

FEMALE ELIGIBILITY REGULATIONS IN ATHLETICS; RATIONAL NECESSITY OR IRRATIONAL REACTION?

JONATHAN COOPER

A thesis submitted to the University of Gloucestershire in accordance with the requirements of the degree of Master of Science by Research in the School of Business

October 2020

Word Count: 32,984

ABSTRACT

Over recent years the International Association of Athletics Federations (the 'IAAF' - now World Athletics) has been seeking a solution to address a difficult problem; how to deal with the possibility that legally female athletes with differences in sexual development might benefit from a performance advantage due to increased levels of endogenous testosterone and consequent physiological and athletic advantages that are typically associated with men. Its current solution is to try and 'compensate' for such perceived advantages by excluding some legally female athletes from some events unless they are prepared to take medication to suppress natural testosterone levels below a certain, pre-determined figure. The relevant regulations (the Eligibility Regulations for Female Classification 2018 – or the 'DSD Regulations') have been approved by international sport's highest judicial body, the Court of Arbitration for Sport, yet both the IAAF's general approach to the problem and the Regulations themselves remain controversial and subject to significant criticism. In particular, there has been criticism of the value of the scientific research that underpins the Regulations (Franklin et al., 2018; Karkazis et al., 2017, 2012; Koh et al., 2018; Pielke et al., 2019; Sonkson, 2015; Tucker, 2017), from those in the ethical and human rights fields seeking to insure that the rights of individual athletes are protected (Adair, 2011; Buzuvis, 2016, 2010; Koh et al., 2018; Krech, 2019, 2017) and in relation to the normative justification on which they are based (Camporesi, 2019, 2020).

This thesis recognizes the controversy and the criticisms and attempts to evaluate the legal and ethical legitimacy of the Regulations and the IAAF's approach by adopting a rationalist perspective. It thereby seeks to evaluate the validity and strength of the IAAF's given reasons for introducing the DSD Regulations against fundamental requirements of rationality and the IAAF's formal constitutional purposes. In doing so the thesis also considers the wider value of legal approval by the Court of Arbitration for Sport and, in this regard, questions the intensity of the legal review that the court undertook.

I declare that the work in this thesis was carried out in accordance with the regulations of the University of Gloucestershire and is original except where indicated by specific reference in the text. No part of the thesis has been submitted as part of any other academic award. The thesis has not been presented to any other education institution in the United Kingdom or overseas.

Any views expressed in the thesis are those of the author and in no way represent those of the University.

Signed:

Date:

Doi: 10.46289/Z57WL8L8

Table of Contents

Chapter 1 - Introduction, background and aims.....	5
Evolution of the Regulations.....	8
Observations on segregation by sex and methods of sex verification	13
Chapter 2 - Methodology.....	17
Rationality, reason and reasons.....	18
Are there such things as normative reasons in practical decision making?	20
The normative force of reasons.....	21
Why should anyone act rationally?	23
The significance of rationality to formal organisations	24
Constraints of rationality on practical decision making	27
Evaluation of objective reasons.....	27
Non-contradiction.....	28
Instrumental rationality	28
The concept of maximisation.....	32
Hermeneutics - identifying the IAAF's aims.....	34
A legal hermeneutical approach	35
The aim of interpreting legal texts.....	35
Chapter 3 - Assessing the Rationality of the IAAF's decision.....	38
The IAAF's stated reasons for introducing the Regulations.....	38
The validity and strength of the IAAF's reasons	40
The Regulations and virtuous characteristics	74
Summary - instrumental reasons justifying the Regulations.....	101
Maximisation of expected utility	104
Solidarity & friendship	105
Integrity & good governance	106
Conclusion.....	112
Bibliography	118
APPENDIX.....	123

Chapter 1 - Introduction, background and aims

In 2011 the International Association of Athletic Federations (the 'IAAF' – now World Athletics) introduced the Hyperandrogenism Regulations in an attempt to deal with what it perceived to be a problem; that of ensuring 'fair' competition in female athletics as a result of athletes with 'differences in sexual development' (DSD)¹ competing against women without such conditions. The concern was that athletes who were legally female² but had a DSD may have physiological and, therefore, performance advantages typically associated with men. The IAAF's belief was that since increased levels of testosterone from puberty appeared to be the principal cause of the 'male athletic advantage', legally female athletes who had higher levels of testosterone than was typical had an unfair advantage over female athletes who did not. The IAAF's solution was to compensate for such advantages by making eligibility to compete in the female category subject to athletes demonstrating levels of naturally occurring (endogenous) testosterone that were below a pre-determined level.³

In 2015, these regulations⁴ were successfully challenged by Indian athlete, Dutee Chand on the basis that they were discriminatory. The challenge was upheld by the Court of Arbitration for Sport (CAS) in *Chand v IAAF* (2015),⁵ primarily on the grounds that the scientific evidence of the performance advantage that testosterone provided was insufficiently conclusive to justify the discrimination. The IAAF commissioned further research (Bermon and Garnier, 2017) and introduced amended regulations (the

¹ Hereafter, the term 'DSD' will be used.

² It is recognised that 'legally female' is not a straightforward concept since sovereign states will have different legal rules for determining male and female and may have additional, legally recognised sex or gender categories. However, since the male and female categorisations in international athletics are primarily built around legal status in the country of representation, legally female will be used to distinguish females in this broader sense from both legal males and athletes with the subset of legal female athletes who have a DSD and are directly affected by the IAAF's regulations on eligibility to compete in the female category.

³ Or by demonstrating that such testosterone was not 'useable' as is the case for women who have Androgen Insensitivity Syndrome (AIS) or Partial Androgen Insensitivity Syndrome (PAIS).

⁴ The Hyperandrogenism Regulations 2011.

⁵ Hereafter the case will be referred to simply as *Chand*.

As private organizations, international sporting federations (ISFs) seem to enjoy a significant degree of legal autonomy¹³ yet are subject to relatively little direct democratic accountability when compared with other institutions that wield similar regulatory power.¹⁴ As such, subjecting decisions of organisations like the IAAF to legal, ethical and rational scrutiny seems important as an additional check against the arbitrary use of power. It also speaks to the growing acceptance of ‘good’ sporting governance as a set of values to which sports governing bodies should adhere in order to ensure that sport continues to be valued as a public good.¹⁵

Consideration of the IAAF’s approach to rule creation in a wider legal and ethical context will also highlight some of the problematic aspects of the legal decision in *Semenya* (and of its subsequent approval by the Swiss Federal Court), something that is important given the rights and livelihoods of current and future athletes with DSDs might well be defined by it.

In the light of these observations, the aim of this thesis is to evaluate the ethical and legal legitimacy of the IAAF’s decision to implement the Regulations from a rationalist perspective. This will require identification and clarification of the IAAF’s stated reasons for implementation of the Regulations and an evaluation of those reasons against certain substantive requirements, it will be argued, are placed on decision makers to be rationally and legally justified. In making such an evaluation it will also be necessary to identify the self-asserted purposes of the IAAF as well as considering the relevance and influence of external legal and scientific norms on the rule making process.

As an evaluation of the rationality of the decision to implement what are essentially a set of private regulations that potentially impact the exercise of individual freedoms and impede the wider legal rights of individuals, the thesis is primarily a socio-legal one since it is concerned with the justification of rule creation in a particular social context.

¹³ An observation made by several commentators. See for example, Gardiner, 2012, p90-93; Lewis & Taylor, 2014, p52; although the actual extent of such autonomy remains much debated (Ryall et al., 2019, p. 5).

¹⁴ For example, Geeraert refers to athletes having a ‘lack of direct control options’ and notes that the creation of regulations by sporting bodies are not subject to any real control by public authorities (Geeraert, 2015, pp. 26-27). See also Alm, 2013, pp. 14-16.

¹⁵ Geeraert, 2015 pp. 18-20; Mrkonjic, 2016, pp. 3-4.

In doing so it not only considers the rational justification for the introduction of the regulations but also appropriateness of the legal scrutiny of it by the CAS in *Semenya*.

Before proceeding further, it should be acknowledged that the author has published an article that evaluates the extent to which the Regulations (and the process behind their implementation) adhere to principles of good sporting governance, and some of what is said in this thesis draws on the work from that article.¹⁶ However, this thesis takes a different perspective to the question of legal and ethical legitimacy and undertakes a more detailed analysis.

In order to provide context for what follows, a more detailed overview of the background to (and evolution of) the Regulations will be provided before explaining the methodology to be employed.

Evolution of the Regulations

For virtually as long as women have been allowed to compete in Athletics (and indeed other sports) there have been rules to segregate competition into male and female categories. The rationale for segregation, initially, was likely based on observations, assumptions and generalizations about the athletic ability of men and women, the perceived 'weakness' of the feminine form and cultural stereotypes about the role of women.¹⁷ Over time there has been scientific flesh added to the assumption of 'male athletic advantage'.¹⁸ According to experts relied on by the IAAF the advantage is due to physiological advantages that are likely to stem from testosterone, such as increased lean body mass, larger bones, greater numbers of red blood cells and, also, 'possible' psychological advantages through increased aggression.¹⁹ There also seems to have been increasing reference to the need to ensure equality of opportunity for women. As a result, there seems to be little historical dispute about the purposes of classification by sex in most sports, particularly where natural biological advantages play a significant role and where there is a perceived risk of injury to female athletes if

¹⁶ Cooper, 2019.

¹⁷ Adair, 2011. p. 130; McDonagh and Pappano, 2008, pp. 7-8 in particular.

¹⁸ The oft-quoted statistic is that an average male has a 10-12% athletic advantage over an average female (IAAF Explanatory Notes 2019, p. 1 – see Appendix).

¹⁹ Professors Ritzen and Hirschberg in *Chand*, para. 184; Auchus, 2018, p. 131; Handelsman et al., 2018, p. 805.

competition was not segregated. In the context of athletics, where the risk of injury is not a concern and success depends heavily on maximization of natural biological advantages linked to strength, power endurance and spatial awareness, the rationale of ensuring fairness has loomed large²⁰ and continues to underpin the ongoing use of classification by sex.²¹

Whilst the primary *purpose* of sex segregation in athletics might have remained largely constant, the methods of verification and policing the divide have been subject to regular change. Before arriving at the current Regulations, various methods have been tried and discarded, including 'nude parades', chromosomal testing of saliva, full medical examinations and functional testosterone levels (the Hyperandrogenism Regulations).²² These changes seem to have been prompted by a combination of factors, but key ones would appear to be advances in scientific understanding of sexual status, the role of hormones in physiological development, the reasons why sex verification is thought necessary²³ and also the need to align with external legal and ethical norms around the determination of sexual status.

It was not until the 1960's that sex verification in any formal sense was introduced and this was ostensibly to deal with the perceived risk of intentional cheating by men disguising themselves as women.²⁴ Verification was initially through a physical inspection of external genitalia.²⁵ However, the demeaning nature of such a process undoubtedly prompted the fairly rapid adoption of a more objective and scientific solution and in 1968 laboratory based testing of saliva for chromosomal sex became mandatory.²⁶ Whilst such mandatory chromosomal testing lasted for several years, the decision of the IAAF to abandon it in 1991 seems to have reflected a growing recognition of the difficulty of categorising some individuals as either male or female

²⁰ Krech, 2017, p. 264; McDonagh and Pappano, 2008, p. 8.

²¹ As will be seen, and as has been advocated by the IAAF, the purpose of ensuring fairness quite clearly remains the central purpose of the DSD Regulations today.

²² Ha et al., 2014, pp. 1036-1037; Krech, 2017, pp. 266-268.

²³ The reasons for adopting methods of verifying the sexual status of individuals should be contrasted from the reasons and purpose of having segregation in the first place.

²⁴ A point made clear by Ljungqvist who was later the chair of the IAAF Medical Commission (Ljungqvist, 2006, p. 227, Ljungqvist 2006, 184). See also Adair, 2017, pp. 132-133; Krech, 2017, p. 266; Xavier and McGill, 2012.

²⁵ The so called 'nude parades'.

²⁶ Ljungqvist, 2006, p. 227, Ha, p. 1036.

given the existence and increasing visibility of individuals born 'intersex'.²⁷ The infamous case of Maria Patino serves as a high profile example of the problems of making a determination of sexual status on the basis of a single metric such as chromosomal constitution.²⁸

It seems reasonable to conclude the IAAF ultimately recognised that the benefit (to the goal of ensuring fairness) was outweighed by the potential unfairness caused by the method used to verify sex.²⁹ Furthermore, given the number of criteria seemingly accepted by the medical community as relevant in determining a person's sexual status,³⁰ the change of approach also seemed to acknowledge the potential futility of trying to find a single scientific test (and a single metric) capable of categorically determining an individuals' sex.³¹

Following the abandonment of chromosomal testing, the IAAF's policy on sex verification can be described as 'ad-hoc', with each competition's medical officer being given the authority and discretion to determine if any athlete's sexual status needed verifying and, seemingly, what examinations might be required to do so.³² Seemingly, such discretion could be exercised on the basis of general observations or 'tip offs'.³³ This 'ad-hoc' process largely remained until the introduction of the Hyperandrogenism Regulations in 2011.³⁴

Before turning to the Hyperandrogenism Regulations, it is worth noting that between 1991 and their introduction in 2011, the original reason for policing the female

²⁷ Eisenstadt, p 795. The term individuals with a DSD will be used in preference to 'intersex'.

²⁸ Patino, 2005, section 38, Adair 2011, p. 135.

²⁹ For example, Ljungqvist, the then IAAF Medical Officer, thought the rationale for implementing sex verification was no longer relevant and the procedure that remained was discriminatory for athletes with a DSD (Ljungqvist, 2006, p. 227).

³⁰ Ljungqvist suggested there were eight criteria to be taken into account to ascertain a person's sexual status: (1) sex chromosome constitution; (2) sex hormonal pattern; (3) gonadal sex; (4) internal sex organs; (5) external genitalia (6) secondary sexual characteristics (7) apparent sex, as presumed by others (8) psychological sex (the identity which a person sees themselves as) (Ljungqvist, 2000, p. 188).

Whilst those who adhere to a clear distinction between sex and gender may point to the last two criteria as being concerned with gender, not sex, the underlying point remains true; there are seemingly several factors that are relevant in determining sex, however one understands that term.

³¹ Ljungqvist, 2000, p. 190.

³² Ljungqvist, 2006, p. 229.

³³ Ha et al., 2014, p. 1037.

³⁴ Seemingly there were guidelines for medical officers set out in the IAAF's 'policy on gender verification' that were in place from 2006 (Krech, 2017, p. 267).

category (the fear of men masquerading as women to gain an intentional advantage) had seemingly been replaced by a growing concern around the potential performance advantage unintentionally enjoyed by athletes with a DSD, a concern which resulted in investigations of individual athletes such as Santhi Soundarajan and Caster Semenya.³⁵ The key catalyst for new regulations was, no doubt, the mess of the investigation into Caster Semenya and her participation and ultimate victory in the 2009 World Championships. The reality of the very public investigation and the catalogue of potential ethical and human rights concerns that it raised shone a spotlight on the unsuitability of such an ad-hoc procedure. Ostensibly, the Hyperandrogenism Regulations recognized competition is built around the division of athletes by their *legal* status as male or female.³⁶ However, the regulations made an athlete ineligible for the female category if they had endogenous (and useable) testosterone levels above 10nmol/L, a figure that was seen as the lower end of typical male testosterone levels. In essence, the new regulations superimposed on the external legal framework, an internal and more reductive basis for determining who was male and female *for the purpose of athletics*.

Importantly, the Hyperandrogenism Regulations also sought to avoid the classification of athletes by reference to sexual status as determined by an external agent, a point stressed by professors Ritzen and Hirschberg in giving evidence for the IAAF in *Chand*.³⁷ At least on the face of it, by focusing on testosterone levels, the regulations relied on the underlying reasons for the male performance advantage and, in so doing, presented an objectively measurable variable as a determiner of eligibility.³⁸ The result seemed to be a more direct engagement with the primary purpose of having segregation at all; unfair performance advantage. However, the implementation and application of the regulations appeared to result in the marginalisation and discriminatory treatment of some athletes with a DSD.

³⁵ Adair, p. 135. It should be acknowledged that there is, of course, also a concern about the participation of transgender female athletes, something that it is not possible to consider in this thesis.

³⁶ Now Rule 141.3, IAAF Competition Rules 2018-2019.

³⁷ Prof. Ritzen and Hirschberg, para. 183.

³⁸ See, for example, Handelsman et al., 2018, p. 807.

In *Chand* the validity of the Hyperandrogenism Regulations was duly challenged on the grounds of discrimination as to sex and/or gender and in relation to individual physiological traits. Despite ultimately suspending the regulations, the CAS did accept the basic idea that it might be lawful and justified to discriminate against legally female athletes with DSDs in the interests of fairness in female athletics. The problem with the Hyperandrogenism Regulations was that they were not supported by sufficiently clear evidence that female athletes with levels of testosterone above the IAAF's cut-off point (10nmol/L) did, in fact, have a competitive advantage 'of the same order' as male athletes.³⁹ Accordingly, the CAS suspended the Hyperandrogenism Regulations but left the door open for the IAAF to furnish further evidence and/or alter the regulations.

The IAAF duly commissioned further research⁴⁰ the results of which were clearly insufficient, even on the IAAF's own interpretation, to convince the CAS that the performance advantage was of the same magnitude as male athletes or significant across all athletic events. Accordingly, the Hyperandrogenism Regulations were dropped, and the DSD Regulations were drafted to focus on a narrower range of athletes in only a selection of events where the risk of unfair advantage was deemed by the IAAF to be 'significant'. In summary, the DSD Regulations only restrict eligibility for legally female athletes with certain DSDs that result in levels of circulating testosterone greater than 5nmol/L who also have functioning androgen receptors,⁴¹ the 'restricted' events being the 400m, 400m hurdles, 800m, 1500m, and the mile.

³⁹ *Chand*, para. 519. Whilst this thesis is not a critique of the decision in *Chand*, it is worth recognising that in determining there was insufficient evidence that performance advantage was of the same order as males, the CAS decision seems to miss the point that what might matter is simply whether there was an unfair performance advantage; which does not necessarily require it to be as large as the performance advantage enjoyed by typical males. This is a point also recognised by Tucker (Tucker, 2017 <<https://sportsscientists.com/2017/07/testosterone-performance-intersex-athletes-will-iaaf-evidence-enough/>> accessed 15/3/2019).

⁴⁰ Bermon, 2017; Bermon et al., 2018. These studies will be referred to hereafter, jointly, as the 'Bermon Studies'.

⁴¹ IAAF Explanatory Notes, p. 3. Following alterations to the DSD Regulations during the course of *Semenya*, the Regulations only apply to athletes with certain 46 XY DSDs who the IAAF thought could benefit from additional useable testosterone and require suppression of endogenous testosterone to a level 5nmol/L. Any DSD which the Regulations now cover will simply be referred to as a 'relevant DSD'.

Observations on segregation by sex and methods of sex verification

Before considering the legitimacy of the DSD Regulations (and to help clarify the arguments that follow) some observations will be made about the evolution of sex verification methods in athletics and the potential ambiguity associated with the terms such as male, female and 'sex'.

First, it is argued that the abandonment of mandatory chromosomal testing marked a significant juncture in the IAAF's approach to sex verification since, at some level, the IAAF was acknowledging a level of complexity in the determination of sexual status. Furthermore, in doing so, it is argued that the IAAF was implicitly recognising the reality that sexual status is not a simple binary fact and that categorising individuals as either male or female was, therefore, imposing a model on reality.⁴² As Dreger observes 'humans like their sex categories neat, but nature doesn't care. Nature doesn't actually have a line between the sexes. If we want a line, we have to draw it on nature'.⁴³ That is not to say that it is not possible or justifiable to draw the line,⁴⁴ or to accept arguments that sexual status lies on some sort of continuum.⁴⁵ However, the observation does encapsulate two important assumptions of this thesis: (1) that the sexual status of any individual is not a completely objective fact that can be simply discovered; at some level it is a construction dependent upon the purpose of the categorisation and the factors considered relevant in making the determination;⁴⁶ and (2) that a binary classification of sexual status is an imperfect model of reality since some individuals with a DSD demonstrate markers of both typical males and females.⁴⁷ Accordingly, it is argued that in order to justify drawing the line, it needs to be clear

⁴² Crasnow argues that viewing sexual status as binary is like any other scientific theory; just a model of how the world is. Crasnow, 2001, pp. 244-245.

⁴³ Dreger, 2010, p. 23.

⁴⁴ After all the model may represent the real world very closely. Crasnow refers to how well a scientific model represents the real world its 'fit' (Crasnow, 2001, p143). Crasnow also makes the point that 'two-sex models' may, ultimately, be useful, but this will depend very much on what the models are to be used for (Crasnow, 2001, p. 145).

⁴⁵ As the arguments of some, such as Fausto-Sterling, have perhaps suggested in the past.

⁴⁶ The distinction between sexual status for legal purposes and the purposes of competing in sport makes the point.

⁴⁷ It is also a model which has the potential to be unfair, to exclude and to marginalise some individuals as a result (Amy-Chinn, 2012, p. 1295).

that the method of verifying sexual status (and applying the binary model) does actually achieve the underlying purpose of ensuring fairness.⁴⁸ The Patino case stands as a warning of the consequences of sticking to the model and having an inappropriate method of imposing it.

Second, in applying a binary classification to individuals with a DSD, what seems undeniable is that there is the potential for confusion with regard to language and terminology.⁴⁹ As alluded to above, it would be intelligible to say that an individual with a DSD was both male and female depending on the purpose of the categorisation and the factors taken into account in making the determination; an individual could be 'chromosomally male', but visibly female in phenotype (with typically female hormone levels). To label that person as 'biologically female' does not tell the full story and has the potential to obfuscate; it paints a simplified picture to fit with a binary model but says little of the purpose of the categorisation and the reality that a choice has been made about what factor or factors have been valued in making the determination.⁵⁰ In short, it seems perfectly possible to take different senses of male and female dependent upon the purpose of the classification, the range of factors that are taken into account and the weight attached to each factor. Furthermore, if choices are made in adopting a particular understanding of sexual status, it is important to make clear what factors have been valued and the purpose of making the classification. If those choices are not clear then there is the potential for a dissonance between the senses in which male, female and sex are used.

Coming back to the sporting context, from an individual athletes' perspective, their legal status and their 'psychological sex' may, understandably, be of most significance. However, from the perspective of an SGB (and given the primary purpose of segregation), what might matter is whether an individual has a typical male phenotype or has the benefit of hormones typically associated with men and development of a male phenotype.

⁴⁸ As will be argued, it is the writer's view that proper consideration of the other purposes of the IAAF should also be relevant to continued use of the binary model and the mechanism for implementing it.

⁴⁹ Amy-Chinn, 2012, p. 1295

⁵⁰ The IAAF itself recognises in the DSD regulations that 'biological sex' is an umbrella term which incorporates more distinct 'aspects' (DSD Regs, para 1.1, (b)).

Whilst recognising the potential for such dissonance in terminology, it needs to be appreciated that in context of sport, it is ultimately the SGB that has the power to determine which factors are relevant (and therefore what *the SGB* means by male and female). However, it is also important not to overlook what choices have been made and whether those factors can be rationally justified given the *purpose* of having the binary classification.

When the Hyperandrogenism Regulations were introduced, it is argued that the IAAF adopted a *specific* meaning of male and female (and therefore how to determine sexual status) for *the purposes of athletics*. This meaning was essentially based on one factor; whether individuals did or did not have typically male levels of functional endogenous testosterone. Although legally female athletes caught by the regulations could still compete in the female category, to do so they needed, in effect, to make themselves ‘athletically female’. However, one consequence of such a position, is that the IAAF was advocating an understanding of male and female (based on a single factor) that was at odds with external medical and legal norms, as well as (potentially) an athlete’s own understanding of their sexual status and gender identity. Accordingly, whilst it seems within the IAAF’s power to adopt a specific meaning of male and female for the purpose of athletics (whatever factors it chooses to consider relevant and whatever label is ascribed to those who fall within each category),⁵¹ it is argued that it still needed to justify the adoption of such a meaning as contributing towards fair competition. However, as highlighted by the decision in *Chand*, it simply did not have the evidence of actual performance advantage to do so.

⁵¹ For clarity this thesis will use the terms ‘athletically male/female’ to describe the meaning of male/female which the IAAF has adopted by implementing the Hyperandrogenism Regulations and the subsequent DSD Regulations. It is used in preference to (and should be contrasted from) ‘biologically male/female’, a term which seems unhelpful since it does not reflect the distinction that the IAAF has sought to make. For example, the IAAF made clear in *Semenya*, it is not actually suggesting that athletes with a relevant DSD (such as 5-ARD) are biologically *identical* to typical male athletes (or are ‘biologically male’), rather it is suggesting that they are biologically identical to typical male athletes in *all* respects that *are relevant to athletics* (*Semenya*, para. 289 & 296). Accordingly, what matters to the IAAF is whether a legally female athlete with a DSD is athletically male or athletically female.

As a further point of clarity, the thesis will also refer to the term ‘legally female’ to make a clear contrast between the senses of ‘athletic female’ that the Hyperandrogenism and DSD Regulations embrace and a wider meaning of female that takes into account a wider set of factors in determining sexual status.

Finally, it should be appreciated that by introducing the DSD Regulations, the IAAF did not alter its basic approach. It still sought to apply a particular understanding of male and female and a way of determining sexual status that is arguably unique to athletics.⁵² However, by focussing only on certain DSDs and thereby accounting for factors in addition to testosterone levels,⁵³ the IAAF has seemingly refined the meaning of 'athletic female'. In doing so, it has sought to make the mechanism of determining sex align better with the ultimate purpose of having segregation at all; that of ensuring fair competition. One key question, which will form a central part of the thesis, is whether the DSD regulations actually achieve a better alignment.

⁵² Krech, 2019, p. 71.

⁵³ Such as chromosomal constitution, which has become relevant again.

Chapter 2 - Methodology

The underlying question for this thesis is a normative one; whether the IAAF ought to have taken the decision that it did. In attempting to answer this question the thesis uses rationalism as the evaluative tool and accepts reason to be the only relevant means by which the IAAF should determine how it acts.⁵⁴ Of course, it is acknowledged that other ethical perspectives could be taken, but it will be argued that a rationalist perspective is the most appropriate one from which to evaluate a specific decision of a formal organisation. Accordingly, the dominant methodology to be employed is a philosophical analysis of the reasoning processes behind the IAAF's decision to introduce the Regulations. Such an approach will also provide a platform for the subsequent legal analysis of the decision in *Semenya*.

In order to identify the IAAF's reasons and to evaluate them, it will also be necessary to provide a justified interpretation of the IAAF's reasons and its constitutional purposes, which will require a hermeneutic approach to be adopted, an outline of which will be provided towards the end of the methodology.

What immediately follows is an attempt to explain and justify the rationalist perspective. However, it would seem helpful at the outset to summarise some key assumptions.

First, if an agent⁵⁵ is committed to rationality, then that commitment places **some** requirements on that agent's decision-making processes. Second, that although what rationality 'demands' is not easily definable, there are some requirements that it would be difficult for rational agents to reject. Third, that although agents do not have to be rational, there is reason to strive to be rational if you want to be an 'effective agent' or

⁵⁴ Audi recognises the different senses in which rationalism is used including the 'strong' position put forward here; that it is the 'unique path to knowledge' (Audi, 1995, p. 673).

⁵⁵ 'Agent' is used to indicate that an entity is capable of being rational, so could include humans or organisations.

if you want to be able to explain and justify your actions to others.⁵⁶ Fourth, that formal organisations⁵⁷ have particular reasons to act rationally.

Before attempting to justify these underlying assumptions, it is important to set out the different senses in which the terms ‘reason’, ‘rational’ and ‘rationality’ will be used and in doing so, engage with some of questions around the nature of ‘reasons and ‘rationality’.

Rationality, reason and reasons

There seems to be a number of senses in which both ‘reason’ and ‘rationality’ are used in everyday language and in philosophical discussion.

