

Allegations of Performance-Enhancing Drug Use and Their Affect on Perceptions of Athlete Intellect

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Abstract

The central objective of this study was to examine whether allegations of performance-enhancing drug use could affect perceptions of athlete intelligence. Extant literature on sports science and intellect has suggested that athletes are frequently subjected to the negative connotations that are associated with the big dumb jock phenomenon. Critical race scholarship and stereotype threat were also highlighted in the review of related literature. A total of 96 participants completed a pre-test measure that assessed their perceptions of athletes, engaged in a non-related distraction task, and then completed a post-test measure that re-assessed their perceptions of athletes. It was during the post-test administration that participants were supplied negative allegations that implied the athletes had experimented with performance-enhancing drugs. Results indicated that unsubstantiated claims of performance-enhancing drug use resulted in all athletes being perceived as less intelligent. Additional findings illustrated a significant difference exists between how we perceive a black athlete who reportedly used performance-enhancing drugs and how we perceive a white athlete who reportedly used performance-enhancing drugs. The data from the present investigation hints that athletes are guilty until proven innocent within the intellectual arena in circumstances where allegations of performance-enhancing drug use are publicly disseminated via various mass communication channels. Implications for social judgment theory and avenues for future research were appropriately acknowledged within the present research.

Keywords: intellect, race, sports, performance-enhancing drugs, social judgment theory

Introduction

Acclaimed basketball player Michael Jordan famously proclaimed: “talent wins games, but teamwork and intelligence wins championships” (thinkexist, 2014). Indeed, his airness was fully cognizant of the salient nature of intellect within the field of play. However, the correlation between intelligence and athletic ability within the social sciences field has been less robust and largely focused on the construct of emotional intelligence. For example, previous research has revealed that

emotionally intelligent athletes value self-talk (Lane, Thelwell, Lowther, & Devonport, 2009), claimed that individual athletes had lower levels of emotional intelligence than team athletes (Ulucan, 2012), and suggested that National Hockey League players possess a higher level of emotional intelligence than members of the general population (Perlini & Halverson, 2006). Although the aforementioned studies have uncovered novel data on the specific niche of emotional intelligence, there is still much to

be learned via examining the broader concept of intelligence in sports.

The current study examined whether perceptions of athlete intelligence stood to be affected by allegations of performance-enhancing drug use. A review of extant literature was undertaken to provide a solid foundation for understanding how we perceive the intellect of athletes and to ground the present research in social theory. Quantitative methods were subsequently utilized in order to ascertain whether the independent variables of allegations of performance-enhancing drug use and athlete race could influence the dependent variable of intelligence perceptions. The results of this study were then interpreted within a theoretical and practical framework that illustrated our perceptions of the modern day athlete. In preview, the central goal of the present research was to determine whether unconfirmed reports of performance-enhancing drug use could affect perceptions of athlete intelligence.

Literature Review

The notion of a big dumb jock who is inherently unintelligent is prevalent in both popular culture and scholarly research. For instance, Coakley (2004) traced the roots of the big dumb jock phenomenon to the days of ancient Greece where he argued that some athletes: “concentrated so much on athletic training that they ignored intellectual development” (p. 65). More contemporary-based literature courtesy of Simons, Bosworth, Fujita, and Jensen (2007) revealed that 41% of college athletes believed their peers who were not college athletes assumed: “athletes lack intelligence and do not deserve to be students at the university” (p. 261). A similar theme was noted by Sailes (1996) who reported that white male students thought college athletes were less intelligent than regular college students. While the aforesaid scholarship looked at general perceptions and stereotypes surrounding athlete intelligence, the majority of extant literature has specifically focused on whether individuals perceive intellect differently based on the criterion of athlete race.

A healthy amount of prior scholarship has examined perceptions of the intelligence of the black male athlete. Devine and Baker (1991) reported that unintelligence was a recurring attribute that a sample of all white participants frequently attached to the regular black male athlete. It was two years later that research emerged which suggested that: “whites and males felt more strongly that the African American athlete was not as academically prepared to be in college as the average student, received lower grades than white athletes, and was not as intelligent as white athletes” (Sailes, 1993, p. 95). A more

specialized investigation by Stone, Perry, and Darley (1997) revealed that white basketball players were perceived as more intelligent than black basketball players. They argued: “perceivers reported that black men have more athletic ability and are better at playing the game of basketball, but white men can contribute because they are more intelligent and make up for their lack of physical ability through effort” (p. 302). When taken together, it appears that negative stereotypes regarding the intelligence of the black male athlete were frequently communicated before the turn of the century but it is conceivable that a new millennium will lead to a perceptual shift in terms of how we perceive the intellect of the male athlete who is black.

