so. Thus, no participants were dropped from the sample for failing the attention check.

Results

Data analyses consisted of descriptive analyses followed by Pearson product correlations to assess the relationship between self-reported GPA, athletic identity, and hypermasculinity. Next, a general linear model (GLM) was constructed to investigate the effect of sport prestige (i.e., high-prestige versus low-prestige) on hypermasculinity and athletic identity. A moderation model to examine the effect of hypermasculinity on the relation between athletic identity and self-reported GPA was examined. Afterwards, receipt of an athletic scholarship (i.e., no athletic scholarship, partial athletic scholarship, full athletic scholarship) and class standing (i.e., freshman, sophomore, junior, senior) were included in a regression model to assess their effect on athletic identity. Lastly, the association between the perception of school as feminine and hypermasculinity was examined in an exploratory GLM.

Descriptive Analyses

The mean scores, standard deviations, Cronbach's alphas, and variable ranges are presented in Table 2.

Table 2

Descriptive Statistics

Variable and statistic	M	SD	α	Range of scale	Range in sample
1. Year in school	1.45	1.1	—	0 - 3	0 - 3
2. Grade point average	3.49	0.4	—	0.0 - 4.0	2.40 - 4.00
3. Athletic aid	0.94	0.7	—	0 - 2	0 - 2
4. Hypermasculinity	2.67	0.6	0.95	1 - 5	1.38 - 4.18
5. Athletic Identity	4.94	1.0	0.82	1 - 7	1.80 - 6.70

Table 3

Pearson Product Correlations			
Variable and statistic	1	2	3
1. Grade point average	—		
2. Athletic identity	-.165	—	
3. Hypermasculinity	0.019	0.099	—

*p < .05, **p < .01

Although there was some variance, in general, student-athletes reported moderate levels of athletic identity, with $M = 4.94$ ($SD = 0.62$) on a $1 - 7$ scale. On average, student-athletes moderately identified with hypermasculine tendencies. Specifically, the mean score on the ADHI was $M = 2.67$ out of 5 ($SD = 0.98$). Year in school was coded as 0 = freshman, 1 = sophomore, 2 = junior, and 3 = senior. Receipt of athletic aid was coded as 0 = no athletic aid, 1 = partial athletic aid, and 2 = full athletic aid.

Association Between Hypermasculinity, Athletic Identity, and GPA

With a sample size of $N = 88$, Pearson correlations were used to investigate the bivariate relationships between hypermasculinity, athletic identity, and self-reported GPA (see Table 3). Although central to the research question, no association between hypermasculinity and athletic identity was found ($r = .099$, $p = .358$), nor was there an association between hypermasculinity and GPA ($r = .019$, $p = .867$) or athletic identity and GPA ($r = -.165$, $p < .147$). However, it is possible that only student-athletes in high prestige sports such as football, men's basketball, and baseball show this effect.

Effect of Sport Prestige on Hypermasculinity and Athletic Identity

To test this assumption, a "prestige" variable was created (0 = low prestige, 1 = high prestige) with football, men's basketball, and baseball as high prestige sports and all other sports categorized as being low prestige sports. Next, a multivariate general linear model (GLM) with

prestige as the independent variable and hypermasculinity and athletic identity as the dependent variables was conducted. The original analysis plan included a multivariate analysis of variance (MANOVA) to be conducted, but because the number of individuals in each group was unequal ($n = 59$ for high prestige sports and $n = 29$ for low prestige sports), conducting a multivariate GLM will correct for the imbalance in sample sizes. There was no evidence that levels of hypermasculinity differed based on sport prestige, $F(1, 87) = .125$, $p = .725$, $\eta^2 = .001$. There was also no evidence that athletic identity differed based on sport prestige, $F(1, 87) = .352$, $p = .554$, $\eta^2 = .004$.

Moderating Effect of Hypermasculinity on Athletic Identity and GPA

I examined a moderation model to test the moderating effect of hypermasculinity (moderator W) on the link between athletic identity (independent variable X) and GPA (dependent variable Y) using the SPSS version of PROCESS 3.5.3 (Hayes, 2018) selecting for Model 1. Because the two antecedents (i.e., hypermasculinity and athletic identity) were scaled differently, both variables were mean centered to make their regression coefficients interpretable. There was no significant effect of either athletic identity, $b = -.075$, $t(77) = -1.252$, $p = .215$, or hypermasculinity, $b = -.073$, $t(77) = -.762$, $p = .558$, on GPA. Moreover, there was no athletic identity-by-hypermasculinity interaction, $t(76) = .227$, $p = .635$. Examination of the effect sizes indicated that the effects for each predictor, including the interaction term, were small (i.e., $R^2 = .0064$, $R^2 = .0196$ and $R^2 = .0025$ for hypermasculinity, athletic identity, and the athletic identity-by-hypermasculinity interaction term, respectively).

Effect of Demographic Variables on Athletic Identity

Previous research indicates that contextual variables such as receipt of scholarship and class standing were related to athletic identity (Beron & Piquero, 2016; Settles et al., 2013).

Thus, an additional regression model with two of the five demographic variables (i.e., receipt of scholarship and class standing) as predictor variables and athletic identity as the dependent variable was assessed. Inclusion of this model in the analyses was exploratory. Receipt of scholarship and class standing were dummy coded in such a way that "full athletic aid" and "senior" were the reference variables for receipt of scholarship and class standing, respectively. There was no significant effect of receipt of athletic aid or class standing on athletic identity (see Table 4).

Moderating Effect of Athletic Aid on Hypermasculinity and GPA

An additional exploratory regression model to further investigate the moderating effect of receipt of athletic aid on the relation between hypermasculinity and GPA was conducted. It is possible that athletic aid serves as a proxy for "prestige," whereby highly skilled athletes who are receiving aid show an effect of hypermasculinity on GPA, whereas those not receiving aid do not. No such interaction effect was found, $F(5, 74) = .433$, $p = .82$, $R^2 = .029$, $R^2_{adjusted} = .011$.

Table 4

Athletic Identity Predicted by Receipt of Athletic Aid and Class Standing

Variable	B	β
Constant		5.57**
Freshman[a]	0.03	0.02
Sophomore[a]	0.42	0.13
Junior[a]	-0.89	-0.36
No athletic aid[b]	-0.81	-0.37
Partial athletic aid[b]	-1.39	-0.63
Adjusted R^2		-0.2
$F_{5, 74}$		0.47

[a] "senior" designation used as reference variable
[b] "full athletic scholarship used as reference variable
* $p < .05$ ** $p < .01$

Association Between Perception of School as Feminine and Hypermasculinity

An exploratory analysis examined the effect of the belief that school is feminine on hypermasculinity. To assess the belief that school is feminine in the first question (i.e., "What type of student does well in school. Why or why not?"), an average score of the frequency with which participants used gendered language was created. For example, trained undergraduate assistants coded words such as "competitive" and "boastful" as masculine and words such as "nurturing" and "kind" as feminine words. The total number of gendered adjectives used in the response was considered the frequency. Separate frequency scores for the use of masculine adjectives and feminine adjectives were computed. The logic was if participants implicitly associated school with femininity they should use more feminine and less masculine adjectives. Next, using univariate GLM, hypermasculinity scores were entered as the independent variable while the use of masculine and feminine adjective frequency scores were entered as the dependent variables, separately. Although hypermasculinity measured by the ADHI did not significantly predict use of stereotypically feminine adjectives such as subordinate or imaginative, $F(1, 87) = .333$, $p = .56$, $\eta^2 = .004$, they did predict use of stereotypically masculine adjectives such as competitive or analytical, $F(1, 87) = 4.45$, $p = .04$, $\eta^2 = .05$.

For the more explicit pair of qualitative questions (i.e., "Women do better in school than men. Do you agree or disagree? Why or why not" and "School is feminine. Do you agree or disagree? Why or why not?), the scores of the two raters were averaged across the questions to create a single agreement score whereby higher scores indicated greater agreement with the statement. This score was entered into a regression model as the dependent variable while hypermasculinity and GPA were entered as independent variables. The addition of self-reported GPA as an independent variable was a last-minute modification to the plan of analyses based on

the assumption that hypermasculinity was linked to lower academic performance (i.e., GPA). In fact, the regression model fit the data, indicating that hypermasculinity and GPA explain a significant amount of the variance in the belief that school is feminine, $F(2, 76) = 4.80$, $p = .01$, $R^2 = .11$, $R^2_{adjusted} = .09$. Hypermasculinity significantly predicted agreement with the belief that school is feminine, $b = .36$, $t(77) = 2.24$, $p = .03$; see Figure 1. GPA also predicted agreement with the belief that school is feminine, $b = .44$, $t(77) = 2.38$ $p = .02$).

A viable explanation for the predictive relation between GPA and agreement with the belief that school is feminine is that male student-athletes with higher GPAs — and thus those most likely to self-identify as being good students — are less likely than those with lower GPAs to endorse the belief that school is feminine. However, this doesn't seem to be the case. Rather, male student-athletes *high* in GPA are *more likely* to endorse the belief that school is feminine than male student-athletes with *low* GPAs. Thus, it's possible that hypermasculinity is interacting
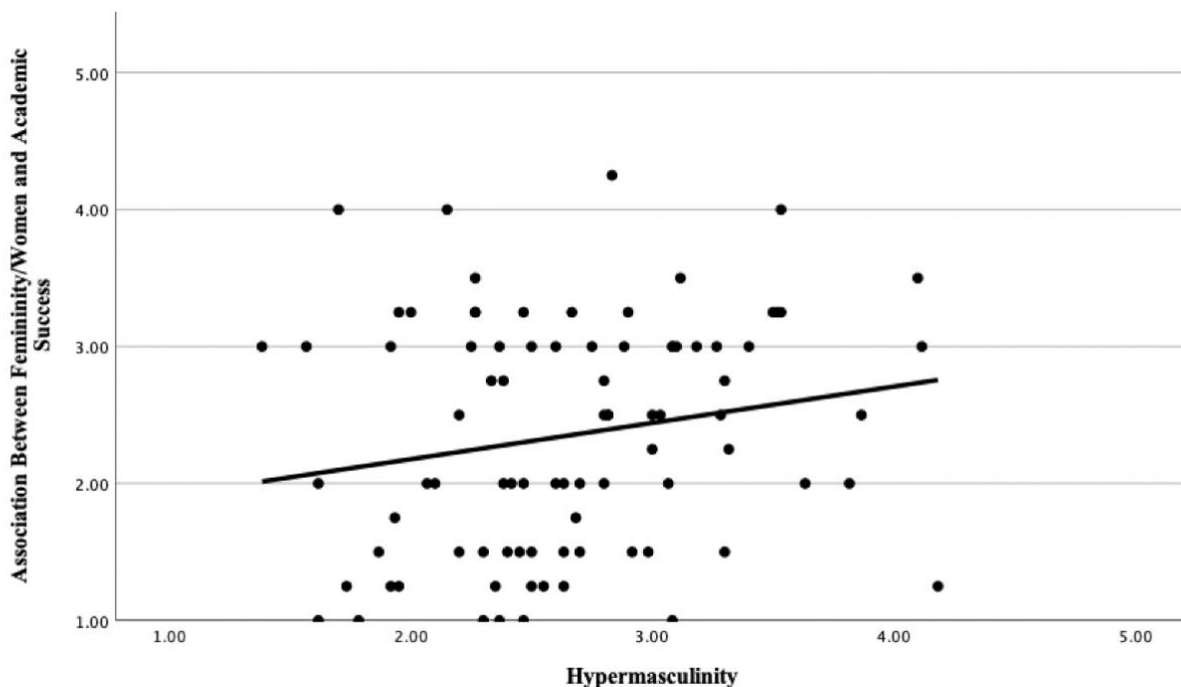

Figure 1. The relationship between the belief that school is feminine and hypermasculinity controlling for GPA.

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with GPA. To test this assumption, an exploratory moderation model with GPA as moderator W, hypermasculinity as independent variable X, and endorsement of the belief that school is feminine as dependent variable Y was conducted. The interaction between hypermasculinity and GPA did not significantly predict the likelihood of agreeing with the belief that school is feminine, $F(1, 75) = 2.511$, $p = .117$, $R^2_{adjusted} = .029$.

Discussion

The current study finds partial support for my hypotheses, specifically the relationship between hypermasculinity and the association between femininity and academic success. Although this relationship is integral to the overall project, it's important to note that the purpose of Study 1 was to establish the link between hypermasculinity, athletic identity, and academic performance in male student-athletes. Bivariate analyses indicated that athletic identity, hypermasculinity, and academic performance (as measured by self-reported GPA) were not significantly related.

While the association between hypermasculinity and academic success is relatively novel (see Heyder and Kessels, 2013; 2016 for exceptions), the negative impact of athletic identity on academic success is well established (e.g., Beron & Piquero, 2016; Harrison et al., 2009; Stone et al., 2012) using a multitude of methods. One can assume, then, that the lack of a significant association may be due to a biased sample (Olsson-Collentine et al., 2020). Specifically, the current sample may not be representative of the overall student-athlete population. For instance, the average GPA in the present sample was $M = 3.53$ ($SD = .51$) on a 4.0 scale. Previous research has shown that GPAs among student-athletes are significantly lower: Settles et al. (2002) found a mean GPA of $M = 2.44$ ($SD = 1.32$) while Beron and Piquero (2016) found a mean GPA of $M = 3.03$ ($SD = .56$) across all three athletic divisions. There is a possibility that, because student-

athletes were asked to self-report their GPA, they overestimated the number. Despite being asked

to verify their GPAs with available student records, participants may not have had accurate

memories or motivation to look up their actual GPAs (Tourganeau et al., 2000). Variation in the

effect of social-desirability bias and participants' memories likely contributed to construct-

irrelevant variance in this scale.

Although there's some evidence to support high correlations between self-reported GPA

and university records (Caskie et al., 2014), there is also evidence to suggest that participants are

likely to misreport their GPAs (Kuncel et al., 2005). Thus, a significant limitation to the

interpretation of the findings in Study 1 is the reliance on self-report data, particularly for a key

dependent variable. Additionally, Beron and Piquero (2016) found that student-athletes' GPA is

predicted to an extent by athletic division (i.e., Division I, Division II, or Division III).

Specifically, the authors found that student-athletes in Division II and Division III had

significantly higher self-reported GPAs than Division I student-athletes. Unfortunately, athletic

division was not measured in Study 1. Therefore, the effect of division could not be included in

the analyses.

Despite not finding an effect in the first set of analyses, a follow-up analysis to examine

the predictive value of the prestige of sport on athletic identity and hypermasculinity was

conducted. There was no evidence that prestige significantly predicted athletic identity or

hypermasculinity. The lack of evidence supporting the predictive effect of prestige on athletic

identity runs contrary to the findings of the current literature. However, it is possible that an

effect was not found because the study was underpowered. Additionally, the low effect sizes (η^2

= .001-.004) may indicate that a larger sample was needed to detect an effect. In subsequent

analyses, no relationships between the variables of interest (i.e., hypermasculinity, athletic

identity, and GPA) were found. Additionally, contextual variables that have previously been found to impact athletic identity such as receipt of athletic aid and year in school demonstrated no effect.

Study 1 did produce interesting results directly related to my central research question, however. When assessing the association between the perception of school as feminine (female-school association) and hypermasculinity, hypermasculinity significantly predicted agreement with *explicit* statements associating women and femininity with academic success (i.e., "School is feminine. Do you agree or disagree? Why or why not?" and "Women do better in school than men. Do you agree or disagree? Why or why not?"). The implications of this finding are significant given that this research theorizes the perception of school as feminine to be the causal link between hypermasculinity and decreased academic performance among male student-athletes. The relationship between hypermasculinity and the *implicit* qualitative questions (i.e., "What type of person does well in school? Why?") was more ambiguous: my hypothesis was contradicted in that hypermasculinity predicted the use of stereotypically *masculine* rather than feminine adjectives when describing a "good student." One possible explanation for this finding may be that an overwhelming majority of the participants (86%) identified as being strong students. It is plausible, then, that the contents of this question are a result of carry-over effects. That is, participants were primed by their identification as a good student, resulting in the increased use of words to describe themselves or people like them (e.g., Molden, 2014).

Since Study 1 included only male student-athletes, it was impossible to disaggregate the effects of gender from hypermasculinity. Study 2 sought to explore the overlap in gender and athlete identities for both male and female student-athletes. Importantly, Study 2 extends the

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findings from Study 1's exploratory analyses by investigating further the association between women/femininity and academic success.

Study 2

To further explore the extent to which participants associate academic success with femininity Study 2 utilized another implicit measure — the Implicit Association Test (IAT) —to expand on the findings from Study 1 and to explain any carryover effects. In addition, the goal of Study 2 was to show that the gender and athlete identities overlap more so for male student-athletes than for female student-athletes, thereby explaining the female-school association, as suggested by the relationship between hypermasculinity and the explicit female-school association in Study 1. This study, then, aimed to demonstrate that the social concept of athlete is intertwined with the social concept of maleness. Said in another way, the stereotypical traits associated with an athlete are highly similar to the stereotypical traits associated with a male. Meanwhile, the stereotypical traits associated with an athlete are distinct from those associated with a female. Therefore, the social identities of gender and athlete should be conceptually similar for males yet distinct for females.

It was hypothesized that participants would exhibit a stronger association between female-student and male-athlete than the converse (female-athlete and male-student) as measured by the IAT. Additionally, male student-athletes would show a stronger preference for the female-student/male-athlete association than female student-athletes. Lastly, this study aimed to investigate whether female student-athletes viewed their athlete identity as distinct from their gender identity. This distinction in female student-athletes would serve as a self-protective strategy to mitigate the presumed negative effects of the athletic identity and its association with hypermasculinity on academic performance (e.g., Harrison et al., 2009). Meanwhile, male

student-athletes should not exhibit this distinction because their gender and athletic identities are conceptually similar (e.g., Cuddy et al., 2015). I predicted that 1) role distinction as measured by the Role Separation Scale (Settles et al., 2002) would mediate the relationship between IAT *D*-scores (i.e., female-student/male-athlete association) and hypermasculinity and 2) gender would moderate the relationship between IAT *D*-scores and role distinction whereby the mediating effect of role distinction would only be present for male student-athletes (i.e., moderated mediation). In other words, IAT *D*-scores would predict role separation, or distinction, which in turn would predict hypermasculinity scores, for male student-athletes *only*.