Broome identifies a ‘traditional’ sense of rationality (and a corresponding sense of reason) that describes *a property* to consider and judge both the relevant considerations for and against forming an intention (practical reasoning) or belief (theoretical reasoning)⁵⁸ and whether the result of that cognitive exercise provides a sufficient or conclusive reason for doing something or forming a belief about something.⁵⁹ This is typically a property which is associated with human actors but is also one that can be ascribed to things or non-human actors, such as an organisation.⁶⁰ Broome describes rationality as a property, rather than a capacity, because it incorporates the idea of whether that capacity has been exercised, and how well it has been. You do not act rationally if you have a capacity to reason but fail to do so. You act more or less rationally depending on how well you have exercised the capacity to reason.⁶¹ Whilst some expressionist accounts doubt that action could genuinely

⁵⁶ Raz, 2005, p. 17.

⁵⁷ a term that will be explained below at page 19.

⁵⁸ Wallace, 2018, section 1; Broome, 2019, p. 2; Scanlon, 2014, p. 54.

⁵⁹ Raz and Scanlon use the term sufficient or conclusive reasons in this way (Raz, 2005, p. 4; Scanlon, 2014, p.54).

⁶⁰ Broome, 2019, p. 3.

⁶¹ Broome, 2019, p5&6. Raz touches on a similar idea and talks of the degree to which our deliberative processes conform to normative standards (Raz 2005, p. 25). Scanlon talks of a perfectly rational agent always taking appropriate actions in accordance with judgements about reasons she accepts, but recognises we cannot be perfectly rational (Scanlon, 2014, pp. 54-55).

emanate from such a cognitive process without some other motivational influence,⁶² there seems a broad consensus that humans do possess the property of rationality.

Broome suggests that reason and rationality used in this sense are non-normative.⁶³ To recognise an agent has the property of rationality is merely descriptive of an attribute that agents may or may not display and may or may not have any interest in displaying.

However, it is important to recognise that, in addition to being used descriptively, rationality is also used in a 'reified' sense, which sees rationality as an objective 'thing' that can make demands about how we exercise our capability to reason.⁶⁴ It is suggested that this reified sense recognises some objective norms against which any individual can be judged as more or less rational. Although an agent does not have to act rationally, the normative force of such requirements should be felt by those who have a cause to act rationally. This is key to the approach of this thesis, since it is these norms against which the IAAF's reasoning will be assessed as more or less rational.

A product of recognising that an agent has the property of rationality is an assumption that there are pre-existing considerations (such as beliefs, intentions, laws and social norms) that are taken into account and cognitively 'weighed' in determining whether to take an action or form a belief. These considerations are generally described as reasons. For clarity such reasons will be described as 'contributory reasons' and are distinguished from the product of the deliberation, which will be described as an 'all-things-considered reason'.⁶⁵

When discussing contributory reasons or all-things-considered reasons, it seems 'a reason' can be used in a predominantly subjective and explanatory sense or a more objective and normative one. For example, if a serious concern for the planet influences a person's decision to eat less meat, that might be described as a reason for *that* person since it influences her decision. However, describing it as a reason in this subjective sense appears to be just an explanation (in the sense of cause and effect) and carries no evaluative connotations about whether the reason was good or bad or

⁶² Wallace, 2018, section 3.

⁶³ Broome, 2019, pp. 1-2.

⁶⁴ Broome, 2019, p. 6.

⁶⁵ Or sometimes, a 'sufficient' or 'conclusive' reason dependent upon the context.

if it justified the action. By contrast, if a person has a concern for saving the planet (and believes that eating meat is bad for the planet) it might also be argued that saving the planet *ought* to influence their decision whether to buy meat and *ought* to be a reason that guides their actions (whether or not it actually does). In other words, what is a relevant reason for any agent can be objectively evaluated and can, therefore, carry normative force.

The recognition of the normativity of reasons and the idea that that any individual's reasons can be the subject of objective scrutiny is of central importance to this thesis and accordingly, it is important to consider the main objections to such a view.

[Are there such things as normative reasons in practical decision making?](#)

Hume famously stated, 'reason is perfectly inert and can never prevent or produce action...' and that 'reason was slave to the passions'⁶⁶. Such statements encapsulate the scepticism about the 'reality' of the normativity of reasons in a practical context and the suspicion that something non-cognitive, such as a feeling, desire or a passion bridges the 'motivation gap' between thought and action.⁶⁷ From this perspective 'reasons' for action are simply ways of expressing our most pressing desires. Put another way, we will always have an undefeated reason to do whatever our most immediate and pressing desires dictate⁶⁸. If this is correct, then there is very little room for rational, objective scrutiny of reasons beyond whether they align with an agent's desires. Furthermore, it seems to suggest that although we have a cognitive capacity to be rational, we do not really use it when making practical decisions since the outcome is pre-ordained by our desires or other non-cognitive states of mind.

Thankfully, it is unnecessary to consider the arguments for and against desire-based theories for the purposes of this thesis if one accepts Aristotle's distinction between natural and rational desires. According to Aristotle, desires can arise from a natural

⁶⁶ Hume, 1978, pp. 457-458 & p. 415.

⁶⁷ Scanlon, 2014, pp. 53-55.

⁶⁸ Wallace suggests a sceptical attitude about practical reasons might doubt the normative force of reasons and merely recognise them as giving expression to desires, sentiments and other non-cognitive states of mind (Wallace, 2018, Section 2).

source (for example, sensory experience or feelings) or as a result of rational, cognitive deliberation.⁶⁹ Whilst rational, cognitive based desires might be a term that has some relevance to an organisation which has existing organisational purposes and values, it is difficult to see how natural desires can influence a non-human agent with no natural desires, feelings or senses of its own. Accordingly, it is assumed that any sense of desire relevant to organisations arises from cognitive deliberation.

The normative force of reasons

Having rejected the relevance of a non-cognitive source of motivation for organisations, a second objection might be raised. If contributory reasons influence practical decisions, that does not necessarily mean that the objective reality (and the normativity) of them should be accepted. In other words, why should an agent take notice of certain considerations and not others? A rational agent could decide to buy a steak because she desires to eat it and fail to consider, on that particular occasion, that she has a belief that eating meat is bad for the environment. The desire to eat meat could still be considered as influencing the decision of that agent in a purely subjective sense, but on what basis can it be said that she *ought* to have considered her concern for the environment? In words attributed to Korsgaard, how can it be said that some considerations 'get a grip'⁷⁰ on a particular agent in a particular set of circumstances?

One answer is to appeal to the shared objective norms and standards of rationality itself, which one necessarily embraces if one wants to appear rational⁷¹. For example, one such norm provides that it is irrational to hold contradictory beliefs or intentions.⁷² Accordingly, if an agent adopts an intention to do something (such as buying a steak) that contradicts established beliefs or existing intentions (such as an intention not to eat meat), they are behaving irrationally. Accordingly, a need to be consistent (and avoid contradictions) is what makes some considerations identifiable as objective

⁶⁹ Irwin, 1975, pp. 573-575.

⁷⁰ This is the phrase that Scanlon attributes to Korsgaard (Scanlon, 2014, p. 9) and provides a simple representation of her concern for what makes people feel the weight that reasons or moral claims have on us (Korsgaard, pp. 9-10).

⁷¹ Broome recognises the possibility but is unsure whether rationality itself can be normative (Broome, 2005, pp 321-325); Korsgaard seems to appeal to the agents existing 'will' (Korsgaard, 1996, pp.19 & 20); Scanlon recognises broad appeal of the view that reason gain their normative force from something 'that is already true' of that agent (such as a belief), Scanlon,2014, p. 11)

⁷² The basis of other rational requirements and their content will be expanded on below at page 28.

reasons, with which it can be said that one *ought* to comply. It is the pre-existing beliefs and intentions of an agent (combined with a need to act rationally) which generates 'normative force'. At the extreme, the initial desire may no longer be seen as an objectively 'valid' reason for her to buy some steak; she will be seen as acting irrationally if she does. The rational course of action is not to buy the steak. An alternative, less extreme position, might be that the contradiction makes the reason less compelling, and the action seem less rational.⁷³

Either way, if objective reasons (or the strength of them) are determined by reference to norms of rationality, then it follows that an objective assessment of an agent's reasons can be made against those standards as a 'first step' in evaluating the rationality of a particular decision.

It should be made clear that accepting the reality of objective, normative reasons also means that a single contributory reason cannot *automatically* provide an objectively conclusive or sufficient reason to take a particular action; rationality requires that all relevant objective reasons are considered to reach an all-things-considered reason for taking action.⁷⁴

For the purpose of this thesis, whether requirements of rationality disqualify considerations from being reasons or merely impact their strength as a contributory reason seems relatively unimportant since on either count, for those who want to act rationally, the requirements of rationality provide a mechanism by which to evaluate how, more or less, justified their decisions are. Accordingly, the thesis will proceed on the basis that: (1) there are such things as objective reasons that carry normative force for particular agents in particular circumstances,⁷⁵ (2) that there are objective requirements of rationality that may either restrict what can count as a contributory reason or effect its normative strength, (3) that other objective requirements of rationality might make demands on how an all-things-considered reason is reached.

⁷³ Raz, 2005, p. 23.

⁷⁴ Raz, 2005, p.4 & p. 24; Wallace, 2018, section 4.

⁷⁵ Consequently, a reason or a contributory reason will be used in this 'normative' sense unless otherwise stated.

One final point; despite talk of objective reasons, none of what has been said removes completely the risk of subjectivity from an evaluation of an agents' reasons. In identifying what an agent's existing beliefs and intentions are, there is clearly a danger of projecting the evaluator's assumptions on to the individual whose decision is being scrutinised. These are risks that are recognised and will be minimised by the approach taken to interpretation referred to later in the methodology.

[Why should anyone act rationally?](#)

It has been suggested above that individuals do not have to act rationally and that the normative force of reasons relies on agents having cause to do so. One issue, therefore, is why any agent might have cause to act rationally and why, in particular, the IAAF might.

There are two reasons highlighted by Raz that seem important to all agents but have particular relevance for formal organisations like the IAAF. The first is about being an effective agent. Whilst failing to adhere to standards of rationality (such as non-contradiction) is not a terrible problem most of the time, it can be a problem when contradictory positions become contributory, counter-balancing reasons in making a specific practical decision; it can lead to dithering, making no decision at all or preferring one belief or intention to another without proper scrutiny or justification. Any of these results may ultimately be a bad decision in terms of fulfilling whatever ultimate goal is valued by that individual.⁷⁶ For example, if an agent has an existing intention never to fly again due to environmental concerns and then formed an intention to fly to Scotland for a wedding, she cannot act on both intentions. If she is aware of the contradiction and dithers, then she may miss booking the flight; alternatively she might decide not to fly and then later regret it because she realised attending her friend's wedding was important to her. In either example, if what she does results in not achieving what she values most (attending the wedding or protecting the environment) then she is a less effective agent. To be a more effective agent it is necessary for her to 'iron out' the contradiction, considering the reasons

⁷⁶ Raz, 2005, pp. 17-18 & p. 22.

behind her intentions and to identify what her values or goals are. This might be described as a need for subjective or 'internal' rationality since it is concerned with increasing the likelihood of achieving an agent's ultimate goals, desires and ends.

The second reason relates to the difficulty in explaining and justifying decisions to the outside world.⁷⁷ Whilst in general individuals are free to ignore rational demands, if an individual has a need to explain or justify her decisions to others, then a shared framework (or 'language') for decision making is needed.⁷⁸ Norms of rationality provide such a framework. In the flying example, if the agent has previously sought to convince others not to fly, it becomes very difficult to justify flying to those same external agents since you will be viewed as irrational and hypocritical. Although this may not matter to the agent on that occasion, it could have consequences for explaining and justifying decisions to others in the future. This might be described as a need to be 'externally' or 'objectively' rational.⁷⁹

Of course, for some agents being an effective agent or justifying decisions externally may not be important, but for formal organisations like the IAAF, as will be explained, it seems extremely important.

[The significance of rationality to formal organisations](#)

Those who study organisational theory recognise the difficulty of defining 'an organisation' due to the ambiguity and vagueness with which the term is used.⁸⁰ However, it seems that there are core aspects implicit in our every-day use of the term and which are well accepted. In particular, fairly fundamental to our understanding is the idea that an organization comprises a collection of actors who work together to pursue shared aims and purposes and have shared values. The Oxford English Dictionary, for example, describes an organization as 'a group of people who form a

⁷⁷ Raz suggests that one value of considering and scrutinising reasons for action is that they (potentially) make intentions and actions intelligible to others (Raz, 2005, pp. 8-9).

⁷⁸ A legal context being a good example of where it is important to be able to justify decisions externally.

⁷⁹ Incidentally, an issue which desire based theories of practical reasoning do not seem to address very clearly.

⁸⁰ For example, Buchanan and Huczynski, 2016, pp. 5-6; Clegg et al., 2006, p. 114.

business, club, etc. together in order to achieve a particular aim'⁸¹. Whilst a common purpose or common aim is probably not a sufficient requirement of any definition,⁸² it seems to be generally accepted as a *necessary* one; whatever else, organisations exist to achieve collective purposes or aims. The dictionary definition reflects the basic 'rational system' analysis of organizations that is significant in organizational theory and sees an organization as a 'tool' to achieve a goal or set of related goals.⁸³

Of course, on an extremely wide interpretation, it might be possible to identify exceptions to the principle (for example, very informal collectives with vague and unspecified aims, such as a street gang), but they are so far removed from typical entities that we intuitively think of as organisations⁸⁴, that it seems unnecessary to consider such exceptions. Accordingly, 'organisation' will be used to refer to a formal organisation in the sense of having clearly defined, publicly stated, self-asserted aims, purposes and values, a separate legal personality and about which questions of governance and authority are significant to a large number of people. Indeed, organisational theorists recognise the distinction themselves and are primarily concerned with such formal organisations.⁸⁵

It follows that if organisations are viewed as existing to achieve self-asserted purposes, then *one* appropriate way of scrutinising the legitimacy of an organisation (and the decisions it makes) is the extent to which it achieves those self-asserted purposes, whatever they are at any given point in time. If an organisation is *not* furthering its stated purposes, it raises a question of 'output legitimacy',⁸⁶ a problem that might be particularly significant for organisations having some sort of democratic mandate

⁸¹ Oxford Advanced Learner's Dictionary.

⁸² For example, Buchanan and Huczynski suggest that an important aspect is a mechanism for controlling performance in pursuit of collective goals) (Buchanan and Huczynski, 2016, pp. 5-6).

⁸³ Bryman, 1984, p. 392.

⁸⁴ Such as companies, governments, charities or sporting federations.

⁸⁵ Buchanan and Huczynski, 2016 p6; Scott, 1998, pp. 25-26.

⁸⁶ A phrase used by Geeraert in considering legitimacy questions around sports governing bodies (Geeraert, 2015; p15) and also Zaum in a wider organisational context (Zaum, 2013, p. 7))

underpinning their authority⁸⁷ since ‘output legitimacy’ will be key to maintaining that authority and justifying its continued existence⁸⁸.

That such organisations need to be ‘effective’ at achieving their purposes seems intuitive and also seems to explain why the concept of rationality and, in particular, instrumental rationality are seen as key principles with which organisations should strive to adhere. Indeed Clegg et al. suggest that the concept of instrumental rationality is so intertwined with the concept of an organisation that ‘it is difficult to appreciate the phenomenon in any other terms.’⁸⁹

Zaum & Geeraart’s concept of ‘output legitimacy’ is slightly more nuanced than already alluded to; it incorporates a notion of whether the organisation achieves aims and purposes that are *shared* by those who recognise its authority, which also raises a question about *shared* values. In the context of ISFs, those whose recognition is required includes, most obviously, athletes, players, clubs and national governing bodies, but will also include other stakeholders such as commercial organisations, fans, governments, other international organisations (including courts and UN agencies) and society generally, all of whom need, to some extent, to recognise its authority for its continued existence. This view of output legitimacy is significant as it suggests that, in addition to being a subjectively rational and effective agent, any organisation which has any sort of democratic mandate also needs to be able to explain and *justify* decisions to external stakeholders; requiring a common ‘language’ in practical decision making. It also suggests that there is a need for organisations regularly to review their purposes and to take account of relevant external norms (such as laws or societal norms) in its decision making to ensure that its values remain ‘shared’ with the values of those from whom it seeks legitimacy.

Of course, viewing organisations as rational systems working towards the achievement of aims and purposes is not the only possible perspective and there is acknowledgement amongst organisational theorists that, in reality, organisations often

⁸⁷ Either directly (as many governments have through elections) or through the voluntary nature of membership of the organisation (such as is typical of sporting organisations and federations).

⁸⁸ This may be less significant for commercial organisations. Even public companies have somewhat limited democratic accountability to shareholders and some entities.

⁸⁹ Clegg et al., 2006, p. 115.

do not *operate* rationally, instead acting as ‘natural systems’; adapting to survive, shifting purposes to remain economically viable or to grow⁹⁰. Whilst recognising such views, it is suggested that a rational system perspective remains a perfectly valid one and, furthermore, seems a particularly appropriate one given the purpose of this thesis. After all, the focus of this study is primarily on the legitimacy of a decision of the IAAF, not on the behaviours and actions of individual agents within the organisation or the exercise of power within it. The focus is on what the organisation ‘ought’ not what the organisation ‘is’.⁹¹ Although, in reality, organisations may well act irrationally, that does not mean they should not strive to act rationally in order to best achieve the goals they exist to fulfil.⁹²

[Constraints of rationality on practical decision making](#)

To summarise, it has been suggested that any agent ought to be guided by rational requirements in making practical decisions if they want to be effective agents and/or they want to explain and justify decisions to those external to them, something that a formal organisation like the IAAF has clear reason to do.

Having sought to justify the basis for the approach taken, the thesis will now outline the substantive principles of rationality that will be relied on in the evaluation of the IAAF’s decision. In doing so, rather than try to identify a complete list of rational requirements that might be subject of contention, the thesis will instead follow Broome’s approach and merely identify some rational requirements that those who hold that rationality is a human attribute, might intuitively accept.⁹³

Evaluation of objective reasons

As has been highlighted, it seems clear that one objective demand of rationality is that agents are required to exercise their cognitive capacity to be rational and weigh up

⁹⁰ Clegg et al., 2006, pp. 118-119; Scott, 1998, pp. 56-60

⁹¹ Scott, 1998, p. 26

⁹² Clegg et al. note that, although organizations strive to be rational, they rarely achieve such rationality (Clegg et al., 2006, p. 118).

⁹³ Broome, 2005, p. 322.

objective, contributory reasons for and against a particular action or belief. Only then can they be justified in determining if there is an all-things-considered reason for taking an action or forming a belief.

Non-contradiction

That rationality requires agents to avoid holding contradictory ‘positions’⁹⁴ is, perhaps, the most fundamental requirement of rationality since it seems to be the foundation for other requirements such as the need to be instrumentally rational and of the maximisation of expected utility.⁹⁵ Since the relevance of non-contradiction has already been discussed,⁹⁶ the arguments won’t be repeated here.

Instrumental rationality

The concept of instrumental rationality is based on the premise that once an agent has set upon something as an end or a goal then one *ought* to intend to take means to achieve that end (or at least that one ought to take the means one *believes* to be necessary). This basic premise involves no evaluation of the objective value of the ends themselves and taken as such, has been labelled one of the ‘least controversial’ substantive norms of practical reason.⁹⁷ Its potential relevance and importance to justifying the actions of any formal organisation has already been noted. However, despite being such an apparently simple premise, there is significant debate about the extent to which ends do actually create a reason to take a means.⁹⁸ As a consequence, some clarification about the role of instrumental rationality seems necessary.

⁹⁴ ‘Position’ will be used to describe both an intention and/or a belief.

⁹⁵ For example, it seems that at its simplest, instrumental rationality can be described as taking the means necessary to fulfil given ends. Not to do so is some kind of rational failure, suggesting inconsistency or contradiction (Raz, 2005. pp. 1-2; Wallace, 2018, section 4).

⁹⁶ pp. 21-22.

⁹⁷ Wallace, 2018, section 4.

⁹⁸ Kolodny and Brunero, 2018, section 2; Raz, 2005, p1.

Do ends generate a reason for taking the means to that end?

Raz provides the example of a person who decides upon an 'end' of murdering an innocent person. If you ignore the morality of the end, then there is, intuitively, *something* 'instrumentally' rational about forming an intention to kill someone and then buying poison to facilitate the end.⁹⁹ That 'something' would appear to be that buying poison (poison being a suitable way of achieving the end), helps the intending murderer be effective in realising her end. If the intending murderer fails to take any suitable means to effect the murder, then it would be intelligible to say that she was, in some sense, acting irrationally. It would also be intelligible to suggest that the end of murder generated an 'instrumental' reason for buying the poison, at least in a subjective sense.

Yet it seems that several philosophers argue that ends, of themselves, cannot generate reasons to take the means.¹⁰⁰ The arguments underpinning such views are complicated¹⁰¹ but one key argument is that where a means is seen as necessary to further an end (such as getting hold of a weapon) one could equally comply with the principle of instrumental rationality by dropping the end *as well* as by taking the means.¹⁰² For example, when it came to buying the poison one might review the reasons for intending to commit the murder and, rationally, decide to change one's mind.¹⁰³ If rational agents are free to change their ends, then it cannot be said that the end *itself* provides a reason to pursue any particular course of action; each new intention to do something depends on fresh rational deliberation about the reasons for or against forming the intention.¹⁰⁴

However, in the context of organisations, there are distinctions which make it is easier to justify the argument that ends in themselves do generate instrumental reasons. As has already been explained, unlike human agents, formal organisations have a set of fixed, (usually) publicly declared ends (or purposes) which cannot be dropped, altered

⁹⁹ Raz, 2005, pp. 3 & 10.

¹⁰⁰ Wallace, 2018, section 4, Raz, 2005, p 10.

¹⁰¹ And it is beyond the scope of this thesis to consider them here.

¹⁰² Raz, 2005, p. 19; Wallace, 2018, section 4.

¹⁰³ Perhaps because the intending murdered realises she has a strong belief in the sanctity of life.

¹⁰⁴ Or as Raz advocates, there is no special set of deliberative standards that are applied once we have adopted an end (Raz, 2005, pp. 25-26).

or clarified in the context of a specific decision; the end remains unchanged until it is formally (and publicly) altered. It follows that there is a much stronger argument that the formal ends of organisations can generate instrumental reasons for action. That 'instrumental reasons' are crucial to organisational decision making has already been commented on in noting that the very idea of an organisation is tied up with the principle of instrumental rationality.¹⁰⁵

Accordingly, it will be assumed that an organisation's ends can generate instrumental reasons. However, it should be appreciated from what has been said above that an individual instrumental reason is not automatically a sufficient or conclusive reason to take the means in question. It is *a* reason, amongst other objective reasons, which ought to contribute to the all-things-considered decision, therefore, something also needs to be said about the strength of such reasons.

The strength of instrumental reasons

If instrumental rationality is partly about being an effective agent and there are alternative means of achieving an end, then the extent to which the means chosen achieves the end necessarily affects the strength of the reason to take it. If obtaining a weapon is necessary to the end of murder, the end of murder would seem to provide a reason to buy anything that would be suitable to cause someone's death. If poison is a less sure means of murdering someone than shooting them at point blank range, then there would seem to be a stronger reason to buy a gun, than to buy poison. Of course, we are dealing here with a fairly 'wide' end and, therefore, the possibility of a number of different suitable means of it being achieved. Other principles of rationality (such as bounded rationality)¹⁰⁶ may limit the extent to which alternative means need to be considered, but the underlying point still seems to hold true; where there are alternative means, the strength of the reason to take a particular action should depend on how effective that action is in achieving the end.

¹⁰⁵ Clegg et al., 2006, p. 114.

¹⁰⁶ The concept of bounded rationality is outlined below when considering the 'maximising' principle of rationality.

The strength of any instrumental reason will also depend on how the end is defined. If the end is to murder someone quietly without creating a scene, such an end might generate a stronger reason to buy poison than a shotgun. In the context of organisations, who have publicly stated, 'settled' purposes, there should be far more objective clarity about the end to be achieved than in the context of human agents and, accordingly, those ends should provide a much more objective basis from which to assess the strength of the reason to take a particular means.¹⁰⁷

It should also be pointed out that a consequence of assuming organisations exist *only* to pursue their self-asserted purposes is that instrumental reasons are assumed to be the only type of reasons that *support* a prospective action. Non-instrumental reasons (for example adherence to legal requirements, societal norms or resource limitations) are relevant, but only in a negative sense; they are reasons against taking a particular means (e.g., if the action is illegal and this would impact on the achievement of its stated purposes). In other words, such norms are relevant when the consequences of a particular course of action that furthers an end is considered. It would be odd to suggest that complying with legal norms (for example) is a reason for action itself since organisations do not exist to follow laws; legal (and societal norms) are external obligations that restrict and limit what they can do.

Accordingly, this thesis takes the position that the requirement of instrumental rationality as applied to organisations means: (1) the self-asserted ends (or purposes) of organisations such as the IAAF *do* create instrumental reasons for taking means to achieve those ends, (2) having an end does not provide a sufficient or conclusive reason for taking *any* means (other non-instrumental reasons will potentially count against a particular means), and (3) the strength of the instrumental reason to take a particular means depends on how well the means achieves the end (the end may generate a stronger reason to take a more suitable means).

¹⁰⁷ Determining what a human agents ends are is a difficulty noted by Raz (Raz, 2005, p. 28).

The concept of maximisation

The idea of a maximisation ‘demand’ of practical rationality seems to be an extension of the principle of instrumental rationality to situations where an agent has a set of competing ends and uses utilitarian principles to determine what is the most rational action in such situations. It seems a useful addition because it is at least arguable that implementing means in the pursuit of *any* end that an organisation has could be rationally coherent, even if it conflicts with other ends of that organization.¹⁰⁸

The essence of the theory is that the consequence of an act can be useful (or not) as a step towards fulfilling a *set* of ends or an ultimate desire or ‘good’.¹⁰⁹ Those who support the theory claim that choices should be guided by which act provides maximum ‘utility’ and, where there is a choice between acts, the correct choice is the one whose utility is at least as good as any of the alternatives and, conversely, a bad choice is one whose utility is less than other alternatives.¹¹⁰ Of course, assessing utility where outcomes are uncertain is difficult since it is quite possible that whatever one’s choice, the consequences may not be the most beneficial.¹¹¹ One solution is to suggest that decisions should be guided by ‘expected’ utility.¹¹² This requires an agent to consider the probability of different outcomes and the usefulness of those outcomes (in terms of the furtherance of his set of ends) in order to determine whether that action is likely to be most beneficial.¹¹³

In the context of this thesis, the concept of maximisation of expected utility provides a further requirement of rationality relevant to assessing how rational the achievement of one particular purpose is if it appears to come at the expense of other self-asserted purposes in the IAAF’s ‘set’.

There are, of course, criticisms of the theory. One predominant criticism is being that ruminations about the probability of uncertain outcomes dependent on taking a particular action are, in the real world, impossibly complex and if you can’t do

¹⁰⁸ Kolodny & Brunero explain discuss the issue of instrumental transmission and the potential problem justifying action that would otherwise be ‘objectionable’ (Kolodny and Brunero, 2018, section 2).

¹⁰⁹ Wallace, 2018, section 5.

¹¹⁰ Bales, 1971, p. 257.

¹¹¹ Feldman, 2006 pp. 49-50, 56.

¹¹² Feldman, 2006 pp. 49-50; Wallace, 2008, section 5.

¹¹³ Briggs, 2019, section 1

something then nor ought you.¹¹⁴ Perhaps even more problematic is the criticism that even if one did attempt such deliberations it would lead to infinite regress¹¹⁵ and, presumably, dithering and impractical delay.

