Of Athletes, Bodies, and Rules: Making Sense of *Caster Semenya*

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Abstract: This article aims to systematically deconstruct four distinct narratives derived from the case of *Caster Semenya v. IAAF (Court of Arbitration for Sport).*

his article helps navigate through *Mokgadi Caster Semenya et al. v. International Association of Athletics Federations (IAAF)*, a case decided by an arbitral panel of the Court of Arbitration for Sport (CAS) in 2019¹ and on appeal, by the Swiss Supreme Federal Tribunal (SFT) in 2020.²

In *Semenya*, Athletics South Africa (ASA) and the globally famous South African runner Caster Semenya contended that the IAAF's Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development) (DSD Regulations) violated Semenya's right to participate in sport without discrimination. Semenya and the ASA claimed that the DSD Regulations unnecessarily, disproportionally and unreasonably discriminated against people with Differences of Sex Development (DSD) by preventing them from competing in the female category unless they underwent testosterone-suppressing treatment.³

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This article complements the existing academic literature on the case, which consists of two strands of criticism, respectively approaching the award under human rights law and critical legal theories. According to the former view, the DSD Regulations entail multiple violations of the rights of athletes with DSD, which are sidelined by the CAS award.8 The United Nations Human Rights Council has adopted this perspective in a resolution calling for the respect of female athletes' "rights to bodily integrity and autonomy."9 The latter view reproaches the CAS for having mobilized science over legal concerns, ignoring the multiple ethical issues raised by the DSD Regulations. This analytical approach criticizes more generally the "technocratization" of law, which relies on the assumption that science reveals "absolute truths" about athletic performance and sex/gender boundaries.10

Against any absolute truth about sex and gender, we conceive both sex and gender as cultural constructs. As our examination of *Semenya* will demonstrate, not only gender but also sex vary across time and space. Sex traits are biological and concrete facts. The scien-

tific gaze on bodies is always distant. Far from being the direct representation of what it observes, science translates what it sees through human and nonhuman intermediaries that "stand in for what actually is."¹¹ The way in which the human eye interprets and categorizes sex characteristics is, therefore, far from natural¹² but rather imbued with cultural expectations. Hence, in this paper we refer to "sex/gender," unless the analysis requires the separate use of one of the two terms or the term is contained in a quotation from another source.

In this article, we offer an original analysis of *Seme-nya* that looks at a set of narratives that the adjudicators used to make sense of the case, by deconstructing

outcome of the case contradicts the very essence of equal participation in sport.

I. A Longstanding Dispute On Gendered Bodies

A. Before Semenya

On August 19, 2009, eighteen-year-old South African runner Mokgadi Caster Semenya set a new world record in women's 800-meters finals at the World Athletics Championship in Berlin, winning the gold medal with a time of 1:55.45. As she excelled eight seconds beyond her prior record, her performance was perceived as a "double transgression" for both her young age and common standards of preparation.¹³ While the

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them as legally flawed and ethically questionable. We elaborate this argument in two parts. Part I presents the case's factual and legal background. Part II offers an analysis in four sections, respectively dedicated to each of the abovementioned narratives. Particularly, we challenge that:

- Deciding on eligibility is not deciding about sex/ gender.
- Testosterone is an accurate predictor of athletic performance.
- The required testosterone-suppressing treatment is safe and harmless.
- Semenya now protects women as a whole.

Despite the adjudicators' attempt to offer an objective, neutral and apologetic narrative, the way they made sense of Semenya's excellent performance is stereotyped, gendered and stigmatizing. We conclude that the narratives presented in *Semenya* are inherently flawed and contradict the principle of fairness in sport. In fact, by precluding athletes with DSD from competing in the same way as the other athletes, the antidoping tests failed to mark any irregularity, Semenya's peers objected that she should not compete with them as "she is not a woman, she is a man."¹⁴

To placate the storm, the IAAF announced further tests on Semenya under their 2006 Policy on Gender Verification (PGV), a one-page instruction set for "handling cases of gender ambiguity."15 A regime based on mere suspicions of gender non-conformity, the PGV targeted female athletes based on the assumption that they "should not be enjoying the benefits of natural testosterone levels normally seen in a male."16 Such testing had already been heavily criticized a few years earlier, when Indian athlete Santhi Soundarajan, a champion in the 800-meter race at the 2006 Asian Games in Doha, was stripped of her medal on the alleged grounds that she "did not possess the sexual characteristics of a woman."17 Her career in sport being interrupted without formal explanations, she attempted suicide, with the IAAF's silence feeding speculations by the media for months.18 Caster Semenya was subject to the same treatment. She was described as having "male sex organs and no wombs or ovaries"19 and being "too strong and muscular to be a woman."²⁰ In response, South African media criticized the IAAF's policy as "a lingering artifact of South Africa's apartheid past and the racist history of Global North/Western culture's scientific scrutiny of African Women's bodies."²¹

Following these polemics, in 2011 the IAAF replaced the PGV with the Regulations Governing Eligibility of Females with Hyperandrogenism to Compete in Women's Competition (Hyperandrogenism Regulations).²² By refusing the label of "gender verification" and "gender policy,"23 this new regime restricted its own scope to female athletes with suspected or diagnosed "hyperandrogenism." This was defined as the excessive production of testosterone above the normal male range, which was conventionally fixed at 10 nanomoles per liter (nmol/L).²⁴ After qualifying hyperandrogenism as "a risk to health,"²⁵ these regulations envisaged a threefold investigation procedure to be carried out by a panel of independent medical experts.²⁶ As in the PGV, the assumption behind the Hyperandrogenism Regulations was that the condition generated an advantage in terms of muscle development that nullified the athletic difference between male and female athletes.²⁷ The new regime also revived the suspicion regime that existed under the PGV, although now suspicion was formally required to come "from any reliable source."28

In 2014, the Indian athlete Dutee Chand challenged the Hyperandrogenism Regulations for the first time before a CAS arbitral tribunal.²⁹ A sprinter and 100-meters national champion at the age of sixteen, Chand had been disqualified at the last minute from the Commonwealth Games upon suspicion of hyperandrogenism. After medical personnel performed two-round tests on her, the Athletics Federation of India (AFI) suspended her from any competition and recommended she follow the Hyperandrogenism Regulations if she planned to compete again.³⁰ Notwithstanding the absence of clear-cut answers regarding Chand's medical conditions, the media speculated that Chand had "failed a gender test" and therefore was not a "normal" woman.³¹