Method

Participants and Procedure

  Participants. Testing the fit of a moderated mediation — or conditional process (Hayes, 2018) — model was the primary analysis in the current study. Thus, sample size estimates were based on the sum of those required for the mediation and moderation models, separately (Fritz & MacKinnon, 2017). To determine the requisite sample size for the mediation model, sample size estimation followed guidelines discussed by Fritz and Mackinnon (2017), which noted steps needed to achieve adequate power (.80). While there are multiple methods to test for mediation (e.g., structural equation modeling), the most recommended and simplest method utilizes a series of regression-based tests that incorporate bias-corrected bootstrapping because of its increased power (Cole & Maxwell, 2003; Holmbeck, 1997; Kenny et al., 1998; MacKinnon et al., 2004; Shrout & Bolger, 2002) and was thus adopted in the current study.

  In a mediation analysis, the individual paths of each variable are expressed through a series of regression equations, whereby τ is the estimate of the total effect of an independent variable *X* on a dependent variable *Y* and a measure of the direct effect of independent variable *X*

on dependent variable *Y* adjusted for mediating variable *M*. ß (beta) is the estimate of the effect

of mediating variable *M* on dependent variable *Y* adjusted for independent variable *X*, and α is

the estimate of the effect of independent variable *X* on mediating variable *M*.

Per suggestions from Fritz and MacKinnon (2007), the effect sizes for the α and ß paths

were estimated separately and the resultant sample size was the sum of the number of

participants needed to reach the desired effect size for each path. Using the table of empirical

estimates of sample sizes needed for .80 power for bias-corrected bootstrapping mediation

models provided by Fritz and MacKinnon (2007), it was determined that a sample size of 71

participants for medium effect sizes of $f^2 = .25$ for both the α and ß paths would be needed to test

the mediation model.

In this iteration of a conditional process model, a moderation analysis was used to

examine the conditional effect of independent variable *X* on dependent variable *Y*, depending on

third variable *W*. Thus, to test the interaction between gender (*W*) and IAT *D*-scores (*X*) — the

moderation component of the model — a total of 128 participants (64 males and 64 females)

would be needed for $\alpha = .05$ and power of .80 (Faul et al., 2007). To test the full moderated

mediation model, a total sample size of 199 participants (71 + 128 = 199) would be needed. For

the sake of simplicity, sample size was rounded up to the nearest whole number (i.e., 200) to

accommodate even numbers of male and female student-athletes.

Participants were recruited via the University of Hawaii at Mānoa's online participant

recruitment service, Sona (*n* = 42), and a flyer (see Appendix G) sent by the Faculty-Athlete

Representative (FAR) over the student-athlete mass communication system (*n* = 120). Student-

athletes who accessed the survey through the link on the flyer received a $5 Starbucks gift card

for their participation. Students who accessed the survey through Sona received one course

credit. There were 162 respondents ($N_{female} = 107$, 66.05%) after data collection. The IBM SPSS

PROCESS extension version 3.5.3 (Hayes, 2018) used to analyze the data assumes the existence

of a complete data set and automatically excludes cases from analyses that are missing on any of

the variables in the model (i.e., listwise deletion). Furthermore, PROCESS does not integrate

with the multiple imputation routine in SPSS version 27 so any attempt at testing the conditional

process model with imputed data would result in an error message. Thus, any participant who

failed to respond to one or more of the measures of interest (i.e., IAT, ADHI, and/or role

distinction measures) was dropped from analyses. Of the 162 respondents, 89 (54.94%)

completed the IAT but 2 (2.20%) of those participants were dropped from analyses for excessive

speed, resulting in a sample size of 87 ($N_{female} = 59$, 67.8%). The substantive drop in participant

retention is most likely an artifact of participants attempting to complete the study on a cell

phone or tablet (e.g., iPhone or iPad). One male student-athlete terminated participation after

completing the IAT and was thus dropped from analyses. The final sample size was $N = 86$

($N_{female} = 59$, 68.6%).

Procedure. Participants were instructed to complete the online survey on a computer and

were explicitly told not to use a tablet or smart phone. All measures were accessed via a

Qualtrics link. After giving consent, participants completed the demographic measures from

Study 1 and self-reported their GPA.

After completing the demographic measures, participants completed an Implicit

Association Test (IAT) designed specifically for this project. First, they were presented with a

screen stating: *In this study you will complete an Implicit Association Test (IAT) in which you*

will be asked to sort words into groups as fast as you can. The first block will be practice. The

purpose of the practice trial was to acquaint the participant with the exercise. Then, after

completing the practice trial, the real IAT was introduced with the sentence: *Now you will start the real IAT*. Participants were subsequently instructed to place their left and right index fingers on the "E" and "I" keys and to categorize the words that appeared in the middle of the screen with the target words at the top left and right corners of the screen as fast as they could, making as few errors as possible. Participants completed a 40-trial *compatible* dual-categorization block and a 40-trial *incompatible* dual-categorization block with the order of the compatible and incompatible blocks randomized across participants (Hahn & Gawronski, 2019).

Once completing the IAT, participants were randomly presented with either the Role Separation Scale (RSS; Settles et al., 2002) to measure role distinction or the ADHI (Burk et al., 2004). The logic behind randomizing the RSS and the ADHI stemmed from the belief that one might cognitively prime the other. Then, participants were asked to complete the attention check used in Study 1 before self-reporting their GPA on a 4.0 scale.

Materials

Demographic Measures and GPA. The five demographic measures (see Appendix A) from Study 1, along with GPA ($M = 3.44$, $SD = .39$) were assessed by self-report, with one slight

Table 5.

Sport by Gender

Sport	Women		Men		Total	
	n	%	*n*	%	*N*	%
Football	0	0.0	14	16.3	14	16.3
Baseball	0	0.0	4	4.7	4	4.7
Track/field	14	16.3	0	0.0	14	16.3
Golf	3	3.5	0	0.0	3	3.5
Swimming/diving	6	7.0	1	1.2	7	8.3
Sailing	3	3.5	2	2.3	5	5.8
Soccer	3	3.5	0	0.0	3	3.5
Volleyball (beach and indoor)	12	14.0	4	4.7	16	18.6
Basketball	1	1.2	1	1.2	2	2.3
Cheerleading	5	5.8	1	1.2	6	7.0
Tennis	2	2.3	0	0.0	2	2.4
Water polo	4	4.7	0	0.0	4	4.7
Softball	5	5.8	0	0.0	5	5.9
Missing	1	1.2	0	0.0	1	1.2
Total	59	68.6	27	31.4	86	100.0

modification: student-athletes were asked to self-identify as either male or female (male = 0, female = 1). Of the 86 participants, 32.6% were freshman, 31.4% were sophomores, 14.0% were juniors, and 22.1% were seniors. A larger range of sports were represented in the current study than in Study 1 (see Table 5). 55.5% of male student-athletes received some form of athletic aid via either a partial or full athletic scholarship compared to 76.3% of female student-athletes. While twice as many female student-athletes participated in the study, it is surprising that roughly the same proportion of male student-athletes did not admit to receiving at least a partial athletic scholarship given that Title VIX requires receipt of athletic scholarships be proportional to participation (NCAA, 2015). Thus, it is possible that a subset of "atypical" male student-athletes make up the current sample. Put another way, it is possible that this sample may not be representative of the "typical" Division I male student-athlete (see General Discussion for a more thorough explanation).

Female-student/Male-athlete IAT. An IAT was used to measure the presumed female-student/male-athlete association. The IAT (Greenwald et al., 1998) is most commonly used as a measure of attitudes but has also been used to measure stereotypes (Amodio & Devine, 2006; Nosek et al., 2002; Rudman et al., 2001; Rudman & Glick, 2001; Rudman & Lee, 2002) and the self-concept (Dal Cin et al., 2007; Devos & Banaji, 2005; Greenwald et al., 2000; Haines & Kray, 2005; Swanson et al., 2001). Importantly, implicit associations are reflected in behaviors and judgments that are automatic, often functioning without the individual's awareness. Thus, the use of the IAT was beneficial in this study for several reasons: (a) participants were forced to make a judgment in milliseconds, thereby eliminating the possibility of deliberation and (b) social desirability is arguably less of a concern in the IAT (Nosek et al., 2007). That is, the IAT may resist the effects of self-presentation strategies and reveal attitudes and automatic

associations for subjects who are hesitant or prefer not to express their true attitudes (Greenwald et al., 1998). Lastly, (c) the results from the implicit measures assessing the association between femininity and academics in Study 1 were ambiguous. Finding an implicit association between femininity and academics using the IAT would bolster the findings from the explicit measures (i.e., "School is feminine. Do you agree or disagree? Why or why not?") and underscore the argument that the increased use of masculine-oriented adjectives to describe a "good student" was a result of cognitive priming by the previous question (i.e., "Do you do well in school? Why or why not?").

The IAT used in Study 2 resembled the word format of the Black/White-pleasant/unpleasant IAT used by Greenwald et al. (1998) whereby participants were presented with target words in the top left and right corners and were asked to categorize attribute words presented in the center in the screen with the associated target word (see Figure 2). In the first test trial of the current study, the target word "MALE" was presented in the top left corner of the screen and the target word "FEMALE" was presented in the top right corner. An attribute word associated with either target (e.g., grandma) appeared in the center of the screen. Participants were required to categorize the attribute word with the target word as fast as possible by pressing the "E" and "I" keys on their keyboards. In a subsequent trial, an additional set of target words was added such that "MALE" and "ATHLETE" appeared in the top left corner and "FEMALE" and "STUDENT" appeared in the top right corner. These pairings constituted the *compatible* trials. Participants were again required to categorize attribute words associated with each target word (i.e., helmet, mother) as fast as they could. Next, target words were switched such that "MALE" appeared in the top right corner and "FEMALE" appeared in the top left corner. In the last block, "MALE" and "STUDENT" appeared together while "FEMALE" and "ATHLETE"

a

Female
or
Student

Male
or
Athlete

+

Now the four categories you saw separately will appear together. Remember, each word/image fits in only one of the four categories. The label/item colors may help you identify the appropriate category.

Use the **E** key for the two categories on the left and the **I** key for the two categories on the right. Again, try to go as fast as possible without making mistakes. Correct errors by hitting the other key. Practice this combination now.

When you are ready, please press the [Space] bar to begin.

Part 3 of 7

b

Male
or
Student

Female
or
Athlete

+

Notice the four categories have been combined again, but in a new configuration. Please practice this combination now, and remember to go as fast as you can while making as few mistakes as possible. Correct errors by hitting the other key.

When you are ready, please press the [Space] bar to begin.
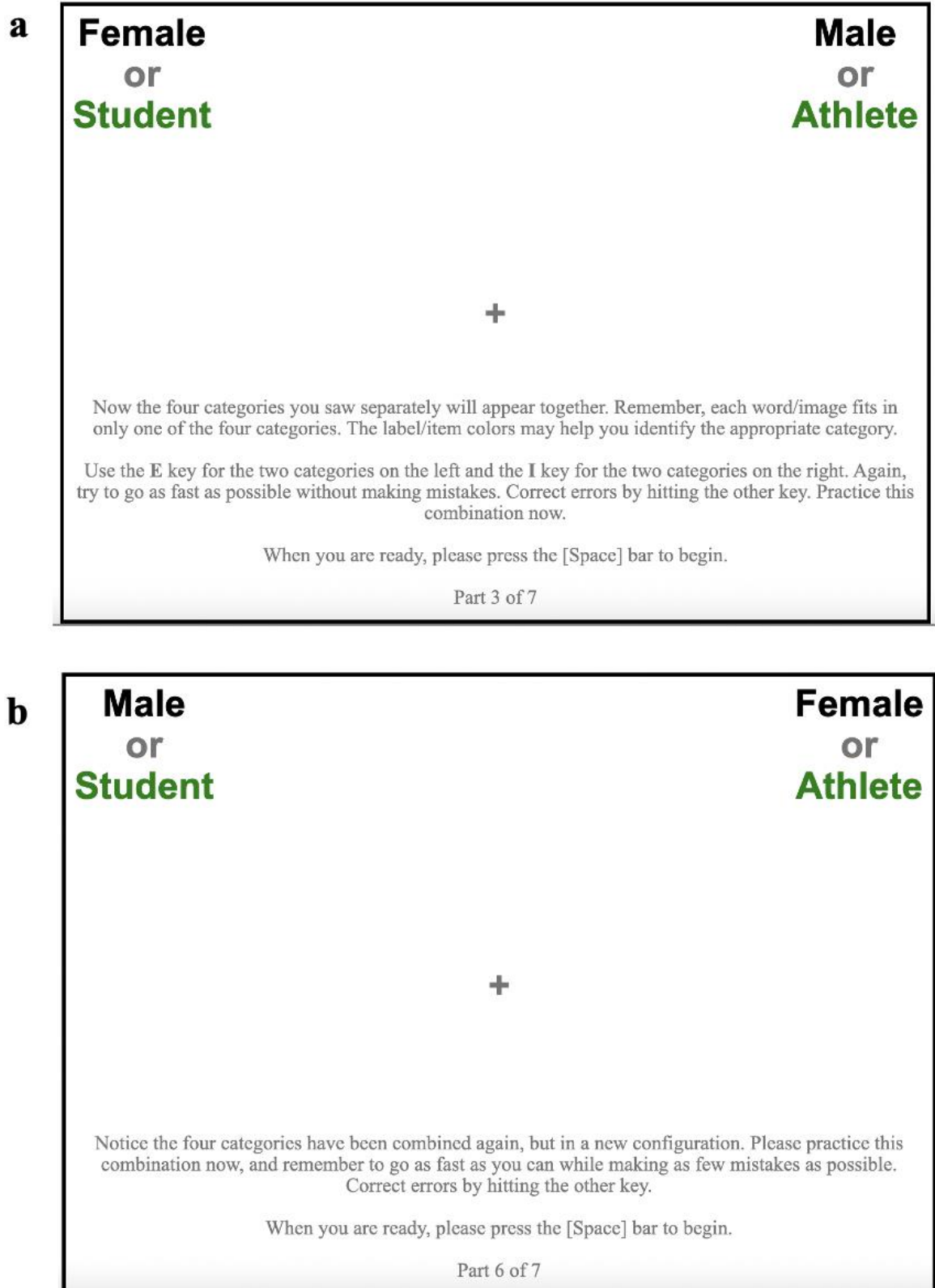
Part 6 of 7

Figure 2.   Participants' view of (a) compatible trials and (b) incompatible trials on Qualtrics.

appeared together. These pairings represented the *incompatible* trials. The IAT, then, captures

the extent to which participants construe attribute words (e.g., jersey, professor, mother, brother)

as being associated with a target word (i.e., male, female, student, athlete). When constructs,

concepts, or categories that are highly associated share a response key (i.e., in the *compatible*

trials), participants tend to have an easier time categorizing relevant attribute words compared to

when weakly associated constructs, concepts or categories share a response key (i.e., in the

incompatible trials). The compatible-incompatible difficulty difference provides the measure of

implicit association between the target categories (Greenwald et al., 1998). This difference is

quantified as a *D*-score (Greenwald et al., 2003). *D*-scores are computed by the mean difference

in trials divided by the overall standard deviation (Greenwald et al., 2003).

Due to the inability to conduct in-lab studies because of the COVID-19 pandemic, the

IAT was programmed using Qualtrics-compatible software (Qualtrics, Provo, UT), IATGen

(Carpenter et al., in press). Target A was specified as "female" and Target B was specified as

"male." Positive attributes were defined as those associated with "female" and "student" while

negative attributes were defined as those associated with "male" and "athlete" (see Figure 3). All

attribute and target stimuli were words.

IATGen (Carpenter et al., in press) conveniently analyzes the IAT data directly in the

software extension. *D*-scores are calculated, with scores close to 0 indicating no association, a

positive *D*-score indicating a stronger female-student/male-athlete association and a negative *D*-

score indicating a stronger female-athlete/male-student association. Thus, a higher *D*-score

indicated a stronger overlap between the concepts of female-student and male-athlete.

Sequence	1	2	3	4	5
Task description	*Initial target-attribute discrimination*	*Associated attribute discrimination*	*Initial combined task*	*Reversed target-attribute discrimination*	*Reversed combined task*
Task instructions	• FEMALE MALE •	• student athlete •	• FEMALE • student MALE • athlete •	FEMALE • • MALE	FEMALE • • student • MALE athlete
Stimuli (attribute words)	✕ WOMAN ✕ DAUGHER ✕ MOTHER ✕ GIRL ✕ AUNT ✕ GRANDMA ✕ WIFE MAN ✕ SON ✕ FATHER ✕ BOY ✕ UNCLE ✕ GRANDPA ✕ HUSBAND ✕	ball ✕ field ✕ helmet ✕ run ✕ coach ✕ team ✕ jersey ✕ ✕ homework ✕ exam ✕ school ✕ semester ✕ grades ✕ professor ✕ class	GRANDPA ✕ ✕ professor FATHER ✕ ball ✕ ✕ AUNT ✕ grades ✕ WOMAN jersey ✕	✕ WOMAN ✕ DAUGHER ✕ MOTHER ✕ GIRL ✕ AUNT ✕ GRANDMA ✕ WIFE MAN ✕ SON ✕ FATHER ✕ BOY ✕ UNCLE ✕ GRANDPA ✕ HUSBAND ✕	✕ MAN ✕ school ✕ BOY helmet ✕ WIFE ✕ exam ✕ MOTHER ✕ ✕ run

Figure 3. Task description, instructions, and attribute words for the social identity implicit association test (IAT). Correct responses are indicated with x's.

Auburn Differential Hypermasculinity Inventory. The ADHI (Burk et al., 2004) was used to assess hypermasculinity. Some items on the ADHI are directed specifically toward heterosexual men (e.g., "I don't feel guilty for long when I cheat on my girlfriend/wife") and, as a result, were modified to apply to women (e.g., "I don't feel guilty for long when I cheat on my boyfriend/husband"), when appropriate. The sample yielded an $\alpha = .90$.

Role Separation Scale. An integral component of this study was the belief that female student-athletes bifurcate — or distinguish between — their athletic and gender identities. Thus, an established measure of role separation was modified to assess this distinction. Settles et al. (2002; see Appendix E) developed a 16-item Student-Athlete Role Conflict Scale based on the theory that the academic and athletic identities were incompatible. This measure

consisted of two scales: a role interference scale and a role separation scale. For the purposes of the present study, only the role separation scale was included to measure role distinction. The Role Separation Scale (RSS) consisted of four items that assessed the extent to which the student and athletic identities were distinct from one another (e.g., "Some student-athletes view themselves more as a student than an athlete"). Items are measured on a 7-point Likert-type scale ranging from 1 (*not really true of me*) to 7 (*really true of me*). Typically, a composite score is calculated by reverse scoring appropriate items and averaging across all items. Higher scores indicate a greater level of role separation.