Progressive research has more closely examined perceptions of the black male athlete relative to the white male athlete in this relatively liberal era. A sports related study by Denham, Billings, and Halone (2002) revealed that broadcaster commentary during the final games of the 2000 NCAA tournament: “did not reveal dominant commentary about the perceived intelligence and leadership capacity of white athletes; it revealed the opposite” (p. 328). Subsequent research by Billings (2004) suggested that black quarterbacks were not depicted as having less intellectual ability than white quarterbacks in his analysis of fifty-four college and professional football games. A similar investigation by Ferrucci, Tandoc, Jr., Painter, and Leshner (2013) illustrated that white athletes were not rated higher in intelligence relative to black athletes in a study that asked participants to evaluate intelligence stereotypes for various baseball players. Although it is imperative to understand how individuals perceive and sometimes negatively stereotype athlete intelligence and race, it is also germane to this investigation to underscore some of the more common perceptions associated with athletes who decide to experiment with performance-enhancing drugs.

It is important to note that general evaluations of athletes who are linked to performance-enhancing drugs may differ depending on whether the perceiver considers herself or himself to be athletic or not athletic. Scholarship courtesy of Uvacsek, Nepusz, Naughton, Mazanov, Ranky, and Pertroczi (2011) indicated that athletes who used performance-enhancing drugs overestimated the extent to which their fellow athletes utilized performance-enhancing drugs. Leone and Fetro (2007) reported that male athletes who engage in weight training felt it was difficult to achieve the public perception of the ideal male body without utilizing some type of performance-enhancing drug. Even though the anonymous albeit famous baseball aphorism suggests: “if you’re not cheating, you’re not trying,”

it is illogical to assume that all athletes endorse the use of performance-enhancing drugs. Nevertheless, it appears that athletic individuals are fairly open to scholarship that highlights the possible advantages and disadvantages associated with performance-enhancing drugs.

Public perception of performance-enhancing drugs on the other hand can be categorized as tidy and consistent. Engelberg, Moston, and Skinner (2012) reported that sports fans had mixed opinions on whether performance-enhancing drugs should be illegal but more importantly noted that the general public believed that companies should not sponsor athletes who dabble with performance-enhancing drugs. A specialized investigation by Paccagnella and Grove (1997) revealed the athletes who used performance-enhancing drugs were perceived as less honest than individuals who were convicted of criminal activity. They argued: "expectations may be especially strong for domain-specific values such as sportsmanship and fair play, and violation of these principles through the use of performance-enhancing drugs may therefore prove particularly disappointing to the sport consumer" (p. 186). Along that line, a study by Sabini and Monterosso (2005) suggested that individuals perceived performance-enhancing drugs more harshly and negatively than various memory-altering drugs. Taken together, it appears that negligible public empathy exists for performance-enhancing drugs users and that individuals maintain critical perceptions of the athletes who use them.

Stereotype Threat and Social Judgment Theory

Emic and etic perspectives that focus on the intersection of sports, race, intelligence, and stereotype threats collectively create a conceptual and theoretical foundation for understanding perceptions of the modern day athlete. Cooper (2012) claimed that black athletes were treated as intellectual inferiors in predominantly white institutions because of longstanding stereotypes. Critical race scholarship by Hodge, Burden, Robinson, and Bennett (2008) argued that: "when teachers, coaches, and other sports professionals knowingly or unknowingly perpetuate stereotypic beliefs about athletic superiority and intellectual inferiority as a function of race, they do harm to the minds of impressionable youth in their charge" (p. 210). Miller (1998) noted that progressive scholars and journalists experienced tacit pressure with regard to noting racial stereotypes that specifically highlighted the natural physical ability of black athletes involved in mainstream American sports. It is possible that stereotype threats which imply that black athletes are less intelligent could possibly result in lower academic performance

amongst that particular demographic (Aronson, Quinn, & Spencer, 1998) however it is vital to consider the role of social theory in order to lay a foundation for understanding the role of perception.