Before the CAS, Chand argued that the Hyperandrogenism Regulations disproportionately discriminated against female athletes with particular biological characteristics based on flawed scientific assumptions about the impact of testosterone on athletic performance.³² The CAS eventually issued an interim award and suspended the Hyperandrogenism Regulations. In particular, the CAS accepted the IAAF's argument that "the Regulations do not police the male/female divide but establish a female/female divide within the female category."³³ Moreover, the CAS rejected Chand's contention that testosterone was irrelevant in explaining the difference in athletic performance between men and women and confirmed it as a scientifically sound marker for eligibility.³⁴ However, because the parameter against which hyperandrogenism was measured was not men's testosterone level but that of non-hyperandrogenic females, the CAS required the IAAF to produce sufficient evidence about the degree of athletic advantage enjoyed by hyperandrogenic athletes.³⁵ As a result, in early 2018, the IAAF withdrew the Hyperandrogenism Regulations and enacted a completely new set of rules, the DSD Regulations, allegedly supported by the strongest scientific evidence and with a more limited scope, resulting in the arbitral proceedings being terminated.³⁶

B. Caster Semenya, the DSD Regulations and the CAS Award

Compared to the Hyperandrogenism Regulations, the DSD Regulations provide more details about the imperatives supporting their provisions. Their selfproclaimed objective is "[t]o ensure fair and meaningful competition in the sport of athletics" while at the same time maintaining the male/female categorization "[b]ecause of the significant advantages in size, strength and power enjoyed (on average) by men over women from puberty onwards, due in large part to men's much higher levels of circulating testosterone, and the impact that such advantages can have on sporting performance."37 Nonetheless, the DSD Regulations recognize possible "atypical" developments in chromosomal, gonadal and anatomical sex characteristics - the so-called "differences of sex development:" (DSD) — which do not perfectly match the traditional male/female categorization.³⁸

The DSD Regulations require the affected individuals - athletes with "46,XY DSD" - to undergo testosterone-suppressing treatment if they wish to continue to compete. Specifically, 46,XY DSD results from a discordance between the genetic sex, the gonadal sex (testes or ovaries), the external genital sex (vulva or penis and scrotum) and/or the initial sex ducts existing at birth. Endocrinology identifies a spectrum of 46,XY DSD conditions which include, inter alia, the 5a-reductase type 2 deficiency (5-ARD). Shortly, 5a-reductase (5-AR) is an enzyme that helps testosterone metabolize into dihydrotestosterone (DHT), an androgen that in turn contributes to the proper formation of the typical male external genitalia (penis and scrotum). The 5-ARD results in a newborn child's genitalia looking atypical or female-typical, while developing testosterone levels closer to the male range from puberty onwards.³⁹ The DSD Regulations target athletes with 5-ARD and other DSD, including "any other genetic disorder involving disordered gonadal steroidogenesis."⁴⁰ Additionally, for ineligibility to apply, the athlete must have circulating testosterone levels in blood of 5 nmol/L or above and sufficient androgen sensitivity to a "material androgenizing effect."⁴¹ It is an eligibility condition for the athlete to maintain her blood testosterone level below that threshold "for a continuous period of at least six months (e.g., by use of hormonal contraceptives)" and thereafter "continuously [...] for so long as she wishes to maintain eligibility."⁴²

Before these new provisions formally entered into force, Caster Semenya and Athletics South Africa (ASA) tried to have them invalidated by CAS on the grounds that they unnecessarily, disproportionally and unreasonably discriminated against people with DSD.43 Semenya and ASA, as the claimants, argued that the DSD Regulations breached the athletes' fundamental rights, exposing them not only to stigmatization but also to adverse physical and mental health risks as a consequence of the mandatory testosteronesuppressing treatment.⁴⁴ In response to these claims, the IAAF argued that the DSD Regulations were necessary for providing the so-called biological females with the same sporting opportunities as male athletes. The IAAF also explained that the DSD Regulations were reasonable in their scope and considerably narrower than the previous regimes.45

The CAS agreed with the claimants that the DSD Regulations were discriminatory but found them necessary, proportionate and reasonable for the IAAF to pursue the objectives of ensuring fair competition and protecting the integrity of the female category. In particular, the CAS observed that, insofar as a binary system was maintained, sex segregation should necessarily be based not on legal status but on "human biology" - biological factors such as the level of endogenous testosterone.⁴⁶ In the CAS' view, the DSD Regulations were necessary because athletes falling within their scope - androgen sensitive female athletes with 46,XY DSD - enjoy "a significant performance advantage over other female athletes" due to their greater levels of circulating testosterone.⁴⁷ Such an advantage had been determined by two academic papers which integrated the need for evidence underlined by the CAS in Chand.48 Furthermore, the CAS found that the DSD Regulations were reasonable in light of their limited scope to specific events where the athletic advantage enjoyed by DSD athletes is particularly evident.49 Finally, the CAS concluded that, with the DSD Regulations requiring athletes with diagnosed DSD to take oral contraceptives to reduce testosterone, the side

effects of such a treatment, albeit generally unknown, would not be different in nature from those experienced by the many thousands of XX women who take such oral contraceptives.⁵⁰ Thus, these side effects did not render the Regulations disproportionate.

At the same time, however, the CAS expressed grave concerns relating to: (i) the paucity of evidence justifying the Regulations material scope;⁵¹ and (ii) the possibility of the affected athletes not being able to maintain a natural testosterone level below 5 nmol/L, even after complying with the DSD Regulations, due to unintentional fluctuations in their endogenous testosterone levels.⁵² Although the CAS recommended the IAAF to address both concerns swiftly, the IAAF ignored these recommendations. Semenya decided therefore to quit athletics and register in soccer competitions instead, a discipline unaffected by the DSD Regulations.⁵³

Semenya and ASA subsequently sought a review of the award by the Swiss Supreme Federal Tribunal (SFT), whose jurisdiction over CAS awards is limited to public policy (*ordre public*).⁵⁴ According to the SFT's decade-long judicial practice, an award is contrary to public policy if it disregards "essential and widely recognized values which, according to the prevailing views in Switzerland, should underlie any and all systems of law."⁵⁵ The SFT found that the CAS award did not disregard such values. The SFT indeed upheld all the conclusions reached by the CAS regarding the necessity, proportionality and reasonableness of the DSD Regulations.⁵⁶

II. The Four Narratives

There are four narratives that emerge from *Semenya*: (1) deciding on eligibility is not deciding on sex/gender; (2) testosterone is a reliable predictor of athletic performance; (3) the required testosterone-suppressing treatment is safe and harmless; and (4) *Semenya* now protects female athletes as a whole. These narratives reflect the ways sport authorities and adjudicators make sense of the case. We, nevertheless, challenge them.

