

Short Report

A Surprising Gender Difference in the Portrayal of Baseball and Softball Players

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Abstract: The purpose of this study was to shed light on how implicit bias could affect the portrayal of male and female athletes—specifically, baseball players and softball players. Although bats are as central to the game of softball as they are to the game of baseball, as “offensive weapons” they are associated with aggression, and both descriptive and proscriptive stereotypes of women are that they are less aggressive and dominant than men. Four hundred pictures of baseball players (men) and softball players (women) were downloaded from popular general sports-related websites. Men were significantly more likely than women to be shown swinging or holding bats. Implicit gender biases affecting how athletes are depicted in the media could shape perceptions of the sports those athletes play.

Keywords: gender; stereotypes; social psychology

Gender bias has long been apparent in the sports world. Funding for women’s programs is often very modest compared to the amount of money men’s sports are given. A prominent example was the long-term disparity in financial support for the men’s and women’s United States national soccer teams, despite the women’s team having much greater success in recent decades—an imbalance that has only recently been rectified (Das,

2022). Another salient example is how men's and women's sports are covered in the media. Results of games between teams in leagues like the Women's National Basketball Association or the National Women's Soccer League are more difficult to find than those for games in those sports' corresponding male professional leagues. The downstream consequence of this bias is that female professional athletes are not able to earn the same level of income as male athletes.

A great deal of research stretching back for many decades has also revealed significant gender biases in how men and women are portrayed in media coverage of sports (Messner, 1988; Yingnan & Guoliang, 2023). A common finding is that images of female athletes are more sexualized than those of males, and that female athletes are more likely than male athletes to be presented in static and passive (as opposed to active) poses (e.g., Buysse & Wolter, 2013; Wasike, 2020).

The forms that gender bias take are not always so explicit and obvious, however. As a result of implicit bias—attitudes and beliefs based on stored associations in memory that can be triggered automatically (Greenwald and Lai, 2020)—people can treat male and female athletes differently without necessarily being aware of doing so. The purpose of this study was to shed light on how implicit bias could affect the portrayal of male and female athletes—specifically, baseball players and softball players.

Baseball is predominantly played by men, and softball as an organized game at the college and professional level is predominantly played by women, and there are a few differences between the two games (i.e., softball pitchers deliver the ball with an underhand motion, as opposed to overhand in baseball; a softball game involves 7 innings as opposed to 9 for baseball). However, the underlying structure of baseball and softball is the same: in both sports nine players wearing gloves defend three bases on a field that contains a mixture of grass (real or artificial) and dirt (the base paths) while players on the other team attempt to produce runs before reaching three outs each inning. And the way in which runs are scored is the same: by hitting the pitched ball with a bat. Bats are as central to the game of softball as they are to the game of baseball.

Bats, however, and the players who wield them, are known as baseball's and softball's "offensive weapons,"¹ and have also long been associated with aggression and even criminal activity (Dujovny et al., 2009; Groleau et al., 1993). Aggression, in turn, is a major component of gender stereotypes: men are much more strongly associated with aggressiveness and assertiveness (Eagly et al., 2020; Harris & Knight-Bohnhoff, 1996; Hentschel et al., 2019). The aggressiveness stereotype is not only descriptive, but can also be proscriptive: men in particular perceive active and aggressive behaviors as integral parts of manhood (Weaver et al., 2010).

Weapons themselves have been found to be gender-linked. Murnen et al. (2016) found that male characters portrayed by children's Halloween costumes and dolls were not only perceived as being more dominant and aggressive than female characters, but were

¹ See, for example, <https://annex.exploratorium.edu/baseball/features/tools-of-the-trade.html>, and <https://www.wsccathletics.com/sports/bsb/2023-24/releases/20240124hvwdnk>

more often “depicted with hyper-masculine accessories such as having a weapon” (p. 78). And experimental research by Zhang et al. (2022) revealed that children associated boys more strongly than girls with weapons (girls were more strongly associated with kitchenware). Bats, as weapons, could thus be implicitly more associated with men than with women.

We hypothesized that media images of male baseball players would more often depict them swinging or even just holding bats than media images of female softball players.