However, even if we accept such criticisms, it does not mean that considering the expected utility of actions is worthless as a rational requirement. Consistent with what has been said already, if rationality is about more than achieving ends and is also about being able to explain and justify decisions to others, then it does not seem necessary that actions must actually turn out to be more useful than other alternatives or that 'perfect' calculations about the consequences of actions need to be made. If an agent needs to be seen as rational by others, then there is still value in a normative principle that helps makes decisions intelligible to others.¹¹⁶ A requirement that asks for an objectively reasonable survey of the 'expected utility' of outcomes against overall aims or desires, might be sufficient. What is 'reasonable' will inevitably depend on the context of the decision and the resources and time available. It has been argued that 'an act is *rational* if it is the action which is, on the *evidence available* to the agent, likely to produce the best results'.¹¹⁷ It might be added that an act is more likely to appear rational *to others* if (1) the likely utility of outcomes has been considered against the agent's set of ends, and (2) the evidence from which the likely utility of outcomes is considered is appropriate, given the context. In some contexts, what is appropriate might be the evidence that is immediately to hand. In others it might mean considerably more in terms of what evidence should be surveyed. This type of limitation on what maximising utility requires resembles what is described as 'bounded rationality' in economic theory. Whilst this may well be perceived to weaken the requirements of the principle of maximisation, and consequently reduce it to a 'decision procedure',¹¹⁸ this is presumably exactly the sort of reflective limitation we might expect that rational people would recognise.

¹¹⁴ Feldman, 2006, p 56 & 72

¹¹⁵ Bales, 1971, p. 257.

¹¹⁶ Just as the value of reasons (in general) is something that Raz suggests is important to making actions and intentions intelligible to others (Raz, 2005).

¹¹⁷ Smart and Williams, 1973, pp. 46-47.

¹¹⁸ Bales distinguishes two possible purposes of a theory of act-utilitarianism; to provide an account of right making characteristics or to provide a decision-making procedure (Bales, 1971, p. 257).

Hermeneutics - identifying the IAAFs aims

To analyse the rationality of the IAAF's decision it is necessary to review some of the IAAF's texts or 'communications' to identify its general self-asserted purposes (its set of ultimate ends) and the specific reasons it has given for introducing the Regulations. In order to reach *justified* interpretations of such texts and communications the general methodology of hermeneutics will be utilised.

The problem of ascribing meaning to any communication is, of course, that it will potentially have a range or 'nexus' of meanings that may be justified depending on a number of variables related to the interpreter, such as the perceived purpose of the communication, the knowledge and experiences of the interpreter and, perhaps most importantly, the purpose of the interpretation.¹¹⁹

What hermeneutic methodology provides is a framework for the justification of posited interpretations based on a general hypothetico-deductive approach. In short, possible interpretations (relevant to the purpose of the interpretation) are posited taking into account general principles (such as hermeneutic charity),¹²⁰ which are then considered and weighed against relevant evidence (such as the claims made by the author about their work or other works of the author) in order to determine the justification and relative truth of each hypothesis.¹²¹

It should also be pointed out that the framework seems to rely on rationality¹²² in the sense that rational requirements and rules of logic (deductive and inferential) are basic requirements of any language and therefore limit what are reasonable interpretations. In other words, in using a shared language to communicate, there are some shared norms that constrain what are reasonable interpretations.¹²³ This thesis takes

¹¹⁹ Mantzavinos, 2016, section 4.

¹²⁰ i.e. permitting for generous interpretations within rational limits Mantzavinos, 2016, section 3

¹²¹ Mantzavinos, 2016, section 5.

¹²² Fish, 2008, p. 1133; Barak, 2007, p. 3; Mantzavinos, 2016, sections 3 & 5.

¹²³ For example, shared norms about the core meaning of words and about the appropriate 'tools' for interpretation (Barak, 2007, p. 24; Fish, 2008, p. 1117).

‘language’ to incorporate sub-sets of language, such as legal language, which might embrace a particular sub-set of norms.

This is, perhaps, an oversimplified view of the approach but is sufficient in providing a general background to the interpretative approach to be taken.

A legal hermeneutical approach

In recognition of the variety of interpretive aims that may be pursued and the variety of purposes with which communications are made, more context specific approaches appear to have developed that embrace their own particular norms and requirements; one such example being an approach to legal interpretation. Whilst this thesis is not a typical exercise in legal interpretation, some of the norms of legal interpretation will be relevant given the nature of the primary sources, which are, it is suggested, legal or quasi-legal.¹²⁴ With regard to the Regulations, their function is to place restrictions on the rights of athletes to compete and, as such, it seems reasonable to view them as a statement of private laws binding on those who recognise the IAFs authority. With regard to the IAAF’s constitution, then its purpose is to create a self-asserted statement of the reasons for its existence and to set out binding obligations and limitations on the exercise of its power.¹²⁵ Accordingly, the legal nature of the key relevant texts suggests a legal hermeneutical approach.

The aim of interpreting legal texts

Despite what has been said above, one aspect of interpreting legal texts is that there is, potentially at least, a ‘right’ answer: that which is determined by a court or other judicial body. This background necessarily influences the aim of any interpretation, which is arguably a search to find the meaning that would be determined by those with the authority to determine it (the court or arbitrator). How to find such a meaning,

¹²⁴ Although the Regulations are not laws in the sense that they apply to citizens of a state, they are what might be described as a ‘private’ law since they set out (and impact) the rights and duties of athletes to compete, have mechanisms of enforcement and are subject to mechanisms for adjudication.

¹²⁵ Clause 5 of the IAAF’s Constitution makes this clear (IAAF Constitution, 2019). See appendix)

however, is subject to an underlying debate about the significance of the author's intention (Fish, 2008). This thesis is not the place for a detailed consideration of these competing arguments. Instead, it will simply be made clear that the communicative intention of the author *is* taken to be a necessary constraint on the nexus of meaning of legal texts.

Accordingly, with this assumption in mind, there are some relevant legal norms about the approach to interpretation (in addition to those general norms of the hermeneutic approach) that will be relied on.

First, a rational starting point (or presumption) is to assume that the author of a legal text intended to give words their semantic or 'everyday', contextual meaning at the time of interpretation since that is likely to reflect the author's communicative intention to create rules that are clear, accessible and understandable to those whose rights and duties are affected by them.¹²⁶ Second, it must be appreciated that this is *only* a starting point and the semantic meaning may not be what was intended by the author, who is free to ascribe whatever meaning it wants to the words or phrases it uses, unlike the recipient.¹²⁷ Third, in determining if the communicative intention diverges from the 'semantic' meaning, any express statements in the text (such as definitions or other parts of the text) will be particularly important to consider, as will the author's underlying purposes for creating the legal text.

¹²⁶ Indeed, this is a common technique of interpretation that is used in legal decision making. For example, in *Mehta v J Pereira Fernandes SA [2006] WLR 1543*, it was accepted that the communicative intention was to convey a meaning of signature that could change to reflect advances in technology.

In short, the starting point is that the 'semantic' and 'pragmatic' meanings are the same. The terms 'semantic' and 'pragmatic' are used to distinguish between the common or everyday meaning that a reasonable recipient would likely take and the meaning that encapsulates the communicative intentions of the author (Poscher, 2017, p.4).

¹²⁷ Fish, 2008, p. 1142.

Chapter 3 - Assessing the Rationality of the IAAF's decision

As alluded to, the analysis of the IAAF's decision-making proceeds on the basis that there are certain requirements of rationality that the IAAF ought to follow if it wants to be an effective agent and in order that it can justify its decisions to those from whom it seeks legitimacy, including legal institutions.

To provide the analysis with a structure, a three-step approach will be taken. First, the contributory reasons given by the IAAF for the implementation of the Regulations will be identified and clarified. Second, the validity and strength of these contributory reasons will be considered by reference to the demands of non-contradiction and of instrumental rationality. Third, the 'set' of purposes for which the IAAF exists to achieve will be considered in order to identify any likely negative impacts of the Regulations on the pursuit of its other self-asserted purposes. The second and third steps represent the objective evaluation of the IAAF's reasons.

The IAAF's stated reasons for introducing the Regulations

In this initial step of the analysis, all that is aimed at is to identify, on a charitable interpretation of the relevant sources (the Regulations, the explanatory notes that accompany them¹²⁸ and the CAS decisions in *Semenya* and *Chand*) what reasons the IAAF appear to have given for implementing the Regulations. At this stage no attempt is made to evaluate the reasons; it is simply a search for the IAAF's subjective reasons.

In determining the 'relevant sources' it is appreciated that a subjective choice has been made as to what sources are considered relevant. A wider range of sources could have been referred to (for example media statements or interviews with IAAF representatives) but given the focus of the thesis is on the rationality of the decision of an organisation measured against its formal constitutional purposes, the key sources were felt to be the organisation's formal statements of its reasons. The Regulations,

¹²⁸ Hereafter, the accompanying explanatory notes will just be referred to as the 'Explanatory Notes'.

Explanatory Notes and the decision of the CAS panel in *Semenya* decision (as well as the IAAF constitutional purposes) have been included in the Appendix.

Helpfully, the IAAF seems to identify its reasons in the Regulations and the Explanatory Notes, which state that the Regulations ‘solely exist to ensure fair and meaningful competition within the female category’.¹²⁹

Noting the observations already made about potential ambiguities surrounding the terms male and female, it should be made clear that reference to ‘the female category’ here appears to be based on a broad, ‘legal’ understanding of female.¹³⁰ Accordingly, the Regulations are aiming for fair competition amongst *all* legally female athletes.

Whether the IAAF view ‘fair’ and ‘meaningful’ as the same thing is not made clear in Regulations or Explanatory Notes, but it seems rational that the IAAF viewed them as two separate reasons since the semantic meanings are different and the inclusion of ‘meaningful’, will, as a matter of legal interpretation, be presumed to add something. Accordingly, ensuring fair competition and ensuring meaningful competition will be treated as separate reasons that the IAAF believe supports the implementation of the Regulations.

Despite the suggestion that these were the only reasons for the Regulations, reference was also made in *Semenya* to the Regulations enabling female athletes to have “an equal opportunity to excel”¹³¹ and the need, therefore, to protect female athletes from male athletes in order that they are able to compete for medals at the elite level.¹³² This is clearly not concerned with equality of opportunity *within* the female class. Instead (and if it adds anything) it appears to be a reason that reflects external social and legal norms concerning sexual equality (and non-discrimination).¹³³ Whilst Krech rightly doubts that such equality has always been a concern of the IAAF (Krech, 2019),¹³⁴ that does not preclude it from being a relevant concern of the IAAF in recent

¹²⁹ DSD Regulations, p 2.

¹³⁰ DSD Regulations, para. 2.3

¹³¹ *Semenya*, para. 278 & 305.

¹³² *Semenya*, at para. 562.

¹³³ External here is used to identify these as a non-sporting norms.

¹³⁴ Krech refers to ‘gender’ equality, which perhaps does not accurately reflect the IAAF’s concern.

years. Accordingly, it is arguable that ensuring ‘sexual equality’ is, potentially, a further reason that the IAAF believes supports the Regulations.¹³⁵

The Explanatory Notes also refer to the Regulations being necessary to ensure and encourage participation in athletics; suggesting that ‘females’ will be less likely to participate if the Regulations were not in place.¹³⁶ The sense of ‘female’ intended here is not immediately clear; presumably the IAAF cannot have expected or intended the Regulations to encourage participation of athletes with relevant DSDs, so the logical assumption is that the concern was only for those the IAAF’s views as athletic females. Regardless, this seems like a different reason from ensuring fair or meaningful competition.¹³⁷

Finally, reference is made in the Explanatory notes (and in *Semenya*) to additional benefits that the IAAF believe the Regulations bring. One such benefit is helping athletes affected by a DSD receive treatment and help for a medical condition of which they might otherwise have been unaware.¹³⁸ Another benefit is the ‘social good’ that results from women excelling in sport.¹³⁹ Although the reference to additional benefits may suggest a minor role in supporting the Regulations, they may well have been contributory reasons.

In summary, there are, potentially, six contributory reasons that the IAAF believe support implementation of Regulations; fair competition, meaningful competition, participation, sexual equality, health and social goods. The strength and validity of these reasons will now be considered.

The validity and strength of the IAAF’s reasons

One assumption of this thesis is that, as an organisation, the IAAF should be striving to achieve the self-asserted purposes for which it exists to achieve. Therefore, the

¹³⁵ Of course, striving for sexual equality based on an understanding of people as either male or female, ignores claims for sexual equality of the minority who do not fit within the binary model.

¹³⁶ Explanatory Notes, p. 1.

¹³⁷ Although it is acknowledged that the perception of the fairness and closeness of competitions may well be linked to participation.

¹³⁸ Explanatory Notes, p5, *Semenya*, para. 306.

¹³⁹ *Semenya*, para. 305.

normative force of any reasons *in support* of taking a particular action should come from those purposes. Action (or indeed in-action) must facilitate those overall purposes and the reasons justifying action must, therefore, be instrumental ones.

It has also been suggested that the validity and/or strength of such instrumental reasons depends upon the extent to which the action (or means) achieves those purposes and also adheres to the rational requirement of non-contradiction in doing so.

However, as the IAAF has not expressly identified the constitutional purposes that the Regulations seek to further, it is first necessary to carry out a relational analysis of the IAAF's reasons and its self-asserted, constitutional purposes.¹⁴⁰

Fair competition in the female category

The first thing that is noticeable from the IAAF's constitution is that it contains no specific purposes which relate to ensuring fair competition in *only* female athletics or to ensure a male/female categorisation is retained in order to 'protect' female athletes, or for that matter, to protect 'athletic females. Article 4.1(j) states that one of the IAAF's purposes is 'to preserve the right of every individual to participate in Athletics without unlawful discrimination of any kind and to ensure that Athletics is undertaken in a spirit of friendship, solidarity and *fair play*'¹⁴¹. Accordingly, if the sense of 'fair competition' which the Regulations achieve can be equated to, or at least seen as part of, what is meant by fair play, then it follows that athletics being undertaken in the spirit of fair play will provide a valid instrumental reason for introducing the Regulations.

¹⁴⁰ The general purposes of the IAAF that will be referred to are those set out in the current version of its constitution, which was published in 2019. It should be pointed out that since the introduction of the Hyperandrogenism Regulations in 2011 there has been more than one version of the IAAF's constitution. However, an analysis of the 2011 version against the current version reveals little significant change, save perhaps, for historic use of 'objects' in place of 'purposes' and the recent development of an express recognition of the need for good governance. Accordingly, the focus will be on the latest incarnation of the IAAF's self-asserted purposes, not least because that is what should justify the IAAF's current approach. Any references to the IAAF constitution will therefore be to the 2019 version.

¹⁴¹ Emphasis added.

Of course, to assess the *strength* of ‘fair competition’ as an instrumental reason, it is also necessary to consider just how well the two concepts resonate. The more that the sense of ‘fair competition’ achieved by the Regulations contradicts or fails to align with what the IAAF appears to mean by ‘fair play’ in its constitution, the less strength ‘fair competition’ has a reason that justifies the Regulations.

‘Fair play’ in sport

As the International Fair Play Committee (IFPC) recognizes, fair play is a complex concept and incorporates a number of different values that are integral to sport but are also important in a wider context (IFPC, 2020).¹⁴² Such contextual statements are helpful but suffer from being vague. They neither fully identify or justify the values nor seek to explain what fair play means in a practical context when these values clash with interests of those that participate in sport. Academic writing on the subject has attempted to better describe the concept and to justify its place as a guide to sporting conduct. However, in her analysis of the literature Sheridan identifies no less than seven different conceptualisations.¹⁴³

Applying the interpretative methodology previously described, it is argued that an appropriate starting point is to consider a contextually enriched semantic meaning of fair play in sport. However, the aim here is realistic given the nexus of meaning seems potentially so large; to find a rational meaning that encapsulates core aspects of the concept about which it would be difficult for participants in sport to reject. Such an approach adopts Loland’s assumption that fair play is a normative concept and also his basis for identifying its substantive norms.¹⁴⁴

Before identifying these core aspects, a few observations will be made to clarify the discussion. First, it is suggested that the different conceptions of fair play touch on three key underpinning concerns; (1) why participants should follow the formal rules and informal norms of any sport (2) whether the formal rules have been interpreted in

¹⁴² IFPC Website, <<http://www.fairplayinternational.org/what-is-fair-play>> accessed 19/5/2020.

¹⁴³ Fair play as formalism, fair play as ‘play’, fair play as ‘respect’, fair play as a contract, fair play as a system of rational norms, fair play as virtue and fair play as an ethos (Sheridan, 2003, pp. 163-164).

¹⁴⁴ The aim of Loland’s work is to develop a moral norm system to guide participation in sport (Loland, 2002, p. 17). Loland suggests that in determining what norms should form part of his framework, he will choose ones that no-one can reasonably reject as a basis for unforced, informed general agreement, (Loland, 2002, p. 31).

a way that is appropriate in the context of the sport (3) whether participants in the sport have demonstrated characteristics or virtues which 'the sport' values, regardless of the formal rules. Second, fair play is often treated as having two separate aspects; formal fair play and informal fair play.¹⁴⁵ Although the writer finds the distinction hard to maintain, it provides a helpful structure by which to evaluate the concept.

Formal fair play

Most obviously, fair play would seem to incorporate a direction to adhere to the constitutive and administrative rules of the game.¹⁴⁶ After all, without formal rules and adherence to them, identifying and differentiating one sport from another or differentiating a sport from general acts of leisure becomes impossible;¹⁴⁷ constitutive rules make the social practice of sport what it is and create the sport specific, structural goal of any sport.¹⁴⁸ Provided the rules are well considered, ensuring adherence to them also increases the likelihood that all those who participate have equality of opportunity to be successful by demonstrating the skills and attributes deemed relevant in that sport by virtue of the structural goal identified.¹⁴⁹ For example, if we assume swimming values the athletic and technical ability of the swimmers but not the technical quality of swimsuits, then rules about what is permissible to wear will be needed to better define the sport specific goal and also to ensure that there is equality of opportunity for participants to win by demonstrating the valued attributes. Accordingly, it seems that a simple normative direction that participants ought to follow the rules is one that any rational participant in sport would have to accept as part of what is meant by fair play. Of course, the extent to which participants in sport actually follow the rules is another question, the answer to which depends on rational consideration of the reasons for and against doing so by individual participants. It is argued, therefore, that fair play understood as a normative direction to follow the

¹⁴⁵ Loland and McNamee, 2000, p. 64; Ryall, 2016, p. 161; Sheridan, 2003, p. 165)

¹⁴⁶ Ryall, 2016, pp. 162-163; Sheridan, 2003, p. 165.

¹⁴⁷ Pearson, 1973, p. 116.

¹⁴⁸ Loland and McNamee, 2000, p. 65.

¹⁴⁹ Sheridan refers to a definition of cheating which recognises that cheating exists where one side changes the latent or manifestly agreed upon conditions for winning and gains an advantage beyond that of skill or strategy (Sheridan, 2003, p. 165).

formal rules also implies that participants ought to respect the reasons why it is important to do so. After all, if there is no reason to follow the rules then a direction to do so is largely empty.

Why follow the rules?

The explanation of why people ought to follow the formal rules of a sport seems to rest on recognizing the nature of sport as a social practice that necessarily requires the reciprocation and cooperation of others.¹⁵⁰ This realization provides a basis for two moral reasons that ought to weigh on all participants.

First, if there is a significant number of participants who do not follow the rules then there will be no recognizable 'social practice'. This is essentially a utilitarian reason; one should follow the rules since that will result in the most benefit to all those who want to partake in the sport (i.e., it ensures the social practice will continue to exist). This reason seems to be, fundamentally, about respecting the value of the social practice for what it is, and in terms of a particular sport, the structural goals that the sports rules articulate.¹⁵¹ The problem is that this utilitarian explanation tends to ignore the free will of individuals and the reality that individuals have different interests, reasons and purposes for participating in sport, which are not necessarily about maintaining it as a social practice.¹⁵² Furthermore, the extinction of the sport seems like an abstract danger and, therefore, a reason that is likely to provide minimal normative pressure for individual participants.

In addition to (or instead of) this utilitarian reason, most conceptualizations of fair play rely on some variant of a social contract theory that recognizes the significance of sport being a voluntary activity that involves the exercise of free will in choosing to participate.¹⁵³ Such a perspective appears to provide a more immediately compelling moral reason for adhering to the rules and the restrictions on freedoms that they

¹⁵⁰ Loland, 2002, p. 15, 25 & 41-42; McNamee, 1995 pp. 62-63.

¹⁵¹ Butcher and Schneider consider fair play as 'respect for the game'. (Butcher and Schneider, 1998, pp. 9-10, 18-19).

¹⁵² Loland both identifies the underlying problems with traditional utilitarian perspectives and speculates on a variety of different motivations for participating in sport (Loland, 2002, pp. 26-28, 109-110).

¹⁵³ Loland, 2002, p. 22; Sheridan, 2003, pp. 170-171.

entail. In outline, the argument seems to be that if an individual (1) voluntarily participates on the understanding that the rules and norms of a sport will be adhered to by others, (2) appreciates that the co-operation of others is needed to participate at all, (3) recognises other participants also participate on the same basis, and (4) respects others as equally free moral agents, then they have a moral obligation to abide by those rules and norms. Not following the rules ignores the fact that other participants have also voluntarily entered the agreement as free moral agents and have, therefore, also agreed to restrict their freedoms on the basis of legitimate expectations about adherence to the rules by all participants. Ignoring the rules might provide an advantage in achieving the structural goal (i.e. winning) but the cost is a failure to respect other participants as equally free moral agents with equally valid interests and preferences that deserve an equal opportunity to benefit from the sporting rewards on offer.¹⁵⁴ In simple terms, not adhering to the rules appears to offend a fundamental value of any sport; that you should treat others as you would wish to be treated.¹⁵⁵ One ought to follow the rules because it is, fair, just and respects the idea of equality and empathy for other participants. Accordingly, such non-consequentialist principles about what is morally right and just seem crucial to explaining why participants in sport should follow the rules.

If formal fair play is about respecting the rules and respecting the rules is concerned both with respecting the sport as a social practice and respecting the principle of equality of opportunity, then it follows that formal fair play is fundamentally a norm about both respecting the sport¹⁵⁶ and the principle of equality of opportunity. Exactly what is meant by 'equality of sporting opportunity' will be returned to, but for now it is sufficient to recognise it (and the values it represents) as a core aspect of any understanding of fair play.

¹⁵⁴ What will be referred to hereafter as the principle of equality of sporting opportunity.

¹⁵⁵ Butcher & Schneider recognises the importance of respecting or honouring the values, rights and preferences of others as if they are your own (Butcher and Schneider, 1998, p. 9)

¹⁵⁶ In the sense of its value as a continuing social practice.

Interpreting the formal rules

Although it has been said that rules cannot interpret themselves,¹⁵⁷ that does not mean that rules can be left to be interpreted without constraint by those subjected to them. If they were then, arguably, the result would be complete relativism and, ultimately, a set of rules that was unenforceable and meaningless.¹⁵⁸ In the context of sport, it might lead to a collection of different rules and no obvious game or at least a lack of equality of opportunity. Accordingly, in any rule-based practice, it is argued that there needs to be other 'secondary' norms or principles that are relevant in narrowing the reasonable interpretations. In other words, whilst different interpretations are inevitable, rational and reasonable ones should accord with general 'principles' that assist in the interpretation and application of rules in specific situations.¹⁵⁹ In sport, it is suggested that the notion of 'fair play' and the values it represents provides just such a source of general principles that constrain reasonable interpretations. Whilst such a proposition is one that those involved in sport might find difficult to rationally argue against, there is, perhaps, less universal acceptance of what those principles are.

In outlining such principles, it is important to recognize that there seem to be two different levels of principle. At a general level there are principles which seem common across all sports such as the reasons for adhering to the formal rules already outlined (i.e., respect for the sport and respect for equality of sporting opportunity). By contrast, there are also principles that might apply only to individual sports, generally encapsulated by the idea of the 'ethos' of a particular sport. It will be suggested that both have their place in guiding the interpretation of the rules, despite potential tensions between them.

General principles of interpretation required by 'fair play'

In addition to the reasons for adhering to the formal rules, there appear to be other general principles of interpretation, which derive from recognising that participating in

¹⁵⁷ Loland and McNamee, 2000. p. 67

¹⁵⁸ This point reflects Fish's argument about the need for legal interpretations to be constrained by reference to the communicative intention of the author (Fish, 2008, pp. 6-7).

¹⁵⁹ Ryall et al., 2019, pp. 4-5.

sport is not only about achieving the structural goal (i.e., winning according to the rules), but is also about the demonstration and development of non-sport specific, 'external' values and the achievement of 'non-sport specific', external goals. Of particular relevance here are the arguments that sport is, fundamentally, a type of play and that sport is a forum for the development and display of virtuous characteristics.

Sport as play

In Huizinga's explanation of play, play is any voluntary activity of leisure. As such, play is an unessential activity and has its own internal value; the fun and pleasure derived from simply participating.¹⁶⁰ Whilst play can help develop skills and values for external contexts, it is the fact that play it is undertaken for its own sake that makes it distinct. If participation in sport is also seen as a voluntary, unnecessary and an enjoyable 'distraction' from the rest of life¹⁶¹ then there is a compelling argument that sport, at its heart, is a formalised type of play. If this is true, then there would appear to be consequences for how rules ought to be interpreted. Before considering such consequences, however, it is important to consider a common objection, which is that the idea of sport being undertaken purely for 'immediate' pleasure and fun is overly idealistic and, as Sheridan suggests, anathema to modern elite sport.¹⁶²

The criticism seems to be based on empirical observations about the importance of winning and of achieving certain external goals (such as earning money) in professional, elite sport, which leaves little room for viewing sport as play. Even at an 'amateur' level, such idealistic notions seem to ignore that winning and external goals (such as socializing) may well play a significant role in the decision to participate. There is also criticism that sport as play seems to ignore the element of seriousness and commitment to improving oneself and one's skills that, even those at lower levels of sport, can demonstrate.¹⁶³ However, the limits of such criticisms need to be made clear. As Loland recognizes, people participate in sport for a range of different reasons,

¹⁶⁰ Huizinga, 1949, pp. 7-8.

¹⁶¹ Keating, 2003, p. 65.

¹⁶² Sheridan, 2003

¹⁶³ Butcher and Schneider, 1998, pp. 4-5.

which will vary in strength between individuals. Some may participate mainly to win and pursue external values, some may do so primarily for the internal value of the activity, and some may do so for both internal and external reasons.¹⁶⁴ Accordingly, it is suggested that enjoyment of the activity is likely to account for at least *some* of the rationale for participating in a particular sport, otherwise why choose to participate in the first place? After all nobody starts as a professional or at an elite level. Other avenues are available to pursue external values such as money, social interaction or bettering yourself,¹⁶⁵ some of which are arguably more easily achieved in other walks of life. Second, the criticism that sport as play does not reflect the reality of elite and professional sport would seem to view fair play as a purely descriptive concept, not a normative one. Whether players and athletes at any level actually do undertake the game in a way that recognizes the internal value of sport as a ‘fun distraction’ is a different question to whether they ought to.

In terms of the relevance to norms for interpreting rules, then accepting the idea of sport as a form of play would seem to suggest that the internal value of playing should be respected and valued when interpreting rules in preference to self-interested interpretations that further the pursuit of victory and external goals such as money or fame. Consequently, it is argued that any reasonable interpretation of fair play articulates the underlying internal value of any sport as a playful activity, which participants undertake for enjoyment, even if, practically, that is just to counterbalance a tendency towards interpreting rules to maximise self-interest.

Virtue and sport

Sport has long been seen as a forum for the display and development of characteristics that are widely seen as morally good. In ancient Greece, Aristotle suggested that living a ‘good life’ meant striving to flourish by maximizing the abilities that each individual has in a way that is virtuous,¹⁶⁶ displaying externally valued characteristics such as

¹⁶⁴ Loland, 2002, pp. 109-110.

¹⁶⁵ A point made by McNamee (McNamee, 1995, p62).