Social judgment theory posits that individual perceptions and evaluations are made as a direct result of comparing a phenomenon to an existing attitude (Sherif, Sherif, & Nebergall, 1965). The theory suggests that acceptable ideas for any given issue fall within a latitude of acceptance. In contrast, ideas that are perceived as not acceptable are anchored within a latitude of rejection. Feelings of indifference or neutrality on an issue are said to be housed within the latitude of noncommitment. For example, the notion of paying college student athletes would fall within the latitude of acceptance for most college student athletes whereas those who are against paying college student athletes would place this attitude in their latitude of rejection. A person who is not necessarily for or against paying college student athletes would maintain a latitude of noncommitment for the subject matter. The theory of Social Judgment is germane to the current research because it effectively highlights perceptual change within the social sciences.

The Present Research

The main thesis of this study centered on the idea that perceptions of athlete intelligence were susceptible to allegations of performance-enhancing drug use that were publicly communicated. Some of the key variables that were discussed in the review of literature and further analyzed in this investigation were athlete intellect and participant race. The core rationale for the present research was to determine if intelligence perceptions and claims of performance-enhancing drug use were interconnected variables. A secondary rationale was to scientifically test how volatile our judgments of athletes can be. A final rationale for the current investigation was to further unpack racial perceptions of intelligence in a sports related context. It is important to explore the present research because allegations of performance-enhancing drug use are prevalent in the sports culture. Society appears to remember the initial allegations and is less likely to remember whether the claims of performance-enhancing drug use were later substantiated or unsubstantiated. Moreover, even a hint of dialogue concerning allegations of performance-enhancing drug use is enough to adversely affect perceptions of an athlete as well as perceptions of various athletic records. The potentially adverse effects were analyzed in this experiment via a methodological structure that featured a pre-test, distraction activity, and then a

post-test. A manipulation check was also completed in order to validate the findings of this study.

The extant literature on intelligence perceptions and athletes has yielded three conclusions that should be briefly summarized in this paragraph. First, the stereotype of a big dumb jock suggests that most athletes are perceived as unintelligent. Second, perceptions of athletes who are linked to performance-enhancing drugs may vary depending on whether the perceiver is athletic or not athletic. Third, it appears that public perception of performance-enhancing drugs is overwhelmingly negative. Thus, the following hypotheses are being put forth:

H1: Allegations of performance-enhancing drug use will result in participants seeing athletes as less intelligent.

H2: Sports fans will have lower post-test perceptions of athlete intelligence after allegations of performance-enhancing drug use emerge relative to the post-test perceptions of individuals who are not sports fans.

H3: Individuals who consider themselves to be athletic will have lower post-test perceptions of athletes who allegedly use performance-enhancing drugs relative to the post-test perceptions of individuals who do not consider themselves to be athletic.

A final point of analysis that is noteworthy of mention focuses on the relationship between perceptions of intelligence and athlete race. It was before the turn of the century that scholarship indicated the black male athlete was essentially perceived as unintelligent (e.g. Devine & Baker, 1991; Sailes, 1993; Stone, Lynch, Sjomeling, & Darley, 1999; Stone, Perry, & Darley, 1997). Scholarship after the turn of the century revealed a moderate shift and suggested that perceptions of the intelligence of the black male athlete and that perceptions of the intelligence of the white male athlete were now more on the level (e.g. Billings, 2004; Denham, Billings, & Halone, 2002; Ferrucci, Tandoc, Jr., Painter, & Leshner, 2013). Perhaps Stone and colleagues (1997) best summarized the pre-2000 literature in stating that white men could: "make up for their lack of physical ability through intelligence and diligence" (p. 295) while Billings (2004) best summarized the post-2000 literature in arguing that progress was being made in the arena of perceived intelligence for the black male athlete. All things considered, there are mixed results with regard to overall perceptions of the intelligence of the black athlete in comparison to overall perceptions of the intelligence of the white athlete. Therefore, the following research question is being offered:

RQ: What effect will the race of an athlete have on perceptions of athlete intelligence after allegations of performance-enhancing drug use are publicly communicated?