Methods

The first 50 pictures that were returned from internet searches using the Google browser for both “baseball player” and “softball player” from the year 2022—and that focused on an individual player—were downloaded from four separate popular general sports-related websites (ESPN, Sports Illustrated, Yahoo Sports, and the NCAA). For example, for the images from Sports Illustrated, the following was entered into the search bar: “site:Sl.com "softball player" after:2021-12-31 before:2023-01-01.” The other searches were identical, other than the replacement of the domain name (ESPN, sports.yahoo, or ncaa).

All baseball players depicted were men and all softball players were women. The 400 images were then examined and coded by the first author in terms of whether or not the player was holding a bat. The second author coded 20% of the pictures, and the percentage agreement in coding was 97.5%. The first author’s coding was retained for analyses.

Results

More than one out of four (27%) baseball players (men) were shown holding bats, but only approximately one out of six softball players (women; 17%) were shown with a bat (see Table 1). Thus, men were close to 60% more likely to be holding bats. A Chi-Square analysis revealed this to be a significant difference, $\chi^2 (1, N = 400) = 5.83, p = .016, \phi = .12$.

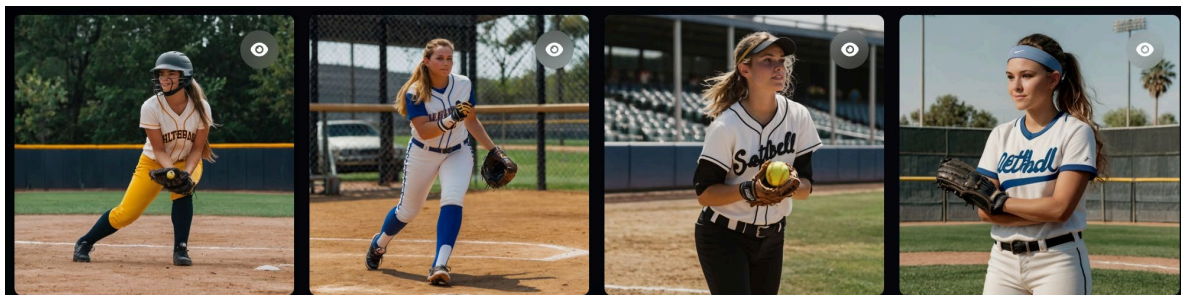
As a follow-up proof of concept test, the online AI image generator Leonardo was instructed to generate images of a “baseball player” and a “softball player.” Leonardo was selected because it was rated as the top free online AI image generator in the first online software review consulted by the second author². AI software generates its output by scraping the internet for content; the images it generates are thus representative of those one would be likely to encounter online. The resulting images produced by Leonardo are presented in Figure 1. As can be seen, none of the softball players are depicted holding bats, while 3 of the 4 baseball players are.

² <https://artsology.com/blog/2023/09/a-comprehensive-review-of-the-best-free-ai-art-generators/>

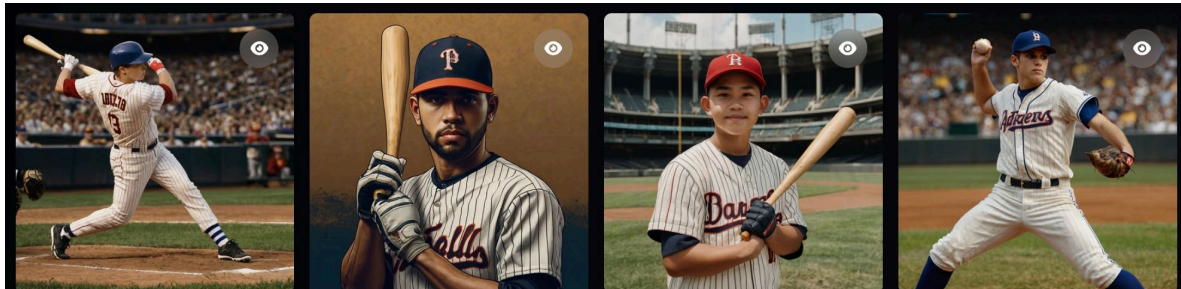
Table 1. Portrayal of players with a bat as a function of sex

Sex	Holding a bat?		%
	Yes	No	
Male	54	146	27.0
Female	34	166	17.0

Figure 1. Images generated by the AI image generator Leonardo of (a) “softball player” and (b) “baseball player”



