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Sex, Gender, and Fairness in Athletic Competition

Throughout history, the sports community has been continuously discussing and shifting competition categorizations as our understanding of sex and gender has advanced (Karkazis 2012) (Wahlert and Fiester 2012). In 1999, the International Olympic Committee (IOC) abandoned XX chromosomal tests for female athletes due to criticism from athletes and women's rights advocates, including its exclusionary nature towards intersex and transgender athletes. In 2003, the IOC established the *Stockholm Consensus on Sex Reassignment in Sports*, which set conditions for transgender athletes to compete in the Olympics. This policy received mostly positive feedback but raised inclusivity concerns. Nevertheless, the 2004 Olympics proceeded without openly transgender athletes, so the policy was implemented with little controversy at the time (IOC 2004).

Then, in 2009, Caster Semenya made headlines when she won the gold medal for the 800 meter run at the World Championships (Karkazis 2012). Her rapid improvement in performance and her masculine appearance raised questions about her gender, leading the International Association of Athletics Federations (IAAF) to subject Semenya to invasive gender verification testing. Soon after, in 2011, new IAAF regulations were introduced, setting testosterone levels as a criterion for female eligibility in certain track events. Semenya, who naturally has higher testosterone levels, was affected by these regulations. In 2019, the Court of Arbitration for Sport (CAS) ruled in favor of the IAAF's regulations, which required Semenya to take medication to reduce her naturally high testosterone levels to be eligible to compete in certain women's events.

Semenya and her supporters argued that these regulations were discriminatory (Karkazis 2012) (Wahlert and Fiester 2012).

These recent events have raised awareness on several critical inquiries concerning sex and gender within the world of sports: what criteria should be used to determine who should be allowed to compete in athletic categories? What is the appropriate category for transgender and intersex athletes to compete in? A range of possible responses have been suggested to resolve this conflict between fairness and inclusion. Of the most inclusive responses, which I will call Policy 1, some arguments call for all sporting events to be non-discriminatorily open without regard to sex or gender. Another perspective that prioritizes individual identity, which I will refer to as Policy 2, argues that women's events should be open to anyone who identifies themselves as a woman. Finally, the third commonly suggested policy, Policy 3, requires that only athletes who meet certain criteria, such as blood testosterone levels, should be allowed to compete in women's athletics. I will start by discussing Policy 1's open argument and demonstrating areas where this view fails to fulfill key beneficial societal roles of sports competitions, showing how the existence of sport categories does serve a necessary social purpose for gender equality and inclusivity. I will then utilize Rawlsian ethics to show how, while these equality and inclusivity concerns are readily handled by Policy 2, simply defining categories by personal gender identification still fails to avoid unfairness and unjust inequality in competition. I will subsequently describe Policy 3 which includes the variant using serum testosterone levels currently put in place by IAAF. I will make the distinction between sex-based biological attributes and social gender identity to clarify how, while better answering questions of competition inequality, setting criteria to a gendered category ultimately causes further unacceptable harm to our values of inclusivity and relational understanding of gender. Finally, I

will show how the arguments explained here can be extended to challenge the very notion of sex/gender segregation in sports, and I suggest a physiology-based, but gender-independent, categorization system that avoids significantly unfair competition within categories while preserving the sanctity of gender.

Policy 1 argues that the primary objective of sports is to rank how well competing athletes display naturally produced athletic attributes such as strength, speed, and stamina, as these are the root attributes that athletics and sports are valuing and measuring. Through this perspective, restricting competition eligibility on some individuals because of any genetic predisposition for proficiency in those athletic attributes would seem contradictory. Thus, if a strictly attribute-based approach is followed, no categories based on genetic or inherent characteristics, including sex or gender, should be differentiated (Tännsjö 2000). However, when acknowledging the existence of the usual athletic advantages associated with males (Bermon 2013) and emphasizing the importance of making sporting rewards accessible to all, adhering to a strictly attribute-based approach raises a valid concern about the opportunities for individuals who do not fit the typical male athletic profile. Such a policy would mean typical females would rarely be, or possibly never be, seen in elite sport competitions (Bermon 2013) (Coleman 2017). This could result in adverse consequences on societal interests in promoting gender equality and inclusivity due to effectively making sport competition gender-exclusive to men. This may be especially true given that historically, women have faced significant discrimination and exclusion from sports in the past. Sports categories where women can compete at an elite level promote and empower women's position in society by providing a space for women to excel and receive recognition. Furthermore, seeing women in public sports competitions works to signal a social virtue of gender equality, in addition to helping construct social schemas about women in

athletics and generally encouraging girls and women to participate in sports. This kind of representation may be essential for societies to challenge traditional gender roles, break stereotypes, and promote a more inclusive and accepting society. Thus, it becomes clear that sport may play more than one role in society outside of simply ranking and indiscriminately measuring athletic attributes. Policy 1 fails to provide some of these necessary latent secondary purposes of sports competitions, including promotion of a society that values, and is still in the process of fighting for, gender equality and inclusivity.