Materials and methods

Participants

The participants in this study were ninety-six ($N = 96$) undergraduate students at a large southeastern university. Females ($N = 53$) made up the majority of the sample while males ($N = 43$) accounted for the minority portion of the sample. The age range for participants varied from 17 years of age to 39 years of age. The median age for study participants was 19.9 ($sd = 3.34$) years old. White participants accounted for 70.8% of the sample followed by Black participants (17.7%), Asian participants (6.3%), Hispanic participants (3.1%), and Indian participants (2.1%). Fifty-four of the study participants identified themselves as sports fans while 42 of the participants claimed they were not sports fans. The same number of study participants identified themselves as athletic ($N = 54$) and the same number of participants categorized themselves as not athletic ($N = 42$). Study participants were awarded extra credit in their communication class in exchange for their participation in this study.

Instrumentation

The main instrument that was utilized in this study was a modified version of the perceptions of others intelligence scale that was originally created by Murphy (2007). A 7-point Likert scale in which responses ranged on a continuum (1 = strongly disagree up to 7 = strongly agree) was applied to the aforementioned instrument. The perceptions of others intelligence scale was designed to measure attributes such as brightness and smartness. For example, some of the modified items for this study included: "The person in the photograph appears to be a bright individual" and "the person in the photograph appears to be smart." The aforementioned scale served as both the pre-test and post-test measure. Reliability analyses for the present study yielded a Cronbach's Alpha of .76 for the intelligence pre-test and .89 for the intelligence post-test. Thus, a reliable measure was utilized in the present investigation.

Procedures

There are several procedural elements that occurred in this investigation. First and foremost, the central procedure that occurred was to manipulate a photograph of a non-famous athlete. A generic headshot photograph of a white male athlete was selected. The male in the photograph had an average

face with no pronounced features. His face was round with a normal amount of facial symmetry. He had dark brown eyes. The photographed athlete also had short dark brown hair that was not descriptive. The aforementioned headshot photograph of the white male athlete was then submitted to a racializer application that morphs a face into a different race. That is, the racializer program allows individuals to see their face (or the face of anyone) as that of a different race whether it be Black, Indian, White, Hispanic, Asian, etc. It was in this study that the photograph of the white male athlete was converted into a photograph of a black male athlete. The original photograph of the white male athlete and the new photograph of the black male athlete were subsequently utilized in this study. This modification procedure was undertaken to make the study photographs as identical as possible while simultaneously controlling for peripheral variables like physical attractiveness. Utilizing racialized photographs was also time and cost efficient. The racializing process occurred two weeks before the data collection process began. In sum, racializing allowed the skin tone of the original photograph to be easily manipulated while still maintaining the same facial structure of the original athlete photograph.

The second procedure that occurred in this study involved participants working on various research documents in person. More specifically, participants completed an informed consent form and a demographic form that identified their age, gender, race, race, and the like. It was also during this time that participants indicated on paper whether they considered themselves to be athletic or non-athletic and indicated on paper whether they considered themselves to be a fan of sports or not a fan of sports. The principal investigator then informed participants that the remainder of the study would be similar to that of a test and that no talking should occur. This instruction was given to help control for group effects that can sometimes occur during data collection. Study participants were also informed during this time that their participation was voluntary and that they could leave at any time. This procedural step as well as the following procedural steps all occurred in a relatively large classroom located inside of the university library.

The third procedural element of this study was the pre-test administration. Three photographs were used. First, study participants were shown the photograph of the white male athlete on a large projector screen located inside the classroom. The Murphy (2007) perceptions of others intelligence scale was in front of all study participants while the photograph was on display. The following instructions were then given to study participants:

Please indicate your perceptions of the person in the photograph on the scale provided. Please indicate the degree to which each statement applies to you by marking whether you (1) strongly disagree, (2) disagree, (3) somewhat disagree, (4) neutral, (5) somewhat agree, (6) agree, or (7) strongly agree. You should look at the photograph for each individual item. So, you should read statement one, look at the photograph, and then answer. Read statement two, look at the photograph, and then answer. Please continue this process until you have completed all of the items on the paper in front of you. Please start now.