¹⁶⁶ Loland, 2002, p. 19.

courage, self-discipline, fairness, wisdom and determination.¹⁶⁷ The events that resulted in the awarding of the IFPC's first fair play trophy to Eugenio Monti serve as a demonstration of the sorts of characteristics which it would be difficult to argue are not highly valued within and outside of sport. Standing in first place after completing his final run in the two-man bobsleigh at the 1964 winter Olympics, Monti realised that one component of the sleigh belonging to his only remaining challenger, Tony Nash, was damaged. The culmination of years of training and dedication came down one decision, but rather than staying quiet and increasing his chances of a victory, Monti removed the component on his own sleigh and gave it to Nash, resulting in Nash winning the gold.¹⁶⁸ Even in the context of modern-day professional sport, such acts of empathy, generosity and friendship are evident and, it is suggested, valued. The very existence of the IFPC and its role in highlighting and rewarding examples of fair play provides some evidence of the value of such characteristics within and beyond sport.

In common with sport as play, seeing sport as a forum for the display and development of valued characteristics emphasizes the structural goal of any sport is not the only, or perhaps not even the main, reason for participation. In the infamous words of Baron de Coubertaine which now stand as the Olympic Creed 'The most important thing in the Olympic Games is not to win but to take part, just as the most important thing in life is not the triumph but the struggle'.¹⁶⁹ As with sport as play, criticisms could be made about such ideals not reflecting the increasing professionalism and commercialization of sport. However, the same responses to the criticism would appear to apply. Unlike sport as play, however, sport as a forum for the display of virtuous characteristics does not view sport as a fun distraction, but as an opportunity to demonstrate courage, discipline, commitment and skill in order to perform to the best of one's ability whilst simultaneously displaying other virtues such as empathy, generosity and kindness. Such a view is clearly relevant at all levels of sport.

¹⁶⁷ Lunt and Dyreson, 2014, p. 18.

¹⁶⁸ International Fair Play Committee Website, 2020, <<http://www.fairplayinternational.org/award-winners-search>

¹⁶⁹ IOC, 2020, <<https://olympics.com/ioc/faq/olympic-rings-and-other-olympic-marks/what-is-the-olympic-creed>>

In terms of interpreting the rules of any sport, recognition that sport is at least, in part, a forum for demonstrating and developing virtuous characteristics would seem to have a similar influence as recognising sport as a formal type of play; the characteristics it embraces should act to counterbalance self-interested interpretations.

Norms of fair play relevant to specific sports

When it comes to interpreting formal rules, explanations of fair play as the ethos of a sport and the idea of respect for the game¹⁷⁰ seem to accept a common position that there is some flexibility for individual sports to interpret rules in a way that is appropriate given their own individual culture, history, institutions and values.¹⁷¹ Whilst this flexibility allows for organic development of a sport and provides scope for different sports to focus on emphasising slightly different values, there is a danger that too much flexibility could lead to conflicts with the general principles of interpretation already outlined and even with the idea of fair play as a normative concept. For example, if 'respecting the ethos' becomes about recognising and re-enforcing historic conventions of how the rules *have* been interpreted in a particular sporting context, rather than how they *ought* to be, it is possible that *any* rule interpretations become acceptable as long as those that participate accept it.¹⁷² The fact that in football grappling in the penalty area is generally ignored, or that in ice hockey, fighting seems to be minimally penalised (if not encouraged) does not mean that it *ought* to be. Ultimately, in the same way that ignoring the formal rules would lead to the sport or game losing its 'identity' completely, so would permitting completely subjective interpretations of those rules. The role of sporting institutions is important here, since they are the ones charged with protecting, nurturing and developing the sport.¹⁷³ They must ensure that rules are interpreted in a way that balances flexibility in rule interpretation with the provision of normative guidance about how the rules *ought* to

¹⁷⁰ As advocated by Butcher & Schneider , (Butcher and Schneider, 1998)

¹⁷¹ Butcher and Schneider, for example, suggest intimidation of opponents needs a 'sport-by-sport' analysis (Butcher and Schneider, 1998, p. 17). Sheridan clearly considers that the ethos of different sports will lead to different understandings of what is permissible and impermissible (Sheridan, 2003, pp. 177-178)

¹⁷² Loland recognises the problem of relativism and the potential for acceptance of rule interpretations and violations based simply on common acceptance (Loland, 2002, pp. 8-9).

¹⁷³ McNamee, 1995, pp. 67-68.

be interpreted. Such a balance should aim to protect the values of individual sports, but also recognise the general principles that underpin sport as a whole. For example, that a high degree of physical contact is valued in a sport like ice hockey, does not mean that rules should be interpreted in a way that allows a very skilful player to be hounded out of the game by an overly aggressive, but less skilful player. If technical skills such as skating, stick handling and spatial awareness are valued more highly than the ability to hit an opponent and that is a value shared between participants, then the rules of ice hockey should reflect those values and should be interpreted by referees and participants with them in mind. If the ethos of the game or respect for the game is viewed in this way, then norms of fair play specific to a sport can be seen as simply refining, rather than contradicting the general principles applicable to all sports.

Informal fair play

The idea of ‘informal’ fair play is useful for distinguishing between the concern for following and interpreting the formal rules of sport and a required attitude towards playing sport, which potentially goes above and beyond merely following or interpreting the rules. However, it is suggested that the norms that any sport recognises by embracing informal fair play very much overlap with the norms already articulated as core to the concept of formal fair play. The Eugenio Monti example is a good one. In acting as he did, Monti’s conduct went over and above merely adhering to the rules or interpreting them, but he was still demonstrating the same values and valued characteristics that have been proposed as norms of formal fair play in a situation where there were no rules to guide his conduct.

However, it has also been suggested that informal fair play embraces something further. Loland argues that it incorporates a norm about participating in a way that is most likely to achieve ‘good’ competitions and not just ‘fair ones’.¹⁷⁴ Butcher & Schneider similarly talk of participating in a way that respects ‘the interests’ of the sport.¹⁷⁵ Loland’s perspective, in particular, appeals overtly to utilitarian principles and the idea that a ‘good’ competition is one that provides the most preference satisfaction

¹⁷⁴ Loland, 2002, p. 107.

¹⁷⁵ Butcher and Schneider, 1998, pp. 10-11.

to the most parties engaged in the sport.¹⁷⁶ After considering the likely preferences of the main categories of people engaged in sport and the extent to which they are satisfied by various attitudes with which the game might be approached, his conclusion is that maximum preference satisfaction is achieved by demonstrating a 'play to win' attitude. Such an attitude, he argues, does not mean winning at any cost but, instead, means engaging to the maximum of one's ability, demonstrating effort and devotion whilst also respecting other participants and their choices and preferences.¹⁷⁷ This is an attitude that clearly resonates with the idea of sport as a forum for demonstrating and developing virtuous characteristics and sees informal fair play as an attitude that recognises achieving one's best as *the* end and competing against the best as a means to doing so; victory (and any external values that it satisfies) are merely a consequence. In other words, that fair play may embrace utilitarian notions about what constitutes a 'good' competition and respecting the interests of the sport, only seems to re-inforce some of the core norms already articulated.

Summary of the meaning of fair play

It has been suggested that fair play is fundamentally a normative concept, one that directs participants in sport not only to play by the rules but also guides them how to interpret them and to approach participation when there are no rules. Although it is a flexible concept that can take on board the 'ethos' of any particular sport, it is not completely relative. Any rational, semantic meaning recognises that 'fair play' is a direction to interpret and act in a way that accords with the values of both the individual sport concerned but also within the context of general norms that come from values central to all sports. Perhaps most importantly, fair play appears to be a limiting consideration against self-interested interpretations (or deliberately ignoring rules) by 'reminding' participants of both the fundamental nature of sport as a co-operative and playful activity and of its role as a forum for the demonstration and development of virtuous characteristics.

¹⁷⁶ By 'engaged' in the sport, what is meant is something wider than participants and incorporates those who play the sport, those who officiate it and those who watch it (Loland, 2002. pp. 114-115).

¹⁷⁷ Loland, 2002, pp. 138-141.

The IAAF's intended meaning

Given the essence of the 'semantic' meaning of fair play just articulated, if the IAAF meant something different in its stated purposes, then it ought to have made that clear. However, fair play is actually raised within the context of the 'wider' purpose of preserving 'the right of every individual to participate in Athletics as a sport, without unlawful discrimination of any kind undertaken in the spirit of friendship, solidarity and fair play' (Clause 4(j), IAAF Constitution 2019). The references to protecting rights to participate, ensuring non-discrimination, solidarity and friendship all seem to demonstrate the intention was to *emphasis* aspects such as respect for equality, empathy for others and the value of participating with maximum dedication (rather than participating to win).

Do the Regulations further the IAAF's constitutional purpose of ensuring 'fair play'

Having articulated a conception of what the IAAF means by fair play, the question becomes to what extent the Regulations help ensuring athletics is undertaken in the spirit of fair play. To answer this, it is necessary to consider in more detail the notion of 'fair competition' in sport and the extent to which the Regulations seem to align with this concept before then considering how this resonates with the core aspects of fair play.

Fair Competition and the meaning of equality of opportunity in sport

As a meritocracy, sport measures and ranks performance in order to distribute its 'rewards'. Such measuring and ranking rely on inequality in the demonstration of the attributes that are relevant and valued in contributing towards the performance. Loland summarizes this as ranking by reference to 'relevant inequalities'.¹⁷⁸ For example, in swimming, technique, stamina, determination, speed and power may all be attributes that are relevant and valued in contributing to the performance, but if

¹⁷⁸ Loland, 2002, p. 43.

there was absolute equality in these basic attributes then it would be difficult to differentiate between the performances. Accordingly, such 'valued' inequalities (and the performance advantages they give) are accepted as 'fair' and those that are not so valued are deemed unfair and, as a consequence, need regulating and compensating for. Exactly what inequalities are valued (and which need to be compensated for) will differ from sport to sport. Consequently, it is suggested that ensuring 'fair competition' is about regulating to compensate, in some way, for those inequalities that are unvalued. However, it is also argued that determining which inequalities are unvalued (and 'unfair') should not be a completely subjective or an arbitrary exercise. Rationally, the existing values of a sport and the general norms of fair play provide an existing framework from which the valuing of inequalities can be considered, objectively, more or less rational. For example, it may not be very rational or objectively fair to compensate for one genetic inequality that influences performance if other known genetic inequalities that influence performance to a similar extent are not compensated for. There is a clear danger of contradiction about what is valued and, therefore, a failure to treat like cases alike, the fundamental basis of any objective understanding of fairness.

Rawls' basic ideas about fair and just distribution amongst a society¹⁷⁹ will be relied on here as they build on what has been already said about the nature of sport as a co-operative activity that necessarily embraces fairness, justice and equality. He argues that a fair and just system for allocating rights and the distribution of rewards should be determined by those who make up the society. To do so, Rawls suggests a hypothetical 'original position' where free, rational and equal individuals would determine what justice looks like. Those in the original position would select how to determine rights and duties and on what basis resources would be allocated.¹⁸⁰ In order to ensure against self-interest, those in the original position would have no knowledge of any inherent advantages that were likely to increase an individual's share of the resource (such as her natural abilities or assets).¹⁸¹ On this basis, an agreement would

¹⁷⁹ Rawls, 1971.

¹⁸⁰ Rawls, 1971, pp. 11-12. Rawls described those asked to determine the rules for distribution as being in the 'original position' and that term will be used in this thesis in the same sense.

¹⁸¹ Rawls describes this as being 'behind the veil of ignorance' (Rawls, 1971, pp.136-137).

be reached about the way to distribute the resource that was based on a just reward for the effort put in and respected the equal opportunity each individual has to benefit from the resource and the legitimate expectations thereby created.¹⁸² If such ideals are applied to sport, then the constitutive rules of any sport should be based on what participants in Rawls' 'original position' would rationally agree on as a fair and just means to distribute the sporting rewards.¹⁸³ In other words, what constitutes valued inequalities and the rules that define how to 'fairly' distribute rewards accordingly (i.e. how to 'win') would need to be those rationally agreed upon by participants without knowledge of the level of their own or other's inherent abilities.

Where the inequality is clearly of no value, like the swimming suit example, it poses little difficulty; in such a 'soft' case all those in the original position would likely agree that rewards should not be influenced by who has the best swimsuit. Consequently, all would rationally agree that regulation is required to prevent, or compensate for, such an advantage.

A more difficult case is presented by endogenous testosterone and athletics. If we apply Rawls' original position, then it seems very likely that the just and fair distribution of rewards would be based primarily on ranking how well participants display naturally produced athletic attributes such as speed, power, stamina and spatial awareness; these being the primary attributes (the relevant inequalities) that the sport of athletics has always valued and measured. However, the effect of the Regulations seems to be to mark the demonstration of these attributes as unfair simply because they are derived from a particular, inherent, genetic pre-disposition. On the face of it, it seems that the very inequalities that are valued and measured (natural athletic performance) also appear irrelevant and unvalued at the same time. It also seems that inherent abilities, about which those in the original position would not know, *are* being compensated for.

¹⁸² This seems implicit in what Rawls says about fair equality of opportunity (Rawls, 1971, p. 84)

¹⁸³ To be clear, what those in the original position 'would rationally agree on' is taken to align with Loland's justification for accepting any social norms; that norms should be chosen that cannot be reasonably rejected as forming the basis for unforced, informed general agreement (Loland, 2002, p. 38).

Rawls does allow those in the original position to have knowledge of some *general* facts about the world and 'human society',¹⁸⁴ so it might be argued that any just and fair distribution of rewards would take into account the reality that science and society recognizes the distinction between men and women and that men have a physiological and athletic advantage over women. The consequent result being that segregation into male and female categories was a necessary starting point for distribution of sporting rewards. Although such an argument might seem initially compelling (since it reflects commonly held views about sexual status and expectations about how sport is typically administered) it seems to ignore the general fact that there *are* individuals who have DSDs.¹⁸⁵ Such a perspective, therefore, seems contradictory; it accepts as relevant the fact that there are men and women and yet not that there are some individuals who are 'other'. As already suggested,¹⁸⁶ viewing sexual status in a binary way reflects an imperfect *model* of reality and, as such, it is not clear why it should be accepted as a relevant general fact that those in the original position should have knowledge of. A binary model *might* be a useful one to adopt to ensure fair and just distribution, but it should not be a pre-condition to it.

It should also be pointed out that once there is recognition of the existence individuals with DSDs and of their equal moral worth, then it follows that such individuals would form part of the participants in Rawls' original position. Consequently, it seems unlikely that a just distribution of sporting rewards could be *predicated* on a binary model of sexual status that marginalizes their interests. In short, it is putting the cart before the horses to suggest that those in the original position would first accept the need for a male and female category in athletics.

To reiterate, the argument being advocated is not that a binary classification system should necessarily be rejected, since it may be perfectly rational and justifiable to apply it to athletics *as a means of achieving fairness*. However, it should be recognized as a means to an end and not accepted as a non-negotiable pre-condition before the rules for just distribution of rewards are made. This should be true of any sport.

¹⁸⁴ Rawls, 1971, p. 137-138.

¹⁸⁵ And do not, therefore, fit easily within a binary classification system.

¹⁸⁶ See p. 13.

If we consider fair equality of opportunity in sport from a perspective unclouded by a requirement to fit within a binary model of sexual status, then we are able to see a more fundamental question about which inequalities are fair or unfair. In this vein, Loland has suggested distinguishing between ‘dynamic inequalities’ and ‘stable inequalities’.¹⁸⁷ Dynamic inequalities are those that can be influenced by the participants after the rules for distribution have been agreed and would include the natural athletic attributes referred to above¹⁸⁸ and, perhaps, also such performance influencing factors such strategy, psychology, technique and diet. As, in theory, these are factors within the control of all participants, they do not need compensating for. By contrast, stable inequalities are inherent and cannot be influenced subsequently (such as genetic predispositions). Such stable inequalities may need compensating for if, as Loland puts it, they ‘significantly’ influence the distribution of the sporting rewards. It has been argued that this is necessary to ensure that those with similar talents have an equal opportunity of reward.¹⁸⁹

It seems that what is being advocating is that those in Rawls’ original position would agree that, whilst the genetic lottery should have some influence in the distribution of sporting rewards, its role should not be *too* influential. Therefore, if any genetic predisposition creates too great a performance advantage, then the means of distribution needs to take this into account. It is possible that the stable inequality might be one that provides an advantage across all sports or one that is sport specific¹⁹⁰ but it is important to stress that the emphasis is on the magnitude of the performance advantage being *too* great in any particular sport, *not* on the specific genetic origin of the advantage, which on its own appears irrelevant.

Of course, there would need to be an agreement about what constitutes ‘significant’ influence or what constitutes ‘too great’ a performance advantage. Accordingly, if those in the ‘original position’ are to agree to compensate for a stable inequality then they need to have sufficient information about the actual magnitude of advantage

¹⁸⁷ Loland, 2020, p. 588

¹⁸⁸ i.e. strength, speed, power, stamina and special awareness which can be improved through training.

¹⁸⁹ For example, see Anderson & Knox (Anderson and Knox, 2020, p. 595)

¹⁹⁰ Camporesi, 2019, p. 702

provided and also *something* objective to compare it against.¹⁹¹ Most obviously this might be another, similar stable inequality that is valued and *not* compensated for or, possibly, a similar inequality that is. Either way, it is suggested that it should have some reference to an existing value or norm of the sport.

Consequently, it is argued that if *a* genetic pre-disposition is to be compensated for, then to comply with the principle of fair equality of opportunity (in the ‘non-binary’ Rawlsian sense outlined above), both the actual magnitude of performance advantage *and* the relative magnitude of performance advantage (when compared against the advantage provided by other genetic pre-dispositions) needs to be known. Furthermore, if minimizing the effect of the genetic lottery provides a justification for compensating for genetic pre-dispositions, then it is arguable that all genetic pre-dispositions which provide an advantage of similar scale need compensating for as do combinations of genetic pre-dispositions.¹⁹² To compensate for one genetic pre-disposition but not another that provides a similar scale of advantage would seem to be contradictory and represent an arbitrary choice. Very simply, without such comparison it is very difficult to conclude rationally that like cases are being treated alike.

The issue of the magnitude of the advantage that testosterone produces will be returned to, but for now it is important to recognise that the IAAF do not appear to have considered (or investigated) evidence about the comparative advantage produced by having higher levels of testosterone as against any other genetic factors or combinations of them.¹⁹³ In this context one only has to consider Usain Bolt as a case that underlines the potential inconsistency. Both Semenya and Bolt dominated their respective athletic events for a substantial period of recent history, yet only in Semenya’s case has there been concern expressed about the genetic factors that

¹⁹¹ This is a similar idea to Rawls’ argument concerning the nature of ‘perfect’ procedural justice, where he argues that there is a fundamental requirement for an ‘independent criterion’ for what constitutes a fair division (Rawls, 1971, p. 85).

¹⁹² If the argument is based on the existence of a genetic lottery, then there it is conceivable that someone might win the lottery by having several different advantageous genetic pre-dispositions and there seems no reason why this would not also be within the ‘sights’ of those in the original position.

¹⁹³ Seemingly a point confirmed by Dr Bermon in *Semenya*, para. 346.

underpin her athletic performance. Whilst dynamic factors¹⁹⁴ were, of course, part of Usain Bolt's success, it would be difficult to maintain that his recent domination of sprinting was not due, in part, to natural genetic pre-dispositions (i.e., stable inequalities) he enjoys. It has been suggested that Bolt, like many other top sprinters, has the 'sprinting gene', meaning he may have particularly fast-twitch muscle reflexes and longer muscle fibers than most. In *Semenya*, Dr Williams suggested that 'ACTN3' gene was so important in events like sprinting that it would be impossible to compete without it.¹⁹⁵ Unlike a lot of sprinters, however, Bolt is 6ft 5 inches tall.¹⁹⁶ A combination of these genetic advantages almost certainly contributed to what makes him especially adept at sprinting. Yet there appears to have been no consideration of whether he had an unfair advantage from one, or indeed, a combination of these genetic factors or the size of advantage that such genetic factors might create. Furthermore, no compensatory regulations seem to be in place for dealing with other genetic pre-dispositions that are known to provide significant physiological and performance advantages, such as a defective EPOR gene.¹⁹⁷

Bolt's success seems to be ascribed to 'talent', with the incumbent suggestion of a 'positive' and fair advantage, whilst Ms Semenya's advantage is labelled unfair, yet it is difficult to see how those in the original position, at least on the argument put forward above, would agree that one genetic pre-disposition (or a combination of them) is valid and one not without comparison between the magnitude of performance advantage provided by each.

It is worth noting the submissions of Prof. Tucker in *Semenya* which analysed the margins of victory in various Olympic and World Championship track finals from 1983 – 2017. He found that the average margin between first and second place was between 0.57% and 0.60%. Six athletes were identified as having margins of victory large enough to be considered 'outliers', these included Usain Bolt (2.9%-3.42% margin of

¹⁹⁴ For example, factors such as dedication and training.

¹⁹⁵ *Semenya*, para. 149.

¹⁹⁶ Thomas, 2016, <<https://www.telegraph.co.uk/usain-bolt-worlds-fastest-man/0/built-for-speed-what-makes-usain-bolt-so-fast/>> Accessed 2/6/2019.

¹⁹⁷ A mutation in the EPOR gene can lead to a 30% increase in haemoglobin levels (Dr Williams in *Semenya*, para. 147). This is the condition that affected Finish cross-country skier Eero Mäntyranta and helped him win several Olympic medals.

victory in the 200m), Genezebe Debaba (2.6% in the 1500m), Michael Johnson (2.57% in the 400m) and Alison Felix (2.43% in the 200m) but not Ms Semenya, whose average margin of victory was only 1%.¹⁹⁸

Accordingly, without considering the influence of other genetic pre-dispositions as a basis for making an objective judgment about what is a fair advantage (or at least having some objective reference point for saying the advantage provided to athletes with relevant DSDs is too large), there would appear to be a dissonance between the Rawlsian sense of equal of opportunity that the notion of fair play seems to suggest and the sense of fair competition and equality of opportunity that the Regulations actually seem to embrace.

Furthermore, if what really matters is the relative magnitude of performance advantage, then it might be argued that *any* secondary factor (whether genetic or environmental), that results in too great a performance advantage needs compensating for. After all the unequal impact of access to resources, coaching, diet etc. are unarguably factors that impact athletic performance, yet are ones that do not appear to be compensated for in the distribution of rewards.¹⁹⁹ The theoretical distinction between genetic and environmental (or stable and dynamic) factors has already been outlined, but it is hard to see the *practical* difference between someone who gains an advantage due to a genetic factor and one who gains a similar advantage due to the fact they have had long-term access to the best diet, coaching and resources; both may have won the lottery.

Of course, even if the non-binary understanding of Rawlsian equality of opportunity advocated above is accepted, then the potential inconsistency of the Regulations might still be justified. For example, it might be pointed out that rationality has practical limits where resources are limited.²⁰⁰ An organization like the IAAF does not have the time or resources to consider the relative advantage provided by testosterone against other genetic or environmental factors; testosterone is the only 'apparent' problem so it should be dealt with. However, it is suggested that such an argument still requires a

¹⁹⁸ *Semenya*, para. 274.

¹⁹⁹ Krech, 2019, p. 69-70.

²⁰⁰ The idea of 'bounded rationality'.

rational justification of the belief that testosterone is the *only* apparent problem. It still requires sufficient certainty about the magnitude of performance advantage that endogenous testosterone produces and that the advantage is so large that those in the original position would have to agree it should be compensated for. The fundamental problem remains the same; a rational determination of what factors are fair or unfair necessarily requires *some* objective reference point against which performance advantages can be compared, even if it is not the impact of other genetic predispositions but by reference to something like historic margins of victory.

In summary, the writers view is that binary segregation by sex is *not* a pre-condition of sporting fairness, and as such it is argued that the Regulations can only be justified as contributing towards fair competition (and therefore furthering the aim of fair play) if there is sufficiently clear evidence about both the actual magnitude of advantage that endogenous testosterone provides to those individuals with relevant DSDs *and* that such advantage is relatively too large by reference to some objective measure.

If one rejects the argument put forward above (and is wedded to binary segregation as a precondition to the distribution of sporting rewards), it is still argued that those in Rawls' original position cannot ignore the reality that some individuals do have a DSD. Therefore, a decision about whether to compensate for any performance advantages associated with DSDs still requires sufficiently compelling evidence that those individuals have the same advantage as typical males *or* have a disproportionately large advantage compared to some objective reference point (such as other genetic advantages enjoyed by other females or margins of victory). Either way, it is argued that any rational justification for the Regulations as furthering fair play requires sufficient clarity of evidence about the magnitude of performance advantage.

Evidence about the magnitude of advantage that testosterone provides

The IAAF's primary evidence concerning the quantification of performance advantage provided to athletes with relevant DSDs are found in three papers. One is a paper by Handelsman, which reviews previous studies on the effects of endogenous testosterone.²⁰¹ The second and third are the Bermon Studies which use performance

²⁰¹ Handelsman et al., 2018.

data from the Daegu and Moscow IAAF World Championships together with the medical records of the athletes participating to provide a relational analysis of ‘free’ testosterone levels and athletic performance.²⁰² All the papers have been subjected to significant criticism. Indeed, the 2018 Berman study was actually published in response to criticism of the 2017 study and to account for various, acknowledged, problems with the underlying data.²⁰³ However, the 2018 study did not alleviate all concerns and there are still those that argue the central planks of the IAAF’s evidence are scientifically flawed, both in terms of what they are capable of showing (only correlation not cause) and in terms of the methodology lacking the level of integrity required of a scientific study.²⁰⁴ Such views were re-iterated and expanded on in *Semenya*.

Due to their importance as a basis for the IAAF’s belief that the Regulations were a necessary means to further fair competition, it is important to provide an overview of key criticisms.

The Handelsman paper

Perhaps the most important is the fact that the Handelsman paper provides very little empirical evidence about the actual performance advantage that testosterone gives athletes with relevant DSDs²⁰⁵ and, instead, relies on the theory that endogenous testosterone would work in exactly the same way in individuals with relevant DSDs as it does in typical men so that those who have been exposed to ‘male’ levels of testosterone since puberty have the exactly the same physiological advantages that typical males have over those the IAAF sees as athletic females. The importance of this assumption to the IAAF’s position is made clear in *Semenya* by repeated suggestions

²⁰² That these form the primary evidence of performance advantage is clear from DSD Regulations themselves (DSD Regulations, 2019, p. 1) and from the evidence given in *Semenya*.

²⁰³ For example, see Pielke et al., 2019, pp. 3-6.

²⁰⁴ For example, Franklin et al., 2018; Karkazis et al., 2017, pp. 126-127; Pielke et al., 2019, pp. 7-8.

²⁰⁵ The only studies that seem to refer directly to athletic performance of athletes with relevant DSDs are the Berman Studies, which, as will be discussed, demonstrate, at best, a small (2-3%) performance advantage in a handful of events and another paper by Bermond (Bermond, 2017 (2)), which suggested an average 5.7 % decrease in performance of elite athletes with relevant DSDs who had been required to undertake testosterone suppression treatment (although the study related to only three athletes one of whom (that can only be Caster Semenya) is highlighted as an example of the effects of suppression medication on performance in competition). A lack of direct evidence on this point was highlighted by Prof Bohning in *Semenya* (*Semenya*, para. 171).

that those with relevant DSDs (other than, perhaps, PAIS) are 'biologically identical' to men 'in all relevant respects'.²⁰⁶ The paper also assumes that the physiological advantages enjoyed by athletes with relevant DSDs translates directly into the 10-12% 'male' performance advantage so that the performance advantages enjoyed are 'indistinguishable from the advantages derived by male athletes'.²⁰⁷

In *Semenya* Prof. Handelsman referred to the 'striking correlation' between rising testosterone in males after puberty and increased athletic performance when compared to females. In his view the only plausible explanation is that one is the cause of the other or there is another unknown variable that causes both.²⁰⁸ Yet this seems to ignore the possibility of another variable contributing *alongside* testosterone to produce the male performance advantage and in doing so seems to imply that testosterone *is the* cause (despite acknowledging that it is not). That the impact of another variable has been discounted without further research seems rationally questionable for a number of reasons.