Methodologically, we deconstruct these narratives using both legal and ethical arguments. These narratives are described in the literature covering the subject in various ways.⁵⁷ Here we intend "narratives" to be understood as "ordered representation[s of] the way we think."⁵⁸ Scholars of different disciplines have highlighted the enormous powers attained to narratives. Narratives are not just vehicles of communication or instruments that help describe the world, but behavior-shaping techniques that influence our lives.⁵⁹ Given the importance of law in shaping behaviors, the power of narratives becomes particularly important when it comes to legal matters and decisions. As one the foremost experts in legal narratology, Peter Brooks, puts it, a judicial decision may "activate conviction that its narrative is the true and the right one."⁶⁰

The narratology we derive from Semenya depicts an apparently logical sequence of objective, neutral and apologetic considerations. These justify a regime of conditions for athletes with DSD for the sake of highly priced values in sports including equality, fairness and the common good. Against this logic, we maintain that the outcome of the case sidelines equally important notions for sports such as gender and race (as in narratives 1 and 4) and expresses extremely narrow views of the surrounding scientific and ethical dynamics (as in narratives 2 and 3). As Australian sociologist and former middle-distance runner Madeleine Pape showed in her in-depth analysis of Chand, sidelining certain important dimensions of a case is a way for the CAS to deal with complexity.⁶¹ Her analysis persuasively found that sidelining manifested itself in Chand when the CAS replaced one gendered dichotomy with another one. The CAS, indeed, substituted the male versus female dichotomy with "a new binary" femalewith-DSD versus female-without-DSD, which "simulate the sex categories of male and female in all but name."62 The same phenomenon, we argue, occurs in Semenya, where the CAS is able to: transform complex questions about sex/gender into a simple eligibility matter (narrative 1); amplify the reliability of the deeply flawed research produced by the IAAF while downgrading the criticisms raised by the claimants as "insufficient" (narrative 2); affirm that a completely unethical medical treatment is nonetheless safe (narrative 3); and downplay the experience of the claimant for the sake of principles (narrative 4).

1. The case is about eligibility and not about sex/ gender

The idea that one can decide on an athlete's eligibility without deciding on their sex/gender is expressed very clearly by both the IAAF and the CAS. On the one hand, the DSD Regulations state that "[i]n no way are they intended as any kind of judgment on or questioning of the sex or the gender identity of any athlete."⁶³ On the other hand, the CAS stipulates that "nothing in this Award is intended to question, determine, or pass judgment upon any aspect of any person's sex or gender"⁶⁴ — a conclusion that is shared by the SFT.⁶⁵

According to Judith Butler, "we can invoke certain standards for admission to compete under a particular gender category without deciding whether or not the person unequivocally "is" that category."⁶⁶ The prob-

lem with these statements, however, is that the question of eligibility and that of sex/gender in sports are so profoundly intertwined that it becomes difficult, if not impossible, to judge an athlete's eligibility without making assumptions about her sex/gender. In fact, while defining the eligibility of certain athletes with DSD to compete within the female category, both the DSD Regulations and the CAS award implicitly determine who is a woman and who is not. They do not simply describe or recognize an athlete's sex/gender. They define it to mean "a real woman does not have a DSD."

The whole eligibility system is grounded on a form of collective surveillance over the athlete's body which valorizes the simple *suspicion* of gender non-conformity.⁶⁷ While the IAAF Medical Manager is the only person who can initiate an investigation, the DSD Regulations are imprecise as to those who may raise "concern," referred to, in Section 3.3 thereof, as:

sources, such as (for example, but without limitation) the athlete herself, the team doctor of the National Federation to which the athlete is affiliated, results from a routine preparticipation health examination, and/or information/data (including but not limited to blood testosterone levels) obtained from the collection and analysis of samples for anti-doping purposes.⁶⁸

Clearly, such a system leaves the door ajar to gender stereotypes and biases to drive the eligibility process. Borrowing from Rebecca Cook and Simone Cusack, a stereotype is "a generalized view or preconception of attributes or characteristics possessed by, or the roles that are or should be performed by, members of a particular group."69 Stereotyping is everywhere. Gender stereotyping, in particular, dominates sport competitions as much as our everyday lives. Both explicit and implicit gender stereotyping is heavily implicated in sport behaviors.⁷⁰ In this respect, particular body morphologies and above-average levels of strength represent powerful triggers for implicit gender stereotyping, especially in the case of gender nonconforming bodies. A stereotype builds on the "salient representatives of a given category."71 Consequently, appearance replaces great athletic performances with nonstereotypical characteristics being targeted as signs of gender non-conformity. For instance, media speculations surrounding Caster Semenya's victory in Berlin in 2009 reflected the idea that Semenva's voice, way of dressing, muscles, short hair and attitude render her a man,⁷² an argument that the IAAF did not hesitate to buy.73

In the context of sport competitions, well beyond the measurement of hormonal levels, "appropriate" female bodies are those meeting the aesthetics and expressions of normative femininity, reporting the beholder — acting as the supposed "source" under the DSD Regulations' investigation provisions - to culturally-coded ideas of femininity. These are the lenses through which higher testosterone levels are interpreted.74 Specific characteristics or modes of behaving may therefore be perceived as signs of high testosterone so that the tone of voice, the size of muscles, facial and other features which do not fit the typical feminine traits become the target of a widespread surveillance of female athletes by different actors and entities like national federations, doctors, doping officials and other official personnel. In this context, striking performances are not interpreted as deserving victories but as gender non-conformity accidents, with talent and stubbornness turning into ambiguous or anomalous components of the athlete's femininity to be extirpated. Hence, rather than expanding the category of woman, the goal is to more narrowly define it in a way that leads to stigmatizing DSD outliers.75