The RSS was modified to measure the distinction between gender and athletic identity for male and female student-athletes individually such that male student-athletes saw "male student-athlete" items only and female student-athletes saw "female student-athlete" items only. The present sample yielded a Cronbach's $\alpha = .20$ for the 4-item measure. ($\alpha_{male} = .03$, $\alpha_{female} = .32$). Settles et al. (2002) had a Cronbach's α of .54. To address this issue of low reliability, an item analysis was run in IBM SPSS version 27. Eliminating items from the scale did not substantially improve reliability (i.e., greatest improvement potential: $\alpha = .33$). Therefore, the Role Separation Scale was dropped from the main analysis due to a lack of internal consistency and its inability to be adequately interpreted.

Attention Check. The same attention check from Study 1 was used in Study 2. Participants who fail the attention check are typically eliminated from analyses. However, because 100% of participants correctly entered the word "pink" when prompted to do so, no participants were dropped from the present sample based on the attention check.

Results

The mean scores and standard deviations for relevant measures are presented in Table 6 and bivariate Pearson correlations are presented in Table 7.

Table 6

Means (Standard Deviations) by Measure

Measure	Total	Women	Men
Social identity IAT	.19 (.36)	.10 (.37)$_a$	.37 (.23)$_b$
ADHI	2.16 (.39)	2.01 (.34)$_a$	2.34 (.45)$_b$
GPA	3.44 (.39)	3.53 (.34)$_a$	3.24 (.43)$_b$

Note.   Means within rows not sharing a subscript differ at the $p < .01$ level or higher

Overall, participants had faster reaction times in the *compatible* trials than the *incompatible* trials such that the female-school/male-athlete association was stronger than the female-athlete/male-school association, $t(87) = 4.92$, $p < .001$, $d = .52$. Male and female student-athletes differed significantly from each other on the strength of this association, $t(84) = 3.45$, $p < .001$, $d = .35$). Male student-athletes showed a stronger female-student/male-athlete association than female student-athletes. Male and female student-athletes significantly differed from each other in GPA, $t(82) = -3.401$, $p = .001$, $d = .37$, and hypermasculinity, $t(84) = 2.964$, $p = .004$, $d = .38$), with female student-athletes reporting higher GPAs than their male counterparts and male student-athletes reporting higher levels of hypermasculinity than their female counterparts.

Table 7

Pearson Product Correlations

Variable and statistic	1	2	3	4
1. Grade point average	—			
2. Gender	-0.352**	—		
3. Hypermasculinity	-0.29**	0.099	—	
4. IAT *D*-score (female-school/male-athlete association)	-0.145	-0.349**	0.096	—

*$p < .05$. **$p < .01$.

In a set of preliminary exploratory analyses, the bivariate relationships between the

ADHI, GPA, and the social identity IAT were examined. Scores on the social identity IAT were

not significantly associated with either GPA or hypermasculinity. However, hypermasculinity

and GPA were significantly associated such that as levels of hypermasculinity increased, GPA

decreased.

Testing the Fit of the Conditional Process Model

The originally proposed main analysis was a test of the fit of the conditional process

model known as a *first stage moderation model* (Edwards & Lambert, 2007; see Figure 4).

Specifically, it was hypothesized that role separation (i.e., the RSS) would mediate the

relationship between IAT *D*-score (i.e., female-school/male-athlete association) and

hypermasculinity *conditional* on gender. Said another way, the mediating effect of role

separation — or the distinction between the athletic and gender identities — would be present for

male student-athletes only such that the *lack* of distinction between the gender and athletic
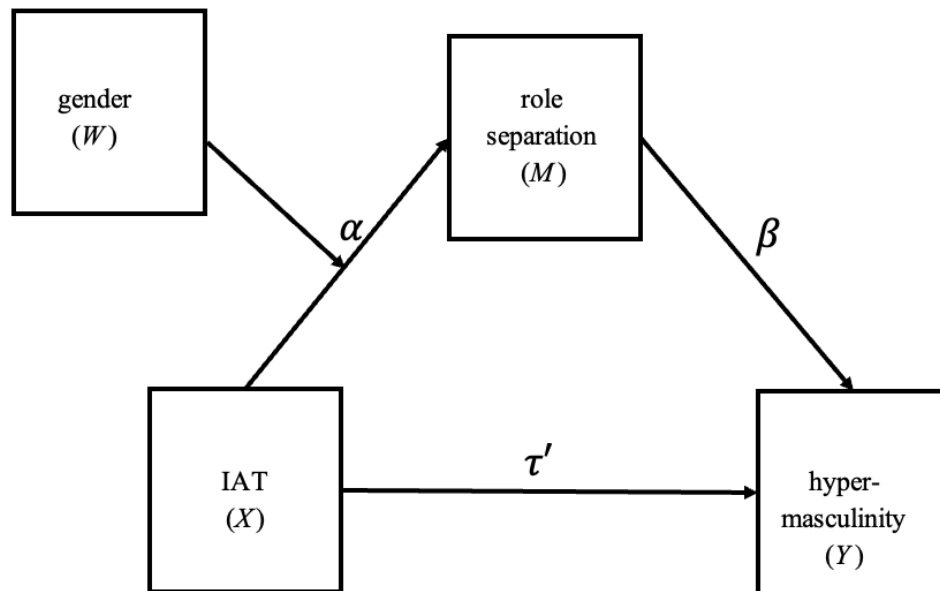

Figure 4.   Proposed path diagram for the indirect effect of IAT scores (*X*) on hypermasculinity (*Y*)
through role separation (M) conditional on gender (W) (model adapted from Hayes, 2018).

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identities for male student-athletes would explain the predictive relationship between IAT *D*-scores and hypermasculinity. The purpose of this model was to test this assumption while simultaneously arguing that female student-athletes bifurcate their gender and athletic identities. This bifurcation serves as a self-protective effort by which female student-athletes are shielded from the negative effects of the athletic identity. Due to a lack of internal consistency, the Role Separation Scale (Settles et al., 2002) was dropped from the model. The low reliability was most likely an artifact of confusing wording. Thus, the main analysis consisted of a *moderation model* in which gender moderated the relationship between IAT *D*-scores and hypermasculinity.

The fit of the moderation model was tested using the SPSS version of PROCESS 3.5.3. (Hayes, 2018) selecting for Model 1. Participants' *D*-scores were entered into the model as the main predictor *X*, gender (male = 0, female = 1) was entered as moderator *W*, and scores on the ADHI were entered as the dependent variable *Y*. Predictor variables were not mean-centered since IAT *D*-scores could theoretically include zero and the second antecedent to variable *Y*, gender, was dummy-coded such that 0 denoted male and 1 denoted female. Therefore, the regression coefficients were substantively interpretable. The model did not produce novel findings, $F(3, 82) = 3.00$, $p = .035$, $R^2 = .10$, $R^2_{adjusted} = .004$. The interaction between IAT *D*-scores (female-school/male-athlete association) and gender was not significant, $b = .211$, $t(82) = .606$, $p =. 546$. Thus, the effect of IAT *D* score on hypermasculinity was not conditional on gender. Moreover, the effect of IAT *D*-score on hypermasculinity scores was not significantly different from zero, $b = -.194$, $t(82) = -.605$, $p = .547$. As previously stated, gender did significantly predict hypermasculinity scores, $b = -.334$, $t(82) = -2.236$, $p < .05$. In the present sample, the average female student-athlete scored .334 points *lower* than the average male student-athletes on hypermasculinity.

Testing the Dual Mediation of Hypermasculinity and IAT D-scores on Gender and GPA

Because gender significantly predicted GPA, an exploratory *dual mediation* model to test the mediating effects of both hypermasculinity and IAT *D*-scores was run using the PROCESS macro for IBM SPSS (Hayes, 2018). Gender (0 = male, 1 = female) was entered into the model as the independent variable, GPA was entered as the dependent variable, and both hypermasculinity and IAT *D*-scores were entered as dual mediators. All continuous variables were mean-centered. Neither hypermasculinity, $F(1, 79) = .566$, $p = .454$, nor IAT *D*-score $F(1, 79) = .350$, $p = .556$, mediated the relationship between gender and GPA.

Discussion

Findings from Study 2 indicate that GPA is negatively associated with hypermasculinity. Thus, Study 2 offered support for this hypothesized relationship, signaling that hypermasculinity may be detrimental to academic performance after all. While these results are significant, the main analysis of this study intended to test the fit of a conditional process model — specifically, a *moderated mediation* model — to investigate whether role distinctness (i.e., the distinctness between the gender and athlete roles), as measured by the Role Separation Scale (Settles et al., 2002) mediated the effect of the female-school/male-athlete association on hypermasculinity scores conditional on gender. That is, role distinctness would only mediate the effect of the female-school/male-athlete association on hypermasculinity scores for male student-athletes because of the conceptual overlap in the male gender and athletic identities. Thus, the primary aim of this study was to determine *how* (role distinctness) and *for whom* (male student-athletes) the female-school/male-athlete association impacted hypermasculinity. It is important to note that the moderated mediation model initially proposed could not be run since the role distinction measure was too low in reliability.

Preliminary analyses supported the presence of a female-school/male-athlete implicit association. Both male and female student-athletes were quicker to implicitly associate "school" attribute words with "female" and "athlete" attribute words with "male". Most importantly, male student-athletes demonstrated a stronger female-school/male-athlete association than did female student-athletes. Although it is difficult to probe the cause for this difference, several explanations are plausible. First, female student-athletes may identify equally as a student and an athlete and therefore may have experienced little hesitation in reaction time during the *incompatible* (i.e., female-athlete/male-student) blocks (e.g., Bhatia & Bhatia, 2021). This explanation runs contrary to research suggesting that female student-athletes shy away from the athletic identity because of its negative effects on their academic performance (e.g., Harrison et al., 2009). Second, male student-athletes self-reported significantly lower GPAs than did female student-athletes ($M_{male} = 3.24$, $M_{female} = 3.53$). It is possible that males were quicker than females to make the female-school/male-athlete association because they were not performing as well academically and failed to identify with the male-student pairing (Steele, 1997; Stone et al., 2012; Woodcock et al., 2012).

Given the evidence that male student-athletes are stigmatized in academic settings (Edwards, 1984; Harrison, 2002; Sailes, 1996; Wininger & White, 2008), perhaps it is not surprising that male student-athletes would more quickly associate their gender identity with the more self-affirming identity (see Stone et al., 2012). Lastly — and arguably most relevant to the central argument of this research project — male student-athletes may have shown a greater preference for the female-student/male-athlete association because of the *antifemininity mandate*, the supposition that boys and men must avoid feminine behaviors, tendencies, and preferences (Bosson & Michniewicz, 2013). Previous research contends that academic success is typified as

being stereotypically feminine (Heyder & Kessels, 2013). As a result, male student-athletes may have shown a stronger preference for the female-school/male-athlete association because of this stereotype.

While the results from Study 2 bolster findings from Study 1 and offer support for the prediction that hypermasculinity is negatively associated with academic performance, the main analysis — testing the fit of the conditional process model — could not be executed because of the unreliability of a key variable: the Role Separation Scale (Settles et al., 2002). Thus, the argument that the athletic and male identities are conceptually similar for male student-athletes — and conceptually distinct for female student-athletes — could not be tested. In a modified *moderation* model, gender did not moderate the effect of IAT *D*-scores on hypermasculinity. Moreover, IAT *D*-scores did not significantly predict hypermasculinity scores. This study cannot conclusively suggest a relationship between the implicit female-student/male-athlete association, role (non)distinction, and hypermasculinity because the intended model could not be tested. While the model's effect was small ($f^2 = .10$), this isn't surprising given that the required sample size (200 total) was not met. Thus, it's probable that the study was underpowered even for a simple moderation model.

Study 3

Although athletic identity specifically does not seem to play a role in male student-athletes' academic performance (Study 1) or affect scores on a measure of hypermasculinity (Studies 1 and 2), both Studies 1 and 2 provide combined evidence of an explicit *and* implicit female-school association. Significantly, Studies 1 and 2 demonstrate this association using different research methods: Study 1 utilized qualitative analyses to quantify the use of gendered adjectives when describing who does well in school (implicit measure) and identify the explicit

endorsement of the belief that school is feminine while Study 2 adopted a widely used measure of implicit association — the IAT — to assess the automatic and unconscious female-school/male-athlete association.

Neither Study 1 nor Study 2 lend substantial support for hypermasculinity serving as the mechanism by which gender impacts academic performance. In fact, hypermasculinity seems to be a *predictor* for the endorsement of the belief that school is feminine (Study 1) and lower GPAs (Study 2) but does not seem to be the mechanism that explains male student-athletes' academic performance. It may be that hypermasculinity has varied effects because of the lack of variation in hypermasculinity in Study 1's sample, the underpowered nature of Study 2, and participants' potential unwillingness to answer socially sensitive questions in general. Thus, the inconclusive effects related to hypermasculinity in Studies 1 and 2 could be a result of a weak measure (i.e., the ADHI self-report measure) for hypermasculinity, especially given its limitation. In fact, some researchers argue that it is beneficial to experimentally manipulate the variable of interest in order to establish a baseline to which scores on self-report measures can be compared (Jerit et al., 2016). That is, manipulating participants' exposure to different levels of hypermasculinity may demonstrate a clearer effect since it circumvents potential social desirability effects.

However, neither Study 1 nor Study 2 experimentally manipulated hypermasculinity. In an effort to determine if hypermasculinity is in fact responsible for decreased academic performance in male student-athletes — and to determine if the effects of hypermasculinity can be more accurately measured using experimental measures — Study 3 manipulated levels of hypermasculinity using a sample of male traditional (non-athlete) undergraduate students to investigate the effect of hypermasculinity on male students' performance on an academic

assessment, the General Record Examinations (GRE). Although neither athletic identity (Study 1) nor the female-school/male-athlete association (Study 2) predicted hypermasculinity for male student-athletes, a statistically significant difference in GPA existed between male and female student-athletes.

It is possible that hypermasculinity is not unique to male student-athletes but rather is a component of the gender identity of *all* males. Although hypermasculinity's role in the GPA differential between male and female student-athletes was not supported in Study 2, there still exists the possibility that the effect may present itself when using a different measure of hypermasculinity in a sample of non-athlete male undergraduate students. Presumably, if underperformance in academics is at least in part due to increased hypermasculinity in male student-athletes, then activation of hypermasculinity in traditional (non-athlete) students should affect academic performance. Thus, it is not the identity of being a male-athlete itself, but rather prescribed norms associated with hypermasculinity (that may also overlap with the athletic identity to some extent) that are responsible for underperformance.

Study 3 also examined the role of a tempered (or "diluted") masculinity — advocacy of feminine traits as well as masculine traits — relative to hypermasculinity on academic performance. Inclusion of this condition further supports these studies' arguments that hypermasculinity is detrimental to academic performance while femininity bolsters an academic mindset. Furthermore, the *tempered masculinity* trait distinguishes between its more toxic cousin, *hypermasculinity*, and a more traditional and widely regarded masculinity.

To my knowledge, no studies have attempted to prime individuals with hypermasculine beliefs. Much of the literature on hypermasculine attitudes and overt, toxic gender bias centers on modifying behaviors of male prisoners (see Jewkes et al., 2015 for a review; Karp, 2010) and

batterers (e.g., Schrock & Padavic, 2007), and preventing incidences of rape (e.g., Lanier et al., 2010). As a result, inclusion of an experimental manipulation of hypermasculine beliefs makes a novel contribution to the social psychological literature on the malleability of gender attitudes and beliefs. It was hypothesized that male traditional undergraduates in the *hypermasculinity prime* condition would have mean GRE scores lower than those of male traditional undergraduates in the *tempered masculinity* prime and the *neutral prime* conditions. It was also predicted that participants in the *tempered masculinity* condition would score higher on the GRE than those in the *neutral prime* condition.

Method

Participants and Procedure

      Participants. Prior to any analyses, it was determined that a sample size of 159 participants would be needed for a medium effect size of $f^2 = .22$. This effect size was based on previous research that used a similar manipulation wherein participants were primed with either traditional or atypical gender roles using photos and descriptions (Rudman & Phelan, 2010). Participants were recruited from the University of Hawaii at Mānoa's online recruitment portal, Sona Systems. Only male traditional (non-athlete) students were recruited. All participants received one course credit for their participation. A total of 138 male students participated in the survey. Twenty-one participants (15.22%) failed the attention check, 1 (0.72%) participant failed to identify as a man/male, and 1 (0.72%) participant terminated the study after completing the attention check. The final sample consisted of 115 (83.33% of original sample) male participants. 49.6% were freshman, 21.7% were sophomores, 17.4% were juniors, and 11.3% were seniors.

      Procedure. As in the previous two studies, all measures were completed online using the Qualtrics survey platform. After providing consent, participants answered three of the five

demographic measures from the previous studies (i.e., man/male identification, class standing, and chosen/intended major).

Following completion of the demographic measures, participants were randomly assigned to one of three priming conditions: (a) *hypermasculinity* prime, (b) *tempered masculinity* prime, or a (c) *neutral* prime. In each condition, participants were asked to read a short passage about either a type of masculinity (*hypermasculinity* or *tempered masculinity* primes) or the history of jellyfish (*neutral* prime). To ensure comprehension, participants were instructed to identify the main points of the argument with which they were presented. The purpose of this attention check was two-fold: first, participants who failed to comprehend the passage were dropped from analyses. Second, participants further encoded the information from the passage, possibly strengthening the effects of the prime (e.g., Squire et al., 1987).

After the attention check, participants completed a manipulation check which consisted of the "hypermasculinity" subscale of the ADHI (Burk et al., 2004). Lastly, participants were given 15 minutes to complete as many problems as possible from the General Records Examination (GRE) practice exam. The study automatically ended after 15 minutes, at which point participants were thanked for their participation.

Materials

Demographic Measures and GPA. Three of the five (i.e., gender, class standing, chosen or intended major) demographic measures used in Studies 1 and 2 were also used in Study 3 (see Appendix A). Participants were also asked to self-report their current GPA ($M = 3.16$, $SD = 0.76$).