First, in one study relied on in the Handelsman paper (and in *Semenya*), there is evidence of a positive correlation between another androgen (DHT) and athletic performance (Eklund et al., 2017).²⁰⁹ A possible role for DHT in contributing to physiological advantages has also been observed in four other studies (Prof. Hackney, *Semenya*).²¹⁰ Indeed DHT was described as a 'more potent' metabolite of testosterone in the Handelsman paper.²¹¹ The possible role of DHT was also raised in *Semenya* by Professors Holt, Gomez-Lobo, Dr Williams and Prof. Dave. Although there is clearly limited empirical research on the role of DHT in athletic performance advantage (as seemingly there is with testosterone), there appears to be some evidence which suggests a degree of influence alongside testosterone and, as such, seems a factor which, rationally, needs further explanation. DHT, after all, is clearly a hormone that the IAAF recognizes as having performance enhancing capabilities since it is designated

²⁰⁶ *Semenya*, para. 289

²⁰⁷ *Semenya*, para. 296.

²⁰⁸ *Semenya*, para. 357.

²⁰⁹ A study which did identify *no* positive correlation between levels of testosterone and athletic performance.

²¹⁰ *Semenya*, para. 166.

²¹¹ Handelsman et al., 2018, p. 4

as a prohibitive substance on the WADA list.²¹² Furthermore, it was suggested in *Semenya* (Professor Holt, Dr Gomez-Lobo, Professor Hackney, and Prof. Dave) that one reason why fully androgen sensitive women with relevant DSDs are not ‘biologically identical in all relevant respects’²¹³ to males was that women with some relevant DSDs cannot convert testosterone to DHT, a point acknowledged by professor Handelsman.²¹⁴ Accordingly, the possibility that some other factor, such as DHT, may contribute to the male athletic advantage seems plausible. Nor is DHT the only possibility. For example, suggestions were also made about roles of other biological factors such as growth hormone and the Y chromosome itself. What is, arguably, significant is that, in *Semenya*, Prof. Handelsman pointed out that there was very little evidence to support speculative theories about the role of growth hormone or the Y chromosome, but no such response was made in relation to DHT.

Second, the assumption that endogenous testosterone has the same androgenizing effect in all legal females with a relevant DSD and the consequential assumption that it has the same effect in *individuals* with different DSDs seems at least questionable in light of existence of PAIS²¹⁵ and the suggestions of the variable impact of particular DSDs on particular individuals. This was a point emphasized by Dr Gomez-Lobo who stated that androgens are unlikely to have the same virilising effect in those with DSDs as they do in males or transgender women and nor are they likely to have the same effect in individuals with the same DSD.²¹⁶ Whilst the individualized effect of PAIS is recognized in the Handelsman Paper²¹⁷ and identified as a difficulty, it does not acknowledge Dr Gomez-Lobo’s point that this individualized effect may well be present in relation to other complex DSD conditions such as 5-ARD, which can result in a ‘significant difference in phenotype’ between individuals.²¹⁸ This was not a point addressed by Professor Handelsman in his paper or in evidence before the CAS.

²¹² WADA, prohibited list, p. 5 <[2021list_en.pdf \(wada-ama.org\)](#)> Accessed 26/07/2021.

²¹³ *Semenya*, para. 289.

²¹⁴ In fact, Dr Gomez-Lobo highlighted that one way of testing for 5-ARD (one of the relevant DSDs and the one that Miss Semenya has) is measuring the ratio of testosterone to DHT (*Semenya*, para. 180).

²¹⁵ PAIS refers to ‘partial androgen insensitivity syndrome’ and is a condition where the androgen receptors can make use of some circulating androgens, but not all.

²¹⁶ *Semenya*, paras.179-183.

²¹⁷ Handelsman, 2018, p. 11.

²¹⁸ *Semenya*, paras.185.

Third, the possibility of a factor other than testosterone contributing to the male advantage seems reinforced by the (limited) extent of the IAAF's evidence on the actual performance advantage afforded by testosterone, since it does not suggest that athletes with relevant DSDs actually benefit from the 10-12% 'male' advantage. At their highest, the results from the Bermon studies suggested a performance advantage of between 2-3% in only a handful of events. The reason for this discrepancy was explained in the Bermon 2018 as being due to the design of the paper;²¹⁹ all the study could do was to provide a basis from which to make an inference that some athletes with DSDs and typically male levels of testosterone have more like a 10-12% advantage. The Bermon 2018 paper went on to suggest that the 10-12% performance advantage would be 'established' by the Handelsman paper.²²⁰ However, the Handelsman paper, as discussed above, does not seem to do this; the only evidence of actual athletic performance advantage in androgen sensitive women with high levels of testosterone is provided by the Bermon studies and an additional study by Dr Bermon of athletes whose testosterone levels were suppressed by medication (Bermon, 2017 (2)); a study which Professor Bohning pointed out had a 'statistically insignificant' sample size and lacked a control group.²²¹

Nor does the historic evidence about Ms Semenya's typical margin of victory suggest that she actually enjoys an advantage of 10-12%. Although Prof. Handelsman did not deal with this point directly in *Semenya*, the IAAF suggested that the only reason that a DSD athlete has not run male times is because they have not been 'good' enough,²²² whilst Dr Bermon seems to have inferred that they might run deliberately slowly.²²³ However, a view which suggests athletes with DSDs can run 10-12% faster if they are 'good', seems to accept the very premise that ought to be proved with evidence (i.e. that they do). Furthermore, it seems to place the risk of any uncertainty in the science

²¹⁹ Since the study compared tertiles and did not focus on the advantage of 'outlying' athletes with male levels of circulating testosterone, it would not have been expected to demonstrate a 10-12% advantage (Bermon et al., 2018, p. 1532).

²²⁰ Bermon et al., 2018, p. 1532.

²²¹ The lack of control group meant that it could not discount for the impact of other variables including the side effects of the medication (which, as mentioned already was acknowledged by the IAAF's medical experts as being something that would be subject dependent) (Professor Bohning, *Semenya*, para. 171).

²²² *Semenya*, para. 289.

²²³ The was seemingly alleged by Ms Semenya (*Semenya*, para. 19).

on the individual athlete²²⁴ and require the athlete prove that they *can't* run 10-12% faster.

Fourth, the Bermon studies suggests that there is no positive correlation between testosterone and performance in men. If the Handelsman paper is correct and testosterone works in the same way in athletes with relevant DSDs as it does in men and there are large differences in testosterone levels in men,²²⁵ then that there are *no* observed performance advantages in male athletics seems to raise the possibility of a contradiction.

There are other criticisms about the methodology of the Handelsman paper, including failing to consider papers that showed no correlation between testosterone and ergogenic/athletic performance. There have also been concerns expressed about the independence of the author as a paid consultant to the IAAF and as a result of the draft version of the paper acknowledging input from the IAAF's legal representatives.²²⁶

The Bermon studies

As the only sizeable study on the relationship between endogenous testosterone and actual athletic performance in female athletes, the Bermon studies are central to the evidence presented about the magnitude of advantage. The Bermon studies are observational studies considering the correlation of performance between three categories of athlete for each athletic event; those with the highest and lowest levels of testosterone and those with average levels.²²⁷

Taken at face value, the 2018 Bermon paper suggests that there was a positive correlation between testosterone levels in female and athletic performance in four events; the 400m (2.1% increased performance between lowest and highest tertile), 400 m hurdles (2.9%), 800 m (2.1%) and the hammer throw (7.35%).²²⁸ The 2017 paper

²²⁴ A point also recognised by Krech (Krech, 2019, p. 71)

²²⁵ The Handelsman paper recognises the normal male range of testosterone as being between 7.7 and 29.4 nmol/L (Handelsman et al., 2018).

²²⁶ An observation made by Prof. Pielke (*Semenya*, para. 134).

²²⁷ The focus of the analysis being on the performance of those in the highest and lowest 'tertiles'.

²²⁸ Bermon, 2018, p. 1531.

also identified the Pole Vault (2.9%).²²⁹ However, the studies also suggest that there were several events in which there was zero advantage for athletes in the highest tertile over those in the lowest, and even some which suggested a negative correlation (i.e. where higher testosterone appeared to be a disadvantage).²³⁰

Despite the acknowledgement in Bermon 2018 of some 220 data errors in the earlier paper²³¹ and the revisions made, there remain some significant criticisms of the conclusions and the underlying data. In particular, Pielke et al. sought to recreate the analysis of Bermon 2018 having removed the 220 problematic data points, and observed that the corrected data suggests: (1) that the low tertile of athletes was faster in more events than the high tertile (6 of 11) (2) in relation to the events covered by the DSD regulations, only one event met the study's own threshold for statistical significance; (3) the performance advantage decreased for three of the 4 events covered by the DSD Regulations (400m from 2.1% to 1.5%; 800m from 2.1% to 1.6%, 1500m from 0.8% to 0.5%) with only the 400m hurdles being revised upwards (2.9% to 3.1%) (4) in the 100m, the advantage of the low tertile of athletes was greater than any other of the observed advantages in the track events (3.4%).²³² Furthermore, the Pielke study thought it likely that were additional errors in the underlying data (Pielke et al., 2019) a view that was re-asserted in *Semenya* when further data was provided.²³³ Professor Bohning also sought to use the underlying data to conduct both a re-creation of the correlation analysis and a regression analysis. His results suggested, at best, a borderline statistical significance in three events (400m hurdles, 800m and the hammer throw) which suggested a 'very minor' correlation between testosterone and performance.²³⁴

Accordingly, at best, the Bermon studies suggest a possible average advantage in the region of 2.1%-2.9% in 4 of the 5 events currently regulated. If Pielke et al are correct,

²²⁹ Bermon and Garnier, 2017, p. 3.

²³⁰ For examples see Bermon and Garnier, 2017, p. 4.

²³¹ Representing an error rate of almost a third for some events (Pielke et al., 2019, p. 5).

²³² Pielke et al., 2019, pp. 6-7.

²³³ Professor Pielke thought once this data was corrected the average performance advantage in the 800m reduced from 1.7% to 1.2% (*Semenya*, para. 136).

²³⁴ *Semenya*, para. 176.

then the possible average advantage is in the range of 1.5%-2.1% for events other than the 400m hurdles (3.1%).

As alluded to, one important question raised by the Bermon studies relates to the impact of testosterone levels on male performance. The study concluded that there is no positive correlation between testosterone and performance advantage in elite male athletes across any events.²³⁵ Since any justification for the magnitude of performance advantage being greater than that suggested by the Bermon studies is largely based on the observance of a dose response relationship between testosterone and increased physiological advantages it creates in men,²³⁶ the fact Bermon 2017 suggests *no* correlation between increased testosterone and athletic performance in men seems extremely surprising. Given the large variation in average male testosterone levels (7.7 nmol/L – 29.4 nmol/L),²³⁷ we might expect some positive correlation, particularly in events where the physiological advantages suggested in the Handelsman paper may be most useful. Alternatively, we may have expected some observations about the number of athletes with higher testosterone in certain events since such observations are made in relation to athletes with relevant DSDs in the Explanatory Notes and in *Semenya*.²³⁸ No explanation seems to have been given for this. Perhaps male athletes with high levels of testosterone were also not ‘good’ enough. At the very least, from a rational perspective, we might expect that further research would be seen as necessary to justify a conclusion that testosterone is the only relevant factor in male performance advantage. However, this does not appear to have happened.

There is also strong criticism of the methodology and robustness of the Bermon studies, including criticisms about the choice and use of tertiles being statistically inappropriate,²³⁹ the inability of other scientists to reproduce and test the results due problems of accessing the data.²⁴⁰ There was criticism of the lack of uniformity in the

²³⁵ Bermon and Garnier, 2017, p. 6

²³⁶ Auchus, 2018, p. 131; Handelsman et al., 2018, p.15.

²³⁷ Handelsman et al., 2018.

²³⁸ For example, see Explanatory Notes, p. 3.

²³⁹ Franklin et al., 2018; Menier, 2018. In *Semenya*, Prof. Holt and Prof. Bohning also criticised the statistical analysis in *Semenya*.

²⁴⁰ Pielke et al., 2019. In fact, it seems that when the IAAF did provide more of the underlying data in the context of *Semenya*, professor Pielke was unable to reproduce almost one third of the results (*Semenya*, at para. 137).

sampling procedure given the number of variables (such as time of day when samples were taken) that can influence levels.²⁴¹ From an ethical perspective, there was also concern about whether athletes had given effective consent for the use of their data in the study²⁴² and also about the independence of Dr Bermon, who acknowledged a conflict of interest given his employment with the IAAF²⁴³ and his involvement in the development of the Regulations.²⁴⁴

Although several of the responses that were given to these criticisms in *Semenya* seem to demonstrate acceptably rational choices in the design and implementation of the study (for example the choice to measure free testosterone), there are some responses that seem less convincing. In particular, the suggestion that variation in individual testosterone levels due to the time when a sample was taken would have had negligible impact, without evidence to support this beyond an assertion that it would even itself out. The problems associated with data not being available to other scientists, an inability for other scientists to recreate the results and the ethical concerns about consent also seem to linger.

From the perspective of someone who does not have scientific expertise it is difficult to reach conclusions about which of the experts' views are to be preferred on several matters, however it would seem to this non-expert writer that the responses to the criticisms are often no more rationally justifiable than the criticisms themselves; which perhaps just highlights the uncertainty of the current science.

Magnitude of advantage - summary

There seems to be a strong and relatively undisputed scientific basis for believing that testosterone plays a significant role, through and after puberty, in physiological development and the performance 'advantages' that typical men have over typical women. By contrast, it is argued there still appears to be a significant degree of

²⁴¹ Prof. Dave (*Semenya*, para. 247-248).

²⁴² Prof. Blockman, *Semenya*. This point will be picked up when considering the consequences of the Regulations on Human Rights (*Semenya*, para. 243).

²⁴³ As director of its science and health department.

²⁴⁴ *Semenya*, para 346.

scientific *uncertainty* surrounding the quantification of performance advantage enjoyed by legal females with relevant DSDs. In particular, there appears to be significant differences in expert opinion about whether endogenous testosterone impacts the physiological development of women with relevant DSDs differently to typical men, how increased testosterone might impact individual with DSDs differently, whether DHT might play a role in performance advantage and whether and how any resultant physiological advantages actually influence athletic performance in both men and women.

Professor Handelsman rightly pointed out in *Semenya* that necessary evidence might be virtually impossible to obtain as it would require administering large doses of testosterone to elite athletes. However, it does not follow that such evidence that there is becomes a conclusive or sufficient reason to justify a belief that the Regulations would achieve fair competition. The magnitude of performance advantage which elevated levels of testosterone actually provide athletes with relevant DSDs seems very much an issue on which opinions may (and do) legitimately differ in absence of better evidence.²⁴⁵ The question is where scientific opinions may legitimately differ, does this provide a justifiable basis for believing the Regulations will ensure equality of sporting opportunity? One view (seemingly held by the IAAF) is that it does. The opposing view is that such a belief involves ignoring conventional scientific norms relating to integrity.²⁴⁶

It was the paucity of scientific evidence concerning the magnitude of actual performance advantage that caused the Hyperandrogenism Regulations to be suspended in *Chand* and yet that uncertainty does not seem to have gone away.²⁴⁷ The Handelsman paper still does not demonstrate that athletes with relevant DSDs have the same advantage as typical men, just theorizes that they do. The Bermon papers do

²⁴⁵ A point that the CAS panel also recognizes (*Semenya*, para. 469).

²⁴⁶ Pielke et al., 2019, pp. 7-9

²⁴⁷ In fact, the CAS panel in *Semenya* recognized that the evidence on the magnitude of advantage is still relatively weak (*Semenya*, para. 582).

not demonstrate this either, nor do they demonstrate that the magnitude of advantage is disproportionately large.²⁴⁸

That the DSD Regulations were introduced despite these underlying evidential problems perhaps explains why the choice of events to which they apply seems to have little rational basis. For example, given the evidence of performance advantage provided by the Bermon studies, the Regulations seem to both regulate events that showed no statistically significant performance advantage (1500m, 1 mile) and yet do not regulate events that do (pole vault, hammer throw). There is little explanation for this in the DSD Regulations or the Explanatory Notes other than observations about the over-representation of athletes with relevant DSDs in the regulated events. The issue was touched on in *Semenya*, where appeal was made to the idea that DSD athletes are likely to benefit from bigger performance advantages in some events because of the nature of those events (the combination of attributes is such that they utilize the physiological advantages that increased testosterone may give).²⁴⁹ For example, Dr Bermon explained why testosterone is unlikely to provide an advantage in long distance running, due to the contrary effect of increased body mass.²⁵⁰ However, such reasoning does not explain why power events such as the sprints, jumping and throwing are not included when the benefits in muscle size and strength would not be removed. The exclusion of the hammer and the pole vault seems particularly contradictory given the suggestion in Bermon 2017 that those events rely the most on spatial awareness and that androgens may also play a role in spatial awareness (as well as power), indicating an even greater role for testosterone influencing the performance advantage in such events.²⁵¹ Accordingly, the Regulations neither apply to all events where the male physiological advantage would, theoretically, seem likely to provide a significant advantage nor only to the events where there is some empirical evidence of actual performance advantage. Given these observations it is hard to see any kind of

²⁴⁸ As argued already, even if fairness in athletics is built upon a binary segregation as a pre-condition, then there still needs to be evidence that athletes with relevant DSDs have the same advantage as men **or** that the advantage they do enjoy is disproportionately large when considered against some objective measure such as another genetic pre-disposition (that is valued and permitted) or by reference to margins of victory.

²⁴⁹ IAAF submissions in *Semenya*, *Semenya*, para. 301.

²⁵⁰ *Semenya*, para. 339.

²⁵¹ Bermon 2017, p. 5

objective or rational basis for selecting the events in which the advantage of endogenous testosterone is or is not compensated for.

The IAAF refers to a ‘very broad’ scientific consensus²⁵² but for reasons highlighted above, that would seem to somewhat overstate the position. Given the gaps and inconsistencies within the scientific evidence on which the IAAF relies, some doubt must be cast on the IAAFs belief that the Regulations can rationally further the goal of ensuring equality of opportunity or its constitutional purpose of ensuring fair play.

Relative magnitude of performance advantage

As already suggested, if there is an absence of evidence that athletes with relevant DSDs actually do have the same advantage as typical men (10-12%), then it still seems possible that the Regulations could be justified if the size of advantage actually enjoyed is disproportionately large.

Accordingly, even if the evidence provided by the Bermon studies is accepted, then it remains to be shown that the suggested 2.1-2.9% advantage is *too* large, which, it has been argued, requires a comparison against *some* objective measure. The most rational comparison would be against other ‘stable’ genetic factors that influence performance, but which are valued and deemed ‘acceptable’. However, such comparisons do not appear to have been attempted.

An alternative might be to compare the size of advantage against typical margins of victory. In *Semenya*, Dr Bermon does appear to do this by referring to the difference in performance between first and fourth (1.5%) and first and last (3.7%) in the 800m at the 2016 Olympics and the potential magnitude of advantage that a relevant DSD athlete *might* have.²⁵³ This observation is raised in the context of Dr Bermon’s study of four relevant DSD athletes whose testosterone had been suppressed (Bermon, 2017), the purpose of which seems to be to demonstrate that the magnitude of the advantage for such athletes would be ‘unfair’ since it elevates athletes who would otherwise not be reaching finals to winning. However, evidence from that study should be treated

²⁵² For example, see the IAAF’s submissions in *Semenya* (*Semenya*, para. 304).

²⁵³ *Semenya*, para. 325

with caution given the criticisms already identified.²⁵⁴ Furthermore, if Bermon 2018 is taken as the indicator of actual performance advantage, then 2.1-3.1% seems broadly comparable to the margins of victory identified by Dr Bermon in *Semenya*. This might suggest that an athlete with a relevant DSD could be ‘elevated’ from the middle of the pack runner to one who is likely to win. However, it does not seem to suggest that the outcome is a foregone conclusion or that the advantage is so large that those in the ‘original position’ would necessarily agree to discount it. What is more, those in the original position would surely have to have some knowledge of typical margins of victory across athletics events to be able to deem 2.1%-3.1% too large. Little evidence has been provided about historic margins of victory by the IAAF. Some evidence about historic margins of victory was provided by Prof. Tucker in *Semenya*, but, as has been noted, this suggests Ms Semenya’s margins of victory in the 800m were not outliers.²⁵⁵

The lack of evidence about the relative magnitude of advantage provides a further reason for scepticism about the justification for a belief that the Regulations are a rational means to ensure fair play since it appears to require adopting a strained, subjective and inconsistent meaning of fair competition and equality of sporting opportunity; one that appears at odds with the ‘Rawlsian sense’ of fairness and justice that has been advocated as central to the notion of sporting fairness.²⁵⁶

Given the importance of the scientific evidence, it should be acknowledged that if the scientific evidence becomes clearer (or if one is minded to accept the IAAF’s evidence as sufficient despite the concerns identified), then the conception of fair competition achieved by the Regulations may appear to resonate better with the conception of fair play in the IAAF’s constitution.

²⁵⁴ The very small sample size and the failure to take account of other variables (such as the side-effects of any medication).

²⁵⁵ The 800m is used as an example of the sort of event where, according to the IAAF’s evidence, athletes with relevant DSDs would be expected to perform the best and margins of victory would, therefore, be expected to be greatest.

²⁵⁶ It should be highlighted that, regardless of whether a ‘Rawlsian’ sense of fairness is premised on a binary sexual classification as a pre-condition for the distribution of sporting rewards, the reasons for skepticism that arise from the uncertainty of the scientific evidence remain the same since it is surely still necessary to establish with sufficient scientific certainty that women with a relevant DSD actually do have a disproportionately large advantage over those the IAAF view as athletically female.

Accordingly, it seems appropriate to consider this possibility and, therefore, to analyse how well the Regulations would further the purpose of ensuring fair play on the assumption that evidence of a disproportionately large advantage was clear. This requires an evaluation of the impacts of the Regulations against the characteristics and ideals that fair play encapsulates and, also, of just how suitable the method of compensation (exclusion or medication) is to ensuring fair play.

The Regulations and virtuous characteristics

The question here is whether the Regulations can be said to embrace or encourage the characteristics and values that have been suggested as central to the notion of fair play, which include respecting the rights, interests and equality of all those engaged in the sport and the value in producing one's best, rather than winning.

This presents a significant problem when the impacts on athletes with relevant DSDs are considered. Such impacts are potentially numerous, including implications for the athletes physical and mental health as well as for the exercise of the individual's legal rights and freedoms.

Impacts of the Regulations

In *Semenya*, the CAS was presented with evidence about the actual and potential physiological effects of requiring elite athletes to medicate to enable them to compete, evidence which suggested potentially severe and unpredictable side effects even where suppression was through oral contraceptives. Although the IAAF medical experts pointed to the relative safety and common use of oral contraceptives amongst the general population,²⁵⁷ it was also acknowledged that effects (and side-effects) are personal and that the IAAF had little evidence about the effects on elite athletes or women with a relevant DSD.²⁵⁸ Consequently, for some individuals it seems quite possible that the effect of medication could go beyond simply *compensating* for any

²⁵⁷ Oral contraceptives seemingly being as the most likely and safest means of athletes suppressing their natural Testosterone.

²⁵⁸ *Semenya*, para. 593.

performance advantage and the side-effects could even increase the risk of serious general health conditions such as stroke, high blood pressure, liver dysfunction and tumors.²⁵⁹ In considering the evidence, the CAS panel accepted the reality of the possible impacts on individual athletes and noted the lack of specific evidence that the IAAF provided on this point. Consequently, the concern is that the IAAF have implemented the Regulations despite a significant element of uncertainty about the effects of medication on individual athletes, suggesting an approach that might have undervalued the concerns, interests and health of those most affected.

The CAS was also presented with evidence of the psychological harm likely to be caused by the procedures required to enforce the Regulations and the consequences of being required to take medication. Harms arising from the need for athletes to undergo intimate, intrusive medical examinations, from the likely public nature of any investigation and from the reality of being labelled as having a DSD were all accepted by the CAS,²⁶⁰ but other causes of psychological harm (or the extent of those harms) were not acknowledged. Intuitively, the psychological harm arising from being told that your own understanding of your sexual identity is wrong (or even having that questioned), seems likely to be fairly severe.²⁶¹ This seems true even if, such labelling is only in the context of athletics given that athletics will almost certainly be of central importance to that individual's sense of identity. Similarly, it seems intuitive that there would be significant psychological harm resulting from being forced to take medication, from the prospect of having one's means of economic subsistence taken away and from the inevitable feelings of discrimination and victimization.

Whilst it might be argued that an athlete is acting freely in choosing to medicate and to continue to participate, the meaning of 'free choice' that this entails seems pretty thin; essentially coming down to a choice between taking medication and accepting the possibility of significant side-effects (and a potentially significant reduction in athletic performance)²⁶² or not competing. It is arguable that the Regulations blur the

²⁵⁹ Prof. Dave and Dr Gomez-Lobo in *Semenya* (para. 251 & 184 respectively).

²⁶⁰ *Semenya*, para. 601 & 602.

²⁶¹ Dr. Mitra in *Semenya* (para. 192).

²⁶² That, as has been suggested, may go beyond simply compensating for any advantage.

line between consent and coercion in this regard.²⁶³ It should be remembered the potential impacts result from the implementation of the Regulations on athletes to whom there can be no moral blame attached;²⁶⁴ they are just being themselves.

In addition to the physical and mental impacts, there is also the question of the infringement of legal rights associated with such harm. Considerations around whether such infringements are lawful will be returned to, but it is important to recognize that there are several fundamental human rights which are, *prima facie*, likely to be infringed by the Regulations. In particular, rights securing dignity, privacy and the expression of personality all seem inevitably impacted.²⁶⁵

Once all of these possible impacts are considered it becomes more difficult to justify a position that the Regulations embrace the characteristics and values of fair play that have been articulated.

One counterpoint might be that the attitude required by informal fair play requires a respect for the 'interests' of the sport, either in terms of ensuring 'good' competitions or in terms of the continued existence of the sport. In other words, although the Regulations do not provide for equal opportunity for all but that is perfectly justifiable since they provide equal opportunity for the majority and also help ensure close and meaningful competitions, thereby maximizing the preference satisfaction of all the parties engaged in athletics.²⁶⁶ Athletes with relevant DSDs clearly do not have their preferences satisfied, but norms required by informal fair play mean they ought to accept the Regulations because they are in the 'interests of the sport'.

These observations reveal a possible tension within the concept of fair play; between fairness and justice (and the rights of individuals) and the 'interests' of the game. Although not dealing directly with this problem, Loland observes that norms of informal fair play only arise *as a result* of voluntarily entering into a rule governed practice and, therefore, within the non-consequentialist framework of what is

²⁶³ A point made Kyle Knight, one of the experts appearing on behalf of Ms Semenya before the CAS (Semenya, para. 202).

²⁶⁴ A point emphasised by the CAS panel (Semenya, para. 468).

²⁶⁵ Krech, 2019, 74-75.

²⁶⁶ For example, Loland argues that ensuring good competitions ought to be part of the normative work of the concept of fair play (Loland, 2002, p. 107, p. 110)

'right'.²⁶⁷ This would tend to suggest, when considering how to act in accordance with fair play, priority should be given to considerations of what is 'right' over what is 'good'. It is arguable, therefore, that if the IAAF wants to ensure and promote fair play it ought to prioritize individual rights over the interests of the game where they conflict.²⁶⁸ Indeed, such an approach seems to be embedded in the in the IAAF's constitution, which situates fair play *within* its purpose of respecting individual rights of participation. Yet, from the brief survey of the potential harms caused by the Regulations, this does not appear to be the approach taken.