Ironically, both the IAAF and the CAS insist on the prevention of stigmatization to which they actually contribute. By upholding the legitimacy of the DSD Regulations, the CAS turns a blind eye to the inconsistency of the above mentioned Section 3.3, describing the process through which any person or entity may provide information to the IAAF Medical Manager for initiating the investigation, with the prescription, contained in the subsequent Section 3.4, to respect of the "dignity and privacy of every individual."⁷⁶ The latter provision also sets forth the specific prohibition for any person or entity providing information to the Medical Manager to "stigmatize or otherwise injure an athlete."77 This reflects the more general prohibition of stigmatization and "improper discrimination on the grounds of sex or gender identity."78 Among the conducts that will not be "tolerated" is the "persecution or campaigns against athletes simply on the basis that their appearance does not conform to gender stereotypes."79

As a matter of fact, stigmatization almost automatically follows gender stereotyping. In particular, the DSD Regulations do not target all women with hyperandrogenism, but only women with a subset of DSD variations with higher natural testosterone levels and androgen sensitivity sufficient to have "a material androgenizing effect."⁸⁰ This last expression incorporated in the DSD Regulations constitutes *per se* a gender stereotype. Higher testosterone levels, indeed, produce certain traits which are considered not feminine and make women androgenized. The "androgenizing effect" is the key albeit vague criterion to selecting the athletes who look "masculine" or do not look "feminine enough."81 This is the premise of the DSD Regulations, which encourage stigmatization of those who look not like the standard(ized) feminine athlete and do not fit gender stereotypes. This claim is further substantiated by the content of the predecessor of and model for the DSD Regulations, the Hyperandrogenism Regulations. These Regulations expressly stated that women with higher testosterone "often display masculine traits and have an uncommon athletic capacity in relation to their fellow female competitors."82 By upholding the DSD Regulations, the CAS reinforces the stigmatization of athletes with DSD, perpetuating the vulnerability of female athletes whose bodies do not conform to common gender stereotypes. The risk of the DSD Regulations' scope being overinclusive is real. While targeting women with DSD with sensitivity to high level of testosterone, the DSD Regulations reinforce stereotypes as to how women more generally should behave and look like.

A second manifestation of the confusion between eligibility and gender determination comes from the CAS' focus on the gender binary which is at the basis of sex segregation in sport. For the CAS,

[o]nce it is recognized that the reason for organizing competitive athletics into separate male and female categories rests on the need to protect one group of individuals against having to compete against individuals who possess certain insuperable performance advantages derived from biology rather than legal status, it follows that it may be legitimate to regulate the right to participate in the female category by reference to those biological factors rather than legal status alone.⁸³

This statement reflects a view according to which sex segregation in sport is commanded by the apparently meritorious goal of protecting women from the "insuperable performance advantage" enjoyed by men. However, sociologists have unveiled the hypocrisy laying behind this view. According to this view, women appear as the protected category while, in reality, the purpose of sex segregation is, and has always been, that of policing sex/gender boundaries to protect male physical superiority.⁸⁴ What eligibility rules actually do is to "provide an upper limit for women's sporting performance"⁸⁵ which does not operate for men.

In the Western world, women were admitted to sport competitions since the 1860s under the dominant medical discourse that justified their access to exercise and training as a way to reinforce the nation's strength. Women's resulting muscular benefits, it was believed, would be inherited by their (male) children.⁸⁶ Systematic and deeply invasive physical examinations were put in place, which effectively restricted women's access to competitions, with the clear purpose of verifying that sport "cannot in any way injure the woman."⁸⁷ This theory predicates women's inherent fragility and perfectly fits the eugenic narrative of capitalism relegating women to a reproductive function.⁸⁸ As such, it has been shared for decades by the Olympic Games ideologues, who vigorously opposed the idea of female athletes as "inconvenient, uninteresting, un-aesthetic and not correct" – women's role had to be relegated to crowning the winners.⁸⁹ When, at the end, women were "admitted" (admises) at the Olympic Games,90 it was not for the sake of gender equality. Instead, so many female sport associations had blossomed locally that it was ultimately impossible to ignore them.⁹¹

Once this had happened, a new narrative was construed to support the sequence of "crude and unpleasant,"⁹² "inappropriate"⁹³ and ultimately "obsolete"⁹⁴ set of sex/gender verification tests enacted by sport authorities from the 1930s to the 1990s. Ranging from "femininity certificates" to the infamous "naked parades,"⁹⁵ to the Barr Body (or Chromatin) test,⁹⁶ these tests were formally justified with the intention of identifying "gender frauds" and "gender cheaters."

However, the number of cases that academic research has progressively revealed to the public tells a completely different story. On the one hand, more often than not, suspicions of gender frauds have been highly politicized, especially during the Cold War, with Western media targeting Eastern athletes in an attempt to discover the highest number of gender cheaters.⁹⁷ On the other hand, as has been showed by a recent study, the various changes in IAAF's sex segregation regime were actually demanded not by cases of cheating but rather by "social anxieties over sex/gender binary breakdown" and the need to police women's bodies.⁹⁸ The Olympics' experience with sex testing reflects both these anxieties for sex/gender boundaries and the connected geopolitical influences.

In sum, the eligibility regime drawn by the DSD Regulations and validated by the CAS construes a "female" category that is: (a) necessarily physically weaker than the "male" category; (b) based on anatomical features and differences between male and female athletes; and (c) arbitrarily drawn upon a line between what is typically female and non-female. Therefore, the category of "female" is treated monolithically as if no differences existed within the group of women. This stance ignores that there is always a particular segment of the sport community which remains difficult to label.⁹⁹ Where a difference is present, the DSD Regulations impose athletes with DSD to assimilate to the male or the female category, in the latter case subject to testosterone-suppressing treatment. In this framework, the Regulations' statement that "in no way are they intended as any kind of judgement on or questioning of the sex or the gender identity of any athlete"¹⁰⁰ is nothing more than a theoretical dictate built on shaky grounds.