Hypermasculinity versus Tempered Masculinity Primes. Participants were randomly assigned to one of three experimental conditions: a *hypermasculinity* prime, a *tempered*

masculinity prime, or a *neutral prime* condition. Because this experimental manipulation is novel and no precedent existed to which we could compare data, qualitative data obtained from an intervention designed to eradicate the relationship between hypermasculinity and criminality was modified slightly to create the conditions for Study 3. Although this project doesn't focus on the link between hypermasculinity and criminality, it is argued that the language of the data is imbued with concepts and themes measured by the ADHI (Burk et al., 2004).

Hypermasculinity Prime. Participants in the *hypermasculinity prime* read an excerpt adapted from qualitative data obtained from an inmate describing the need to conform to hypermasculine norms (Karp, 2010):

A man suffers in silence. He never admits he's afraid. He doesn't snitch. And he doesn't do anything that makes other men think he's gay, feminine, or a sissy. A real man acts hard and doesn't back down to authorities. He doesn't trust anyone. A real man is always ready to fight, especially when his manhood is challenged. One way a man can avoid a fight is to look as though he is willing to fight. As a result, men should lift weights compulsively. Men should be intimidating to other men. Importantly, they should keep their fears and pain carefully hidden beneath. There is only one type of man.

Tempered Masculinity Prime. To distinguish between hypermasculinity and traditional masculinity as well as to lend support to the argument that femininity is implicitly linked to academic success, the second condition – *tempered masculinity* – consisted of a passage advocating for the inclusion of feminine characteristics with traditionally masculine characteristics. This passage was adapted from educational resources used by the ManKind

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Project (MKP), a voluntary organization that focuses on re-envisioning masculinity by making men aware of the benefits of holding both masculine and feminine traits. Importantly, the ManKind Project offers a critique of hegemonic masculinity and seeks to redefine masculinity:

A man asks for help when he's suffering. He admits when he's afraid. He does what's right. And he isn't afraid to include feminine characteristics into his personality. A real man is ok with being in touch with his emotions, being caring and empathetic and respects authorities. He trusts people. A real man doesn't always have to fight, even when he's challenged. One way a man can avoid a fight is to not be violent or domineering. As a result, men don't have to be big and muscular. Men should be accepting of other men and women. Importantly, they should talk about their fears and pain. There are multiple types of men.

Neutral Prime. The neutral prime condition served as the control condition. Participants in this condition read a passage irrelevant to any of the constructs of interest. Specifically, participants read a passage about a gender-neutral animal (i.e., jellyfish) adapted from an article in *National Geographic*:

Jellyfish have drifted along on ocean currents for millions of years, even before dinosaurs lived on the Earth. The jellylike creatures pulse along on ocean currents and are abundant in cold and warm ocean water, in deep water, and along coastlines. But despite their name, jellyfish aren't actually fish – they're invertebrates, or animals with no backbone. Jellyfish have tiny stinging cells in their tentacles to stun or paralyze an animal before

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they eat them. Inside their bell-shaped body is an opening that is its mouth. They eat and discard waste from its opening. As jellyfish squirt water from their mouths, they are propelled forward. Tentacles hang down from the smooth baglike body and sting their prey.

Manipulation Check. The "Hypermasculinity" subscale of the ADHI (Burk et al., 2004) was used to assess the effectiveness of the hypermasculinity manipulation. The subscale consisted of 17 items that specifically measured the super-valuation and exaggeration of traditional male gender characteristics (i.e., "Women, generally, are not as smart as men" and "I value power over people"). The present sample yielded a Cronbach's $\alpha = .86$ ($M = 4.53$, $SD = .43$).

GRE Practice Exam. Most standardized tests assess a combination of verbal, quantitative, writing, and critical reasoning skills. Research shows that standardized admissions tests, like the GRE, are predictive of student academic performance (Kuncel & Hezlett, 2007). In Study 3, participants were administered 40 (20 quantitative reasoning + 20 verbal reasoning) problems from a practice GRE exam, which are available online for free (see Appendix F). Participants had 15 minutes to complete as many problems as possible. To protect against any differences in performance as a result of gender stereotypes, participants received an equal amount of practice problems from both the verbal and quantitative sections of the test (Shih et al., 1999, 2006). The order in which the practice problems were presented were randomized across participants. A GRE success rate was calculated as follows:

$$\left(\frac{\Sigma \text{ GRE questions answered correctly}}{\Sigma \text{ GRE questions attempted}}\right) * 100$$

On average, participants attempted 6.22 (SD = 5.79) out of 20 verbal reasoning problems, 16.48 (SD = 5.71) out of 20 quantitative reasoning problems, and 22.70 (SD = 10.66) out of 40 problems in total. Overall, participants received an average success rate of 43.53% (SD = 19.03). The large spread in scores is most likely attributable to differences in effort put forth.

Results

Manipulation Check

To determine if the *hypermasculinity* prime had the intended effect on participants' attitudes, scores on the "hypermasculinity" subscale were subjected to a one-way analysis of variance (ANOVA) with condition (hypermasculinity v. tempered masculinity v. neutral) as the grouping variable. There was no evidence that the manipulation had an effect on hypermasculinity, $F(2, 110) = 1.100$, $p = .337$, $\eta^2 = .02$. As expected, the proposed main analysis — a one-way ANOVA to assess mean differences in success rate on the GRE practice exam as a function of condition — was also not significant, $F(2, 110) = .407$, $p = .666$, $\eta^2 = .007$.

Exploratory Bivariate Analyses

Bivariate Relationship Between Hypermasculinity and GRE Success Rate. In an exploratory analysis to examine the relationship between scores on the "hypermasculinity" subscale of the ADHI (Burk et al., 2004) and GRE practice exam success rates, a bivariate Pearson correlation was run. There was no evidence of any association between "hypermasculinity" subscale scores and GRE success rates, $r = -.076$, $p = .424$.

Bivariate Relationships Between Hypermasculinity and Number of GRE Questions Attempted. A series of exploratory bivariate analyses were conducted to investigate the relationships between hypermasculinity, and the number of GRE questions *attempted*. Since the number of questions attempted appeared to be low ($M_{verbal} = 2.09$ and $M_{quantitative} = 8.00$),

participants may have been unmotivated to complete as many problems as possible within the 15-minute time frame. Thus, these analyses were conducted in an effort to probe motivation. Scores on the hypermasculinity subscale of the ADHI (Burk, 2004) were negatively associated with the number of GRE questions attempted for both the verbal ($r = -.244$, $p > .001$) and quantitative ($r = -.210$, $p > .001$) questions. Even though there was not a significant relationship between hypermasculinity and GRE *success rate*, the above results suggest that male traditional (non-athlete) students attempt fewer questions when they're higher on hypermasculinity. In other words, hypermasculinity may affect academic performance by way of motivation.

Discussion

The purpose of Study 3 was to examine the causal link between hypermasculinity and academic success as measured by success rate on a GRE practice exam in a sample of male traditional (non-athlete) undergraduate students. It was hypothesized that hypermasculinity would significantly impact academic performance such that participants in the *hypermasculinity* condition (i.e., those primed with notions of toxic masculinity such as intense emotional restraint and aggression) would have the lowest GRE success rate compared to participants in either the *tempered masculinity* or *neutral* conditions. Moreover, it was predicted that participants in the *tempered masculinity* (i.e., participants primed with more progressive notions of masculinity such as the dual possession of traditionally masculine and feminine attitudes and behaviors) condition would obtain the highest mean success rate on the GRE practice exam. The addition of the *tempered masculinity* prime is a contribution that is unique to this project and, to my knowledge, has yet to be formally introduced to the social psychological literature until now.

In a preliminary analysis to test the effectiveness of the priming conditions, there was no evidence that the conditions had the intended effect. In fact, the low effect size ($\eta^2 = .02$)

indicated that there was little reason to believe that there existed any meaningful difference between the three conditions. It follows that the proposed analysis to assess the differences in means of GRE success rates between the three conditions was also not significant. In an exploratory analysis to investigate the association between GRE practice exam success rates and scores on the "hypermasculinity" subscale of the ADHI (Burk, 2004), no relationship between the two variables was found. It is important to reiterate, though, that participants were given only 15 minutes to attempt up to 40 GRE questions. The total number of attempted GRE questions was surprisingly low so it is possible that participants were unmotivated. To probe this assumption, a series of exploratory bivariate analyses were run. Hypermasculinity was negatively associated with the number of GRE questions attempted for both the verbal and quantitative questions. This finding is significant given that hypermasculinity had mixed effects on academic performance in the first two studies (no relation in Study 1, but a negative relation in Study 2). However, it is plausible that hypermasculinity negatively affects academic performance via motivation such that those who are high in hypermasculinity are substantially less academically motivated than those low in hypermasculinity.

While Study 3 produced interesting — albeit unpredicted — effects, a few points must be taken into consideration in the current study. First, the sample size needed to detect the predicted effect was not satisfied. According to preliminary power analyses, 159 participants would be needed. The present sample consisted of 115 male traditional (non-athlete) participants. It is likely, then, that the study was underpowered. Second, it is important to take into account the fact that a novel manipulation was used in this study. Although previous research has successfully primed participants with traditional and nontraditional gender roles (Rudman & Phelan, 2010), according to my literature search, no research has attempted to prime participants

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with notions of toxic masculinity. As a result, there was no precedent by which I could predict effectiveness of the manipulation. Future research should pilot such manipulations.

Relatedly, the specific contents of the prime may have had the *opposite* intended effects, especially in the *hypermasculinity* condition. A review by Wheeler et al. (2014) claims that several moderators (e.g., self-reflectiveness v. internal state awareness) can impact the prime-to-behavior effects. In this study, a *contrast* effect whereby the prime activates a discrepant comparison standard may be responsible for the lack of an effect in the priming conditions. Specifically, it's possible that the *hypermasculinity* prime activated contrast behavior in the participant such that the intensified notions of masculinity actually made a "tamer" notion of masculinity accessible in the self-concept of the participant. Said a different way, the exaggerated notions of "what a man should be" could have decreased the effectiveness of the prime because of its incompatibility with the participants' self-concepts. Third, there's research to suggest that priming effects do not last as long as was needed to complete the GRE practice exam (Squire et al., 1987). Although evidence suggests that priming effects can last 15 – 20 minutes, participants need to be continually exposed to the stimulus for the priming effect to remain intact. While participants were given only 15 minutes to attempt up to 40 GRE questions, the priming (i.e., reading the relevant passage) occurred at the beginning of the study and was only reinforced once via the manipulation check.

Lastly, there was significant variation in GRE success rates (*SD* = 19.03) and the number of problems attempted (*SD* = 10.66). Even though hypermasculinity scores negatively predicted the number of verbal and quantitative GRE questions attempted, it is still possible that participants experienced fatigue towards the end of the study and did not put forth an equivalency of effort across the sample. Thus, the GRE success rates may not be representative

of some participants' actual performance. In summary, while my hypotheses were not supported, it is possible that an effect would have been found if the priming had first been piloted, had been reinforced more than once, and participants had been required to complete the GRE portion in a controlled setting in which performance could be monitored.

General Discussion

The primary aim of these studies was to determine whether, how, and for whom hypermasculinity plays a role in negatively impacting academic performance. My initial prediction was that athletic identity and hypermasculinity would be linked in such a way that male student-athletes high on athletic identity would also be high on hypermasculinity. This association would in turn result in lowered academic performance. Although there was no evidence that athletic identity predicted GPA (Study 1), there was preliminary evidence for a negative association between hypermasculinity and GPA (Study 2). Moreover, this research did find the proposed female-school association using two different research methods. In a series of exploratory qualitative analyses, I found evidence for a female-school/male-athlete association (Study 1 and Study 2) using both implicit and explicit measures. In Study 1, male student-athletes suggested agreement with explicit statements linking women/femininity to academic success. Additionally, hypermasculinity significantly predicted agreement with the explicit statements linking women/femininity to academic success.

Study 2 replicated the findings from Study 1's qualitative analyses using the IAT. Both male and female Division I student-athletes were quicker to associate "school" attribute words with "female," and "athlete" attribute words with "male." Importantly, male student-athletes demonstrated a stronger female-school/male-athlete association than did female student-athletes. This finding may be due to female student-athletes incorporating both their academic and athletic

identities into their overall self-concept, erasing any hesitation when forced to associate their own gender identity (female) with either "athlete" or "student" attribute words. Although this explanation runs counter to my prediction that female student-athletes bifurcate their gender and athlete identities, it does align with the explanation put forth by Harrison et al. (2009), who argue that females are the academic vanguard of student-athletes. This explanation also lends support to a second component of Harrison et al.'s (2009) argument stating that the social identity of "athlete" is self-affirming for males. Thus, it is possible that male student-athletes were more hesitant to pair "student" attribute words with "male" compared to when presented with "athlete" attribute words. Importantly, the female-student association underscores research by Heyder and Kessels (2013, 2016). The authors found that a strong implicit association between academic achievement and female gender stereotypes, and ascription to negative masculine traits (i.e., traits associated with toxic masculinity and/or hypermasculinity) significantly predicted lowered academic achievement. Females' grades were unrelated to gender stereotyping or a gendered self-concept.

Most pertinent to the theoretical framework of this project, though, is the idea that male student-athletes experienced hesitation because of the *antifemininity mandate*, or the belief that males must actively disavow any tendencies, behaviors, or attitudes that are feminine. Significantly, the antifemininity mandate is a central tenet of hypermasculinity. That is, hypermasculine men abide by the antifemininity mandate. In the case of this project, the evidence that male student-athletes associate — both implicitly *and* explicitly — females with academic success underscores the argument that they disavow the male-student pairing of the IAT. As a result, this pairing was antithetical to their self-concept, thus explaining the increased

hesitation in the *incompatible* trials. This study was unable to fully probe this relationship, however.

Study 2 intended to answer the questions *how* and *for whom* hypermasculinity negatively impacts academic performance. The main purpose of Study 2 was to test the fit of a *moderated mediation* model. It was hypothesized that role distinction — or the extent to which student-athletes conceptualized their athletic and gender identities as being distinct from one another — would mediate the relationship between IAT *D*-scores (female-student/male-athlete association) and hypermasculinity. Specifically, I hypothesized that role distinction would mediate this relationship for *male* student-athletes *only*. Thus, the relationship between IAT *D*-scores (independent variable *X*) and role distinction (mediator variable *M*) would be conditional on gender (moderator variable *W*) such that role distinction would explain hypermasculinity scores (dependent variable *Y*) for male student-athletes because they conceptualize their male gender identity and their athletic identity as being one and the same. This overlap in male gender identity and athletic identity would essentially exaggerate traditional male attitudes and behaviors, thereby predicting higher scores of hypermasculinity. Meanwhile, female student-athletes *bifurcate* — or exhibit role distinction between — their athletic and gender identities. Unfortunately, the reliability of the Role Separation Scale (Settles et al., 2002) was unacceptable, rendering the main analysis inappropriate. In a modified *moderation* model to test the moderating effect of gender on the relationship between IAT *D*-scores and hypermasculinity, the data did not fit the model. As a result, it was difficult to determine if male student-athletes experienced lower GPAs than female student-athletes because of the conceptual overlap of their male gender and athletic identities based on the findings from this model.

To probe the effect of the conceptual overlap of male gender and athletic identities on GPA, an additional exploratory model testing the *dual mediation* of hypermasculinity and IAT *D*-scores on the direct effect of gender on GPA was conducted. This model was included based on the finding that gender predicted GPA whereby female student-athletes self-reported significantly higher GPAs than male student-athletes. Neither IAT *D*-scores nor hypermasculinity mediated the effect of gender on GPA. However, GPA was negatively correlated with hypermasculinity, suggesting that as hypermasculinity increases, GPA decreases.

Prior to running Study 3, the presumed causal mechanism responsible for decreased academic performance among male student-athletes was hypermasculinity. Findings from Studies 1 and 2 did not clearly support this assumption, though. However, research indicates that the way a variable is measured (i.e., self-report versus manipulation) may affect how participants respond. For example, comparison of self-report scores to an experimental baseline shows that participants routinely misrepresent their "true" scores. Even though Study 1 and Study 2 found mixed effects for the relation between hypermasculinity and academic performance, it is possible that experimentally manipulating the presumed causal mechanism — hypermasculinity — could produce different results given that the variable of interest (hypermasculinity) was measured in a different way.

As a result, the goal of Study 3 was to experimentally manipulate hypermasculinity in order to draw a causal relationship between hypermasculinity and lowered academic performance. Because there was no evidence that athletic identity was associated with hypermasculinity (Study 1), it was proposed *post-hoc* that hypermasculinity would not be unique to male athletes. Rather, hypermasculine tendencies are intertwined in the male gender identity for *all* males and are thus easily accessible. If that were the case, hypermasculine attitudes could

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theoretically be primed in all males. Because disavowal of femininity is foundational to hypermasculinity, it can be argued that disobeying this mandate may negate the negative effects of hypermasculinity on academic performance.

To test this assumption, male traditional (non-athlete) students were randomly assigned to one of three conditions: a *hypermasculinity* prime, a novel *tempered masculinity* prime, and a *neutral* prime (the control condition). The addition of the *tempered masculinity* prime paid homage to the positive female-school association found in Studies 1 and 2 such that the integration of feminine with masculine traits would neutralize the effects of the antifemininity mandate and perhaps increase academic performance. I hypothesized that participants in the *hypermasculinity* prime would have lower success rates on a GRE practice exam than those in the *tempered masculinity* prime and the *neutral* prime. Additionally, it was hypothesized that participants would score the highest in the *tempered masculinity* prime because of its unique emphasis on both masculine and feminine tendencies.

A preliminary analysis to assess the effectiveness of the primes indicated that the primes had no effect on self-reported hypermasculine attitudes. As a result, my main analysis — a test of mean differences in GRE success rates between the three conditions — also did not yield significant results. There are multiple explanations for a lack of this differential finding. First, it is possible that, because I tried to prime extreme attitudes (i.e., hypermasculinity) and the language of the passage was relatively strong (e.g., "And he doesn't do anything that makes other men think he's gay, feminine, or a sissy") and the material could not be "integrated" into the self-concept (Wheeler et al., 2014). Instead, the prime could have had the *opposite* intended effect. That is, participants might have experienced a more diluted masculinity than what was supposed to be primed. In fact, there was no meaningful difference between the tempered

masculinity (i.e., a more traditional and progressive form of masculinity) and hypermasculinity, indicating that they both had the same effect. Future iterations of research priming hypermasculinity may want to focus on the specific wording of the stimuli. In other words, wording that signals hypermasculinity but isn't as abrasive or controversial may increase the chances of the material being "integrated" into the self-concept.