Accordingly, even if current strained and inconsistent conception of fair competition that the Regulations seem to entail is ignored, the impacts of the Regulations on individual athletes also seems out of kilter with general norms of fair play and suggests some level of dissonance between the Regulations and the purpose of ensuring 'fair play' set out in the IAAF's constitution.

Was exclusion or medication necessary to further the aim of fair play?

As has been advocated, this thesis assumes that the strength of an instrumental reason to take a means is relative to how well the means achieves the end. If there are alternative means that better achieve the end, then there is a stronger reason to take the alternative means. Given the potential harms caused to individuals with relevant DSDs, a solution that reduces those harms and resonates better with the norms of fair play would seem like a more rational solution. If the IAAF believes that the scientific evidence is sufficient to quantify the magnitude of advantage then why not compensate by having categories based on testosterone or by using a handicap system (for example, by reference to time or distance)?²⁶⁹ This might not alleviate all of the harms caused by identifying athletes with relevant DSDs, but it would *at least* remove the potential harms caused by requiring athletes to take medication and reduce the possibility of over-compensating. Such solutions, arguably, pay more respect to notions

²⁶⁷ Loland, 2002, p. 39.

²⁶⁸ At least when there is no threat to the ongoing existence of the sport.

²⁶⁹ Camporesi refers to 'external modifications', which I take to incorporate similar ideas (Camporesi, 2019, p. 703).

of justice, fairness, equality and individual autonomy. Unfortunately, whether the IAAF did, in fact, consider other solutions is not made clear in *Semenya*, nor from the Regulations, the Explanatory Notes or any other information published by the IAAF. This lack of transparency leaves obvious questions about what other reasons and motivations might have been influential. For example, if the prospect of handicapping is a non-starter, why? Speculatively, the possibility of staggered starts or re-calculated finishes/placings might be seen as contrary to the 'interests of the sport', but it is not immediately obvious why, especially since the IAAF already embraces a similar idea in the final events of the heptathlon and decathlon. With regard to both classifying by testosterone and handicapping, are they viewed as unsuitable means simply because they threaten the male/female segregation of athletics? If so, it seems to reveal segregation as an unchangeable starting point, yet, as already argued, it is not clear why it should be.

Regardless, a belief that the solution adopted by the Regulations were the necessary or only means of achieving fair competition seems irrational and unjustified since other suitable means that might better achieve that end do not appear to have been considered.

Furthering fair play - summary

It has been argued that in light of the Rawlsian sense of equality of sporting opportunity articulated above, the Regulations seem to adopt a conception of 'fair competition' which is at odds with the basic ideals that underpin a just distribution of sporting rewards. This is true even if one accepts a binary model of sexual status as a starting point. Such a conception might have been avoided had the scientific evidence been clear in showing that the performance advantage enjoyed by athletes with relevant DSDs was as large as that enjoyed by typical males or disproportionately large by reference to some rational, objective reference point. However, the science seems far from clear and there remain legitimate concerns over the IAAF's evidence, which seems to paper over some significant gaps and issues of scientific integrity. To borrow a

phrase, 'the numbers matter'²⁷⁰, but the problems with the numbers seem to have been papered over.

At present, in order to view ensuring 'fair competition' as an objective and instrumentally valid reason at all, it seems necessary for the IAAF to hold two contrasting beliefs about the meaning of equality of opportunity in athletics (between the meaning achieved by the Regulations and the meaning seemingly intended as part of its constitutional purpose of ensuring fair play) and, given the selection of events to which they apply, seemingly between different events within athletics.

Even if the concern about the conception of 'fair competition' embraced by the Regulations is ignored, it is far from clear that the Regulations would appreciably further the IAAF's constitutional purpose of ensuring fair play, which, it has been argued, also embraces wider values and characteristics that are not reflected by the Regulations. The lack of consideration of other suitable means that might better achieve the end seems particularly irrational in this regard.

Furthermore, it should be emphasised that the IAAF's constitutional purpose of ensuring fair play is not sex or gender specific; it is to ensure fair play for all participants. That the IAAF have not investigated potential unfairness in male athletics any further before creating regulations compensating for the advantage that testosterone provides) seems rationally questionable and evidence of the IAAF's failure to recognise its ultimate, constitutional purpose. If the assumption is that endogenous testosterone works the same way in everyone, then given the wide range of 'normal' endogenous testosterone present in men (7.7n/mol – 29.4nmol/L)²⁷¹ it would seem to follow that it would be potentially unfair for a male athlete with a testosterone level of 7.7nmol/L to compete against a male athlete with a testosterone level of 29.4 nmol/L. Consequently, it is also arguable that the Regulations result in an understanding of equality of opportunity and fairness that is inconsistently applied between the male and female categories.

²⁷⁰ A phrase used by the CAS panel in *Chand*, one that was highlighted by Pielke et. al (Pielke et al., 2019, p2)

²⁷¹ Handelsman et al., 2018, p. 6.

Ensuring meaningful competitions

In a sporting context, 'meaningful competition' seems likely to be understood as referring to close competitions where outcomes are uncertain and is, therefore, similar to what Loland identifies as a 'good' competition.²⁷² Given the context and purpose of Regulations and the observations already made about the IAAF's beliefs concerning the magnitude of advantage that testosterone provides, this seems like a justifiable interpretation of what the IAAF meant. Assuming this is correct, then 'meaningful' competition is different to fair competition because it has a more utilitarian flavour, emphasising that the Regulations seek to protect the 'interests' of athletics by creating competitions that maximise the preference satisfaction of all those engaged in the sport.²⁷³

If the Regulations do ensure meaningful competitions in this sense, then it is arguable that another of the purposes of the IAAF might be furthered by them; the general promotion and development of the sport (Clause 4.1(a), IAAF Constitution), which might provide a further 'instrumentally valid' reason.²⁷⁴ The argument being that athletics will be more appealing to potential participants (who benefit from close competitions which push them to achieve their best) and other stakeholders (for example, fans, and sponsors who want the excitement that comes from uncertain outcomes).

However, the belief that the Regulations ensure 'meaningful competitions', again, seems to raise rational problems.

The most obvious is that such a position requires an objective and consistent reference point for determining what is 'meaningful'; in other words, some clarity on how close competitions ought to be. Yet, the IAAF does not appear to have attempted to provide one. Instead, the Regulations just focus on a particular source of performance

²⁷² Loland, 2002, pp. 137-138.

²⁷³ *Ibid.*

²⁷⁴ Although, given the structure of clause 4(a) it might be argued to refer only to promotion and development of the IAAF, it seems reasonable to assume one of its purposes would be about protecting, nurturing and developing the 'social practice' of athletics.

advantage that may provide a 'significant' advantage in relation to some events. Such evidence that there is about testosterone-based performance advantage and margins of victory,²⁷⁵ as has already been considered, seems extremely limited and does not seem to suggest that the margins of victory of athletes with relevant DSDs are out of kilter with margins of victory enjoyed by athletes without DSDs. In other words, it seems a fairly irrational and arbitrary way of ensuring meaningful competition within female athletics or across athletics as a whole. If promoting and developing athletics requires meaningful competitions, then it is arguable that the principle of instrumental rationality should require regulations that ensure 'meaningful' competitions in all athletic events regardless of underlying reasons for individual athletic advantage.

Perhaps a focus on specific events and causes of athletic advantage might be justified, but as has already been argued in relation to the pursuit of fair competition, such a justification would seem to require clear scientific evidence regarding the magnitude of the advantage. If the evidence on the quantification of performance advantage provided by the Bermon Studies is accepted, then ultimately the result may be to make competitions minimally closer in the events to which the Regulations apply.²⁷⁶ However, this seems a relatively minimal achievement of the IAAF's relevant constitutional purpose concerning the development of the sport.

In comparison to 'fair competition', it is perhaps easier to accept on the basis of the current scientific evidence that the Regulations might further the purpose of ensuring meaningful competitions (and therefore developing the sport) simply because some competitions might be closer. However, this would seem to be such a minimal contribution towards the IAAF's constitutional purpose that the strength of it as an instrumental reason also seems minimal.

Participation

As has already been touched on, the IAAF's constitution clearly identifies protecting individual 'rights' to participate in athletics as one of its core purposes. In addition,

²⁷⁵ Provided by Dr Bermon and Prof. Tucker in *Semanya*.

²⁷⁶ Although even that minimal claim seems questionable, as has already been discussed.

Clause 4(b) recognises the IAAF exists to *encourage* participation at all levels of athletics. As such, protecting or promoting participation seems like a further instrumentally valid reason that might support the implementation of Regulations.

That said, exactly how the IAAF views the Regulations as furthering this purpose is not made clear in the Regulations, the Explanatory Notes or in *Semenya*. The Explanatory Notes do make clear that the IAAF believes female²⁷⁷ athletes would be discouraged from competing against *male* athletes because they might perceive that competition would not be ‘fair or meaningful’, but they say nothing directly about ‘whether those it considers athletic females would be discouraged from competing against athletes with relevant DSDs. However, given its belief that legally female athletes with relevant DSDs have the same relevant physiological advantages as typical men, it is logical to assume that the IAAF also has a belief that those it considers athletic females would be put off participating in athletics if there were no eligibility restrictions on athletes with relevant DSDs.

However, no evidence is provided to support this contention. Whilst it may be plausible to appeal to intuition and accept, without empirical evidence, that fewer legal females would choose to enter athletic competitions if they had to compete against men, it does not follow that we should accept (without evidence) that there would be a detrimental effect on participation in athletic competitions if those the IAAF consider as athletically female are still required to compete against legal females with relevant DSDs. Such skepticism is fueled by the fact that the IAAF’s evidence as to the actual magnitude of performance advantage does not suggest that outcomes will be inevitable.

Nor, rationally, should the possibility of a negative impact on participation be discounted, since it seems intuitive that the Regulations will have a negative effect on participation of athletes with DSDs or who may think they have a DSD or even potential athletes who have complex sexual or gender identities. Furthermore, the IAAF’s purpose is to encourage ‘participation in athletics’, not simply to encourage participation in *elite* athletics. As a consequence, it would seem necessary to consider

²⁷⁷ Explanatory Notes, p. 1.

the potential effects on participation outside the elite level, where participant preferences are less likely to be so concerned with winning or even close competitions.

Given the possibility of less intrusive ways of compensating for the advantage that testosterone is said to provide then, again, it is arguable that the Regulations may well not be the best means for achieving the aim.

Of course, the possible negative impacts on participation caused by the Regulations are just speculation, but then so is the IAAF's implicit suggestion that the Regulations will ensure participation. Accordingly, it is arguable that the IAAF has not considered some, potentially significant, objectively relevant considerations when reaching a belief that the Regulations will contribute towards participation.

Medical Care

In *Semenya* the IAAF asserted that that the Regulations will help some athletes (especially those from poorer countries) receive medical care for conditions of which they were unaware.²⁷⁸ In terms of its constitutional purposes, then protecting the health of athletes could be seen as part of its purpose of ensuring athletics is undertaken in a spirit of solidarity (Clause 4.1(j)), since supporting any athlete would seem to fit squarely within the semantic understanding of the term.²⁷⁹

However, whilst it is possible that the Regulations will result in athletes finding out about an unknown medical condition and could be seen as supportive by some, it is highly doubtful that most athletes with DSDs would view the Regulations as supportive given the issues of physiological and psychological harm (and consent) that have already been mentioned. There is also the obvious possibility that athletes might not want to know about a DSD they may have.

Perhaps more fundamentally, it is difficult to square the contradiction of the Regulations excluding or limiting athletes from participating and, at the same time, furthering solidarity since excluding or limiting participation is clearly unnecessary to provide medical help and support. Accordingly, it is argued that providing medical

²⁷⁸ *Semenya*, para. 306.

²⁷⁹ The Oxford Advanced Learner's Dictionary explains solidarity as 'support by one person or group of people for another because they share feelings, opinions, aims..'.¹

support for athletes is not an instrumental reason that can support the Regulations, all it can do is seek to ameliorate the harm caused by them.

Social goods

In *Semenya* the IAAF suggested that by allowing women to excel in sport the Regulations would deliver ‘numerous’ social goods, such as ‘creating inspirational role models.’²⁸⁰ Such a suggestion draws on the idea that the Regulations are justified and necessary as a means to ensure sexual equality between men and women. As such, its validity and strength as an instrumental reason seem to rely on an appeal to external legal and social norms on sexual equality and therefore, on an external understanding of male and female that, it is argued, is based on a wider number of factors than those accepted by the IAAF for the purpose of athletics. Such a position would appear to leave the IAAF holding inconsistent understandings of ‘female’.

The important issue of complying with legal norms on sexual equality will be turned to shortly. However, before doing so, it is important to appreciate that there is no evidence that the Regulations are likely to result in an increased number of female athletes being viewed as role models. The implicit suggestion seems to be that athletes with relevant DSDs were preventing those who the IAAF view as athletically female from becoming role models; a suggestion that ignores the possibility of legally female athletes with relevant DSDs being female role models and also the probability that those the IAAF view as athletically female can still be role models, even if they do not ‘win’.

Furthermore, if ‘social goods’ are introduced as a reason justifying the regulations this seems to invite an evaluation of the net benefit to society, including the impact of the Regulations on the attitudes of society more generally towards individuals with atypical sex and gender identities. This is not an issue that the IAAF seems to have addressed despite asserting that the IAAF respect such individual choices.

²⁸⁰ *Semenya*, para.305.

Legal and social norms concerning equality

It was suggested that sexual equality, as well as sporting equality, is one of the reasons that the IAAF now gives for the Regulations. However, it is argued that there is an inherent difficulty in the IAAF using this as a contributory reason for the justification of the Regulations,²⁸¹ as opposed to simply a justification for segregation of male and female. If it adds anything as a reason, it is because it appeals to external social and legal norms concerning the understanding of male and female and, therefore, would seem to require an understanding of female that is wider than the sense of ‘athletic female’ created by the Regulations. In other words, such a reason supports regulations that protect *all legal* females, with or without a relevant DSD. The potential difficulties are twofold. First, by requiring those with relevant DSDs to suppress testosterone levels, the Regulations potentially disadvantage a subset of legally female athletes, since, in contrast to athletic females, athletes with relevant DSDs are unable to make use of their natural, genetic abilities.²⁸² Second, on any understanding of fairness, equal opportunity for all *legal* females should require, as a minimum, that the Regulations ensure that athletes with relevant DSDs are not disadvantaged vis-à-vis other female athletes by their requirement to reduce testosterone levels.²⁸³

Furthermore, how such a reason relates to the IAAF’s constitutional purposes is not straightforward, and, therefore, neither is its potential value as an instrumental reason.

Clause 4.1(j) of the IAAF’s Constitution has been highlighted as central to arguments about whether ensuring fair competition is an instrumentally valid reason. However, Clause 4.1(j) also refers to preserving rights of participation ‘without unlawful discrimination of any kind’ and as such makes an overt commitment to respecting external legal norms concerning non-discrimination and equal treatment. The IAAF’s stated purposes also embrace the Olympic Charter, which requires respect for international human rights instruments and emphasizes respect for human dignity as

²⁸¹ As a means of sex verification.

²⁸² Of course, the appeal of such an argument depends on one accepting that the ‘Rawlsian’ sense of fairness should not be constrained by a binary sexual classification as a pre-condition. An argument put forward above at p. 54-56.

²⁸³ Something, as has already been argued, that the Regulations do not seem to do.

well as the rejection of discrimination of any kind on whatever ground.²⁸⁴ Whilst recognising the importance of non-discrimination, both these constitutional references clearly see external legal norms, not as a purpose of the IAAF per se, but as norms with which it has an obligation to comply in the pursuit of its purposes. Hence, ensuring sexual equality, as a legal norm, does not seem to be an instrumental reason that can support the Regulations. Important though it is, its normative significance is in determining the most suitable (or most rational) means of ensuring its constitutional purposes (such as ensuring fair play or promoting/developing the sport) and, therefore, the strength of the instrumental reason for taking any particular means to do so.

It might also be argued that the pursuit of sexual equality, viewed as both an external social and legal norm,²⁸⁵ might further the IAAF's constitutional purposes by ensuring athletics is undertaken in the spirit of solidarity (Clause 4.1(j)) and by protecting the integrity of the sport (Clause 4.1(e)). However, there are problems with such a perspective, not least because there would appear to be more suitable, yet unconsidered, means (as already suggested) that might further the cause of sexual equality that would not create such a conflict with other external standards and norms. More detailed consideration of such conflicts will be undertaken when evaluating the instrumental reasons against adopting the Regulations.

Before addressing the legal legitimacy of the Regulations it is worth bearing in mind that, as a private organization (a non-state actor), the IAAF is not directly bound by international human rights instruments such as the Universal Declaration of Human Rights (UDHR) or the European Convention on Human Rights (ECHR).²⁸⁶ Instead, it is bound only to the extent that it voluntarily recognizes such limits on its powers (for example in its constitution) or through 'indirect' means. Such 'indirect effect' can arise from the possibility that those subject to 'private' regulations could seek to protect their fundamental rights in national courts (due to national laws that prohibit

²⁸⁴ International Olympic Committee, 2016, Code of Ethics, Art 1.1 & 1.4.

²⁸⁵ In other words, norms that are not limited to an understanding of sex created only for the purpose of athletics.

²⁸⁶ Since the IAAF is not a nation state and cannot be a signatory to international human rights instruments, a point made by the IAAF in *Semenya*, para. 293.

discrimination between private citizens)²⁸⁷ or from an alleged failure of a signatory state to act to ensure that fundamental rights of individuals are protected (for example, that an individual did not receive a fair trial). Accordingly, although the IAAF may not be technically bound by international legal norms on equality and non-discrimination, the voluntary acceptance of those norms and the prospect of indirect enforcement suggests that the IAAF cannot, in reality, ignore them.

Of course, the fact that the CAS panel in *Semenya* found that the DSD Regulations were lawful (and the subsequent decisions of the Swiss Federal court not to interfere)²⁸⁸ might be taken to be the final ‘legal’ word on the issue. However, it is important to recognize both the limits of the legal decisions and the remaining criticisms that the CAS decision (in particular) is open too, not least because of the clear reservations made by the CAS panel as to how the Regulations will be implemented in a way that remains lawful.²⁸⁹

The Legal issue

The legal issue in *Semenya* can be fairly simply summarized; whether, in treating athletes with relevant DSDs differently, the Regulations were discriminatory and therefore contrary to the IAAF’s own constitution, the Olympic Charter (which it purports to embrace) and the laws of Monaco. Although the context and the forum for legal scrutiny (a CAS panel) are not typical of human rights disputes, there is seemingly a relatively standardized approach that judicial bodies take to questions of discrimination and human rights violations, both in national and international contexts.²⁹⁰ First, there is consideration of whether there was a breach of the right in

²⁸⁷So, in the context of the DSD regulations, it is possible that an athlete affected by the implementation of the DSD regulations in a UK athletic competition could seek to argue that any application of the Regulations in the UK breaches the Equality Act 2010. This possibility might have increased given the recent decision in *Taylor v Jaguar Land Rover Ltd [2020] 9 WLUK 200*, which suggests that those with more complex gender identities might be protected under the Equality Act (Hunte, 2020).

²⁸⁸ Press Release of the Swiss Federal Court 30 July 2019, 2019, Swiss Federal Court, Case 4A_248 / 2019 & Case 4A_398 / 2019, 25th August 2020.

²⁸⁹ Krech, 2019, pp. 74-75 It is not inconceivable, therefore, that the Regulations could be challenged again in the CAS or in a national court if implemented by a national athletics organisation such as UK athletics.

²⁹⁰ Krech, 2019, pp. 67-68.

question (here a right to not be discriminated against).²⁹¹ Second, if there is a breach of a 'qualified' right (such as non-discrimination), then the question becomes whether such a breach can be justified. Only if it cannot be justified is there a violation of the right. 'Justification' generally requires weighing the impact on the rights of individuals against 'the public interest' or other 'legitimate' aim. As Rivers points out, this is a complex question which requires a rational decision maker to take into account numerous factors such as (i) the importance of the impacted right(s) (ii) the extent to which the right(s) will be limited by the measures taken (iii) the importance of the public interest/aim that is being pursued (iv) the extent to which the public interest/aim will be realized by the measure and then, ultimately, (v) whether the benefit to the public interest (or extent to which the aim is furthered) outweighs the cost to individual rights.²⁹² In legal discourse, rather unhelpfully, the term 'proportionality' can be used both to describe the whole justification question (i.e. in a wide sense), and to describe just the ultimate cost benefit calculation at (v) (i.e. in a narrower sense). For clarity, this thesis will use 'the justification question' to refer to proportionality in a wide sense.

In examining the justification question judicial bodies tend to apply broadly similar legal 'tests'.²⁹³ First, does the measure pursue a legitimate aim. Second, the extent to which the measure is actually capable of achieving that aim. Third, whether the measure is the least intrusive means of achieving the realization of the aim. Fourth, whether the measure is proportionate (narrow sense). As a framework for its decision, this is broadly the approach adopted by the CAS in both *Semenya* and *Chand*, albeit ultimately reaching different conclusions. However, despite the use of an appropriate framework, it has been argued that the CAS fell short in its application of it²⁹⁴, a view that will be echoed and amplified.

²⁹¹ In *Semenya*, at this first stage, the Regulations were found, prima facie, to infringe a right not to be discriminated against due to sex and/or gender and birth traits.

²⁹² Rivers 2006, p. 181.

²⁹³ Krech, 2019, pp. 67-68; Rivers, pp. 180-181, 2006, Klatt M. and Meister M., 2012.

²⁹⁴ Krech, 2019, p. 66.

In considering criticisms of the decision in *Semenya*, the different aspects of the justification question will be considered in turn before addressing the consequences of any shortcomings for the burden of proof and the limits of legal scrutiny.

Criticisms of the CAS decision

Legitimate aim

Typically, the issue of discrimination arises in the context of infringement of individual rights by a state (or some branch of it) under an international treaty (such as the ECHR) or by one individual against another in the context of national laws that enshrine a right not to be discriminated against.²⁹⁵ In an ‘international’ context, states seem to have a large degree of flexibility to define the legitimate aim.²⁹⁶ That said, the relevant human rights instrument will set some kind of objective framework for determining what is a legitimate aim, which tends to require that the measure secures the fundamental rights and freedoms of others or protects the just requirements of morality.²⁹⁷ In the context of national legal norms and individual or organisational actors, it is suggested that identifying a legitimate aim requires the court to identify a real business need.²⁹⁸ However, how ‘legitimate aim’ translates to ISFs, who are neither branches of the state nor fundamentally commercial in nature, is not so well established.

Yet despite a lack of clarity about what a legitimate aim means in a sporting context, the CAS panel in *Semenya* gave little consideration to it either by reference to the ‘public interest’ (i.e., rights of participants whose interests the Regulations supposedly protect) or the IAAF’s ‘business’ or organizational needs. Instead, the legitimate aim was simply accepted as ensuring ‘fair competition in the female category of elite competitive athletics’.²⁹⁹ This may well have been because this was not disputed by the parties, but whatever the reason, it seems to have resulted in a failure to consider the legitimacy of the aim from an objective perspective. It is argued that, at the very least,

²⁹⁵ Such as the Equality Act 2010.

²⁹⁶ Rivers, 2006, pp. 175-176.

²⁹⁷ For example, Article 29 of the UDHR recognises that rights and freedoms may only be infringed for the ‘purpose of securing due recognition and respect for the rights and freedoms of others and of meeting the just requirements of morality, public order and the general welfare in a democratic society’.

²⁹⁸ Lane and Ingleby, 2018, p. 532, *Bilka-Kaufhaus GmbH v Weber von Hartz* (170/84) EU:C:1986:204; [1986] E.C.R. 1607; [1986] 5 WLUK 96 (ECJ).

²⁹⁹ *Semenya*, para. 556.

the aim of *any* measure that results in different treatment must be objectively justified³⁰⁰ and, therefore, subjected to some objective scrutiny by a judicial body.

If viewed in the context of protecting a ‘public interest’ it is far from straight forward to identify how the Regulations achieve a legitimate aim since it has never been made clear exactly what fundamental rights of those the IAAF view as athletic females have been ‘secured’ by the Regulations nor what norms of morality they protect. In *Semenya*, the IAAF argued that the Regulations balanced the ‘right’ of ‘biologically female’ athletes to compete separately from ‘biological males’ against the ‘desire’ of ‘biologically male athletes with female gender identities’ to compete in the female class.³⁰¹ It was also argued that ‘biologically female’ athletes have a ‘right’ to ‘fair and meaningful competition’. Ignoring the potential ambiguity already identified with regard to the term biological female³⁰², the exact basis for the ‘rights’ of athletic females equating to fundamental, legally recognised human rights remains unclear. Yet the CAS panel does not seem to even consider this issue, just accepting the assumption that the rights of females without a relevant DSD would be infringed.³⁰³

One possibility would seem to be the right against non-discrimination. However, infringement of such a right would require that those the IAAF see as athletic females were treated *differently* due to a protected characteristic, not that they were treated the same. As a ‘parasitic’ right,³⁰⁴ relying on non-discrimination would also require demonstrating that a fundamental human right had been impacted by the discrimination. In this regard, by being required to compete against athletes with relevant DSDs, it might be arguable that those the IAAF sees as athletic females are unable to develop and recognize their ‘economic, social and cultural rights which are indispensable for their dignity and the free development of their personality’ (Art 22 UDHR). However, such an argument would seem to rely on evidence that the size of

³⁰⁰ A point made clear by the European Court of Justice in *EARL de Kerlast v Union régionale de coopératives agricoles (Unicopa) v Coopérative du Trieux* (C-15/95) EU:C:1997:196 at [35] (Lee, 2019, p. 647).

³⁰¹ *Semenya*, para. 285.

³⁰² See pp. 14-15.

³⁰³ *Semenya*, para. 554.

³⁰⁴ In the ECHR, for example, the right against non-discrimination is not a ‘stand-alone’ right, it can only be raised as an infringement issue where there is difference in treatment in an area of life that is in some way linked to other, more fundamental rights protected by the ECHR (Davis, 2016, pp. 153-154).

advantage enjoyed by athletes with relevant DSDs is so large that the dignity and personal development of athletic females is in some way infringed either by not being able to earn sufficient income or by not being able to challenge for victory. Either claim seems difficult in light of the uncertainty surrounding the scientific evidence. Both claims also seem to require acceptance of winning and the fulfilment of external goals (such as economic success) as necessary for the personal development and dignity of athletes; something that does not sit easily with the conception of fair play that has been articulated.

Furthermore, as a human rights issue, the relevant balance is not between the rights of those the IAAF sees as athletically female and the *desires* of athletes with relevant DSDs but between the rights of 'athletic females' and the *rights and freedoms* of athletes with relevant DSDs.

Given the reservations already expressed about how effective the Regulations are in furthering fair play and the paucity of evidence about quantification of advantage on which the Regulations rely, it is arguable that the only things secured by the Regulations for 'athletic females' are a slightly increased chance of winning and the *perception* of fair competition. If this is true, then it is something that seems difficult to balance against the likely interferences with the human rights and freedoms of athletes with relevant DSDs that the Regulations seem to entail.

By contrast, if viewed in the context of private law rights, the furtherance of 'real business needs' seems unhelpful for determining if the aim of ISFs is legitimate, since ISFs do not exist primarily for commercial purposes. What does appear intuitively relevant to assessing the legitimacy of the aim of an ISF is its constitutional purposes.³⁰⁵ Yet the IAAF's constitutional purposes were not really considered at all.

Reference to the IAAF's constitution would have, hopefully, highlighted that 'ensuring fair competition in the female category of elite competitive athletics'³⁰⁶ should be viewed as merely a *means* to a larger constitutional purpose, and should not,

³⁰⁵ After all, identifying 'business needs' as a framework for assessing the legitimate aim of a commercial organisation would just seem to reflect the primary reasons for a commercial organisation to exist (making profit).