2. Testosterone is a predictor of athletic performance

The second narrative scrutinized here is the CAS' conclusion of testosterone being a biological predictor of athletic performance. In this regard, the CAS shares the IAAF's view that "androgen sensitive athletes with 46,XY DSD enjoy a significant performance advantage over other athletes without such DSD, and that this advantage is attributable to their exposure to levels of circulating testosterone in the adult male range."¹⁰¹ The CAS also responds affirmatively to the question as to whether this advantage is "insuperable," thereby resulting in the justifiability of DSD Regulations as necessary.¹⁰² We hereby criticize this narrative as an exercise of "opportunistic epistemology," that is, an approach that formulates conclusions before searching for evidence.¹⁰³

Let us start with the integrity of the scientific process that supports the alleged causal relationship between testosterone and the athletic advantage enjoyed by athletes with DSD. In *Chand*, the CAS adopted a rigorous approach in the evaluation of the scientific evidence by explicitly warning the IAAF that the "degree or magnitude of the advantage" must be scientifically determined as "substantial," while "it is not enough simply to establish that the characteristic has some performance enhancing effect."¹⁰⁴ Against this approach, according to which "numbers matter[ed],"¹⁰⁵ the majority of *Semenya*'s panel went loose on the exact weight of the athletic advantage and limited its findings to considering that the latter "cannot be characterized as minimal or marginal."¹⁰⁶

Given such stunning level of disenfranchisement from *Chand* — which the CAS omitted to justify¹⁰⁷ — one should have expected the scientific evidence brought before the CAS to be methodologically sound, that is resilient to criticism. Yet, despite the CAS' enormous efforts to elaborate on the scientific evidence provided by the IAAF, an accurate time analysis of the proceedings reveals that the evidence used in support of the DSD Regulations in the first place, *i.e.*, the 2017 paper by IAAF's medical experts Stéphane Bermon and Pierre-Yves Garnier¹⁰⁸ ("BG17") was firstly amended to fit the IAAF's purposes and subsequently complemented with more research – namely, Professor David J. Handelsman's expert testimony and paper, coauthored with Bermon,¹⁰⁹ published *after* the publication of the DSD Regulations. This explains why, as has been observed, the BG17 was "relegated to the periphery, out of sight and scrutiny, because that's where the IAAF were the weakest,"¹¹⁰ and why the CAS reported at length on Handelsman's data and findings.¹¹¹

Now, the BG17 examined 1,332 blood samples made available to the IAAF in 21 women's events in Daegu and Moscow IAAF World Championships and found a competitive advantage from 1.8% to 4.5% in female athletes with high testosterone over female competitors with normal androgen levels, with different margins depending on the discipline.¹¹² A substantial number of authors highlighted flaws in the paper's methodology and data analysis, concluding that "it is reasonably likely that the correlations presented in [BG17] (even the largest ones) occurred by chance."113 These authors also found that only in 12 over 21 of the examined events athletes with high testosterone performed better on average and that, given the absence of publicly available raw data, the paper filed with the arbitral tribunal failed to meet the standard of proof required by the CAS.¹¹⁴ Other authors contended that BG17 failed to address "the issue of causality" between the testosterone level and athletic performance. They criticized the idea that the asserted competitive advantage could be measured by testosterone alone without considering "other relevant variables."115 Finally, one author questioned whether it was ethical to use the blood samples the athletes consensually provided in the context of antidoping testing for further research on athletic performance.¹¹⁶

Analogous criticisms have been raised with regard of an amended version of the BG17 produced before the CAS.¹¹⁷ As to Professor Handelsman's paper, the authors not only declared that their research provided "incomplete evidence," but also remarked that, in order to fill the existing "lack of well-designed study" on the sex/gender differences in athletic performance, the more research that is needed may raise "ethical concerns over short and long-term adverse effects" of administering exogenous testosterone to "healthy" adults.¹¹⁸ Moreover, when Professor Handelsman's independence was questioned before the CAS, he admitted that his remuneration by the IAAF was contingent on the outcome of the case.¹¹⁹

Concerns have also been raised regarding a possible conflict of interest since the research supporting the conclusions of the IAAF has been conducted by its own in-house researchers, which is tantamount to "cigarette companies [providing] the scientific basis for the regulation of smoking".¹²⁰ While sports governance necessarily requires robust evidence, the evidence in this case simply does not fulfil the standard criteria for courtroom admissibility due to the use of flawed scientific data which has not even been subject to peer-review.¹²¹

The centrality of quantitative evidence in proceedings before the CAS acquires a further meaning if seen from the angle of what that evidence is expected to prove. The reasons underlying the two-year temporary suspension of the Hyperandrogenism Regulations in 2015 in the Dutee Chand interim award provide the background for understanding the narrative of testosterone being a predictor of athletic performance in Semenya.¹²² The narrative upheld in Semenya was conditioned by the combination of the burden of proof being on the IAAF and the CAS' assumption of testosterone being an indicator of improved performance in the *Dutee Chand* interim award. The panel assumed that, had the IAAF proven the testosterone-driven athletic advantage, the Hyperandrogenism Regulations should have been reinstated. In that ruling, the CAS suspended the regulations to allow the IAAF to provide scientific proof about the correlation between increased testosterone levels in hyperandrogenic athletes and a competitive advantage in athletic performance. By giving the IAAF the opportunity to provide scientific evidence about improved performance, the CAS, therefore, confirmed the IAAF's assumption regarding the causal link between high testosterone levels and athletic advantage. The panel explicitly stated that this link "may well be proved valid"123 although sufficient evidence of the correlation between testosterone and performance was not provided, with the onus of proof remaining with the IAAF.124

We see the CAS' approach in assessing the scientific evidence advanced by the parties as reflecting a power imbalance between the IAAF and its athletes. While the IAAF is allowed to produce, amend, contradict and provide further support to its own data and findings, the claimants are left unarmed against such a powerful expenditure of money and resources on the opposite side. It seems that the same dystopic dynamics highlighted by Pape in the Chand award are replicated in Semenya. Here, claimants are cornered into the awkward position of having to prove "the negative claim that testosterone does not confer an advantage of any size."125 Furthermore, as Pape argued, under this approach "legitimate expertise could only be that which constructed testosterone - and the sexed/gendered athletic bodies it was taken to approximate - in binary terms."126 This is exactly what both the BG17 and Professor Handelsman's paper do. In fact, their research on testosterone is always gendered. It is led not by the genuine intent of discovering unexplored dimensions of testosterone but by the goal of biologically confirming the male-female binary. In other words, the focus of the IAAF's research altogether is to confirm sex/gender boundaries so that male aboveaverage performances are never considered but only female ones are. All this completely neglects the fact stressed by UN Special Rapporteurs, that "[n]atural physical and biological traits as well as social and economic factors also influence the performance of men athletes."¹²⁷ We argue that this is the essence of opportunistic epistemology. The CAS fell into the same conceptual trap when it asserted that testosterone, in its own view, remains "the primary drive of physical advantages and therefore of the sex difference in sports performance between males and females."¹²⁸