Second, priming usually only has an effect when the information presented in the prime is accessible in the first place (Squire et al., 1987). In other words, if the attitudes present in the *hypermasculinity* prime were not believable to the participant, it is easy to imagine the prime not having an effect. It is likely that undergraduate males are aware of the social taboo of holding sexist and hypermasculine attitudes — especially after recent social movements such as #MeToo and the publicized arrests of Bill Cosby, Harvey Weinstein, and Jeffrey Epstein — and may consciously adjust their reactions accordingly. To combat this shortcoming, it would be beneficial to operationalize hypermasculinity differently. For example, rather than making the wording of the prime explicit (i.e., "A real man is always ready to fight, especially when his manhood is challenged"), passages that include instances of hypermasculinity in sports, pop culture, or current events (i.e., wide receiver Antonio Brown being released from the New England Patriots after several accusations of sexual assault) may lead the participant to identify with the character, thus activating hypermasculine tendencies.

Third, priming effects only have a life span of 15 – 20 minutes (Squire et al., 1987). While the prime was reinforced in the manipulation check, this reinforcement came immediately after reading the passage. Participants may not have fully encoded the information from the passage. Lastly, much of the research that utilizes priming as an experimental manipulation primes stereotypes, particularly racial stereotypes (Lenton et al., 2008). In fact, only a small

minority of the literature on priming even attempts to prime implicit gender stereotypes and/or beliefs. The attempt to prime male participants with an extreme and socially unacceptable version of masculinity may have been too ambitious and should be reworked and piloted.

Despite the limitations, the current results contribute to the limited body of research on the academic performance of student-athletes, specifically pushing forward the theoretical argument that hypermasculinity negatively affects academic success. While much of the research on student-athletes and academic performance has focused on the incompatibility of the athletic and academic identities and subsequent stereotype threat (Harrison et al., 2009; Stone et al., 2012; Yopyk & Prentice, 2005), findings from this research suggest that a simple stereotype threat argument may not account for the full effect. That is, it may be beneficial for future research to deviate from the idea that the athletic identity is stigmatized *writ large* but rather, that characteristics specific to gender — specifically the roles and stereotypes associated with the individual genders within the context of athletics — may contribute to the academic performance differential among student-athletes. This claim is underscored by the finding that hypermasculinity predicted increased endorsement of an explicitly stated female-school association in a sample of male student-athletes. Thus, male student-athletes in particular may abandon academic success because of this association.

Although this research did not find any effects of athletic identity on hypermasculinity or academic performance, it would behoove stereotype threat researchers to further investigate the nuances of the athletic identity, specifically focusing on hypermasculinity. Despite the limited interpretability of the current findings, across 3 studies, hypermasculinity predicted a female-school association (Study 1), lower GPA (Study 2), and fewer attempted GRE problems (Study 3). Extrapolating from these findings, hypermasculinity could serve as an impediment to

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academic success for male student-athletes. Thus, stereotypes associated with the *athlete* may be less culpable in decreased academic performance than stereotypes associated with a *masculine* athlete.

It's also possible that the athletic and academic identities are incompatible for male student-athletes *only*. Given that a female-school/male-athlete association was found in Study 2 — and that this association was stronger for male student-athletes than female student-athletes, these findings align with previous research arguing for the overlap in athletic identity and masculinity. Specifically, male student-athletes are motivated to confirm positive stereotypes attributed to their athletic and gender identities, thereby making the association between "male" and "athlete" more accessible. At the same time, male student-athletes may disavow their academic identity in favor of their athletic identity. On the other hand, female student-athletes demonstrated a weaker female-school/male-athlete association than their male counterparts. It is possible, then, that female student-athletes activate equally their athletic, academic, and gender identities.

This argument runs counter to the idea that female athletes engage in compensatory behaviors to protect themselves from the effects of social backlash for participating in gender-atypical activities (i.e., sports). In fact, this finding undermines the initial assumption that female student-athletes *bifurcate* their gender and athletic identities as a self-protective measure. Rather, female student-athletes may feel comfortable embracing both their academic and their athletic identity. This finding is interesting given that research indicates it is more acceptable — even desired — for women to demonstrate masculine *and* feminine traits than for men (e.g., Rudman & Glick, 1999). Moreover, according to social role theory, as the number of women in male dominated environments increases, gender-specific stereotypes should converge for women, but

not necessarily for men (Eagly & Wood, 2012). Thus, it may be more acceptable for women to be comfortable integrating masculinity into their self-concept than for men to integrate femininity. Future research should investigate compensatory behaviors in a female student-athlete population specifically. This research could illuminate whether female student-athletes consider their athletic identity to be incompatible to their gender identity or if the proliferation and celebration of female athletes makes it more socially acceptable to engage in what was previously believed to be a gender-atypical behavior. It would also be beneficial to explore the role of gender identity beyond that of "man" and "woman" in compensatory behaviors. For example, Cahn (1994) argues that women who participate in sports are perceived as "mannish." It's plausible that women athletes who identify as feminine might engage in compensatory behaviors to a greater extent than women athletes who identify as androgynous (Chalabaev et al., 2013).

Additionally, results show that female student-athletes do in fact self-report significantly higher GPAs than their male counterparts. Moreover, hypermasculinity was negatively associated with GPA in Study 2 such that as hypermasculinity increased, GPA decreased. Although neither hypermasculinity nor the female-school/male-athlete association mediated the relationship between gender and GPA, further research should probe this model further. Based on the tenets of hypermasculinity, male student-athletes should shy away from academics because of its association with femininity. If anything, hypermasculinity should moderate the relationship between the female-school/male-athlete association and GPA whereby the female-school association predicts GPA for those *high* in hypermasculinity but *not* for those *low* in hypermasculinity. Yet an exploratory analysis testing the fit of the aforementioned model did not yield meaningful effects.

Lastly, other unmeasured contextual factors might explain these findings, such as time spent participating in one's sport, coach involvement, and strength of academic identity (Beron & Piquero, 2016; Settles et al., 2006). It is possible that student-athletes inherently high on traits associated with doing well in school (e.g., highly motivated, ambitious, dedicated, studious) self-selected to participate in these studies. As a result, it would be inappropriate to assume that this sample represents the overall student-athlete population. Furthermore, previous research indicates that the contextual factors listed may differ by sport and athletic division (Beron & Piquro, 2016), Thus, to get an accurate understanding of the effects of hypermasculinity on student-athletes' academic performance, it would be prudent to sample equally from all sports.

These results provide some important information for how the gap in academic performance between male and female student-athletes can be remedied. First, the significant negative correlation between hypermasculinity and GPA (at least in Study 2) suggests that part of the problem lies in the male student-athletes, or at least in hypermasculine individuals. Subsequently, any learning services designed for student-athletes should pay special attention to the needs of those individuals. Moreover, if future research finds that the female-school/male-athlete association does in fact negatively affect GPA, interventions to combat the effect of gendered stereotypes could be created. Finally, the detrimental impact of hypermasculinity on academic performance could be combatted with validated interventions that endorse the notion of a tempered masculinity. Teaching men to simultaneously adopt feminine and masculine attributes could destigmatize femininity.

Limitations and Future Directions

There exist a multitude of limitations that deserve significant consideration. While these limitations are severe and posed many difficulties in my studies, it is possible that effects

supporting my hypotheses would have been found if it were not for these limitations. Thus, additional research should be conducted in the future to address these limitations.

Inadequate Sample and Effect Sizes

First — and arguably most important to the conclusiveness of my findings — the sample sizes across all three studies were significantly smaller than what was originally intended. Due to time constraints, data collection was terminated before the full sample size could be reached. Additionally, a significant portion of participants were dropped from analyses for failing to adequately respond to measures. Prior to data collection, power analyses were run for each study. The purpose of these analyses was to calculate the sample size needed to achieve adequate power (.80 across the three studies) with a medium effect size. One potential explanation for the lack of an effect may be that the effect in actuality is small, requiring a significantly larger sample size than what was estimated. A larger issue within the social sciences that extends beyond the scope of this project is the emphasis on *p*-values, which are inextricably linked to sample size (Sullivan et al., 2012). While it is argued that effect sizes are more important than *p*-values, any given study must have adequate power in order to detect an effect. To have adequate power, studies must have a large enough effect size. In other words, as effect size increases, power also increases. Therefore, it is difficult to disentangle whether the small effect sizes are a result of an actual lack of an effect from that of an underpowered study.

Second, when discussing the limitations of this research, sample selection bias is of great importance. A vast amount of literature (e.g., Beron & Piquero, 2016; Harrison et al., 2009, Settles et al., 2002; Stone et al., 2012) finds that the athletic identity is stigmatized in an academic context. This assumption is predicated on evidence suggesting that student-athletes

perform less well in an academic setting than their non-athlete counterparts. In fact, the NCAA actually mandates that student-athletes receive academic support; support that is not available for free to non-athletes (NCAA, 2019). However, there is reason to believe that the participants in this project did not represent a "typical" male student-athlete. For example, the average GPA for male student-athletes in Studies 1 and 2 were 3.53 and 3.24, respectively. Beron and Piquero (2016) found a mean GPA of 2.99 while Settles et al. (2002) found a mean GPA of 2.44. It is possible, then, that male student-athletes who were exceptionally self-motivated not only participated in the study but also finished it in its entirety. Moreover, the study was advertised as being about the link between social identity and academic performance. Male student-athletes who were already confident in their academic accomplishments may have self-selected into the study. Future iterations of this research should take into account the sample frame to account for any variation. For example, Study 1 failed to collect data on athletic division and school. Research indicates that athletic identity varies depending on athletic division (Beron & Piquero, 2016). Additionally, a multitude of sports should be sampled in order to draw conclusions between the individual "sport cultures."

Methodological Limitations

A significant drawback of this research project was the inability to test the *moderated mediation* model proposed in Study 2. This model served as the foundation of this project's theoretical framework. The grossly low reliability score rendered the use of the Role Separation Scale (Settles et al., 2002) inappropriate. Because of this setback, it was impossible to determine whether male and female student-athletes experience their athletic identity differently and if this difference explains *how* hypermasculinity negatively affects academic performance.

Of all the limitations present in this research project, one stands out above the rest: the length of the study. One of the key measures — the Auburn Differential Hypermasculinity Inventory (Burk et al., 2004) — consisted of 60 Likert-type items. Although the items themselves were not lengthy or wordy, it was very possible that participants became fatigued while completing the survey, thereby affecting their responses. Prior to data collection, trial runs of the study were conducted, indicating that the average time spent completing the study satisfactorily ranged from 15 to 20 minutes. This may have been too cognitively taxing. Survey methodologists argue that surveys with less cognitive demand or that require less cognitive load result in higher response rates (Guo et al., 2016). Future research should develop either a version of the ADHI with fewer items or that requires less cognitive effort (Burk et al., 2004) or focus on specific subscales (e.g., the "hypermasculinity" subscale) depending on the construct of interest.

Relatedly, a major drawback of using explicit measures (e.g., self-report surveys and questionnaires) is the risk of social desirability effects. Social desirability is a measurement issue that is particularly relevant when assessing attitudes. For example, respondents to attitude items may not answer truthfully because they know their responses are not politically correct and are therefore afraid of social retribution. As a result, some respondents may have the tendency to answer "neutrally" whereas others may choose to answer on the extreme (Bandalos, 2018; Tourangeau et al., 2000). The items on the ADHI (Burk et al., 2004) assessed sensitive and controversial topics that may have signaled to the participants that answering in the affirmative (i.e., *very much like me*) was socially undesirable.

Finally, the way in which GPA was collected may have been problematic. There is some evidence that students are apt to inflate self-reported GPAs (e.g., Caskie et al., 2014). Despite participants being asked to verify their self-reported GPAs by checking academic records, it may

be that participants reported their GPAs from memory and with variation in precision (e.g., some may report to one decimal others to two decimals). Thus, self-reported GPA — may not be a valid measure of academic success.

To better understand how the length of the survey and the contents of the items might have impacted response rate, a follow-up study could be beneficial. Survey methodologists interested in evaluating survey questions typically use *cognitive interviews*. A cognitive interview is essentially an intensive investigation of the measurement tool (Willis, 2015). Typically, cognitive interviews are conducted early in the development process because the findings usually lead to modifying or removing survey questions entirely. In hindsight, conducting cognitive interviews before unleashing the full study could have prevented some of the aforementioned limitations. However, cognitive interviews could still be beneficial in retroactively understanding *why* data were so poor and how to measure sensitive attitudes in the future. A follow-up study utilizing cognitive interviews to evaluate the ADHI is currently underway (see Appendix I). Results from these interviews will not be able to change the results from this project, but they may be able to offer insight into how to collect sensitive data in the future.

Study Context

Penultimately, the context in which the data were collected should be taken into consideration. Data collection commenced October 2020 — deep into the COVID-19 global pandemic. As a result, all data had to be collected via online methods. Moreover, most University classes were *asynchronous* (self-paced) given that 100% of classes moved online in Spring 2020. This has implications for student motivation to complete the survey, the quality of the participants' responses, and the proliferation of external distractions (e.g., childcare, being at

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home with family members) that might not have been present pre-pandemic. In addition, all college sports seasons were cancelled at the start of the pandemic, potentially decreasing the salience of participants' athletic identity. Lastly, the COVID-19 pandemic is associated with significantly higher levels of psychological distress than pre-pandemic times (Xiong et al., 2020). Thus, it is possible that the data may have been of a higher quality if it had been collected at a different time.

Finally, data were collected during arguably one of the most divisive political eras since the Civil War (Pew Research, 2020). The current political climate has seemingly resulted in extreme attitudes on both sides of the political spectrum, with some people on the political Right feeling emboldened to publicize their authentic racist, homophobic, and sexist beliefs, and people on the political Left fearing being portrayed as insensitive or deemed politically incorrect. Of all social groups, college students have recently increased their political activity and involvement, taking part in social justice movements such as #MeToo. The increased awareness of social-political issues such as sexism, homophobia, and racism might have made participants more aware of their response patterns, particularly on the ADHI (Burk et al., 2004). Although it is impossible to account for all aspects of the social context in a given study, it is best to consider the social context when interpreting results, especially when studying *social* attitudes.

Conclusion

On January 6, 2021, over 250 mostly white men stormed the U.S. Capitol building over what they believed to be a "stolen" election. The desire — let alone the audacity — to participate in an insurrection is fueled only by privilege and belief in an unmitigated power bestowed upon someone for no apparent reason other than their placement in the social hierarchy. Political pundits and a handful of political scientists were quick to notice the contrast in police action

taken between the insurrection at the Capitol and the #BlackLivesMatter protests from earlier in the year. And while most commentators substantiated this contrast by comparing the race of the insurrectionists with those of protestors, others noticed the *gender* makeup. It's not difficult to argue that the insurrectionists felt protected not only by their race, but also their gender. In fact, political scientist Cara Daggett (Daggett, 2018) describes men who participate in the far-Right political movement as buttressing hegemonic masculinity while repurposing its tenets into a more extreme version: hypermasculinity.

The connection between hypermasculinity and the insurrectionists' behavior is not far-fetched; and it lends credence to the importance of studying hypermasculinity and its effects on individuals scientifically. While this project did not find clear support for the hypothesis that hypermasculinity explains male student-athletes' lower GPAs compared to female student-athletes', it did find support — both implicit and explicit — for the female-school association. Moreover, this research found that strong endorsement of hypermasculine attitudes predicted increased agreement with explicit statements linking women/femininity to academic success. If nothing else, this finding is significant and attests to the pernicious effects of hypermasculinity. Although this research project was not able to answer the questions of *whether* or *how* hypermasculinity impacts male student-athletes and male traditional students, it does offer a framework for beginning to understand the connection between athletics, hypermasculinity, the male gender identity, and academic performance.

References

Amodio, D. M., & Devine, P. G. (2006). Stereotyping and evaluation in implicit race bias: Evidence for independent constructs and unique effects on behavior. *Journal of Personality and Social Psychology, 91*, 652-661.

Banaji, M., & Greenwald, A. (2013). *Blindspot: hidden biases of good people.* Delacorte Press.

Bandalos, D. L. (2014). Relative performance of categorical diagonally weighted least squares and robust maximum likelihood estimation. *Structural Equation Modeling: A Multidisciplinary Journal, 21*(1), 102-116.

Bandalos, D. L. (2018). *Measurement theory and applications for the social sciences.* Guilford Press.

Baucom, C., & Lantz, C. D. (2001). Faculty attitudes toward male Division II college athletes. *Journal of Sport Behavior, 24*(3), 265-276.

Bem, S. L. (1974). The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology, 42*(2), 155-162.

Beron, K. J., & Piquero, A. R. (2016). Studying the determinants of student-athlete grade point average: The roles of identity, context, and academic interests. *Social Science Quarterly, 97*, 142-160.

Bhatia, N, & Bhatia, S. (2021). Changes in gender stereotypes over time: A computational analysis. *Psychology of Women Quarterly, 45*(1), 106-125.

Blackburn, G., & Scharrer, E. (2018). Video game playing and beliefs about masculinity among male and female emerging adults. *Sex Roles, 80*, 310-324.

Bosson, J. K., & Michniewicz, K. S. (2013). Gender dichotomization at the level of ingroup identity: What it is, and why men use more than women. *Journal of Personality and*

Social Psychology, 105(3), 425-442.

Brewer, M. B. (1988). A dual process model of impression formation. In R. S. Wyer, & T. K.

Srull (Eds.), *Advances in social cognition* (pp. 1-44). Erlbaum.

Cahill, B., & Adams, E. (1997). An exploratory study of early childhood teachers' attitudes

toward gender roles. *Sex Roles, 36*, 517-529.*,*

Cahn, S. K. (1994). *Coming on strong: Gender and sexuality in women's sport.* University of

Illinois Press.

Caskie, G. I. L., Sutton, M. C., & Eckhardt, A. G. (2014). Accuracy of self-reported college

GPA: Gender-moderated differences by achievement level and academic self-efficacy.

Journal of College Student Development, 55, 385-390.

Chalabaev, A., Sarrazin, P., Fontayne, P., Boiché, J., & Clément-Guillotin, C. (2013). The

influence of sex stereotypes and gender roles on participation and performance in sport

and exercise: Review and future directions. *Psychology of Sport and Exercise, 14*, 136-

144.