(a)



(b)

Post-hoc Analysis

Although the data are consistent with the hypothesized pattern, they arguably lend themselves to an alternative explanation. Rather than reflecting implicit beliefs about the appropriateness of aggression in women, perhaps they reflect beliefs about women’s lack of agency more generally (Hentschel et al., 2019; Rudman & Glick, 2001), a proscriptive stereotype that has been found to correspond to media portrayals of men and women (such as in advertising—Gentry & Harrison, 2010; Infanger, & Sczesny, 2015)³. If that were the case, one would expect female softball players to also be less likely to be shown pitching than male baseball players. It is a rather commonplace observation that “Pitching

³ We thank an anonymous reviewer for this suggestion.

is the most important element in the game” (Koppett, 1991, p. 41), and that the pitcher “dictates so much of the game” that “the pitcher is the most important position in baseball, without a doubt” (Pinak, 2022). It has even been suggested that “The most important position in sports is unequivocally the baseball pitcher” (Lefell, 2023).

Two coders (the third and fourth authors) coded the 308 images⁴ of baseball and softball players not holding bats in terms of whether they portrayed a player pitching the ball. The percentage agreement in coding was 91.9 %, and disagreements were resolved via discussion⁵. Close to one out of four (24.5%) softball players (women) were shown pitching, as opposed to less than one out of 10 baseball players (men; 9.7%; see Table 2). A Chi-Square analysis revealed this to be a significant difference, $\chi^2 (1, N = 396) = 15.26, p < .001, \phi = .19$. Thus, in the case of pitching—an active, dominant, agentic role in the game—there was clearly no reluctance to portray women.

Table 2. Portrayal of players pitching as a function of sex

Sex	Pitching?		
	Yes	No	%
Male	19	177	9.7
Female	49	151	24.5

Discussion

Bats are as essential a part of the action in competitive softball, primarily played by women, as they are in competitive baseball, primarily played by men. Nonetheless, when softball players are presented in the media, they are more likely than baseball players to be shown pitching, fielding, running the bases, or anything else besides holding or swinging a bat. This predicted finding is consistent with the more general tendency for people to perceive, describe, and represent males as being more dominant and aggressive than females. That bias seems to extend to a reluctance to associate women with baseball’s offensive weapon, the bat—just as in cartoons of ancient cave dwellers, it is always the men who are holding the clubs.

It is unlikely that the difference in how baseball and softball players are portrayed in the media are due to deliberate, conscious decisions by the people selecting the images, just as those who populate children’s books with images of women with household items (brooms, pots and pans, etc.) and men with workplace tools (Crabb & Bielawski, 1994) are not necessarily motivated by a desire to uphold societal stereotypes. Implicit gender biases, however, can affect the behaviors and decisions of people who otherwise make sincere efforts to avoid stereotyping and discrimination (Fiske, 1998).

⁴ Four images of baseball players were inadvertently lost before the recoding.

⁵ The coders also recorded the number of images portraying players “fielding,” and the number of baseball ($n = 43$) and softball players ($n=42$) in this category was almost identical.

The effect of the bias revealed in this paper could be to dampen enthusiasm for softball as a spectator sport. It has long been observed that declines in hitting and scoring in baseball are correlated with declines in the sport's popularity (Kepner, 2005; Sherman, 2005). Fewer pictures of softball players with bats, the only method of scoring in the game, could possibly implicitly signal a paucity of offense in the game.

The pictures of baseball and softball players were downloaded from the same web sites, at the same time, with the same criteria for selection. One difference between the two sets of pictures should be acknowledged, though: the baseball players were predominantly professionals while the softball players were almost exclusively collegiate and high school athletes. That confound, however, seems unlikely to have played a factor in the differences found and reported here.

This paper focuses on just one aspect of portrayals of male and female athletes in just two (related) sports. But similar discrepancies could exist for other sports. Are images of women playing basketball less likely than those of men to depict assertive physical contact? Is there a bias against presenting images of the more forceful, dramatic kinds of takedowns in women's wrestling events? It remains for future research to shed light on other implicit gender biases in media depictions of athletes.

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