Overall, the expertise evidence claimed by the CAS as decisive in deciding about the role of testosterone in athletic performance appears extremely flawed. Contrary to what the CAS stated, there exists no clear scientific consensus that high testosterone levels actually produce a performance advantage in athletics. The equation at the core of the IAAF's argument, that "more testosterone equals more ability," is inaccurate and therefore makes the argument untenable. Studies even demonstrate that positive and negative relationships between testosterone and performance exist in a wide range of sports.129 Additionally, as this article goes to print, Bermon and Garnier issued a correction to the BG17, clarifying that the results they reached regarding the relationship between testosterone level and athletic performance are "exploratory, nothing else, that is, not confirmatory of evidence for a causal relationship", praising for "an independent, prospectively designed, randomly controlled trial [...] to establish confirmatory scientific evidence".130 This further strike at the core of IAAF's significant competitive advantage claim which is at the basis of the DSD Regulations confirms the weakness of the narrative surrounding the athletic advantage, which remains very far from being supported by solid scientific evidence, no matter the conclusions reached by the CAS. At any rate, one thing is to say that there is a significant advantage deriving from specific physical condition,¹³¹ like the CAS argued, another thing is to argue that such an advantage is unfair. A performance difference is not necessarily unfair, unless it leaves gender binary unquestioned.

3. The required testosterone-suppressing treatment is safe and harmless

That bodies are (easily) malleable is the assumption underlying the third narrative. The body malleability narrative is expressed very clearly at multiple levels. First, the DSD Regulations plainly require athletes with DSD who have testosterone levels higher than 5 nmol/L to lower them for a 6-month period prior to a competition and continuously thereafter.¹³² Second, the CAS accepted that "the use of oral contraceptives to reduce testosterone levels can cause a range of unwanted side effects"133 such as "weight gain, feverish symptoms and consistent abdominal pain,"134 making focus during training impossible and performance low. Yet, the CAS asserted that these side effects "are not different in nature to those experienced by many thousands, if not millions, of other XX women, who take oral contraceptives."135 Finally, the SFT recognized that "the assumption of oral contraceptives causes significant side effects and does not lay on a completely free and clear consent, to the point of constituting a grave violation of the athlete's right to physical integrity."136 Nevertheless, the SFT upheld the mandatory testosterone-suppressing treatment as it was proportional and ultimately justified by the need to pursue the objectives prefixed by the IAAF.

Two premises are implicitly stated here, which make the required medical treatment look minimal or insignificant. The first premise is that *the artificial lowering of testosterone is a negligible medical treatment*; the second is that *the medical procedure attained to obtain this result is both safe and effective*. In fact, whereas generally speaking testosterone levels may be lowered either surgically or pharmacologically,¹³⁷ the DSD Regulations expressly forbid the former possibility, so that "surgical anatomical changes are not required in any circumstances."¹³⁸

Both premises, however, are false. To begin with, despite said prohibition, there is no certainty that an athlete could not be required to undergo surgical operations, making the medical treatment uncertain and possibly dangerous. If the prohibition of surgical treatment is, on the one hand, the law on the books, then on the other hand, the genealogy of the implementation of the DSD Regulations' predecessor dismantles this statement. In accordance with the Hyperandrogenism Regulations, indeed, four female athletes with "excessive" testosterone underwent medical investigations. Following the discovery of a 46 XY karyotype, doctors recommended partial clitoridectomy, vaginoplasty and estrogen replacement therapy.¹³⁹ Gonadectomy (*i.e.*, the removal of gonads) had been the condition that the IAAF imposed for the athletes to compete.¹⁴⁰ That the surgical solution remains a concrete possibility for athletes with DSD exceeding the required threshold for testosterone is made clear by the CAS itself, which after taking into consideration both the use of GnRH antagonists and gonadectomy in case the oral contraceptives failed to achieve the expected result, simply recommended, in this event, "a different analysis of proportionality."141 The CAS did not seem concerned with the fact that the use of GnRH in combination with oral contraceptive may not bring the expected results.¹⁴² In any case, it implied that, besides the different proportionality standard that would be applied, gonadectomy nonetheless remains a feasible option in medical practice.

This is confirmed by the genealogy of the implementation of the DSD Regulations' predecessor. In accordance with the Hyperandrogenism Regulations, indeed, four female athletes have been reported as having excessive testosterone levels and being subjected to the Hyperandrogenism Regulations.¹⁴³ They were all aged between eighteen and twenty-one and came from rural areas of developing countries. The doctors who examined them found a 46,XY karyotype and recommended partial clitoridectomy followed by vaginoplasty and estrogen replacement therapy.¹⁴⁴ The IAAF allowed these athletes to compete one year after gonadectomy, despite the fact that a paper authored by is not born a woman, but rather becomes one."¹⁴⁷ The confusion produced by the CAS conveys the idea that gender is inextricably determined by sex — because "gender is sex," and "sex is gender." It is undeniable that sex characteristics are natural in their origins. Yet the way in which a certain society or societal circle, such as the Westernized international sport arena, interprets, understands and thereby categorizes sex traits is anything but natural. Perceptions and interpretations change across times, spaces and cultures.¹⁴⁸

This narrative on body malleability is accompanied by what Susie Orbach in a different context called "a rhetoric of empowerment."¹⁴⁹ This is the idea that not abiding by the testosterone-suppressing provision would signal the athlete's *voluntary* exclusion from the competition. According to this rhetoric, no athlete would be actually "forced" to do anything against their own will, with the medical treatment following the discovery of testosterone levels beyond the prescribed

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IAAF officials discouraged gonadectomy for eligibility purposes while recommending keeping eligibility and therapeutic options distinguished.¹⁴⁵ By making permanent anatomical modifications a concrete option, while at the same time denying them as a condition to compete, both sport authorities and adjudicators have been able to minimize the costs that these operations entail on the athlete's body and psyche.

These challengeable postures on bodily modifications show that nature is a concept prone to misrecognition and misunderstanding depending on the interests and the power dynamics at stake. In the CAS decision, the sport competition moves the focus from one's identity to their bodily parts as components of a performing machine. Relatedly, the CAS conflates sex with gender. "Ms. Semenya is a woman," the CAS argues. "At birth, it was determined that she was female, so she was born a woman."¹⁴⁶ This is the opposite of Simone de Beauvoir's well-known conception of gender as a non-innate feature but a becoming: "one threshold being just a part of the athlete's stubbornness and prowessness.