From discussion of Policy 1, we can see that the underlying purpose of sport is key to understanding which regulations and organization of sport competition may be more morally defensible. John Rawls provides a valuable theoretical foundation regarding equitable and just distribution within an ideal society for establishing moral determinations on rules. He suggests that assuming the "original position" can aid in the identification of morally sound and impartial decisions. In this hypothetical state, individuals would deliberate on rules while lacking knowledge about their abilities, gender, sex, genetics, or any other distinguishing characteristics that they will have in the ideal society they are designing (Rawls 1971). In this way, bias and self-interest would be avoided while reaching an agreement on the rules of society, or in our situation, rules of sport competitions. When individuals are unaware of and equally likely to turn out to be male or female in the society they are designing, it becomes further clear how Policy 1, where elite sport competition becomes effectively inaccessible to females, is likely to be rejected. However, a Rawlsian exploration also highlights an additional key insight into the function of sports. From behind this “veil of ignorance” about individual attributes, Rawls further posits that people would select two major principles of justice for guiding the determination of rules on distributing rewards: the value of liberty and the value of allowing non-uniformity in treatment

for the benefit of the least advantaged individuals (Rawls 1971). Athletic attributes such as strength, speed, and stamina, in addition to strategy and technique, can ultimately be adjusted and influenced by the athletes' efforts. However, any class of people with a set of inherent attributes, such as hormone levels, that significantly shifts the distribution of possible athletic attributes (above the typical distribution achievable by the rest) would confer a reasonably major disadvantage to their competitors. If significant enough, this may warrant intervention and non-uniformity in treatment to prevent such an inequality. With regard to Rawls' ideas, this suggests that without personal bias, people would agree that although genetic lotteries may play a part in how sport competition rewards are distributed, its significance should not be overly influential to the point of overly dominating the rewards resulting from sport victories.

With this insight, we can now analyze Policy 2, where women's events are open to anyone who personally identifies their gender as a woman. An important distinction must be made between gender, which includes social and cultural gender roles and identity, and sex, a component of biological differences (Haig 2004) (Karkazis 2012). Transgender individuals may therefore possess biological characteristics of a different sex than the gender with which they identify with. Likewise, intersex individuals may not fit into either of the biological binaries of male or female sex. Finally, any of these individuals may or may not take steps to alter their biological markers to be in better concordance with their personal gender identity. It is therefore possible for women to have biological markers and attributes from the male sex (Haig 2004). Furthermore, sets of biological attributes within one category of "sex" are not deterministic themselves–despite many biological markers of sex, including chromosomes, gonads, hormones, and genitalia, none are actually universally present in every single person born of either male or female sex (Karkazis 2012). There will therefore exist individuals such as Semenya, who, by

chance, have some exceptionally male-typical biological attributes, such as testosterone levels. If we agree that certain biologically male-typical attributes confer a significantly unfair advantage (Bermon 2013), then allowing individuals with male-typical attributes to compete against individuals with biologically women-typical attributes, regardless of gender identity, may seem unfair. Following Policy 2, all people from a single gender identity would compete together in a women's sports category. Many of these people would therefore also have biological markers and the athletic attributes of the male sex. From our previous Rawlsian analysis, these individuals could then impose a significant and unfair disadvantage onto their other women-identifying competitors. It would therefore be ethical to have differential treatment for the competition of sports rewards and victories for those with biologically male-typical attributes versus female-typical attributes. Ultimately, this policy overlooks the potential that women-identifying individuals with exceptionally male-typical biology, such as elevated functional testosterone levels, might be sufficiently dissimilar and cause sufficient disadvantage to their other female competitors to justify distinct treatment and separate categories.

Although counter-arguments against the amount of significant sports advantage conferred by a subset of male biological sex characteristics (Karkazis 2012) exist, there is evidence that some of these, including the case of only having elevated testosterone, is sufficient for major physical distinctions. Physiologically, men have 10 times more testosterone than women, and its anabolic effects on muscle tissue and bone density are well studied (Bermon 2013). Documents from experiments performed by sports scientists in the former German Democratic Republic likewise found that "the effects of the treatment with androgenic hormones were so spectacular, particularly in female athletes in strength dependent events, that few competitors not using the drugs had a chance of winning" (Franke and Berendonk 1997). Indeed, simply sitting around

with a 600 mg injection of testosterone, which is considered typical for beginner steroid injecting bodybuilders (Griffiths 2016), allows for greater muscle mass growth over a 10 week period than active training (Bhasin 1996). These studies suggest that, at the very least for strength dependent sports, significantly elevated testosterone levels, such as in the male-typical range, would put the distribution of relevant athletic attributes for that individual far above that of other individuals (Bermon 2013) (Coleson 2017). This significant effect would reasonably result in a nearly complete domination of at least some sports. Thus, certain sex-related genetic attributes are distinct in their effect on sports from the natural variation in other genetic traits such as mitochondrial efficiency or longer limbs and larger hands which may simply be overrepresented in certain sports, but do not necessarily dominate competition to the same severity (Karkazis 2012).