³⁰⁶ *Semenya*, para. 556.

therefore, be automatically viewed as a legitimate aim in its own right. Ultimately, to its own constitution, the IAAF exists to ensure it preserves the rights of *every* individual to participate and to ensure fairness in athletics, not only to protect the rights of a majority of elite female athletes. When it comes to considering the later steps in the justification question, the difference becomes important.

Accordingly, it is argued that the CAS panel provided rather too much flexibility for the IAAF to determine what the legitimate aim was, paying too much respect to the IAAF as an autonomous regulatory body. It neither considered how legitimate the aim was by reference to the fundamental rights secured by the Regulations or by reference to the IAAF's constitutional purposes. If it had, as will be discussed below, a different decision may have been reached. In summary, it is argued that a failure to consider the legitimacy of the aim at all inevitably contributed to an insufficiently intensive review of the justification.

To what extent is the measure capable of achieving the aim?

However, the legitimate aim is described, it seems that ensuring fairness (within only female athletics or within athletics as a whole) is key. Yet it is difficult to consider how well the Regulations achieve such an aim unless 'fairness' is explained and articulated as an objective concept, for example, by considering the meaning of fair play and equality of opportunity in sport, something that the CAS decision does *not* do. This thesis has suggested that any objective sense of fairness relating to genetic predispositions has to make a relative comparison between genetic factors that are known (or are suspected) to influence athletic performance or, at least, make a comparison against *some* objective reference point by which it is possible to say an advantage is too large. However, the majority of the CAS panel seem to miss this point and conclude that the performance advantage provided by testosterone is so 'significant' that the regulations are needed to ensure fair competition.³⁰⁷ The questions remain, significant compared to what and who's definition of fairness?

³⁰⁷ *Semenya*, para. 580.

Accordingly, even if fairness within female elite athletics is recognised as the legitimate aim, the minimal consideration given to the meaning of fairness in a sporting context and the absence of evidence about the relative magnitude of advantage that testosterone provides suggests that the CAS panel's evaluation of how well the Regulations achieved the aim is, at best, underwhelming. A point that is only emphasised by its approval of the choice of events that are regulated, which for reasons explained above, seems to highlight some potential inconsistencies about what is fair, inconsistencies which presently seem difficult to justify

If the legitimate aim was actually recognised as being to ensure fair play in athletics as a whole, then consideration of the extent to which the Regulations achieve that aim would have also brought into focus the need for further investigation (and evidence) about whether regulation and compensation might also be needed in the male category.

Were the Regulations the least intrusive means of realizing the aim?

Regardless of how the legitimate aim is defined, the question here is whether there is a method of compensating (and no more) for the performance advantage that testosterone provides that is less intrusive on the rights of those who will be affected by the Regulations. This raises very similar issues to those already discussed concerning the extent to which the Regulations are a 'necessary' or 'suitable' means for achieving the aim of ensuring fair play.

In identifying potential human rights intrusions, we might expect a detailed consideration of relevant human rights instruments, such as the UDHR or the ECHR as a framework within which to consider potential intrusions.³⁰⁸ However, the panel's deliberations on justification make little reference to such instruments and there seems like a less than complete consideration of the potential harms as a result. Of particular relevance are the right to dignity, the right not to be subjected to degrading treatment (Articles 1, 22 UDHR, Art 2 ECHR), the right to bodily integrity and autonomy

³⁰⁸ Larson, 2011, p. 239.

(which, although not protected as a specific right, has been interpreted to come within a right to security of the person (Art 1 & 3 UDHR & Art 5, ECHR), the right to freedom of expression, the right to privacy/private life (Art 12 UDHR, Art 8 ECHR), the right to not be discriminated against (Art 7 & 22, UDHR, Art 14 ECHR), the right to recognize one's economic, social and cultural rights *indispensable to one's dignity and the free development of one's personality* (emphasis added) (Art 22 UDHR).

The CAS panel does refer to the right of bodily integrity when considering the requirement for athletes having to undergo invasive medical examination but the majority of the panel seems to balance this intrusion against the possibility that such examinations may exonerate athletes from being suspected of doping and thus protect their reputation.³⁰⁹ But in reaching this 'equilibrium' it is not at all clear what weight the panel attaches to which factors nor that all relevant factors have been considered. For example, the decision 'notes' that the medical examinations might be unwelcome and distressing, and that there will be some psychological harm caused to athletes, but the severity of harm does not seem to be considered. 'Unwelcome and distressing'³¹⁰ would seem to seriously underplay the likely psychological consequences of being required to undergo such an invasive procedure, one that may be medically unnecessary, may result in an athlete being told she has a different sexual status to the one she has associated with since birth and which may have significant negative cultural and social consequences for the individual athlete. After all, sex and gender identity are arguably some of the 'most defining and fundamental characteristics of personhood'.³¹¹

Furthermore, no consideration is given to the issue of bodily integrity or autonomy in the context of the requirement to take medication to suppress testosterone, despite the panel accepting the general evidence about potential side effects (and of those actually experienced by Ms Semenya). Nor is any consideration given to the underlying issue of the extent to which athletes give their free and informed consent, despite this being of key significance in justifying interferences with bodily integrity and

³⁰⁹ *Semenya*, para. 601.

³¹⁰ *Ibid.*

³¹¹ Wiesemann, 2011, p. 218.

autonomy³¹² and despite the potential consequences to an individual's personal and economic development if they do not agree. The only occasion where consent is discussed relates to the data used for the Bermon studies, where the panel concluded that there was no infringement of the law of Monaco regarding use of athletes' data despite there being no evidence of express consent for such use.³¹³ In any event, just because the Bermon studies may not have breached the national laws of Monaco does not make the question of a right to bodily integrity and the need for free and informed consent irrelevant considerations in the wider context of the potential infringements of individual athlete rights. It is worth noting that the Convention on Human Rights and Biomedicine specifically prohibits medical intervention 'under duress'.³¹⁴ Whilst the meaning of duress in this context is beyond the scope of this thesis, it is clear that respect for such a requirement is concerned with ensuring free consent as a basis for medical treatment. Wieseman has even gone so far as to argue that rights to bodily integrity and autonomy can be extended to incorporate a right for athletes *not* to know about medical conditions that affect them, clearly a right that would be infringed by the DSD Regulations.³¹⁵ Accordingly, it seems clear that the extent to which athletes with relevant DSDs actually give their free consent to the Regulations and its consequences is a question that was not fully addressed by the CAS panel in *Semenya* (or indeed by the IAAF) but one that seems extremely significant to issues of proportionality, rationality and the integrity of the IAAF.

The CAS panel does also refer to the issue of privacy and recognizes that the nature of the Regulations (in the context of elite athletes) will result in what are extremely personal issues being played out in public.³¹⁶ Quite rightly, the panel recognizes that this, on its own, does not mean the regulations are not justified, but neither does it attempt to consider the extent of the psychological harm that is likely to be incurred

³¹² Herring and Wall, 2017.

³¹³ Blood was originally given for anti-doping purposes. It is worth noting that using data for a different purpose to that which it was originally taken without express consent seems slightly at odds with some more general legal norms on data protection, such as the EU's General Data Protection Regulation.

³¹⁴ Prof. Cornelius in *Semenya*, para. 281.

³¹⁵ Wiesemann, 2011, pp. 217-218.

³¹⁶ *Semenya*, para. 605.

given all of the potential infringements identified above may well happen in the public spotlight.

At the very least it seems clear that the Regulations result in the IAAF making a designation of an individual's sex which is likely to contradict the athlete's own understanding of themselves. The suggestion that such a designation is made only to ensure fair and meaningful competition and is not intended to question the sexual status or gender identity of athletes with relevant DSDs³¹⁷ does not obviate the need to consider the likely impact of such a designation. From the athlete's perspective, it is reasonable to think they are left questioning both their sexual and gender identity and also their role in athletics, elements that must be absolutely central to their understanding of 'self'.

As a consequence, some meaningful consideration of the impact on an individual's autonomy, their rights to develop their personality and their economic interests might be expected. Yet such deliberation seems conspicuous by its absence. Taking one example, no real scrutiny is given to the IAAF's suggestion that athletes have a choice about whether to undergo treatment because they could compete in a different event, despite the likely consequences of this choice.³¹⁸ Nor, it might be pointed out, is there any recognition of the asymmetry involved in suggesting that athletes with a relevant DSD can select another event if they do not want to medicate when it is equally possible for those the IAAF view as athletic females to self-select into events in which they think they may have increased prospects of success..

In addition to shortcomings in terms of the level of deliberation about possible human rights infringements, it is argued that the CAS panel avoids a fundamental question. Rather than consider whether the Regulations are the *least* intrusive means of achieving the legitimate aim, it seems to accept the IAAF's view that the Regulations were the *only* means of achieving the aim and, therefore, were necessary.³¹⁹ The result being that the infringements were viewed as an inevitable consequence of pursuing the legitimate aim. However, it is suggested that not all of the infringements are

³¹⁷ IAAF DSD Regulations, 2019, p. 2. para. 1.2(e)

³¹⁸ Incidentally, a choice that is also available to athletes who do not have a DSD.

³¹⁹ *Semenya*, para. 569.

inevitable even if it is accepted that relevant DSDs need compensating for. For example, the issue of required medical treatment and the consequential human rights concerns³²⁰ could be removed if the performance advantage provided by testosterone was compensated for using testosterone categories, or a time/distance handicap. Such solutions would also remove or lessen the possibility of over-compensation resulting from the uncertain effect of medication on individual athletes. Yet it seems that the Panel does not entertain the possibility of an alternative method of compensation or even deliberate on whether the IAAF had considered one.

The 'justification question' is sometimes described as whether a sledgehammer has been used to crack a nut. Following that analogy, there did not seem to be any consideration about whether or not a smaller hammer was available. In defence of the panel, this was not an argument put before them. However, the consideration of other means to achieve the aim seems such a fundamental aspect of assessing the justification and rationality of the decision that it surely needed to be taken into account.

Do the Regulations represent a 'net gain'?

If we ignore the criticisms just outlined, then the question looks more like the one the CAS panel addressed; whether the infringement of rights is balanced by the extent to which 'fair competition in elite female sports' is achieved by the Regulations.

Making a quantitative or objective comparison between rights infringements and the extent to which the Regulations help towards securing fair competition is, of course, extremely difficult; there is a sense of comparing apples and oranges.

However, as has been argued, in picking out one genetic factor as being unfair with, at best, limited and contested direct evidence about the actual and relative magnitude of performance advantage, the Regulations demonstrate a view of 'fair competition' that does not necessarily sit easily with the IAAF's constitutional purposes nor the ideals of fair play they appear to embrace. The fact that no other stable genetic inequalities that

³²⁰ Particularly about autonomy, consent and bodily integrity.

might provide similar performance advantages are addressed (or considered relevant) by the Regulations clearly places a limit on the extent to which the regulations can achieve 'fair competition'.³²¹ As does the slightly irrational selection of events to which they apply. If, as argued, sporting fairness is taken to mean evening out stable genetic advantages that are too great,³²² then, rationality would suggest that any regulation should compensate for all known genetically based performance advantages which pass the threshold and should do so across all events where they may have influence.³²³ Furthermore, the means of compensating for the advantage (medical suppression) would not seem to provide fair competition or equality of sporting opportunity within the female category given the real possibility that medication might cause athletes with DSDs to be disadvantaged, not merely have their advantage negated.

As a consequence, it is arguable that the Regulations offer minimal 'gain' in the pursuit of a more objectively understood sense of fair competition. On the other hand, the Regulations would seem to produce numerous and potentially severe impacts on the rights and freedoms of those individuals to whom they are directed. It may still be possible to rationally conclude that they offer a net benefit, but the benefit is currently far from clear or, to make use of a word used repeatedly by the IAAF, 'significant'.

If the legitimate aim is viewed as ensuring fair play across athletics, then the level of realization of the aim reduces further since the Regulations ignore the potential advantages of testosterone in male athletics, other stable genetic factors that might result in significant performance advantages, not to mention other norms of fair play.

³²¹ Of course, this does not mean it cannot do so, and it is accepted that there may be a justifiable reason to single out functional testosterone. However, as already argued, even where a binary categorisation is a pre-condition of fair competition in athletics, compelling evidence of the actual performance advantage is needed.

³²² Within a female category or more widely.

³²³ It would also suggest that further investigation is undertaken into ones that are suspected of providing such advantage.

Burden of proof

In its analysis the CAS panel made clear that the IAAF had the burden of proving that the Regulations were justified and proportionate.³²⁴ However, in accepting the IAAF's scientific evidence as sufficient to demonstrate relevant DSD athletes have a 'significant' advantage, it is arguable that the burden of proof was actually reversed. Such an observation arises partly from the sequential approach that the panel took and partly from viewing the scientific issues as questions of 'legal' fact that needed determining in a binary way.

First, despite the level of uncertainty about the magnitude of performance advantage, the CAS panel made what appears to be a binary finding of fact³²⁵; that testosterone *does* provide a 'significant' performance advantage to athletes with relevant DSDs. Only then did it move on to consider the issues of justification and proportionality of the Regulations. However, such an approach seems to sever considerations about the strength and reliability of the scientific evidence from the justification question. Yet the strength of the scientific evidence seems crucial to the issue of how likely the Regulations are to achieve the aim of fair competition. In other words, it is argued that the panel ought to have considered the level of consensus (and clarity) of the scientific evidence in determining the extent to which the Regulations are likely to achieve the legitimate aim.

By approaching the scientific issues as a question of legal, binary fact the risk of scientific uncertainty is, inappropriately, placed on those that are subjected to the discrimination.³²⁶ As has been mentioned above, it seems to require that DSD athletes prove a negative; that they *cannot* run 10-12% faster than those the IAAF view as athletic females.

³²⁴ *Semenya*, para. 540 & 541.

³²⁵ Something that is often necessary in a legal context where an authoritative and final determination is necessary.

³²⁶ Krech 2019, pp. 74-75.

Criticisms and limitations of legal scrutiny – summary

As an adversarial judicial body, the issues that the CAS considers are significantly influenced by the questions they are asked to address and by its judicial function; it can neither address issues not in dispute nor make the decision in place of the IAAF.³²⁷ Such limitations need to be appreciated. Nevertheless, there do appear to be some justified criticisms of its approach. Particular criticisms relate to failing to consider the legitimacy of the aim, failing to consider the meaning of fairness in sport, failing to consider what fundamental rights are actually being protected by the Regulations, failing to consider the full impact of the harms caused against the ‘rights’ being protected, failure to consider if there were the less intrusive means of achieving the aim and failing to account for the relative uncertainty of the scientific evidence in determining that the Regulations were justified and proportionate. In summary, there appears to have been an inadequate ‘intensity’ to the review of the IAAF’s justification. Considering that the IAAF has some degree of quasi-legislative, public function in creating rules that affect individuals’ rights and duties and yet has a relative lack of democratic accountability, it is suggested that the intensity of legal review should have been greater. Instead, the CAS seems to have undertaken a minimal review and accepted the argument that all the IAAF needed to do was demonstrate an honest and good faith view that had a reasonable basis.³²⁸ Such criticism about the intensity of the review seems equally valid in relation to of the subsequent decision of the Swiss Federal Court.³²⁹

It should also be highlighted that the CAS decision was not a unanimous one and some significant reservations were expressed about whether the Regulations would remain justified and proportionate in implementation.³³⁰ If, for example, further evidence established that oral contraceptives are not an appropriate mechanism for reducing testosterone levels because of side-effects or because of the difficulty presented to

³²⁷ *Semenya*, para. 551

³²⁸ *Semenya*, para. 303

³²⁹ Swiss Federal Court, Case 4A_398 / 2019, 25th August 2020

³³⁰ *Semenya*, para. 616

athletes of consistently maintaining appropriate levels of testosterone, then the Regulations may lose their proportionality.³³¹

In terms of the limitations of the CAS decision to a wider ethical evaluation of the IAAF's process, it is submitted that in light of these criticisms about the intensity of its review, the CAS decision offers relatively little additional strength to the instrumental reasons for adopting the Regulations as a means to ensure fair competition, therefore, to the question of how rational the decision was in a wider context.³³² Furthermore, the reservations identified by the CAS relating to how the Regulations would be implemented serve to highlight the possible practical unsuitability of the Regulations as well as the issue of whether there were more rational alternatives.

Summary - instrumental reasons justifying the Regulations

Of the reasons that have been asserted (or implied) by the IAAF as justifying the Regulations, there is little doubt that the IAAF places greatest weight on ensuring fair and meaningful competition and sexual equality.

In terms of ensuring fair competition, then its value and strength as an objective and instrumental reason seems undermined by an apparent dissonance between the meaning of fair competition that appears to result from the Regulations and the meaning of fair play in the IAAF's constitution. Such dissonance seems to arise primarily from a reliance on relatively uncertain scientific evidence about the actual and relative magnitude of performance advantage that testosterone provides to athletes with relevant DSDs and a consequently subjective basis for believing that any advantage provided is 'unfair'. It is also undermined by an apparent failure to consider other potential solutions for ensuring fair competition.

In terms of ensuring meaningful competition, if that is understood as ensuring close competitions and uncertain outcomes, then the Regulations only minimally seem to achieve this purpose and do so relying on the same uncertain scientific evidence and a

³³¹ Krech, 2019, p. 75.

³³² A point that was perhaps being alluded to when the CAS was explaining that it is not charged with evaluating the IAAF rule making processes.

concept of meaningful that also seems subjective and unexplained. Again, the consequence is that its strength as an objective, 'instrumental' reason seems significantly diminished.

In terms of legal norms on sexual equality, then the fact that the Regulations have received qualified approval from the CAS and, indirectly, the Swiss Federal Court may provide some additional strength to other instrumental reasons that support the Regulations but there remain rational concerns about how 'lawful' the Regulations are, particularly given the relative scientific uncertainty about quantification of performance advantage, the lack of scrutiny concerning the legitimate aim of the IAAF and the extent to which the Regulations were a necessary means to further the IAAF's relevant aims. It does seem arguable that sexual equality, viewed as part of the IAAF's purpose of protecting the integrity of the sport, could contribute to justifying the Regulations, but again it is not a straightforward argument (as will be considered below).³³³

The other reasons that might count in support of the regulations (participation, medical care and social goods) seem, for different reasons, to have no, or minimal strength as instrumental reasons.

In summary, it is suggested that whilst some of the IAAF's stated reasons may appear objective and instrumentally valid reasons that justify the implementation of the Regulations, on closer evaluation, their normative force appears limited. Although, speculative, it is tempting to suggest that there are some additional reasons and values at play that are not necessarily instrumentally valid and do not appear to have been acknowledged as contributory reasons.

Perhaps most influential are the reasons why male/female segregation appears to be an unmoveable vantage point from which fair (or meaningful) competition is judged. When little was known about either the underlying reasons for the 'male advantage' and when there was less recognition of DSDs, categorisation by reference to a binary model of sexual status may well have been appropriate (and rational) for ensuring *both*

³³³ See pp. 107-112.

fair play and the consequent need to protect female athletes in general,³³⁴ but that does not necessarily make it so now. If testosterone levels are the reason for the ‘male advantage’ and seemingly, provide a sufficiently quantifiable advantage, then we have gone beyond simple observations about men being faster than women and the consequence would seem to be that segregation by sex is not *necessarily* needed as a means of ensuring fair play or ‘protecting’ female athletes. As has been argued already, it is simply one means or trying to ensure fairness across athletics. It has been suggested that the challenges presented by athletes with relevant DSDs do not necessitate abandoning sex classification since gender segregation has its place in society.³³⁵ Whilst this is one possible perspective, it is not a reason that has been given by the IAAF to justify the Regulations and nor is it a claim that seems easy to rationally justify given the purposes for which the IAAF exists.

There also appears to be a belief that the Regulations represent the only or most suitable way of compensating for any performance advantage that testosterone provides. Yet the reasons for such a belief are opaque. Perhaps compensating by reference to testosterone categories or time/distance handicaps are inherently problematic to the IAAF’s purposes and values, but it is not obvious why they would be any more problematic than the harms caused by the Regulations.

It is also tempting to think that the perceived need to do *something* in response to the reactions of those the IAAF view as athletic females who, perhaps understandably, have the perception that they are not receiving their just rewards. But as the organization responsible for the sport as a whole and for achieving the purposes for which it exists, satisfying subjective perceptions should only weighing in its decision-making process if it relates to furthering those purposes.

³³⁴ i.e., to protect all females incorporating a broader understanding of female than the sense employed by the Regulations

³³⁵ Loland refers to this line of argument (Loland, 2020 p. 588).

Perhaps most controversially, it has been argued that the Regulations demonstrate a belief that only certain types of ‘typical’ females should be able to excel in athletics.³³⁶

Whether any of these speculative reasons did influence the decision is not really the direct concern of this thesis, what matters is that value and strength of the only contributory reasons that have been put forward to rationally justify the Regulations seem questionable given the current lack of clarity on the scientific evidence, the selection of events to which the Regulations apply and the choice of method by which to compensate.

Maximisation of expected utility

As has been discussed in the methodology, where a rational agent decides to take an action that furthers a particular purpose amongst a ‘set’ of purposes, rationality would seem to require that the agent considers and weighs the impact of the action on the other purposes within its ‘set’ to ensure that the action furthers its purposes as a whole. It was suggested that this is particularly important when the agent’s set of purposes are public, and it needs to justify its decisions externally. It was acknowledged that practical limitations mean that the extent to which the (negative) consequences need to be considered will depend on the context and resources available and what is reasonable. However, at the very least this places *some* requirement to weigh the extent to which one purpose is achieved against the negative impacts on other purposes which are apparent (and which require minimal resources to consider).

When considering the IAAF’s ‘set’ of constitutional purposes there would appear to be two purposes, in particular, which are likely to be negatively impacted by the Regulations; (1) ensuring athletics is undertaken in a spirit of solidarity and friendship and (2) protecting the integrity of athletics by adhering to standards of conduct, ethical behaviour and principles of good governance.

³³⁶ Krech notes the effect of the regulations have almost exclusively been to affect women of colour from the Global South (Krech, 2019, p. 70).

Solidarity & friendship

As already observed, Clause 4(j) of the IAAF's constitution protects the right of all to participate in athletics which is undertaken in a spirit of solidarity, friendship and fair play. In its everyday use, the essence of solidarity is about providing mutual support. Referring to the general sporting norms that were discussed in the context of fair play, solidarity recognizes the nature of sport as a co-operative social endeavour where respecting the interest and freedoms of others is of central importance. The reference to friendship would seem to underpin this understanding further. In a sporting context, the Sports Governance Observer explains solidarity as recognizing *responsibility* towards internal and external stakeholders,³³⁷ which it is suggested, encapsulates an obligation to support all participants in athletics and, perhaps also, to recognise obligations towards others who have an interest in athletics.

The key point is that discrimination and exclusivity are, in essence, the opposite of solidarity. So, whilst it is arguable that exclusion and discrimination might help ensure athletics is conducted in a spirit of fair play or to ensure meaningful competition, it is not easy to argue that discrimination and exclusion can help ensure solidarity; it's a contradiction in terms.

The IAAF have argued that the Regulations do not exclude athletes with relevant DSDs since such athletes can suppress testosterone levels, compete in non-regulated events in the female category or compete against men. However, as has been suggested already, such options seem only to create a Hobson's choice; hardly the most inclusive result. In any event, even if some aspects of the Regulations can be argued to be inclusive, it does not detract from their overall exclusive nature, a point that is recognised by the CAS panel in finding that the Regulations are, *prima facie*, discriminatory.

Accordingly, it seems clear that the Regulations detract from athletics being undertaken in a spirit of solidarity and friendship. This is one of the prices to pay for

³³⁷ Geeraert, 2015, p. 39.

seeking fair and meaningful competition in elite female athletics through the means of the Regulations.

Integrity & good governance

Article 4.1(e) of the IAAF's constitution sets out one of its purposes is to 'protect the integrity of Athletics and the IAAF by developing and enforcing standards of conduct and ethical behaviour and implementing good governance'.

Of course, references to ethical behaviour, standards of conduct and 'good' governance begs questions about what moral norm system is being used to judge ethical from unethical and good from bad. The fundamental premise of this thesis is that rationality is the most appropriate moral norm system from which to evaluate the IAAF's conduct. Indeed, the submissions of the IAAF about the rationality of the Regulations in *Semenya* would seem to provide some evidence that the IAAF sees rationality as an important standard for it to adhere to, at least for the purpose of legal proceedings. To avoid repetition, observations already made about the rationality of the IAAF's approach will not be repeated and the focus here will be to consider the extent to which the IAAF's approach to implementing the Regulations has adhered to other *external* standards of conduct and ethical behaviour.

As has been highlighted, there are clear ethical concerns about the extent to which the scientific evidence relied on by the IAAF adheres to normal standards of scientific integrity,³³⁸ not all of which seem to have been satisfactorily dealt with in *Semenya*. In addition to the obvious concerns about the certainty and reliability of the evidence as to quantification of the performance advantage, there seem to be some remaining concerns about the independence of the scientific experts and the use of athletes' personal data for purposes that were not expressly consented to; something that Camporesi suggests is intuitively unethical.³³⁹ There is a lingering feeling that the scientific evidence has been manipulated to achieve a pre-determined policy objective with scant consideration of external norms and standards of integrity. As Koh et al. put

³³⁸ Franklin et al., 2018; Menier, 2018; Pielke et al., 2019.

³³⁹ Camporesi, 2019, p. 701; see also Prof. Blockman in *Semenya*, para. 242.

it, there is a clear sense of a ‘square data peg’ being used to plug a ‘round policy hole’.³⁴⁰ With regard to the interplay of science and legal policy making, it interesting to note that in *Semenya* Dr Bermon not only offered evidence as to the quantification of the performance advantage and the reasons for it, but also felt it appropriate to offer an opinion on whether the performance advantage (and the source of it) was ‘fair’,³⁴¹ yet this is surely a ‘policy’ concern of the IAAF and beyond the remit of his expertise.

From a medical treatment perspective, in addition to issues of autonomy and consent, there would also seem to be some serious ethical concerns within the medical profession about the appropriateness of requiring medical treatment for athletes that are otherwise healthy. The World Medical Association has gone as far as to suggest that doctors and physicians should not agree to treat individuals who do not have a ‘medical need’.³⁴²

A further significant concern is that the Regulations necessarily create a unique definition and standard of female for the purpose of athletics that ultimately relies on the single metric of useable testosterone. Whilst this is clearly within the powers of the IAAF, the result seems to jar with external standards and practices in medical and legal spheres.³⁴³

Accordingly, it is arguable that the Regulations may well detract from the integrity of athletics in as much as they fail to conform to rational standards and *also* to other external standards of conduct and behaviour.

³⁴⁰ Koh et al., 2018, p. 3 <<https://www.lawinsport.com/topics/articles/item/not-by-gender-not-by-sex-but-by-testosterone-saith-the-iaaf-international-athletics-and-the-new-female-eligibility-regulations>> Accessed 30/8/2019.

³⁴¹ *Semenya*, para. 326.

³⁴² Camporesi, 2019, p. 700; World Medical Association, 2019, Press Release [WWW Document]. World Medical Association. <<https://www.wma.net/news-post/physician-leaders-reaffirm-opposition-to-iaaf-rules/>> Accessed 9/9/2020.

³⁴³ Krech, 2019, p. 75.

The extent to which the IAAF adhered to principles of good governance

References to standards of ‘good governance’ seem to suggest recognition and acceptance of an additional, objective and yet more contextual requirement of integrity. Over recent years there have been an increasing number of studies on the meaning of ‘good governance’ in a sport and there are now well-established sets of good governance principles in sport utilised in both literature and policy.³⁴⁴ Despite variations, they generally reflect a core of well accepted aspirational principles about processes and policies of ISFs that revolve around accountability, transparency, democracy, treating stakeholders fairly and equally and ensuring there are control mechanisms on those wielding power.³⁴⁵ Indeed, the IAAF, as a member of the Association of Summer Olympic International Federations (ASOIF), has seemingly committed itself to implementing five key principles of good governance;³⁴⁶ integrity, transparency, democracy, sports development & solidarity, and the adoption of control mechanisms. Obviously, some of these principles have already been referenced in terms of the extent to which they are impacted by the Regulations (for example, integrity and solidarity), but it is helpful to highlight the additional instances of conflict between the Regulations and these principles.