In connection with that, the DSD Regulations specify that the medical investigation and the possible subsequent treatment depend on the athlete's willingness and responsibility, as if no coercive assessment and treatment were ever imposed on the athlete. The DSD Regulations state, precisely, that "[n]o athlete will be forced to undergo any assessment and/or treatment under these Regulations [and i]t is the athlete's responsibility, in close consultation with her medical team, to decide whether or not to proceed with any assessment and/or treatment."150 Despite this statement, in practice the DSD Regulations leave no real choice to the athlete who wants to compete in the female category. *Either* the athlete agrees to undergo invasive medical investigations involving intimate parts of her body and undertake medical procedures with potentially physically and psychologically harmful consequences, or she has to quit the competition.¹⁵¹

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It is undisputable that the mere acceptance of the medical intervention is not equivalent to informed consent: such a consent must be voluntary and sufficiently informed to make a free decision. In 2018, the UN Special Rapporteur on the right to health addressed a letter to the IAAF, stressing the key element of making the athlete's consent vitiated. The consent that the athlete gives to the intrusive investigation is indeed far from free, as the athlete makes the decision under pressure vis-à-vis the alternative of being excluded from competition without a viable choice.¹⁵² The same UN Special Rapporteur had already explained in 2009 that informed consent is invalid if, inter alia, it is subject to "undue influence," which corresponds to situations where the person "perceives there may be an unpleasant consequence associated with refusal or consent."153 There is no reason to doubt that ending an elite sport career amounts to an unpleasant consequence, an "impossible set of choices,"154 a subtle form of double bind. Either you conform, or you cannot perform. Damned if you do, doomed if vou don't.

The side effects of the hormonal treatment imposed on the athlete whose testosterone level is over 5 nmol/L are equally unfortunate. The treatment has a great impact on the athlete's health, which goes beyond the IAAF's minimizing suggestion about contraceptives.¹⁵⁵ Paradoxically, the CAS recognizes that the side effects of hormonal treatment would make compliance with the DSD Regulations practically impossible, alerting the IAAF that:

[i]f the DSD Regulations cannot be

implemented fairly in practice, that could render them disproportionate at a later stage since a regulation which is impossible or excessively difficult to apply fairly cannot be characterized as a proportionate interference with the rights of those who are subjected to it.¹⁵⁶

The CAS (followed by the SFT) moved from a strict proportionality analysis to a lighter standard requiring the mere lack of an evident disproportion in the prescribed measure.¹⁵⁷ This approach may be explained in light of the CAS' decision to defer to the IAAF's legislative competence. The CAS held that evaluating the IAAF's policy making process or rewriting its rules was not their problem.¹⁵⁸ Nonetheless, we see a contradiction between CAS upholding the DSD Regulations' exclusionary regime, on the one hand, and its assessment of the actual harm that is caused to the athlete's body, on the other hand. Such a harm may attain the *practical impossibility to participate in sport*. This practical impossibility cannot be left to future cases and future proportionality assessments, as unfair implementation of the DSD Regulations in practice is already a reality today. By attempting to fix the standard to be applied in future cases, the CAS acted, probably unintentionally, as a constitutional adjudicator. Yet it declined to play this role in all respects, leaving the IAAF's legislation completely untouched without considering any less harmful alternative, or even the possibility of a time percentage handicap.¹⁵⁹ This consideration undermines the CAS' necessity analysis. How can a measure be deemed necessary if the adjudicators refuse to examine possibly less harmful alternatives?

The CAS' approach appears shy at best, reverential to IAAF policy orientations at worst. One would expect that the intensity of the CAS' legal review of the IAAF's decision-making power would have been greater in the light of the IAAF's public function in creating rules and impacting athletes' lives. This is even more problematic given that a decision of such importance, for the control over powerful decisionmakers and for the implications on athletes' physical integrity, was reached with a two out of three majority.

The CAS' narrative of the athletes' easily malleable bodies is that of machines whose performance can be not just accurately measured but also remotely controlled through pharmacological treatment. As machines that are required to function perfectly, their suffering becomes either irrelevant or part of the inherent dynamics of their own working. In such a world, calling for these machines to consent to the burdens that are assigned to them is simply unconceivable.

4. The case is about protecting the integrity of the female category

The argument that it is fair to exclude certain athletes from the female category in order to protect the integrity of the category itself is made by both the IAAF and the CAS. In particular, the DSD Regulations clearly establish that they "exist solely to ensure fair and meaningful competition within the female classification, for the benefit of the broad class of female athletes."¹⁶⁰ The CAS accepts this argument subject only to the IAAF proving the existence of an athletic advantage to the benefit of the considered subgroup,¹⁶¹ a proof it considered reached anyway. The STF also upheld this argument when dealing with Semenya's petition for annulment.¹⁶²

We wonder whether the resulting separation between "the broad class of female athletes" and a minority of women sensitive to high testosterone levels reflects ethno-racial boundaries. To dig deep in this direction, we resort to an intersectional analysis and therefore look at how sex/gender interact with other markers such as ethnic origins and race.¹⁶³ The type of discrimination arising from this interaction is peculiar in that it does not correspond to the simple sum of the different discriminatory grounds, but to their coalescence. Understanding these intersections helps appreciate the different subordination discourses underlying discrimination.¹⁶⁴

Several authors have remarked that a common trait of the female athletes targeted by the DSD Regulations and their antecedents - including Semenya - is that they all apparently come from the Global South.¹⁶⁵ This circumstance makes these athletes "structurally vulnerable for 'failing' gender eligibility regulations."166 The United Nations High Commissioner for Human Rights asserted that "[t]he existing data do not show much about the intersection between gender and race discrimination in sport, global and local resource inequities and exclusionary community practices."167 However, the apparent overrepresentation of athletes from the Global South among those subjected to the IAAF's scrutiny under the DSD Regulations and their predecessors should raise attention across the board. For instance, by considering that allowing athletes with DSD to compete in the female category would amount to a defeat for the entire female category, the IAAF and the CAS open the door to a majority-minority dynamic. In this context, the logics of power take the shape of the "tyranny of the majority"168 and the oppression of the minority.