Participants then completed the pre-test administration for the white male athlete. Second, a distracter photograph of an anonymous female athlete was then displayed on the same large projector screen that was located in the same classroom. The exact same instructions were verbally stated and the same perceptions of others intelligence scale (Murphy, 2007) was administered even though the photograph of the female athlete was merely a foil. This diversion was implemented in order to make the present investigation appear to be focused on gender perceptions. The foil procedure was completed to help mask the intent of this study. Participants then completed the pre-test administration for the female athlete using the Murphy (2007) perceptions of others intelligence scale. Third, the photograph of the black male athlete was then displayed on the same large projector screen located inside the same classroom. The same instructions were once again verbally stated and the same perceptions of others intelligence scale (Murphy, 2007) was supplied to study participants. Participants then completed the pre-test administration for the black male athlete with the Murphy (2007) perceptions of others intelligence scale. It should be noted that a specific sport was not identified for any of the photographed athletes. This was purposefully executed in order to make the findings of this investigation more generalizable and to avoid an excessively narrow focus. The analyses of the white male athlete and the black male athlete served as the pre-test evaluations; the data that was collected for the female athlete was disregarded.

A distraction task served as the fourth procedural element of this investigation. This non-related activity had students complete a series of language exercises. Study participants were given a three-letter word stem. They were then instructed to write as many words as they could think of that started with that three-letter word stem over the course of the next three minutes. It was after the allotted time had passed that participants were given a new three-letter word stem. Three additional minutes were subsequently given to participants to write as many

words as they could think of that started with that new three-letter word stem. The same process occurred for one additional round that also lasted three minutes. The utilized words stems were “com,” “par,” and “stu.” As hinted at previously, the main objective of these language exercises was to distract the minds of participants from their pre-test evaluations.

The fifth procedural element of this study was the post-test administration. The exact same directions were given. The same perceptions of others intelligence scale by Murphy (2007) was used. The exact same headshot photographs of the white male athlete, the female athlete, and the black male athlete were once again displayed on the same large projector screen located inside the same classroom. Yet, it was during the post-test administration that participants were informed of allegations of performance-enhancing drug use for the photographed athletes. A text copy of the allegations for the photographs of the athletes was also supplied. The allegations were identical. Some of the allegations were: “three former teammates indicated they saw performance-enhancing drugs in the locker of the person in the photograph” and “the athletic performance of the person in the photograph increased 64% in the most recent year.” Participants were informed that the provided information were only allegations and that none of the provided information had ever been proven true. It was after the allegations were provided that instructions for the post-test administration were given. The instructions were identical to the pre-test administration; the only difference was that during the post-test administration participants were instructed to look at the photograph, review the allegations, and then answer each item on the perceptions of others intelligence scale (Murphy, 2007) that was provided. In short, the post-test administration used the same photographs and the same scale but featured allegations of performance-enhancing drug use.

The sixth procedural element in this study was a manipulation check. This quantitative assessment was completed after the post-test administration. The manipulation measure was designed to examine whether participants viewed the allegations of performance-enhancing drug use in a negative or positive manner. A 7-point Likert scale with responses that ranged from strongly disagree to strongly agree (1 = strongly disagree; 7 = strongly agree) was utilized. Findings indicated that the mean for the allegations being perceived as negative was 5.85 ($sd = 1.50$) while the mean for the allegations being perceived as positive was 1.66 ($sd = 1.08$). A paired-samples t test uncovered a statistically significant difference with regard to the allegations of

performance-enhancing drug use being rated as negative as opposed to positive ($t(95) = 17.697, p < .001$). These findings indicated the manipulation was successful and that study participants viewed the allegations in a negative light.

Data Analysis

A series of different statistical analyses were completed to test the proposed hypotheses and research question. The main analyses that were conducted included repeated measures ANOVAs and paired-samples t tests. Supplemental analyses were also conducted when appropriate. All of the analyses that were completed were done via the statistical program for the social sciences (SPSS).

Results

The first hypothesis for this study proposed that allegations of performance-enhancing drug use would result in participants seeing athletes as less intelligent. Support was found for this hypothesis after the completion of a repeated measures ANOVA ($F(1, 95) = 78.441, p < .001$, Partial Eta Squared = .452). Pre-test perceptions of athlete intelligence before allegations of performance-enhancing drug use emerged were 4.52 ($SD = 0.87$) on a 7-point response continuum while post-test perceptions of athlete intelligence after allegations of performance-enhancing drug use emerged were 3.27 ($SD = 1.30$) on a 7-point response continuum. Thus, it can be argued that mere allegations of performance-enhancing drug use can actually make athletes appear less intelligent.