Cheryan, S., Cameron, J.S., Katagiri, Z., & Monin, B. (2015). Manning up: Threatened

men compensate by disavowing feminine preferences and embracing masculine

attributes. *Social Psychology, 46,* 218-227.

Cle'ment-Guillotin, C., Chalabaev, A., & Fontayne, P. (2012). Is sport still a masculine

domain? A psychological glance. *International Journal of Sport Psychology*, *43*,

67-78.

Cole, D. A., & Maxwell, S. E. (2003). Testing mediational models with longitudinal data:

Questions and tips in the use of structural equation modeling. *Journal of Abnormal

Psychology, 112*, 558-577.

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of
psychopathology. *Journal of Consulting Psychology, 24*(4), 349-354.

Cuddy, A. J. C., Glick, P., & Beninger, A. (2011). The dynamics of warmth and competence
judgments, and their outcomes in organizations. *Research in Organizational Behavior,
31*, 73-98.

Cuddy, A. J. C., Wolf, E. B., Glick, P., Crotty, S., Chong, J., & Norton, M. I. (2015). Men as
cultural ideals: Cultural values moderate gender stereotype content. *Journal of
Personality and Social Psychology, 109*(4), 622-635.

Czopp, A. M., Lasane, T. P., Sweigard, P. N., Bradshaw, S. D., & Hammer, E. D. (1998).
Masculine styles of self-presentation in the classroom: Perceptions of Joe Cool. *Journal
of Social Behavior and Personality, 13*, 281–294.

Daggett, C. (2018). Petro-masculinity: Fossil fuels and authoritarian desire. *Millennium: Journal
of International Studies, 47*(1), 25-44.

Dal Cin, S., Gibson, B., Zanna, M. P., Sumate, R., & Fong, G. T. (2007). Smoking in movies,
implicit associations of smoking with the self, and intentions to smoke. *Psychological
Science, 18*, 559-563.

Dar-Nimrod, I., & Heine, S. J. (2006). Exposure to scientific theories affects women's
math performance. *Science, 314*, 435.

Devos, T., & Banaji, M. R. (2005). American = White? *Journal of Personality and Social
Psychology, 88*, 447-466.

Diekman, A. B., & Eagly, A. H. (2000). Stereotypes as dynamic constructs: Women and men of
the past, present, and future. *Personality and Social Psychology Bulletin, 26*(10), 1171-
1188.

Disprete, T. A., & Buchmann, C. (2013). *The rise of women: The growing gender gap in education and what it means for American schools.* Sage.

Eagly, A. H. (1995). The science and politics of comparing women and men. *American Psychologist, 50*, 145-158.

Eagly, A. H., Makhijani, B. G., & Klonsky, B. G. (1992). Gender and the evaluation of leaders: A meta-analysis. *Psychological Bulletin, 111*(1), 3-22.

Edwards, H. (1984). The Black "dumb jock": An American sports tragedy. *College Board Review, 131*, 8-13.

Engstrom, C. M., & Sedlacek, W. E. (1991). A study of prejudice toward university student-athletes. *Journal of Counseling and Development, 70*(1), 189-193.

Engstrom, C. M., Sedlacek, W. E., & McEwen, M. K. (1995). Faculty attitudes toward male revenue and nonrevenue college athletes. *Journal of College Student Development, 3*, 217-227.

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods, 39*, 175-191.

Ferris, E., Finster, M., & McDonald, D. (2004). Academic fit of student-athletes: An analysis of NCAA Division I-A graduation rates. *Research in Higher Eduation, 45*, 555-575.

Fritz, M. S., & MacKinnon, D. (2007). Required sample size to detect the mediated effect. *Psychological Science, 18*(3), 233-239.

Greenwald, A. G., & Farnham, S. D. (2000). Using the Implicit Association Test to measure self-esteem and self-concept. *Journal of Personality and Social Psychology, 79*, 1022-1038.

Greenwald, A. G., Mcghee, D. E., & Schwartz, J. L. K. (1998). Measuring individual differences

in implicit cognition: The implicit association test. *Journal of Personality and Social Psychology, 74*(6), 1464-1480.

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the Implicit Association Test: An improved scoring algorithm. *Journal of Personality and Social Psychology, 85*, 197-216.

Guo, Y., Kopec, J. A., Cibere, J., Li, L. C., Goldsmith, C. H. (2016). Population survey features and response rates: A randomized experiment. *American Journal of Public Health, 106*(8), 1422-1426.

Gynther, M. D., Burkhart, B. R., & Hovanitz, C. (1979). Do face valid items have more predictive validity than subtle items? The case of the MMPI Pd scale. *Journal of Consulting and Clinical Psychology, 47*, 295-300.

Hahn, A., & Gawronski, B. (2019). Facing one's implicit biases: From awareness to acknowledgement. *Journal of Personality and Social Psychology, 116*(5), 769-794.

Haines, E. L., & Kray, L. (2005). Self-power associations: The possession of power impacts women's self-concepts. *European Journal of Social Psychology, 35*, 643-662.

Harrison, C. K. (2002). Scholar or baller in American higher education? A visual elicitation and qualitative assessment of revenue college athlete mindset. *National Association of Student Affairs Professionals Journal, 8*(1), 66-81.

Harrison, C. K., & Lawrence, S. M. (2004). Female and male student-athletes' perceptions of career transition in sport and higher education: A visual elicitation and qualitative assessment. *Journal of Vocational Education and Training, 8*(1), 66-81.

Harrison, C. K., Stone, J., Shapiro, J., Yee, S., Boyd, J. A., & Rullan, V. (2009). The role of gender identities and stereotype salience with the academic performance of male and

female college athletes. *Journal of Sport and Social Issues, 33i(1), 78-96.*

Hartley, B. L., & Sutton, R. M. (2013). A stereotype threat account of boys' academic

under achievement. *Child Development, 84*, 1716-1733.

Hayes, F. A. (2017). *Introduction to mediation, moderation, and conditional process analysis*.

Guilford Press.

Herek, G. M. (1986). On heterosexual masculinity: Some psychical consequences of the social

construction of gender and sexuality. *American Behavioral Scientist, 29*(5), 563-577.

Heyder, A., & Kessels, U. (2013). Is school feminine? Implicit gender stereotyping of school as

a predictor of academic achievement. *Sex Roles, 69,* 605-617.

Heyder, A., & Kessels, U. (2017). Boys don't work? On the psychological benefits of showing

low effort in school. *Sex Roles, 72*, 72-85.

Hodges, A. J., & Park, B. (2013). Oppositional identities: Dissimilarities in how women and men

experience parent versus professional roles. *Journal of Personality and Social

Psychology, 105*(2), 193-216.

Hogg, M. A., & Turner, J. C. (1987). Intergroup behavior, self-stereotyping, and the salience of

social categories. *British Journal of Social Psychology, 26*(4), 325-340.

Holmbeck, G. N. (1997). Toward terminological, conceptual, and statistical clarity in the study

of mediators and moderators: Examples from the child-clinical and pediatric psychology

literatures. *Journal of Consulting and Clinical Psychology, 65*, 599-610.

Howard, J. A., (2000). Social psychology of identities. *Annual Review of Sociology, 26*, 367-393.

Iacobucci, D., Schneider, M. J., Popovich, D. L., & Bakamitsos, G. A. (2017). Mean centering,

multicollinearity, and moderators in multiple regression: The conciliation redux.

Behavior Research Methods, 49, 403-404.

Inzlicht, M., & Schmader, T. (Eds.) (2012). Stereotype threat: Theory, process, and application. Oxford University Press.

Jackson, C., & Dempster, S. (2009). "I sat back on my computer…with a bottle of whisky next to me": Constructing "cool" masculinity through "effortless" achievement in secondary and higher education. *Journal of Gender Studies, 18*, 341-356.

Jerit, J., Barabas, J., Pollock, W., Banducci, S., Stevens, D, & Schoonvelde, M. (2016). Manipulated vs. measured: Using an experimental benchmark to investigate the performance of self-reported media exposure. *Communication Methods and Measures, 10*(2-3), 99-114.

Johnson, J. E., Wessel, R. D., & Pierce, D. (2010). Reexamining student-athlete GPA: Traditional vs. athletic variables. *Journal of Intercollegiate Sport, 3*, 234-255.

Jost, J. T., Kay, A. C., & Dovidio, J. F. (2005). Exposure to benevolent sexism and complementary gender stereotypes: Consequences for specific and diffuse forms of systemic justification. *Journal of Personality and Social Psychology, 88*(3), 498-509.

Kahn, J. S., Brett, B. L., 7 Holmes, J. R. (2011). Concerns with men's academic motivation in higher education: An exploratory investigation of the role of masculinity. *The Journal of Men's Studies, 19*, 65-82.

Kansky, J., Allen, J. P., & Diener, E. (2016). Early adolescent affect predicts later life outcomes. *Applied Psychology Health and Well-Being, 8*(2), 192–212.

Kenny, D. A., Kashy, D. A., & Bolger, N. (1998) Data analysis in social psychology. In. D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (p. 233-265). Oxford University Press.

Kimmel, M. S. (1997). Masculinity as homophobia: Fear, shame and silence in the construction

of gender identity. In M. M. Gergen & S. N. Davis (Eds.), *Towards a new psychology of gender* (p. 223-242). Taylor & Frances/Routledge.

Kimmel, M. S. (2008). *Gayland: The perilous world where boys become men.* Harper-Collins.

Kuncel, N. R., Credé, M., & Thomas, L. I. (2005). The validity of self-reported grade point averages, class ranks, and test scores: Meta-analysis and review of the literature. *Review of Education Research, 75*(1), 63-82.

Kuncel, N. R., & Hezlett, S. A. (2007). Standardized tests predict graduate students' success. *Science, 315*(5815), 1080-1081.

Lapchick, R. E., (2001). *Smashing barriers: Race and sport in the new millennium*. Madison.

Lightbody, P., Siann, G., Stocks, R., & Walsh, D. (1996). Motivation and attribution at secondary school: The role of gender. *Educational Studies, 22*, 13-25.

Linville, P. W. (1987). Self-complexity as a cognitive buffer against stress-related illness and depression. *Journal of Personality and Social Psychology, 52*(4), 663-676.

MacKinnon, D. P., Lockwood, C. M., & Williams, J. (2004). Confidence limits for the indirect effect: Distribution of the product and resampling methods. *Multivariate Behavioral Research, 39*, 99-128.

Marrs, H. (2016). Conformity to masculine norms and academic engagement in college men. *Psychology of Men & Masculinities, 17*(2), 197-205.

Marrs, H., & Sigler, E. A. (2012). Male academic performance in college: The possible role of study strategies. *Psychology of Men and Masculinities, 13*, 227-241.

Marshall, W. L., & Moulden, H. (2001). Hostility toward women and victim empathy in rapists. *Sexual Abuse: A Journal of Research and Treatment, 13*, 249-255.

Marx, D. M., & Stapel, D. A. (2006). Distinguishing stereotype threat from priming effects: On

the role of the social self and threat-based concerns. *Journal of Personality and Social Psychology, 91*(2), 243-254.

McQueen, A., & Klein, W. M. P. (2006). Experimental manipulations of self-affirmation: A systemic review. *Self and Identity, 5*(4), 289-354.

Mehrabian, A. (1996). *Manual for the Balanced Emotional Empathy Scale* (BEES).

Messner, M. M. (2002). *Taking the field: Women, men, and sports.* University of Minnesota Press.

Mok, M. M. C., Kennedy, K. J., & Moore, P. J. (2011). Academic attribution of secondary students: Gender, year level and achievement level. *Educational Psychology, 31*, 87-104.

Molden, D. C. (2014). Understanding priming effects in social psychology: What is "social priming" and how does it occur? *Social Cognition, 32*, 1-11.

Murnen, S. K., & Kohlman, M. H. (2007). Athletic participation, fraternity membership, and sexual aggression among college men: A meta-analytic review. *Sex Roles, 57*, 145-157.

National Collegiate Athletic Association. (2019). *Trends in graduation success rates and federal graduation rates at NCAA Division 1 schools*. https://ncaaorg.s3.amazonaws.com/research/gradrates/2019D1RES_FedGSRTrends.pdf

National Geographic. (n. d.) *Jellyfish*. Retrieved August 22, 2020, from https://kids.nationalgeographic.com/animals/invertebrates/jellyfish/

Nosek, B. A., Banaji, M. R., & Greenwald, A. G. (2002). Math = male, me = female, therefore math is not equal to me. *Journal of Personality and Social Psychology, 83*, 44-59.

Olsson-Collentine, A., Wicherts, J. M., & van Assen, M. A. L. M. (2020). Heterogeneity in direct replications in psychology and its association with effect size. *Psychological Bulletin, 146*(10), 922-940.

Pew Research. (2020). *Political polarization in the American public: How increasing ideological uniformity and partisan apathy affect politics, compromise and everyday life.* https://www.pewresearch.org/politics/2014/06/12/political-polarization-in-the-american-public/

Pittinsky, T. L., Shih, M., & Ambady, N. (1999). Identity Adaptiveness: Affect across multiple identities. *Journal of Social Issues, 55*(3), 503-518.

Pronin, E., Steele, C. M., & Ross, L. (2002). Identity bifurcation in response to stereotype threat: Women and mathematics. *Journal of Experimental Social Psychology, 40*, 152-168.

Räty, H., Vänskä, J., Kasanen, K., & Kärkkäinen, R. (2002). Parents' explanations of their child's performance in mathematics and reading: A replication of extension of Yee and Eccles. *Sex Roles, 46*, 121-128.

Rosenberg, M. (1965). *Society and the adolescent self-image.* Wesleyan University Press.

Rosenberg, M. (1979). *Conceiving the self.* Basic Books.

Rudman, L. A., Ashmore, R. D., & Gary, M. L. (2001). "Unlearning" automatic biases: The malleability of implicit prejudice and stereotypes. *Journal of Personality and Social Psychology, 81*, 856-868.

Rudman, L. A., & Fairchild, K. (2004). Reactions to counter-stereotypic behavior: The role of backlash in cultural stereotype maintenance. *Journal of Personality and Social Psychology, 87*(2), 157-176.

Rudman, L. A., & Glick, P. (1999). Feminized management and backlash toward agentic women: The hidden costs to women of a kinder, gentler image of middle managers. *Journal of Personality and Social Psychology, 77*(5), 1004-1010.

Rudman, L. A., & Glick, P. (2001). Prescriptive gender stereotypes and backlash toward agentic

women. *Journal of Social Issues, 57*(4), 743-762.

Rudman, L. A., & Phelan, J. E. (2010). The effect of priming gender roles on women's implicit

gender beliefs and career aspirations. *Social Psychology, 41*(3), 192-202.

Sailes, G. A. (1996). An investigation of campus stereotypes: The myth of Black athletic

superiority and the dumb jock stereotype. In R.E. Laphick (Ed.), *Sport in society: Equal

opportunity or business as usual?* Sage.

Settles, I. H., Sellers, R. M., & Damas, A. J. (2002). One role or two?: The function of

psychological separation in role conflict. *Journal of Applied Psychology, 87*(3), 574-582.

Shih, M., Pittinsky, T. L., & Ambady, N. (1999). Stereotype susceptibility: Identity salience and

shifts in quantitative performance. *Psychological Science, 10*, 80-83.

Shih, M., Pittinsky, T. L., & Trahan, A. (2006). Domain-specific effects of stereotypes on

performance. *Self and Identity, 5*(1), 1-14.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New

procedures and recommendations. *Psychological Methods, 7*, 422-445.

Sherman, D. K., & Cohen, G. I. (2006). The psychology of self-defense: Self-affirmation theory.

Advances in Experimental Social Psychology, 38, 183-242.

Spence, J. T., & Hahn, E. D. (1997). The Attitudes Toward Women Scale and attitude change in

college students. *Psychology of Women Quarterly, 21*(1), 17-34.

Squire, L. R., Shimamura, A. P., & Graf, P. (1987). Strength and duration of priming effects in

normal subjects and amnesic patients. *Neuropsychologia, 25*(1B), 195-210.

Steele, C. M. (1997). A threat in the air: How stereotypes shape intellectual identity and

performance. *American Psychologist, 52*, 613-629.

Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self.

Advances in Experimental Social Psychology, 21, 261-302.

Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology, 69*, 797-811.

Steele, C. M., Spencer, S. J., & Aronson, J. (2002). Contending with group image: The psychology of stereotype and social identity threat. In M. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 34, pp. 379-440). Academic Press.

Stevens, S. S. (1946). On the theory of scales of measurement. *Science, 103*(2684), 677-680.

Stone, J., Harrison, C. K., & Mottley, J. (2012). Don't call me a student-athlete: The effect of identity priming on stereotype threat for academically engaged African American college athletes. *Basic and Applied Social Psychology, 34*(2), 99-106.

Stone, J., Lynch, C. I., Sjomeling, M., & Darley, J. M. (1998). Stereotype threat effects on black and white athletic performance. *Journal of Personality and Social Psychology, 77*(6), 1213-1227.

Sullivan, G. M., & Feinn, R. (2012). Using effect size — or why the *p* value is not enough. *Journal of Graduate Medical Education, 4*(3), 279-282.

Swanson, J. E., Rudman, L. A., & Greenwald, A. G. (2001). Using the Implicit Association Test to investigate attitude-behavior consistency for stigmatized behavior. *Cognition and Emotion, 15*, 207-230.

Tajfel, H. (1982). Social psychology of intergroup relations. *Annual Review of Psychology, 33*, 1-39.

Tajfel, H., & Turner, J. (1979). An integrative theory of intergroup conflict. In W.G. Austin & S. Worchel (Eds.), *The social psychology of intergroup relations*. Brooks/Cole.

Tourangeau, R., Rips, I. J., & Rasinski, K. (2000). *The psychology of survey response*.

Cambridge University Press.

Trujillo, N. (1991). Hegemonic masculinity on the mound: Media representations of

    Nolan Ryan and American sports culture. *Critical Studies in Mass Communication, 8*,

    290-308.

Turner, J. C., Hogg, M. A., Oakes, P. J., Reicher, S. D., & Wetherell, M. S. (1987).

    Rediscovering the Social Group: A Self-Categorization Theory. Basil Blackwell.

Turner, J. C., Oakes, P. J., Haslam, S. A., & McGarty, C. (1994). Self and collective: Cognition

    and social context. *Personality and Social Psychology Bulletin, 20*(5), 454-463.

Wilson, R. (2007). The new gender divide. *The Chronicle of Higher Education, 21*, A36-A39.