Nevertheless, an important advantage of Policy 2 involves the social role of inclusivity and the gender affirmation it accomplishes for transgender and biologically non-typical females. This brings us to Policy 3, where only athletes who meet certain criteria should be allowed to compete in women's athletics. This policy is similar to that which is currently enacted by the IAAF, whereby female-identifying athletes competing in the women's category of sports must meet testosterone level thresholds (Karkazis 2012). Although these criteria may allow for greater fairness in sports competitions, they come at a steep cost. First and foremost, there is the psychological harm of subjugating individuals to intrusive tests in order to live and act in accordance with their gender identity, as evidenced by the suicides of several female athletes subjected to these (Viloria and Martinez-Patino 2012). On a fundamental level, criteria such as these "send the implicit message to the women subjected to these policies that they are not 'female enough'" (Viloria and Martinez-Patino 2012), and they therefore will affect how our

society views and defines “female-ness” going forward. The critical element here is that these tests for female biological *sex* characteristics are being tied to the *gender* based category of women’s events. Gender, including the definition, salience, and meaningful value we place on it, is socially constructed and therefore highly vulnerable to social rules. Firstly, conflating a public gender category together with sex-based biological characteristics runs the serious risk of hindering and discouraging the rights and dignity of transgender and intersex individuals, who often already face significant discrimination in many other aspects of life. Such ignorant misassignment may furthermore represent a more sinister danger to broader society by normalizing a less conscientious, and in many ways less humane, ascription to gender.

A morally acceptable organization of sports categories may not come from gender-based categories at all. From the previous arguments, it is clear that an ethical solution must not result in unfair domination of sport competition rewards by any significantly advantaged group, while also avoiding the real danger of injuring our efforts to construct a more inclusive and compassionate definition of gender. Of note, none of these constraints prevents us from detaching gender from sports competitions completely. This is to say, an optimal solution may involve sports categories based completely on physical attributes without any explicit labeling by gender. Such an idea is not entirely novel–similar categorization philosophies do already exist in other sports, such as weight classes in boxing and martial arts, and on a non-elite level, categorization by age. These serve the purpose of giving athletes in each category a genuine chance of winning, in addition to providing greater safety between competitors in sport matches. It should be possible to extend physical categorizations to other sports as a replacement for gendered sports. In an analogous manner to heavy, middle, or lightweight boxing class divisions, “heavy”, “middle”, or “light” physiology sports classes could be defined based on some

numerical combination of serum testosterone levels, history of sex-based puberty, bone density, etc. Certain sports, such as basketball, may require incorporating height, while others, such as swimming, may involve lung volume. Having a combination of multiple physiological attributes would additionally be favorable for ensuring the medical privacy of transgender and intersex individuals. As long as care is taken to distinguish our social use of gender from these physiology class divisions, this solution provides one example of how to successfully rescue each of the issues arising from the previous policies. Physiology class divisions will ensure 1) females will be represented in public elite athletic competitions, 2) all athletes have a fair and just chance at receiving victory rewards, and 3) gender identity and its intersubjective meaning is no longer attacked.

Traditional sporting competitions have historically separated participants based on the conventional male or female binary. However, intersex individuals whose biological characteristics do not neatly align with this traditional male or female binary, transgender individuals who challenge the notion of biological sex as indistinct from gender, and female individuals with masculine traits and/or hyperandrogenism have raised questions about the fairness and efficacy of sex segregation in sports. Identification of the faults in three common putative categorization mechanisms, including completely open sports (Policy 1), personal gender identification (Policy 2), and using a sex-correlated criteria for gender-defined categories (Policy 3), reveals key features that a more successful implementation would require. These include preserving principles of gender equality and inclusion, along with ensuring fair competition without significant disadvantage to anyone based on their genetic attributes. One solution created from deliberately avoiding each of these problems is gender-independent physiological classes. Ultimately, I would hope that a gender-independent answer may not only

lead to more nuanced discussions on public sports ethicality, but that it may also assist in elevating our understanding of gender towards the more personally intimate and individualistically special element of being human that I believe it deserves.

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