Hypothesis two surmised that sports fans would have lower post-test perceptions of athlete intelligence after allegations of performance-enhancing drug use emerged relative to the post-test perceptions of individuals who are not sports fans. This hypothesis was supported ($t(41) = -2.770, p = .008$). Post-test perceptions of athlete intelligence after allegations of performance-enhancing drug use emerged were 3.64 ($SD = .67$) for individuals who were not sports fans while post-test perceptions of athlete intelligence after allegations of performance-enhancing drug use emerged were 2.95 ($SD = .58$) for individuals who were sports fans. Simply put, sports fans are more critical of the intelligence of athletes who allegedly use performance-enhancing drugs than are individuals who are not sports fans.

Hypothesis three proposed that individuals who consider themselves to be athletic will have lower post-test perceptions of athletes who allegedly use performance-enhancing drugs relative to the post-test perceptions of individuals who do not consider themselves to be athletic. Support was found for

hypothesis three ($t(41) = -2.675, p = .011$). Post-test perceptions of athlete intelligence after allegations of performance-enhancing drug use emerged were 3.52 ($sd = .67$) for individuals who did not consider themselves to be athletic while post-test perceptions of athlete intelligence after allegations of performance-enhancing drug use emerged were 3.05 ($sd = .59$) for individuals who claimed they were athletic. Put differently, it appears that athletic individuals see athletes who reportedly use performance-enhancing drugs as less intelligent than individuals who are not athletic.

The research question in this study asked: What effect will the race of an athlete have on perceptions of athlete intelligence after allegations of performance-enhancing drug use are publicly communicated? Table one on the following page illustrates the findings for the research question as well as for the study hypotheses. Factorial ANOVA

results for the proposed research question revealed that a statistically significant difference existed between post-test perceptions of the black male athlete and post-test perceptions of the white male athlete after allegations of performance-enhancing drug use came to light ($F(1, 95) = 5.480, p = .021$, Partial Eta Squared = .055). Post-test perceptions of the intelligence of the black male athlete after allegations of performance-enhancing drug use emerged were 3.38 ($sd = 1.38$) while post-test perceptions of the intelligence of the white male athlete after allegations of performance-enhancing drug use emerged were 3.15 ($sd = 1.39$). Interestingly, this result suggests that we are more judgmental of the intelligence of a white male athlete who allegedly used performance-enhancing drugs than we are of the intelligence of a black male athlete who allegedly used performance-enhancing drugs.

Table 1. Means for Hypotheses and Research Question

Hypotheses or Research Question	Administration	Mean	Std. Deviation
H1: Allegations of performance-enhancing drug use will result in participants seeing athletes as less intelligent. (Supported).	Pre-Test	4.52	0.87
	Post-Test	3.27	1.30
H2: Sports fans will have lower post-test perceptions of athlete intelligence after allegations of performance-enhancing drug use emerge relative to the post-test perceptions of individuals who are not sports fans. (Supported).	Post-Test Perceptions for Non-Sports Fans	3.64	0.67
	Post-Test Perceptions for Sports Fans	2.95	0.58
H3: Individuals who consider themselves to be athletic will have lower post-test perceptions of athletes who allegedly use performance-enhancing drugs relative to the post-test perceptions of individuals who do not consider themselves to be athletic. (Supported).	Post-Test Perceptions of Non-Athletic Individuals	3.52	0.67
	Post-Test Perceptions of Athletic Individuals	3.05	0.59
RQ: What effect will the race of an athlete have on perceptions of athlete intelligence after allegations of performance-enhancing drug use are publicly communicated? (A statistically significant difference was observed).	Post-Test Perceptions of the Black Male Athlete	3.38	1.38
	Post-Test Perceptions of the White Male Athlete	3.15	1.39

Discussion and Conclusion

The main purpose of this study was to learn more about perceptions of athlete intelligence after allegations of performance-enhancing drug use were publicly disseminated. Findings revealed that perceptions of athlete intelligence decreased from pre-test to post-test after negative allegations surfaced. Results related to the proposed hypotheses indicated that athletes and sports fans were particularly critical of the intelligence of athletes who supposedly used performance-enhancing drugs. A statistically significant difference was also observed with regard to overall perceptions of the intellect of a black male athlete who was purportedly linked to performance-enhancing drugs and overall perceptions of the intellect of a white male athlete who was purportedly linked to performance-enhancing drugs. All in all, there are several interesting points of analysis that warrant further discussion.