Wininger, S., & White, T. (2008). The dumb jock stereotype: To what extend do student-athletes

    feel the stereotype? *Journal for the Study of Sports and Athletes in Education, 2*, 227-

    237.

Wheeler, S. C., DeMarree, K., G., & Petty, R. E. (2014). Understanding prime-to-behavior

    effects: Insights from the active-self account. *Social Cognition, 32*, 109-123.

Woodcock, A., Hernandez, P. R., Estrada, M., & Schultz, P. W. (2012). The consequences of

    chronic stereotype threat: Domain disidentification and abandonment. *Journal of*

    Personality and Social Psychology, 103(4), 635-646.

Xiong, J., Lipsitz, O., Nasri, F., Lui, L. M. W., Gill, H., Phan, L., Chen-Li, D., Iacobucci, M.,

    Ho, R., Majeed, A., & McIntyre, R. S. (2020). Impact of COVID-19 pandemic on mental

    health in the general population: A systematic review. *Journal of Affective Disorders*,

    277, 55-64.

Yopyk, D. J. A., & Prentice, D.A. (2005). Am I an athlete or a student? Identity salience

    and stereotype threat in student-athletes. *Basic and Applied Social Psychology,*

4, 329-336.

Zuckerman, M. (1976). *Preliminary manual with scoring keys and norms for Form V of the Sensation Seeking Scale*. University of Delaware.

Appendix A

Demographic Measures

1. As what gender do you identify?

   Male   Female

2. What is your class standing?

   Freshman   Sophomore   Junior   Senior

3. Are you currently receiving athletic aid*?

   No athletic scholarship   Partial athletic scholarship   Full athletic scholarship

4. What is your major or intended major?

5. What sport do you play*?

6. What is your present cumulative GPA on the traditional 4-point grading scale?

*Items only included in the demographic measures for Study 1 and Study 2.

Appendix B

Auburn Differential Hypermasculinity Inventory

INSTRUCTIONS: The following statements describe certain beliefs. Please read each item carefully and decide how well it describes you. Rate each item on the following 5-point scale.

4	3	2	1	0
very much like me	*like me*	*a little like me*	*not much like me.*	*not at all like me*

1. If another man made a pass at my girlfriend/wife, I would tell him off.
2. I believe sometimes you've got to fight or people will walk all over you.
3. I think women should date one man.
4. I think men who show their emotions frequently are sissies.
5. I think men who show they are afraid are weak.
6. I think men who cry are weak.
7. I don't get man, I get even.
8. Even if I was afraid, I would never admit it.
9. I consider men superior to women in intellect.
10. I think women who say they are feminists are just trying to be like men.
11. I think women who are too independent need to be knocked down a peg or two.
12. I don't feel guilty for long when I cheat on my girlfriend/wife.
13. I know feminists want to be like men because men are better than women.
14. Women, generally, are not as smart as men.
15. My attitude regarding casual sex is "the more the better."
16. I would never forgive my wife if she was unfaithful.
17. There are two kinds of women: the kind I date and the kind I would marry.
18. I like to tell stories of my sexual experiences to my male friends.
19. I think it's ok for men to be a little rough during sex.
20. If a woman struggles while we are having sex, it makes me feel strong.
21. I am my own master; no one tells me what to do.
22. I try to avoid physical conflict.*
23. If someone challenges me, I let him see my anger.
24. I wouldn't have sex with a woman who had been drinking.*
25. Sometimes I have to threaten people to make them do what they should.
26. Many men are not as tough as me.
27. I value power over other people.
28. If a woman puts up a fight while we are having sex, it makes the sex more exciting.
29. I don't mind using verbal or physical threats to get what I want.
30. I think it is worse for a woman to be sexually unfaithful than for a man to be unfaithful.
31. I think it's ok for teenage boys to have sex.
32. I like to be in control of social situations.
33. I prefer to watch contact sports like football or boxing.
34. If I had a son I'd be sure to show him what a real man should do.
35. If a woman thinks she's better than me, I'll show her.

36. I notice women most for their physical characteristics like their breasts or body shape.
37. I think it's ok for men to date more than one woman.
38. I sometimes feel afraid.*
39. I think men who stay home to take care of their children are just as weak as women.
40. I'd rather stay home and watch a movie than go out to a bar.*
41. I like to brag about my sexual conquests to my friends.
42. When something bad happens to me I feel sad.*
43. I can date many women at the same time without commitment.
44. I don't mind using physical violence to defend what I have.
45. I think men should be generally aggressive in their behavior.
46. I would initiate a fight if someone threatened me.
47. Women need men to help them make up their minds.
48. If some guy tries to make me look like a fool, I'll get him back.
49. I consider myself quite superior to most other men.
50. I get mad when something bad happens to me.
51. I want the woman I marry to be pure.
52. I like to be the boss.
53. I like to think about the men I've beaten in physical fights.
54. I would fight to defend myself if the other person threw the first punch.
55. If another man made a pass at my girlfriend/wife, I would want to beat him up.
56. Sometimes I have to threaten people to make them do what I want.
57. I think it's ok to have sex with a woman who is drunk.
58. If I exercise, I play a real sport like football or weight lifting.
59. I feel it is unfair for a woman to start something sexual but refuse to go through with it.
60. I often get mad.

Note: * denotes item is reverse-scored

Appendix C

Athletic Identity Measure

INSTRUCTIONS: The following statements describe certain beliefs. Please read each item carefully and decide how well it describes you. Rate each item on the following 7-point scale.

1	2	3	4	5
strongly agree	*agree*	*somewhat agree*	*neither agree nor disagree*	*somewhat disagree*

6	7
disagree	*strongly disagree*

1. I would consider myself an athlete.
2. I have many goals related to sports.
3. Most of my friends are athletes.
4. Sports are the most important part of my life.
5. I spend more time thinking about sports than anything else.
6. I need to participate in sports to feel good about myself.
7. Other people see me mainly as an athlete.
8. I feel bad about myself when I do poorly in sports.
9. Sports are the only important thing in my life.
10. I would be very depressed if I were injured and could not complete in sports.

Female-School/Male-Athlete Implicit Association Test (adapted from Greenwald et al., 1998)

Pairing #1

male/athlete; female/student

Pairing #2

female/athlete; male/student

Male Stimuli

man; son; father; boy; uncle; grandpa; husband

Female Stimuli

woman; daughter; mother; girl; aunt; grandma; wife

Athlete Stimuli

ball; field; helmet; run; coach; team; jersey

Student Stimuli

homework; exam; school; semester; grades; professor; class

Appendix E

Role Separation Scale (adapted from Settles et al., 2002)

INSTRUCTIONS: Read the following statements that student-athletes have used to describe themselves. Please read each item carefully and rate how true for you each statement is. Rate each item on the following 7-point scale.

<div align="center">

1   2   3   4   5   6   7

not really true of me   *really true of me*

</div>

1. Some student-athletes feel that the roles of their gender and the roles of an athlete are similar and compatible.*
2. Some student-athletes see themselves more as a [man/woman] when in a classroom setting than during competition.
3. Some student-athletes view themselves more as a [man/woman] than an athlete.
4. Some student-athletes feel that they can be both a [man/woman] and an athlete at the same time.*

- = item is reverse scored

Appendix F

GRE Practice Test

Quantitative Reasoning

For each question, indicate the best answer using the directions given. **You may use a calculator if you need to**.

1.

List *L*: 3, 4, 18, 21, 34

<u>Quantity A</u>   <u>Quantity B</u>
The average (arithmetic mean) of the numbers in list *L*   The median of the numbers in list *L*

1. Quantity A is greater.
2. Quantity B is greater.
3. The two quantities are equal.
4. The relationship cannot be determined from the information given.

2.

$$x < 0 < y + z$$
$$z \neq 0$$

<u>Quantity A</u>   <u>Quantity B</u>
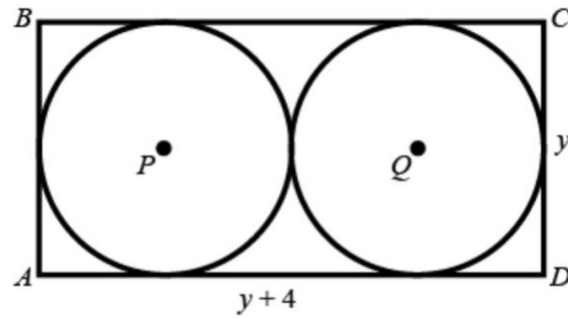
$$\frac{y+z}{x}$$ $$\frac{y}{z}$$

1. Quantity A is greater
2. Quantity B is greater.
3. The two quantities are equal.
4. The relationship cannot be determined from the information given.

3.

The area of rectangle $ABCD$ is 32.

Quantity A	Quantity B
The area of the circle with center P	11

1. <mark>Quantity A is greater.</mark>
2. Quantity B is greater.
3. The two quantities are equal.
4. The relationship cannot be determined from the information given.

4.

$$a > 0 \text{ and } b < 0$$

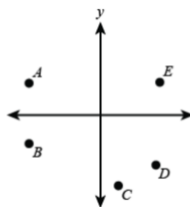| Quantity A	Quantity B
$\dfrac{1}{a^2}$	$\dfrac{1}{b^2}$

1. Quantity A is greater.
2. Quantity B is greater.
3. The two quantities are equal.
4. <mark>The relationship cannot be determined from the information given</mark>.

5.

$$\sqrt[3]{(a^2)^6} =$$

1. a^2
2. <mark>a^4</mark>
3. a^5
4. a^9
5. a^{11}

6.

Which of the above points could have the coordinates (-6, 2) in the coordinate plane?

1. *A*
2. *B*
3. *C*
4. *D*
5. *E*

7. Of the swimmers at a meet, $\frac{1}{2}$ are female, and $\frac{1}{2}$ are male. If $\frac{1}{2}$ of the females and $\frac{1}{4}$ of the males are swimming in a relay, what is the probability that a swimmer selected at random will be swimming in the relay?

1. $\frac{1}{8}$
2. $\frac{3}{16}$
3. $\frac{1}{4}$
4. $\frac{3}{8}$
5. $\frac{3}{4}$

8. How many different committees of 7 people can be formed from a group of 10 people?

   1. 84
   2. 105
   3. 120
   4. 165
   5. 720

9. If $p + 2q = 8$ and $2p - q = 11$, the $p =$

   1. 6
   2. 7
   3. 8
   4. 9
   5. 10

10.

Carl is 5 years older than Amy, who is 5 years older than Juan.

Quantity A	Quantity B
The average (arithmetic mean) age of Carl, Amy, and Juan	The median age of Carl, Amy, and Juan

1. Quantity A is greater.
2. Quantity B is greater.
3. The two quantities are equal.
4. The relationship cannot be determined from the information given.

11.

$a = 7$ and $b = 4$.

Quantity A	Quantity B
$a^2 - 16$	$49 - b^2$

1. Quantity A is greater.
2. Quantity B is greater.
3. The two quantities are equal.
4. The relationship cannot be determined from the information given.

12.

Quantity A	Quantity B
$1,000 - 4.45002$	$1,000 - 4.45101$

1. Quantity A is greater.
2. Quantity B is greater.
3. The two quantities are equal.
4. The relationship cannot be determined from the information given.
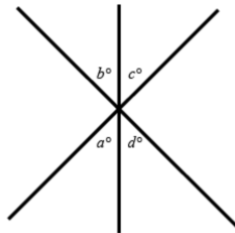
13.

Quantity A	Quantity B
$a + b$	$c + d$

1. Quantity A is greater.
2. Quantity B is greater.

    3. <mark>The two quantities are equal.</mark>
    4. The relationship cannot be determined from the given information.

14.

The average (arithmetic mean) of 50 measurements is 24, and the average of 20 additional measurements is 10.

Quantity A	Quantity B
The average of the 70 measurements	17

1. <mark>Quantity A is greater.</mark>
2. Quantity B is greater.
3. The two quantities are equal.
4. The relationship cannot be determined from the information given.

15.

ABCD is a rectangle.

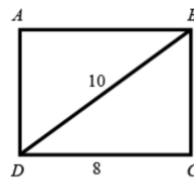| Quantity A	Quantity B
The sum of the perimeters of rectangle *ABCD* and triangle *BCD*	54

1. Quantity A is greater.
2. <mark>Quantity B is greater.</mark>
3. The two quantities are equal.
4. the relationship cannot be determined from the information given.

16.

A bag contains lettered tiles that spell the word "MATHEMATICS" in its entirety. A tile is selected at random.

Quantity A	Quantity B
The probability of choosing the letter M	20%

1. Quantity A is greater.
2. <mark>Quantity B is greater.</mark>
3. The two quantities are equal.
4. The relationship cannot be determined from the information given.

17. At two days after birth, a puppy weights 25% more than he weighed at birth. At four days after birth, a puppy weights 25% more than he weighed two days after birth. The puppy now weighs 11.25 ounces. How many ounces did the puppy weight at birth?

    1. 7.2
    2. 8
    3. 8.4
    4. 8.75
    5. 12

18.

$$\text{If } 7x + 5 = x + 23, \text{ then } 12x =$$

    1. 18
    2. 24
    3. 28
    4. 36
    5. 46

19. Which of the following has the largest prime factor?

    1. 36
    2. 96
    3. 210
    4. 330
    5. 450

20. The average mass of 5 applies in a bag is 150 grams. After another apple is added to the bag, the average mass is 148 grams. What is the mass, in grams, of the sixth apple?

    1. 100
    2. 138
    3. 146
    4. 148
    5. 160

Verbal Reasoning

Select one entry for the blank. Fill the blank in the way that best completes the text.

1. Recent editions of the Chinese classic *Tao Te Ching*, based on manuscripts more authoritative than those hitherto available, have rendered previous editions _____.

    1. incomprehensible
    2. uninteresting
    3. inaccessible

    4. <mark>obsolete</mark>
    5. illegible

2. Advisors warned the congressman to communicate directly and intelligibly; speech that instead required extensive _____ would bewilder and alienate the voters.

    1. <mark>elucidation</mark>
    2. mystification
    3. recitation
    4. comprehension
    5. vocalization

Questions 3 and 4 are based on the following.

Even people who rarely listen to classical music are familiar with a few famous melodies, and perhaps the most famous of these is the melody from the final movement of Ludwig can Beethoven's Ninth Symphony, a melody commonly called Ode to Joy. This melody rings out in electronic renditions from cell phone, appears in many advertisements, and is internationally recognizable, yet many people are unaware of the poem that inspired Beethoven's melody. The poet Friedrich von Schiller (759 – 1805) wrote poetry and dramas that explore power and its abuses. Freedom mattered greatly to Schiller, who resented the control over his life and career wielded by the oppressive duke for whom his father worked. When he chose the ode as a poetic form, Schiller announced, in essence, that he would sing the praises of joy.

Beethoven composed the Ninth Symphony at a time when discontent with the ruling classes, inspired by the French Revolution, was on the rise in Vienna, Austria. Schiller's poem "An die Freude" ("To Joy") struck Beethoven as appropriate. Key phrases in the poem state that "All men become brothers" in joy's <mark>presence</mark>, and the speaker offers the poem as a "kiss for all the world." Given the poem's emphasis on universal brotherhood, perhaps it is fitting that the melody is heard around the world.

3. The author mentions the oppressive duke for whom Schiller's father worked in order to

    1. <mark>suggest why personal freedom was important to Schiller.</mark>
    2. explain Beethoven's attraction to Schiller's ode.
    3. describe the unrest among the common people in Vienna.
    4. praise the universal brotherhood that Schiller's ode describes.
    5. caution readers about working for overbearing employers.

4. In the context of the next-to-last sentence, "presence" means

    1. charisma.
    2. attendance.
    3. existence.
    4. occurrence.
    5. <mark>company.</mark>

5. The disjunction between the CEO's empathic arguments for expanding the business into a new region and the ambiguous data on which her case was built revealed _____ between the goal-driven nature of the business world and the open-ended process of market research.

1. a conflict
2. an overlap
3. a synergy
4. a familiarity
5. an alternative

6. Modern business management theory stresses that, to promote fairness, any increase in responsibility given to a worker should be met by a _____ increase in remuneration.

1. predetermined
2. commensurate
3. enjoyable
4. modest
5. arbitrary

Question 7 is based on the following data.

Electronic publishing has not yet fulfilled its "green" promises. In the case of one mid-level firm, which publishes economic reports, total paper consumption skyrocketed to four times the baseline paper usage when the company switched to desktop publishing. How could this be? All edits are made onscreen; files are sent via e-mail or computer networks from writer to editor and then to production. The answer lies in the generation of multiple drafts. In the days of the typewriter, an entire document went through a few discrete stages. A manuscript was typed once, then line edited, retyped, and then copyedited. The copyedited version was made into typeset book pages, or galleys. However, when entire documents can be printed with the click of a print button, the temptation to jump the gun and produce "clean copies" is enormous. The tiniest mistake can change pagination, requiring reprinting of the entire document. A single document may be duplicated a dozen times or more before the manuscript is ready. If we are ever to reap the benefits an electronic environment has to offer for printed materials, a return to tighter editing protocols is mandated.

7. Which of these, if true, would most seriously undermine the author's argument?

1. Publishers agree to a set of editing rules that limits the number of printings that a given document may go through.
2. A study proves conclusively that excessive paper consumption in offices is due to the increased easy of copying and printing.
3. The market for white paper recycling goes through the roof, creating a booming industry where there was none before.

4. Waste in publishing offices is not limited to paper, but includes toner, ink, and other printing supplies as well.
5. Research shows that wasteful practices took place in pre-computer days, including the use of vast amounts of correction fluid and editing tape.

Question 8 is based on the following data.

International Sports Supply has just recently released an advertisement claiming that it produces the best athletic shoes on the market today. The company based on this claim on videotaped interviews conducted by the company's marketing department with one hundred people who were asked about their athletic shoe preference. A majority of the respondents reported that they buy International Sports Supply shoes regularly because the shoes are the best on the market today.

8. Which of the following would most weaken the argument made in the passage?

1. The majority of the respondents are not native speakers of the language used in the interview.
2. Most of the respondents were randomly selected.
3. Most of the respondents work for International Sports Supply.
4. The majority of the respondents interviewed work for a competing company.
5. Some of the respondents reported purchasing shoes made by International Sports Supply's primary competitor.

Question 9 is based on the following data.