This category-defeating narrative conceals an exercise that sociologists Pierre Bourdieu and Loïc Wacquant would define as "cultural imperialism." This is "the power to universalize particularisms linked to singular historical tradition by causing them to be misrecognized as such."169 Instead of being celebrated as exceptional athletes, athletes from the Global South are cornered with their bodies being obsessively scanned in search of biological explanations of their strength and stunning performances. These explanations build on understandings of body and sexuality that conform to the Western culture. In this perspective, globalized Western conceptualizations of the shape of sex traits and health (so-called) normality prevail over local dimensions of access to health and sexuality.¹⁷⁰ It is therefore not surprising that "the majority of medical experts named in the 2011 and the current [IAAF] policy include mainly men and a few women in Western research and medical institutions who have long-standing relationships with the [IAAF, International Olympics Committee and] national sporting organizations."171

Furthermore, the story of Caster Semenya has a parallel in that of Sarah/Saartjie Baartman, derisively known as the "Hottentot Venus."¹⁷² Born in Candeboo

Valley, South Africa, in 1789, Baartman was brought to Europe in 1810 under the false pretense of a regular employment contract. There she was exhibited halfnaked for years, with her body systematically examined by anatomists, zoologists and physiologists. After her death in 1815, her excised genitalia and brain were preserved in formaldehyde and, along with her skeleton, exposed at the Jardin des Plantes and the Musée d'Orsay in Paris.¹⁷³ Obviously, the two centuries that separate Semenya from Baartman - whose remains were returned to South Africa only in 2002174 account for completely different historical and geopolitical contexts. Nonetheless, in both cases, the Global North's eye dehumanizes the Black body, portrayed as the dangerous site of fear and fascination.¹⁷⁵ In both cases, the European gaze submits individuals to analogous exhibition and enfreakment.¹⁷⁶ Sexualization, pathologization and medicalization are the perfect ingredients for dehumanization of Black bodies.

The main problem with the category-defeating narrative is that it frames the question of the exclusion of athletes with DSD as a simple male-versus-female opposition. A champion of this narrative is certainly Duke law professor Doriane Lambelet Coleman, who acted as a witness expert before the CAS and has written extensively about women in sport and the Semenya case.¹⁷⁷ Coleman's main argument is that athletes with DSD are so strong that, if they are not excluded somehow, "most of the women who will lose out will be biological females of color."178 She also denies that the overrepresentation of athletes from the Global South has any relevance, claiming that "[b]ecause our sport is mostly populated at the elite levels by athletes of color, it is this group that will be most impacted however the women's category is defined.'¹⁷⁹ In her opinion, the case is actually more about women's empowerment and economic opportunities than race.

Although greatly articulated, arguments of this kind tend to adhere to a narrative dominated by "[a] perception of a "tsunami" of men coming to destroy women's sport."¹⁸⁰ This narrative neglects both the cultural imperialism that characterizes sport competitions in general, and the suffering of individual athletes in particular. In fact, what remains unclear within the broad discussions surrounding the category-defeating argument is how the stigmatization of athletes with DSD and the imposition of a highly invasive medical treatment to their bodies could do any good to the majority of female competitors.

Consider the story of Uganda's 800-meter champion Annet Negesa, gold medalist at the 2011 All-Africa Games. After being alerted by her medical team that she could no longer compete, she went to Nice for medical tests and once back in Kampala, underwent an allegedly "simple" surgery, which she knew nothing about.¹⁸¹ Having been identified in the media as an "intersex," Negesa petitioned for – and obtained the refugee status in Germany as she risked the death penalty in Uganda because of her condition.182 Consider also Equatorial Guinean footballer Genoveva Anonma, whom the Confederation of African Football has forced to do a naked parade in front of her team to show that she was a woman;183 or Kenyan runner Maximilla Imali, who was sidelined at the IAAF World Championship after her blood tests revealed that she had hyperandrogenism;¹⁸⁴ or, finally, her peer Margaret Wambui,¹⁸⁵ who dropped from competing internationally after the CAS ruled on Semenya. That the policing of gender categories brings detrimental harm is patent.

What remains unsolved is the question of how all these dramatic experiences of discrimination, stigmatization, humiliation and exclusion could actually help the majority of women foster their lives in sport. This question remains unsolved after Semenya because for the CAS, the expertise evidence produced by the IAAF on testosterone's impact on athletic performance has a different weight than the *experiential* evidence shown by Semenya regarding the side effects of testosteronesuppressing treatment. While the former is praised at length in the award, the latter is trivialized as irrelevant and perhaps even disturbing. After all, how dare Semenya complain about contraceptive-subsequent migraine when there are millions of women out there facing the same? It is unsurprising, then, that in the CAS award, testosterone-driven putative advantage prevails over the evidence of concrete harm suffered by individuals.186

In sum, the category-defeating narrative is based on a sort of zero-sum consideration. The more a minority of outcast athletes is framed and suppressed, the better the majority's chances to access to the podium. This narrative raises unsolved social justice matters that are worthy of further reflections at all levels.

Conclusion

This article offers a narratological perspective of the *Semenya* case. We have problematized the narratives generated by the CAS award and the SFT judgment on Semenya's discrimination claims. The adjudicators have attempted to present the case outcome as the necessary conclusion of a smooth logic driven by objective, neutral and apologetic considerations.

Yet, the CAS left a large margin of manoeuvre to the IAAF concerning the level of "reasonableness" of scientific evidence, without problematizing the effects of the IAAF acting as a policy maker. What is peculiar is the lack of accountability in relation to an entity exerting broad policy-making powers such as those described in this case. This lacuna of accountability is unique in the international landscape and therefore requires close scrutiny.

The way adjudicators made sense of Semenya's excellent performance is as flawed as it is stereotyped, gendered and stigmatizing. Sport authorities and adjudicators would like us to believe that the conversation about the DSD Regulation is over. We don't think this is the case. To the contrary, we believe that a genuine conversation should start at all levels — sport authorities, adjudicators, media, governments, societies — regarding, *inter alia*, the key actors and networks influencing decision-making processes, the alleged scientific basis supporting eligibility regulations and decisions, and the interplay in sport between adjudication, science, and human rights.

One crucial point, which deserves not just to be stressed, but to be made the object of further research, is why sex/gender-related dimensions of sport are given more attention than other bodily traits. The world is filled with athletes having bone, heart, blood, and muscles advantages, but sport authorities do not look at them as they look at sex/gender-related aspects. Why are some of these advantages celebrated as gifts while others as anomalies? If we believe in fairness, talent, respect, integrity and solidarity, we should pursue these conversations.

Note

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