The first point of discussion that should be further explicated was the finding that mere allegations of performance-enhancing drug use are enough to make athletes appear less intelligent. Previous scholarship has demonstrated empirical support for the notion that a big dumb jock is someone who lacks intellect (e.g. Coakley, 2004; Sailes, 1993; Simons, Bosworth, Fujita, & Jensen, 2007) while the findings from this study suggest that members of the general public are additionally skeptical of the intelligence of athletes who are reportedly linked to performance-enhancing drugs. It is conceivable that perceptions of athlete intelligence decreased after unsubstantiated claims of performance-enhancing drug use emerged because individuals automatically assume that athletes who are even casually mentioned in the same breath with performance-enhancing drugs are in fact guilty of using performance-enhancing drugs. The society that we live in is predicated on the assumption that individuals are innocent until proven guilty. However, it appears that the modern day athlete is not awarded a similar burden of proof in terms of how we evaluate intellectual capabilities. The results from this investigation suggest that athletes who have allegedly used performance-enhancing drugs are guilty until proven innocent within the arena of intelligence perceptions. It should also be noted that individuals might see athletes who are seemingly connected to performance-enhancing drugs as less intelligent because some individuals may presuppose that athletes are not smart enough to consider the ramifications of using performance-enhancing drugs. We see the modern day athlete as someone who cares primarily about performance on the field and do not regard the modern day athlete as a deep thinker who carefully weighs the possible downfalls of

performance-enhancing drugs. The big dumb jock who is already perceived as lacking in intellect is thereby evaluated as less intellectual after performance-enhancing drug allegations surface because we have already negatively stereotyped the lack of cognitive capacity for all athletes.

A second point of discussion that should be further examined was the finding that sports fans had lower perceptions of athlete intelligence after allegations of performance-enhancing drug use surfaced relative to individuals who did not claim to be fans of sports. Sports fans may perceive the intelligence of athletes who reportedly use performance-enhancing drugs lower than individuals who are not sports fans because they have higher expectations of athletes than their non-sports fans counterparts. It is when the expectations of sports fans are seemingly not met that individuals who are fans of sport find proactive ways to unfavorably evaluate the intelligence (or any other attribute) of a once highly regarded athlete. Perhaps sports fan perceive the intelligence of athletes significantly less favorably after performance-enhancing drug allegations surface because sports fans feel stupid or less intelligent for believing the athlete was possibly clean. Sports fans buy the livestrong products as well as buy into the storyline of the athlete doing things the right way. However, it is once performance-enhancing drugs allegations come to light that sports fans question the intelligence of the athlete as well as their own.

The third piece of discussion that is noteworthy of mention was that athletic individuals had lower post-test perceptions of an athlete who allegedly used performance-enhancing drugs in comparison to individuals who did not classify themselves as athletes. Individuals who are athletic are potentially more educated about the possible health implications associated with performance-enhancing drugs relative to individuals who do not consider themselves to be athletic. Therefore, athletic individuals know it is not smart to use performance-enhancing drugs if one is concerned about some of the adverse health effects (e.g. hypertension, jaundice, cardiovascular disease, etc.) that are frequently associated with performance-enhancing drugs (Maravelias, Stefandidou, & Spiliopoulou, 2005; Tokish, Kocher, & Hawkins, 2004). It could also be argued that athletes who are clean perceive allegedly non-clean athletes as less intelligent because they harbor feelings of resentment towards athletes who potentially benefit from the advantages of performance-enhancing drugs. Athletes who allegedly use performance-enhancing drugs are likely to possess an unfair physical advantage within the

field of play. Consequently, clean athletes might negatively evaluate the intelligence of athletes who allegedly use performance-enhancing drugs less favorably because the clean (yet competitive) athlete wants to feel like they are winning the battle of the brain since they are perhaps losing the battle of the brawn. Either way, the findings from this study suggest that athletic individuals are not very tolerant of athletes who reportedly use performance-enhancing drugs.