To help promote feline health and welfare, an ongoing research project involves identifying genes that control autosomal dominant traits and causative mutations in cats. This study involves understanding the morphological traits that help define different breeds. If researchers can identify A) the genes that control autosomal dominant traits, or traits that are inherited from only one parents, and B) the genes that are responsible for congenital abnormalities, also called causative mutations, they can then determine why only some breeds have health problems connected to the traits. The lack of tails in Manx cats is an autosomal dominant trait, for example, and significant problems can arise when a cat has two copies of this mutation. For this reason, the majority of Manx cats are bred with cats that have tails.

9. In the passage given, the two highlighted portions play which of the following roles?

1. concept and clarification
2. hypothesis and defense
3. dilemma and choices
4. theory and exceptions
5. conclusion and evidence

10. Since her parents were distracted by their guests after dinner, the child _____ escaped to the kitchen and proceeded to devour all of the remaining cookies. **Cboose all that apply.**

1. stealthily
2. resiliently
3. scornfully
4. cheerfully
5. furtively
6. benevolently

11. As he stepped down from the podium, the candidate was lauded by an enthusiastic audience of supporters who were gratified not only by the fervency of her delivery but also by the _____ words of her speechwriter. **Choose all that apply**.

1. stentorian
2. expository
3. felicitous
4. garrulous
5. poignant
6. vociferous

12. While attempting to take a photograph, Miguel inadvertently stumbled forward and became partially submerged in the pond, causing him to _____ a significant quantity of dirty water. **Choose all that apply**.

1. absorb
2. imbibe
3. regurgitate
4. dispatch
5. ingest
6. spew

13. A number of double-blind lab studies have confirmed that soothing activities such as knitting and cooking can counteract the deleterious effects of _____ on the human body. **Choose all that apply**.

1. dispassion
2. sedation
3. apprehension
4. trepidation
5. intoxication
6. imperturbation

Questions 14 – 16 are based on the following data.

Phenomenology, an early twentieth-century humanist philosophy inaugurated by Edmund Husserl, is the explicit and rigorous examination of description of consciousness. In the early 1980s, scholars of theater and performance began to employ analysis informed by

phenomenology in their writing. These scholars found that phenomenology allowed them to describe their encounters with the performance event in a way unencumbered by the language-centered critical modes of psychoanalysis and deconstruction. Accordingly, phenomenological criticism asserted that a more immediate, visceral experience could be conveyed by suspending the "haze of secondary association" that often mediates between the audience and the performance object.

Critics of this approach have pointed out that Husserl and other phenomenologists naïvely thought that language was a transparent system that reflected reality, though this belief has been strongly discredited by linguists and deconstructionist philosophers. This means, they argue, that even if phenomenology gives access to an encounter with the "essence" of a given art object, this encounter could never be conveyed to others in speech or writing without distortion or filtration of meaning. In response to this criticism, theater and performance scholars have adapted their methodology, citing later phenomenologists like Maurice Merleau-Ponty, whose work focuses on the importance of the body in forming consciousness, and disavowing the reductive formulation of Husserl.

14. Which of the following is implied by the author?

1. Phenomenology is a critical approach created by Edmund Husserl in the 1980s.
2. Linguistically minded critical approaches are thought by some scholars to preclude the description of a visceral encounter with a performance event.
3. Phenomenological critics have responded to the critiques of linguists and deconstructionist philosophers by disavowing phenomenology as a practice.
4. Linguists and deconstructionist philosophers have shown how language transparently reflects the real world.
5. Phenomenology is necessarily naïve concerning the way that language mediates communication.

15. According to the passage, each of the following is true of phenomenology EXCEPT:

1. It is a philosophy that was created decades before it was applied to theater and performance scholarship.
2. It has been considered a way to achieve a direct and immediate encounter with a performance event.
3. Its employment in performance scholarship has promted some to question whether it can overcome the complexities of language.
4. It involves cutting through a "haze of secondary associations" in order to access the essence of a performance event.
5. It has been employed to point out the way that language mediates a "haze of secondary associations."

16. In the second paragraph of the passage, the word "transparent" is used to mean

1. easily understood
2. obfuscating

3. translucent
4. sheet
5. diaphanous

Question 17 is based on the following data.

Memoirs can be valuable as historical source materials, despite the fact that they are based on personal experience and are therefore subjective in nature. It is a common misconception that a memoir intentionally misleads its readers. A memoir writer portrays a part of history as the writer recalls it happening. Except in the most egregious instances, such as attempts to bury crimes, the author's intent is subsidiary because historical material can be presented and understood subjectively. Furthermore, due to their fictional quality, memoires are more likely than archival materials to represent the true complexities of reality. Memoirists transform themselves into literary characters, helping readers to relive historical events vicariously. To better understand the past, readings draw on their similarities to the writers whose stores are presented. The memoirists use such literature devices as irony and metaphor, which force their readers to analyze multiple levels of meaning in the material.

17. Which of the following, if true, most seriously undermines the author's argument?

    1. Memoirs help readers understand the historical landscape from different perspectives.
    2. Misrepresentations of reality can often be revealing.
    3. To understand past reality, readers must distance themselves from the historical subject.
    4. The literary significance of a memoir depends primarily on its level of historical detail.
    5. The amount of text analysis done by the reader is proportionate to the reader's level of understanding.

Question 18 is based on the following data.

Many of the world's languages are facing extinction. By 2050, the six thousand existing languages may be diminished in number by nearly half. About 50 percent of the world's languages are no longer taught to children. Unless measures are taken to revitalize them, these languages will die along with the current adult generation. the spread of the Internet and mass media reinforces the use of a few "common" languages and discourages the use of less widespread languages. While many of us may never have heard of, much less used, some of these languages, the extinction of these languages is still a cultural loss for humanity since each language embodies a distinct view of the world, with its own untranslatable insights and knowledge.

18. Which of the following, if true, most helps to explain why languages are dying?

    1. Some European countries are concerned that their languages may someday be replaced by English.

2. Some languages, such as Etruscan, fade away naturally; while others, such as Latin, gradually transform into new languages.
3. With determined effort, it is possible to resuscitate almost-dead languages, as has been done with Hebrew, Cornish, and Navajo.
4. In order to participate in the global economy, speakers of less widespread languages must learn and use a widely understood language, such as English, Russian, or Swahili.
5. Since commonly studied dead languages, such as Ancient Greek, embody a wealth of literature and tradition that cannot fully be appreciated in translation, it is reasonable to assume that every language is a cultural treasure chest.

Questions 19 and 20 are based on the following.

The evolution of written language can be understood through its relationship to art, just as the evolution of artistic expression can be understood through its relationship to writing. Throughout the course of history, developments in writing and art have influenced one another and led to more complex forms of communication. In the fourth millennium B. C., the emergence of writing produced changes in the organization of the designs in Near Eastern art composition. For example, the visual compositions became linear. The relative location, position, size, order, and direction of the images in the artwork were used symbolically to explain important emergent ideas. Thus, the relative size of figures represented on painted pottery denoted the idea of hierarchy, and the progression of figures in one direction showed sequential order or cause and effect.

19. In the context of the passage, "evolution" is closest in meaning to

1. movement.
2. expansion.
3. fruition.
4. growth.
5. progression.

20. According to the passage, in what way did Near Eastern art compositions reflect the influence of the emergence of writing?

1. They contained symbols placed in order from left to right.
2. They conveyed complex ideas.
3. They formed sequential patterns the eye could follow.
4. They included characters from the earliest alphabet.
5. They used symbols to represent ideas.

Note: *correct answers are highlighted*

Appendix G

Recruitment Flyer

Social Identity & Academic Performance

Are you a student-athlete?? Do you want to get a $5 gift certificate or research credit?? Are you interested in participating in research??

Researchers from the Psychology Department at the University of Hawaii at Mānoa are recruiting participants for a research study about the effect of social identity and being a student-athlete on academic performance. This study may help us to understand ways to better help student-athletes perform well academically.

You are eligible to participate in this study if you are at least 18 years of age or older and are a student-athlete at the University of Hawaii at Mānoa.

The study will take place online. Your participation will last up to 45 minutes.

As part of participating, you will be asked to read over a few scenarios then complete a series of questionnaires.

You will be given a $5 gift certificate or 1 SONA research credit (if applicable) for your participation.

If you participate, there is no anticipated direct benefit.

If you are interested in participating in this study, please contact Victoria Narine at vrnarine@hawaii.edu .

Research Participation
vrnarine@hawaii.

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vrnarine@hawaii.

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vrnarine@hawaii.

Research Participation
vrnarine@hawaii.

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vrnarine@hawaii.

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vrnarine@hawaii.

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vrnarine@hawaii.

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vrnarine@hawaii.

Research Participation
vrnarine@hawaii.

Research Participation
vrnarine@hawaii.

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Appendix H

Sports Teams at the University of Hawaii – Mānoa

<u>Men's Sports</u>
Baseball
Basketball
Football
Golf
Swimming & Dive
Tennis
Volleyball

<u>Women's Sports</u>
Basketball
Beach Volleyball
Cross Country
Golf
Sailing
Soccer
Softball
Swimming & Diving
Tennis
Track & Field
Volleyball
Water Polo

<u>Co-Ed Sports</u>
Cheerleading
Coed Sailing

Note: *it's unlikely that participants will be sampled from all sports.*

Cognitive Interview Script and Questions (Interviewer's Page)

[Send warm-up in chat]

At beginning of interview

For my dissertation, I conducted 3 studies to assess academic performance among student-athletes. Unfortunately, the data didn't turn out the way I wanted it to. Many people, particularly in my second study, dropped out before completing the entire sturdy. I want to figure out why so the purpose of this interview is to evaluate the content of the tasks and surveys in this study, and to see if the questions are working the way they should. While you're completing the tasks, I encourage you to say out loud **everything** you are thinking while you are reading and while you are responding to the questionnaire. For example, if you're answering a question and find the wording confusing, please let me know. Or, if you feel uncomfortable answering a question for any reason, that is also valuable feedback. I may probe you to go into more detail. If you don't feel comfortable about talking about one of the items, please remember that this interview is totally confidential. Nobody except for me will know what you said. It's very important to me that I know why people might not answer a question, especially if they feel uncomfortable answering it.

It's best that you continually talk while completing the tasks. Talk **constantly.** Also, do **not** plan what to say before you talk. Instead, just talk. Please do not talk with me unless I ask you a question. If you are silent for too long, I will ask you to talk. After each task, I'll ask you specific questions about your thoughts and feelings. Are there any questions?

Warm-up

To warm-up, practice thinking out loud while you do three different types of tasks. This is so you can get used to talking aloud without stopping.

1. First, read the question below out loud and think aloud while you are reading and answering the question. You can stop after any word at any time and say your thoughts.

How many windows were in the last room you were in?

[If they do not verbalize their thinking but only give an answer, ask: "What were you thinking right before you gave your answer?" If they did verbalize their thinking, say "Good. The purpose of this practice session is to have you say out loud how you arrived at an answer, and you did that."]

2. Now, read these sentences aloud and think aloud while you are reading to show what you are thinking while you are reading:

I don't need to get married or have kids. I want a dog. Dogs are perfect. They don't complain. They're *dilis* to you. They even care about you and give you love. Furthermore, they protect you from dangerous people.

[If they don't spontaneously verbalize misunderstanding of *dilis*, say "What you saw the word *dilis*, what were you thinking?" Otherwise, say "Good. When you encountered the word *dilis*, you shared your thinking. This word is intentionally in this practice session so that you can practice saying what you think. Remember, you can stop while you are reading and verbalize your thoughts."]

3. Now, read this question while you are thinking aloud, and select a response while you are thinking aloud:

Is the issue of invasive plants important to you?
   ⋆ **Yes**
   ⋆ **No**
   ⋆ **No preference**

[Ask these or other follow-up prompts: "In this question, what does the word *invasive* mean to you?" "Was it easy or difficult for you to select an answer?"

Now, the main purpose of this interview is to understand any hesitations a participant might experience while answering some of the questions. Specifically, some of the items in my project are sensitive and tap into attitudes that some people may not feel comfortable answering truthfully. I really want to understand why people might not answer some of these questions, or if they would completely drop out. I'm going to reiterate that this interview is 100% confidential. Nobody will know what you say. And by answering truthfully, you're helping me to understand how to make my project better in the future. So please be completely honest with me. Let's practice:

[Ask the participant to read the question out loud and to continually talk.]

4. I think it is worse for a woman to be sexually unfaithful than for a man to be unfaithful.

Was this question difficult to answer?

What do you think other people might think of this question?

What might prevent someone from answering this question honestly?

As you can probably tell, I will also ask you some specific questions about your thinking as you continue through the question. I am asking these questions to see how well these questions work. Do you have any questions about this process?

After demographic questions

Were any of those questions difficult to answer?

Were any of those questions sensitive? Why?

Before IAT (after reading introduction)

Before you start the next task, tell me what this introduction is telling you.

Ok. You're going to complete a few practice rounds. Let me know when you're finished, please.

Does anything sound difficult?

Is there any reason why you wouldn't continue?

After practice IAT

Was any part of the practice round difficult?

Before completing the real IAT

Say anything that comes to mind while you're completing the IAT.

After IAT

After part 4 of 7

What are your current thoughts about the activity?

Continue

Was any part of that activity difficult?

What were some of your thoughts during the exercise?

What concerns do you have about the content of the exercise?

What do you think your results will indicate?

Is there any reason why you wouldn't continue the survey after completing the IAT?

Hypermasculinity and role separation scales

While you're completing the next few surveys, please think aloud. This can include any thoughts you have about the specific questions, the length of the survey, the layout, anything.

<u>To determine which survey is presented first:</u>

What is the first question that you see? (*if it's **hypermasculinity***) → Since the survey is relatively lengthy, I'm going to stop you after specific items to get a better idea of how these items are functions.

Hypermasculinity

Stop after question #1: If another man made a pass at my girlfriend/wife, I would tell him off. (**aggression + dominance**)

 In general, how do you feel about this question?

Is the content OK to talk about in a survey, or is it uncomfortable?

How much thought would you say you've given to what you think was being asked?

How do you think other people might feel about these questions?

Do all the possible answers here seem OK, or did it seem like there's one that's supposed to be the right answer?

Stop after question #6: I think men who cry are weak (**devaluation of emotion**)

In general, how do you feel about this question?

Is the content OK to talk about in a survey, or is it uncomfortable?

How much thought would you say you've given to what you think was being asked?

How do you think other people might feel about these questions?

Do all the possible answers here seem OK, or did it seem like there's one that's supposed to be the right answer?

Stop after question #9: I think women who are too independent need to be knocked down a peg . (**hypermasculinity**)

In general, how do you feel about this question?

Is the content OK to talk about in a survey, or is it uncomfortable?

How much thought would you say you've given to what you think was being asked?

How do you think other people might feel about these questions?

Do all the possible answers here seem OK, or did it seem like there's one that's supposed to be the right answer?

Stop after question #17: There are two types of women: the type you date and the type you marry.

What is that question asking?

Stop after question #19: I think it's ok for men to be a little rough during sex (**sexual identity**)

What does "rough" mean?

In general, how do you feel about this question?

Is the content OK to talk about in a survey, or is it uncomfortable?

How much thought would you say you've given to what you think was being asked?

How do you think other people might feel about these questions?

Do all the possible answers here seem OK, or did it seem like there's one that's supposed to be the right answer?

Stop after question #34: If I had a son I'd be sure to show him what a real ma should do (**conservative masculinity**)

In general, how do you feel about this question?

Is the content OK to talk about in a survey, or is it uncomfortable?

How much thought would you say you've given to what you think was being asked?

How do you think other people might feel about these questions?

Do all the possible answers here seem OK, or did it seem like there's one that's supposed to be the right answer?

After first survey (surveys are randomized)

Can you tell me in your own words what these questions were asking?

Can you tell me what you were thinking while completing the survey?

How much thought would you say you've given to what you think was being asked?

Is the content OK to talk about in a survey, or is it uncomfortable?

In general, how do you feel about this question?

How do you think other people might feel about these questions?

How did you come up with your answers?

Do all the possible answers here seem OK, or did it seem like there's one that's supposed to be the right answer?

Was it easy or difficult to decide what answer to give?

After the survey is over

Ok. Now that you're finished taking the survey, we're almost finished with the interview. Do you have any general thoughts about participating in the survey? Talk to me about everything that you're thinking.

Appendix J

Cognitive Interview Directions and Warm-up Practice (Respondent's Page)

To warm up, practice thinking out loud while you do three different types of tasks. This is so you can get used to talking aloud without stopping.

1. Read the question below out loud and think aloud while you are reading and answering the questions. You can stop after any word at any time and say your thoughts.

How many windows were in the last room you were in?

2. Now, read these sentences aloud and think aloud while you are reading to show what you are thinking while you are reading:

I don't need to get married or have kids. I want a dog. Dogs are perfect. They don't complain. They're *dilis* to you. They even care about you and give you love. Furthermore, they protect you from dangerous people.

3. Now, read this question while you are thinking aloud, and select a response while you are thinking aloud:

Is the issue of invasive plants important to you?
★ **Yes**
★ **No**
★ **No preference**

Now, the main purpose of this interview is to understand any hesitations a participant might experience while answering some of the questions. Specifically, some of the items in my project are sensitive and tap into attitudes that some people may not feel comfortable answering truthfully. Let's practice:

4. **I think it is worse for a woman to be sexually unfaithful than for a man to be unfaithful.**

Again, the purpose is to see how well these questions work. Do you have any questions about what you should do?

Recruitment Flyer (Cognitive Interviews)

Social Identity & Academic Performance

Are you a student-athlete?? Do you want to get a $15 gift certificate??Are you interested in participating in research??

Researchers from the Psychology Department at the University of Hawaii at Mānoa are recruiting participants for a research study about the effect of social identity and being a student-athlete on academic performance (IRB Protocol # 2020-00006). This study may help us to understand ways to better help student-athletes perform well academically.

You are eligible to participate in this study if you are at least 18 years of age or older and are a student-athlete at the University of Hawaii at Mānoa.

The study will take place online over Zoom. Your participation will last up to 1 hour.

As part of participating, you will be asked to complete a brief exercise and a series of questionnaires. While completing these exercises and questionnaires, a researcher will ask you questions about your thoughts and feelings to get a better idea of the best ways to study student-athletes.

You will be given a $15 Amazon gift certificate for your participation.

If you participate, there is no anticipated direct benefit.

If interested in participating, please email vrnarine@hawaii.edu.

Questions?? Contact Victoria Narine at vrnarine@hawaii.edu