An additional piece of discussion that is noteworthy of mention is tied to social science theory. The findings from this study suggest that initial perceptions of the intelligence of an unfamiliar athlete fall into the latitude of noncommitment as described by social judgment theory (Sherif, Sherif, & Nebergall, 1965). While that finding was not surprising, the statistically significant decrease that was observed for sports fans and athletic individuals implies that participants who maintain an interest in sports are objectionable to performance-enhancing drug use. Consumers of sport and athletic individuals apparently conceptualize performance-enhancing drug allegations as unethical because their anchor shifts downward from the latitude of noncommitment into the latitude of rejection. Put differently, it could be argued that fair sportsmanship which is void of alleged performance-enhancers is more valued by those who maintain a high ego-involvement with sports relative to those who maintain a low ego-involvement with sports.

The final piece of discussion that deserves further unpacking was the finding that a white male athlete who allegedly used performance-enhancing drugs was perceived as significantly less intelligent than a black male athlete who allegedly used performance-enhancing drugs. These two separate persons should have been perceived equally since identical albeit racialized photographs were utilized in the present investigation. Moreover, the allegations of performance-enhancing drug use were also identical. Prior scholarship courtesy of Billings (2004) suggested "progress in many areas" (p. 201) in a study that revealed black football players were not portrayed as less intelligent than white football players. A little over one decade later it can be argued that too much progress has been made as the white male athlete is now being perceived as less intelligent than an equivalent black male athlete. The results of this study suggest that society has overcorrected itself from previous perceptions of athlete intelligence because it now views the white male athlete as intellectually inferior to the black male athlete within a context associated with performance-enhancing drugs. The notion that white men can't jump has been apparent in the cinema and in scholarly research

(Stone, Perry, & Darley, 1997) but the idea that white men can't think or that the perceived intellect of the white male athlete is lesser than that of the black male athlete in a context involving performance-enhancing drugs and sport illustrates that the trend towards being more disapproving of the white male athlete is still progressing from a state of infancy. One possible reason this particular result emerged is because the present sample was comprised of relatively youthful individuals who were perhaps raised to be more culturally sensitive of minority athletes. A second possible reason why the white male athlete who allegedly used performance-enhancing drugs was perceived as significantly less intelligent than the black male athlete who allegedly used performance-enhancing drugs is tied to historical and cultural narratives surrounding the black male athlete and the white male athlete. It could be argued that black male athletes who are linked to performance-enhancing drugs are stereotyped as individuals who are easily subsumed into the North American narrative that highlights black deviance and criminality. White male athletes are perhaps stereotyped as individuals who are members of a privileged and innocent majority prior to allegations of performance-enhancing drug use. A white male athlete who is subsequently tied to allegations of performance-enhancing drug use is thereby perceived as someone who unintelligently and foolishly transgresses moral lines in a manner that is highly egregious relative to a black male athlete. All the same, athlete race remains omnipresent in society and the findings from this investigation suggest that we harshly evaluate the intelligence of a white male athlete who has allegedly used performance-enhancing drugs.

Limitations and Future Research

This empirical investigation featured some limitations that should be highlighted. As hinted at previously, the major limitation of this study was that the sample was comprised of relatively youthful individuals. It is conceivable that the perceptions of undergraduate students with a mean age of 19.9 years old are not consistent with the perceptions of older segments of the population. Along a similar line, the sample size was from a somewhat homogenous group that possessed relatively similar values and beliefs. Utilizing a more attitudinally and geographically diverse sample of varying ages may have produced results that were a bit more generalizable.

There are also a couple of directions for future research that are noteworthy of mention. One possible avenue for future scholarship to explore is whether perceptions of athlete intelligence vary amongst the four major professional sports in the

United States. It would be interesting to note which professional league is perceived as the most intellectual as well as the least intellectual. Exploring possible gender differences for individuals who allegedly use performance-enhancing drugs would also be an intriguing area to research in the future. Perhaps perceptions of female athletes who reportedly dabble with performance-enhancing drugs would be significantly different than perceptions of male athletes who reportedly dabble with performance-enhancing drugs. In other words, it would be interesting to see if we are more judgmental of women who apparently use performance-enhancing drugs or if perhaps women are in a league of their own.

Conflict of interest

The authors declare no conflict of interest

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