Good governance – transparency

As has been explained, the IAAF set out the key aspects of its rationale for introducing the Regulations both in the Regulations themselves and its Explanatory Notes. This has since been supplemented by its submissions in *Semenya*. However, as the IAAF does not seem to publish minutes of its executive meetings (nor a summary of them), it is difficult to ascertain what other reasons were considered and weighed in determining that the Regulations were necessary, proportionate and furthered its constitutional purposes. Particular factors that, rationally, ought to have been considered but appear to have been overlooked (or seemingly required further consideration and investigation) have already been suggested; the meaning of ‘fair play’ in sport, the

³⁴⁴ Chappelet and Mrkonjic, 2013, pp. 5-6; Mrkonjic, 2016, p. 4.

³⁴⁵ Ryall et al., 2019, p. 2.

³⁴⁶ ASOIF, 2016, pp. 6-7.

influence of other genetic factors on performance outcomes across all athletic events, the role of environmental factors in influencing performance, the possibility of testosterone influencing performance outcomes in male athletics, the reasons for retaining male and female categories in light of the conclusion that testosterone is the only explanation of male performance advantage, the role of history and tradition in justifying segregation, the extent to which athletes can be said to consent to medical intervention and treatment and, last but not least, the possibility of other less invasive means of compensating for the advantage that testosterone might provide. Even where some of these issues were touched on in *Semenya*, that does not necessarily mean that they were considered before the Regulations were implemented. Nor are these examples intended as a full list but serve the purpose of demonstrating a lack of transparency in the decision-making process.

Ultimately a lack of transparency leaves room for speculation about the reasons for implementation of the Regulations and makes it more difficult to communicate the objective rationality of any decision. In absence of full transparency, it is difficult to ignore suggestions that the Regulations are driven by a conscious or sub-conscious desire to retain separate male and female categories and a particular vision of the female ideal rather than instrumentally valid reasons such as ensuring fair play or developing the sport.

Good governance - democracy

The ASOIF's governance task force report seems to view democracy in terms of the process of electing members to executive bodies and in ensuring representation of key stakeholders in the sport's governing body.³⁴⁷ However, it is suggested that democracy goes further than this and should include wider participation by both internal stakeholders (such as athletes and national federations, clubs etc.) and external

³⁴⁷ ASOIF, 2016, p. 7

stakeholders (the public, governments, NGOs and those interest in human rights) in the creation and development of specific policies.³⁴⁸

Although issues of transparency prohibit significant analysis of the democratic input of stakeholders, Karkazis et al. have shed some light on the evolution of the Regulations. They observed that although a range of stakeholders were consulted (including human rights experts, female athletes and a representative of the intersex community), there were obvious limitations (in terms of the composition of the IAAF's working group, the selection of stakeholders asked to input in to the decision making process and the clarity of the goal to be achieved).³⁴⁹ What input athletes with DSDs had into the continuing process up to the introduction of the DSD Regulations is far from clear. However, it might be noted that according to Karkazis there was, apparently, only one representative of the intersex community (a non-athlete), who inputted into the working group, which, given the potentially disproportionate effect on athletes with a DSD and the potential impact on non-athletes with DSDs, might be considered somewhat of an underrepresentation.

Good Governance – Control Mechanisms

Control Mechanisms are clearly of importance in a governance context to ensure that those within an organisation cannot abuse positions of power. The IAAF has adopted an Integrity Code, which aims, amongst other things, to promote fair play and prevent corruption.³⁵⁰ However, the remit seems to focus primarily on cheating (doping) and preventing corruption, rather than a wider sense of integrity that might include checks and balances designed to ensure decisions are taken in accordance with external standards and norms (such as scientific or legal ones). For example, there does not appear to be a role for the IAAF's independent Athletics Integrity Unit in making decisions on how rules, such as the DSD Regulations, might impact issues of integrity or fair play.³⁵¹ Again, due to a lack of transparency about the decision-making process,

³⁴⁸ Geeraert suggests a failure to take into account views of a wider range of external stakeholders inevitably adds to legitimacy 'gaps' Geeraert, 2015, pp. 15-20.

³⁴⁹ Karkazis et al., 2017, p. 9.

³⁵⁰ IAAF, 2017.

³⁵¹ IAAF Constitution, Article 71.1.

it is difficult to assess the extent to which the IAAF's Integrity Unit (or its predecessor) had input into any aspect of the Regulations. Nor is it clear what other mechanisms were used to limit the potential for individual or majority preferences to drive the implementation of the Regulations.

Good Governance – summary

Even on the basis of such a short survey of good governance principles, it is possible to make a case that the IAAF has fallen short in relation to some of them. After all, it seems reasonably clear that more could have been done to consider the views and rights of those principally affected (for example, through at least considering compensating by methods other than medication), to be transparent and to involve relevant stakeholders in developing the means of dealing with the perceived problem. The lack of obvious role for the independent integrity unit in decisions concerning rule creation perhaps suggests the need for additional control mechanisms in this regard as well.

These shortcomings mean it is at least arguable that the implementation of the Regulations may well have had a negative impact on achieving the IAAF's purposes of ensuring integrity and good governance. The significant volume of criticism aimed at regulations, both from a human rights perspective and a scientific perspective is perhaps testament to that.

Conclusion

The aim of this thesis was to evaluate the rationality of the IAAF's decision to implement the Regulations. In recognising that rationality, like sexual status and gender, is not, in reality, a binary concept, the inevitable result is an evaluation of how more or less rational the IAAF's approach is. However, it is argued that such an evaluation remains important since it offers a perspective on the effectiveness of the IAAF as a rational agent and, perhaps, highlights some of the reasons why it has struggled to justify its approach externally. Although there are clearly limitations on the conclusions that can be drawn about a rational agent's general effectiveness from the evaluation of a single decision, it is suggested that such an evaluation can highlight aspects of an agent's decision making that might be problematic if repeated in the future. Furthermore, given the importance of the decision to the rights of individual athletes and the possible influence of a high-profile organisation (such as the IAAF) on attitudes towards individuals with atypical gender identities, there would seem to be value in scrutiny of the decision.

It has been suggested that whilst the pursuit of fair and meaningful competition in female athletics seem (initially at least) plausibly valid instrumental reasons for introducing the Regulations, on closer evaluation, the normative force of such reasons seems underwhelming.

First, the strength of them as instrumental reasons capable of justifying the Regulations is undermined by the inconsistent and subjective approach the IAAF seems to have adopted as to the meaning of 'fair' and 'meaningful' competition.

With regard to fair competition, it has been argued that in order to have any resonance with the meaning of 'fair play' in the IAAF's constitution, the Regulations ought to have respected a Rawlsian sense of equality of sporting opportunity and recognised the need for an objectively consistent basis for determining which genetic pre-dispositions are considered fair or unfair. Such an outcome could have been achieved by reference to the relative magnitude of the performance advantage that *any* genetic pre-disposition provides as compared against each other or, at least, by reference to some sort of objective reference point such as an acceptable margin of victory. This claim seems equally true, whether binary segregation by sex is taken as a pre-condition to

fair competition or not. With regard to ensuring meaningful competitions, again there ought to have been an objective and consistent reference point from which it is possible to determine competitions as 'meaningful' or not. However, the IAAF has not provided clear evidence of the performance advantage that athletes with DSDs actually have, nor (given such evidence that it has put forward) an objective or consistent reference point against which it has singled out increased testosterone caused by relevant DSDs as a genetic pre-disposition which needs to be compensated for. To underline the point, reference need only be made to the selection of events to which the Regulations apply, where it is difficult to find any semblance of objective, consistent or rational justification since the regulated events do not align with the IAAF's own scientific evidence about the performance advantage that testosterone provides. It has also been argued that questions also remain about the possibility of needing to compensate for testosterone-based performance advantage in male events.

Furthermore, the IAAF's chosen *means* for making competition fairer or more meaningful (exclusion or medication) also seems difficult to reconcile with the pursuit of fair and meaningful competition, however those terms are understood. The acknowledged yet unknown impacts of medication on particular individuals means that any sense of adhering to sporting equality of opportunity or of protecting meaningful competition seems to have been marginalised when adopting the solution. That alternative (and perhaps better) means of achieving fair and meaningful competition do not appear to have been considered at all is a problem that further reduces the rationality of the decision.

Even if such problems are ignored and it is accepted that the Regulations do help achieve fair and meaningful competition within female athletics, it still needs to be recognised that achieving fair and meaningful competitions in female athletics is not the end to be achieved; it is itself merely a means of furthering the IAAF's constitutional purposes of ensuring athletics is undertaken in the spirit of *fair play* and developing the sport. Ultimately, even if the IAAF had been able to provide an objective basis for determining what was fair and meaningful and the magnitude of performance advantage was clear and relatively 'too large', the Regulations do not necessarily significantly contribute to ensuring that athletics is conducted in 'the spirit of fair play'

or to ‘developing’ the sport. Whilst compensating for testosterone in only female athletics might, arguably, make elite female competitions a little fairer and slightly more ‘meaningful’, it is suggested that the Regulations could only ever minimally advance fair play across athletics due to their narrow focus on one sub-group of athletes and one stable genetic inequality. Furthermore, there remains a dissonance between the physiological, psychological and legal harms caused by the Regulations and the characteristics and ideals of fair play. In particular, the Regulations seem to sit uncomfortably when viewed against characteristics such as equality, empathy and respect for others and ideals that recognise sport as an essentially playful activity and as a forum for striving to be one’s best, regardless of the outcome. Although the Regulations might better satisfy the (understandable) winning preferences of those the IAAF views as elite athletic females, such a result does not align easily with fair play. Nor is it at all clear that making competitions marginally closer in some events will ‘develop’ the sport through increased participation and interest in the sport as a whole; there is simply no empirical evidence to support this.

In addition to the underwhelming reasons for adoption of the Regulations, it has also been suggested that there are instrumental reasons *not* to adopt the Regulations; namely that they would appear to harm efforts to ensure athletics is undertaken in the spirit of solidarity and friendship and also, potentially, the integrity of the sport by failing to adhere to external scientific and legal norms as well as standards of good sporting governance. It also seems plausible that the Regulations are heading against the ‘flow’ of wider social attitudes that are more accepting of atypical sex and gender identities.³⁵²

Accordingly, whilst it might be possible to argue that the introduction of the Regulations was rational in the sense that *some* rational, reasonable people would recognise that the Regulations could minimally further some of the IAAF’s constitutional purposes, it is argued that they were far from the most rational response. Had key relevant considerations been considered properly (such as the IAAF’s constitutional purposes, the meaning of fair play and equality of opportunity in

³⁵² Camporesi, 2019, p. 703.

sport, the uncertain state of the scientific evidence and the full significance of the human rights implications) it is hard to justify the Regulations as being near the top of a list of most rational responses. With reference to what has been about the maximisation of expected utility, it seems possible to label the decision as a bad choice.³⁵³

Whilst the legal scrutiny of the decision to date seems to endorse the minimal rational justification for the Regulations, the intensity of the legal scrutiny remains open to criticism, as does the possibility of the lawfulness of the Regulations being questioned in the future.³⁵⁴ Furthermore, given the limits of the legal scrutiny, such legal approval does not undermine the argument that, in implementing the Regulations, the IAAF is being, at best, a minimally effective rational agent.

When considering potential lessons to take from IAAF's approach, three aspects seem to stand out. First, that in justifying the Regulations, the IAAF seems to have played relatively minimal attention to its constitutional purposes. As an organisation that has a set of formal and publicly stated purposes, a clear, transparent and rational justification of how the Regulations achieved those purposes seems the logical starting point. Instead, the starting point seems to have been the segregation of male and female athletics and protection of those it views as athletically female athletes.

Second, in relying on uncertain scientific evidence about the actual magnitude of performance advantage, what has been achieved is a veneer of objectivity about what is fair and unfair and what is meaningful, but one that masks an inherently subjective determination. Furthermore, in doing so, there appears to have been a failure to fully respect both the limits of the conclusions that can be drawn from the available scientific evidence and also the relevant conventions and standards of scientific study. This potential manipulation of scientific evidence to fill a 'policy hole' raises a more general question about the IAAF and its approach to scientific 'knowledge' in rule creation.

³⁵³ Bales suggests that the rightness of a decision might ultimately be judged by whether it contributes towards a 'good state of affairs' (i.e. the achievement of the IAAF's ultimate aims) no less than any other alternative would ((Bales, 1971, p. 259).

³⁵⁴ Something that is now happening at the level of the European Court of Human Rights.

Third, there appears to have been a lack of transparency in the decision-making process and, as a result, it seems tolerably clear that there were reasons that influenced the decision which remain opaque. It has been suggested, speculative, that such reasons might include: a historic and institutionalised attachment to male/female segregation; a need to be perceived to be doing something; and, possibly, an institutionalised view of what it means to be a female athlete. As Loland observes, historical and sociocultural observations do not make a moral justification.³⁵⁵ Similarly, nor do historical and sociocultural perspectives make a rational one, especially when their value as contributory reasons are not considered against an organisation's constitutional purposes.

In summary, it is argued that the Regulations have, at best, a minimally rational justification and their implementation has highlighted some more general concerns about the IAAF's approach to rule creation. That the Regulations have received approval by the CAS and the Swiss Federal Court despite such a minimally rational justification tends to highlight a possible lacuna in legal accountability of ISFs and also in the protection of rights of individual athletes.

Finally, some observations on the specific case of Caster Semenya. Whilst the IAAF may view her (and other athletes with relevant DSDs) as athletically male, that does not mean she automatically benefits from an unfair advantage. Whilst it is for the IAAF to determine the sense of male and female it wishes to adopt and to determine what is fair or unfair, it needs to do so from a rational, consistent and objective starting point. What constitutes fair or unfair advantage needs to be consistently applied to all participants across all events so that like cases are treated alike. The IAAF might have done this by showing that athletes like Ms Semenya do, in fact, have the same performance advantage as typical men³⁵⁶ or, by providing evidence that the advantage is disproportionately large compared to some other objective reference point. However, The IAAF has not yet provided clear evidence of either and as such it seems difficult to conclude that she (or other athletes with relevant DSDs) have an unfair advantage, unless you are prepared to accept the IAAF have little rational or objective

³⁵⁵ Loland, 2020, p. 587

³⁵⁶ If a binary classification is viewed as a pre-condition to the division of sporting rewards.

constraint on what it views as fair or unfair. Such a conclusion seems particularly justified when the mechanism of compensation is considered, which may well go beyond simply negating any advantage that Ms Semenya has.

Bibliography

- Adair, J.L., 2011. In a League of Their Own: The Case for Intersex Athletes. 18 *Sports Law J.* 18, 121.
- Alm, J., 2013. Action for Good Governance in International Sports Organisations, Final Report.
- Amy-Chinn, D., 2012. The Taxonomy and Ontology of Sexual Difference: Implications for Sport. 15 *Sport in Society*, 9, 1291-1305
- Anderson, L.C., Knox, T.R., 2020. On Loland's conception of fair equality of opportunity in sport. *J Med Ethics* 46, 595–596. <https://doi.org/10.1136/medethics-2020-106748>
- ASOIF, n.d. The Association of Summer Olympic International Federations: Governance Task Force [WWW Document]. URL <https://www.asoif.com/governance-task-force> (accessed 4.11.19).
- Auchus, R.J., 2018. ENDOCRINOLOGY AND WOMEN'S SPORTS: THE DIAGNOSIS MATTERS. *LAW AND CONTEMPORARY PROBLEMS* 80, 12.
- Audi, R., 1995. *Cambridge Dictionary of Philosophy*. Cambridge University Press.
- Bales, R.E., 1971. Act-Utilitarianism: Account of Right-Making Characteristics or Decision-Making Procedure? 10.
- Barak, A., 2007. *Purposive Interpretation in Law*. Princeton University Press, Princeton, New Jersey.
- Bermon, S., 2017. Androgens and Athletic Performance of Elite Female Athletes. *Curr Opin Endocrinol Diabetes Obes.* 24, 246-251. <https://doi.org/10.1097/MED.0000000000000335>
- Bermon, S., Garnier, P.-Y., 2017. Serum androgen levels and their relation to performance in track and field: mass spectrometry results from 2127 observations in male and female elite athletes. *British Journal of Sports Medicine* 51, 1309–1314. <https://doi.org/10.1136/bjsports-2017-097792>
- Bermon, S., Hirschberg, A.L., Kowalski, J., Eklund, E., 2018. Serum androgen levels are positively correlated with athletic performance and competition results in elite female athletes. *Br J Sports Med* 52, 1531–1532. <https://doi.org/10.1136/bjsports-2018-099700>
- Bratman, M.E., 2009. Intention, belief, and instrumental rationality, in: *Reasons for Action*. Cambridge University Press, Cambridge, p. 24.
- Briggs, R.A., 2019. Normative Theories of Rational Choice: Expected Utility [WWW Document]. *The Stanford Encyclopedia of Philosophy*. URL <https://plato.stanford.edu/archives/fall2019/entries/rationality-normative-utility/>
- Broome, J., 2019. Practical Reason; rationality or normativity but not both, in: *The Routledge Handbook of Practical Reason*.
- Broome, J., 2005. Does Rationality Give Us Reasons? ¹. *Philosophical Issues* 15, 321–337. <https://doi.org/10.1111/j.1533-6077.2005.00069.x>

- Bryman, A., 1984. Organizational studies and the concept of rationality. *Journal of Management Studies* 21, 391–408.
- Buchanan, D.A., Huczynski, A., 2016. *Organizational behaviour*, Ninth edition. ed, Always learning. Pearson Education Limited, Harlow.
- Butcher, R., Schneider, A., 1998. Fair Play as Respect for the Game. *Journal of the Philosophy of Sport* 25, 1–22.
- Buzuvis, E., 2016. Hormone Check: Critique of Olympic Rules on Sex and Gender. *Wis. J.L. Gender & Soc’y* 31, 29.
- Buzuvis, E., 2010. Caster Semenya and the Myth of a Level Playing Field. *Mod. Am.* 36.
- Camporesi, S., 2020. The legacy of Caster Semenya: examining the normative basis for the construction of categories in sport. *J Med Ethics* 46, 597–598. <https://doi.org/10.1136/medethics-2020-106508>
- Camporesi, S., 2019. When does an advantage become unfair? Empirical and normative concerns in Semenya’s case. *J Med Ethics* 45, 700–704. <https://doi.org/10.1136/medethics-2019-105532>
- Chappelet, J.-L., Mrkonjic, M., 2013. Basic Indicators for Better Governance in International Sport (BIBGIS): An assessment tool for international sport governing bodies.
- Crasnow, S., *Models and Reality: When Science Tackles Sex*. 16 *Hypatia*, 3, 138-148.
- Clegg, Stewart., Courpasson, David., Phillips, Nelson., 2006. *Power and organizations*, Foundations for organizational science. SAGE, London.
- Cooper, J., 2019. Testosterone: ‘the Best Discriminating Factor.’ *Philosophies* 4, 36. <https://doi.org/10.3390/philosophies4030036>
- Davis, H., 2016. *Human Rights Law*. Oxford University Press, Oxford.
- Dworkin, R., 1977. *Taking Rights Seriously*. Harvard University Press.
- Eklund, E., Berglund, B., Labrie, F., Carlström, K., Ekström, L., Hirschberg, A.L., 2017. Serum androgen profile and physical performance in women Olympic athletes.
- Feldman, F., 2006. Actual Utility, The Objection from Impracticality, and the Move to Expected Utility. *Philos Stud* 129, 49–79. <https://doi.org/10.1007/s11098-005-3021-y>
- Fish, S., 2008. Intention is All There Is: A Critical Analysis of Aharon Barak’s Purposive Interpretation in Law. *Cardozo L. Rev.* 29, 1109.
- Franklin, S., Ospina Betancurt, J., Camporesi, S., 2018. What statistical data of observational performance can tell us and what they cannot: the case of *Dutee Chand v. AFI & IAAF*. *British Journal of Sports Medicine* 52, 420–421. <https://doi.org/10.1136/bjsports-2017-098513>
- Gardiner, S., 2012. *Legal Regulation of Governing Bodies*, in: *Sports Law*. Routledge, New York
- Geeraert, A., 2015. *Sports Governance Observer 2015; The Legitimacy Crisis in International Sports Governance*.
- Greenfield, S., Osborn, G., n.d. *The Role of Law within Sport* 12.
- Ha, N.Q., Dworkin, S.L., Martínez-Patiño, M.J., Rogol, A.D., Rosario, V., Sánchez, F.J., Wrynn, A., Vilain, E., 2014. Hurdling Over Sex? Sport, Science, and Equity. *Arch Sex Behav* 43, 1035–1042. <https://doi.org/10.1007/s10508-014-0332-0>
- Handelsman, D.J., Hirschberg, A.L., Bermon, S., 2018. Circulating Testosterone as the Hormonal Basis of Sex Differences in Athletic Performance. *Endocrine Reviews* 39, 803–829. <https://doi.org/10.1210/er.2018-00020>

- Herring, J., Wall, J., 2017. The Nature and Significance of the Right to Bodily Integrity. *Cambridge Law Journal* 76, 566–588. <https://doi.org/10.1017/S0008197317000605>
- Huizinga, J., 1949. *Homo Ludens: A Study of the Play-Element in Culture*.
- Hume, D., 1978. *A Treatise of Human Nature*, 2nd ed. Oxford University Press.
- Hunte, B., 2020. Gender-fluid worker wins Jaguar Land Rover tribunal [WWW Document]. BBC. URL <https://www.bbc.co.uk/news/uk-england-coventry-warwickshire-54180794> (accessed 9.23.20).
- IAAF, 2017. IAAF Integrity Code of Conduct [WWW Document]. URL <file:///C:/Users/uogstaff/Downloads/IAAF%20Integrity%20Code%20of%20Conduct.pdf>
- IAAF Constitution, 2019.
- International Association of Athletics Federations, 2019. Eligibility Regulations for the Female Classification (Athletes with Differences in Sexual Development) Explanatory Notes.
- International Fair Play Committee, 2020. What is Fair Play? [WWW Document]. URL <http://www.fairplayinternational.org/what-is-fair-play>
- IOC, 2020. IOC website, Olympic Motto [WWW Document]. URL <https://www.olympic.org/the-olympic-motto> (accessed 7.20.20).
- Irwin, T.H., 1975. Aristotle on Reason, Desire, and Virtue. *The Journal of Philosophy* 72, 567. <https://doi.org/10.2307/2025069>
- Karkazis, K., 2018. The Testosterone Myth [WWW Document]. *Wired*. URL <https://www.wired.com/story/testosterone-treatment-myth/>
- Karkazis, K., Jordan-Young, R., Davis, G., Camporesi, S., 2017. Out of Bounds? A Critique on the New Policies on Hyperandrogenism in Elite Female Athletics, in: *The Ethics of Sport*. Oxford University Press, pp. 119–143.
- Karkazis, K., Jordan-Young, R., Davis, G., Camporesi, S., 2012. Out of Bounds? A Critique of the New Policies on Hyperandrogenism in Elite Female Athletes. *The American Journal of Bioethics* 12, 3–16. <https://doi.org/10.1080/15265161.2012.680533>
- Keating, J.W., 2003. Sportsmanship as a Moral Category, in: *Sports Ethics an Anthology*. Blackwell.
- Klatt M., Meister M., 2012. Proportionality-A benefit to human rights? Remarks on the ICON controversy. *International Journal of Constitutional Law* 10, 687–708. <https://doi.org/10.1093/icon/mos019>
- Koh, D.B., Adair, D., Elphick, L., 2018. Not by gender, not by sex, but by testosterone saith the IAAF: Law in Sport (Online Journal). <<https://www.lawinsport.com/topics/articles/item/not-by-gender-not-by-sex-but-by-testosterone-saith-the-iaaf-international-athletics-and-the-new-female-eligibility-regulations>>
- Kolodny, N., Brunero, J., 2018. Instrumental Rationality. *The Stanford Encyclopedia of Philosophy*.
- Korsgaard, C., 1996. *The Sources of Normativity*. Cambridge University Press, Cambridge.
- Krech, M., 2019. The misplaced burdens of “gender equality” in Caster Semenya v IAAF: the Court of Arbitration for Sport attempts human rights adjudication. *I.S.L.R.* 3, 66–76.
- Krech, M., 2017. To be a Woman in the World of Sport: Global Regulation of the Gender Binary in Elite Athletics. *Berkeley J. Int’l L.* 35, 262–290.

- Lane, J.A., Ingleby, R., 2018. Indirect Discrimination, Justification and Proportionality: Are UK Claimants at a Disadvantage? *Industrial Law Journal* 47, 531–552. <https://doi.org/10.1093/indlaw/dwx009>
- Larson, S., 2011. Intersexuality and Gender Verification Tests: The Need to Assure Human Rights and Privacy. *Pace Int'l L. Rev.* 23, 215–247.
- Lee, M.Y., 2019. Sex-segregated services - their place in EU anti-discrimination law and their relationship to positive action measures 14.
- Loland, S., 2020. Caster Semenya, athlete classification, and fair equality of opportunity in sport. *J Med Ethics* 46, 584–590. <https://doi.org/10.1136/medethics-2019-105937>
- Loland, S., 2002. *Fair Play in Sport: a moral norm system*. Routledge.
- Loland, S., McNamee, M., 2000. Fair Play and the Ethos of Sports: An Eclectic Philosophical Framework. *Journal of the Philosophy of Sport* 27, 63.
- Lunt, D., Dyreson, M., 2014. A History of Philosophic Ideas about Sport, in: *The Bloomsbury Companion to the Philosophy of Sport*. pp. 17–37.
- Mantzavinos, C., 2016. Hermeneutics. *The Stanford Encyclopedia of Philosophy*.
- McDonagh, E., Pappano, L., 2008. *Playing With the Boys: Why Separate is Not Equal*. Oxford University Press.
- McNamee, M., 1995. Sporting Practices, Institutions, and Virtues: A Critique and a Restatement. *Journal of the Philosophy of Sport* 22, 61–82.
- Menier, A., 2018. Use of event-specific tertiles to analyse the relationship between serum androgens and athletic performance in women. *British Journal of Sports Medicine* 52.
- Mrkonjic, M., 2016. Enlarged Partial Agreement on Sport: A review of good governance principles and indicators in sport.
- Oxford Advanced Learners Dictionary [WWW Document], n.d. URL <https://www.oxfordlearnersdictionaries.com/> (accessed 5.10.20).
- Pearson, K.M., 1973. Deception, Sportsmanship, and Ethics. *Quest* 19, 115–118. <https://doi.org/10.1080/00336297.1973.10519761>
- Pielke, R., Tucker, R., Boye, E., 2019. Scientific integrity and the IAAF testosterone regulations. *Int Sports Law J.* <https://doi.org/10.1007/s40318-019-00143-w>
- Poscher, R., 2017. Hermeneutics, Jurisprudence and Law, in: *The Routledge Companion to Hermeneutics*. Routledge, p. 23.
- Rawls, J., 1971. *A Theory of Justice*. Belknap Press, Cambridge, Mass.
- Raz, J., 2005. The Myth of Instrumental Rationality. *Journal of Ethics & Philosophy* 1, 28.
- Reed, M., 1985. *Redirections in organizational analysis*. Tavistock, London.
- Rivers, J., 2006. PROPORTIONALITY AND VARIABLE INTENSITY OF REVIEW. *C.L.J.* 65, 174–207. <https://doi.org/10.1017/S0008197306007082>
- Ryall, E., 2016. *Philosophy of Sport: Key Questions*. Bloomsbury.
- Ryall, E., Cooper, J., Ellis, L., 2019. Dispute resolution, legal reasoning and good governance: learning lessons from appeals on selection in sport. *European Sport Management Quarterly* 1–17. <https://doi.org/10.1080/16184742.2019.1636400>
- Scanlon, T.M., 2014. *Being Realistic with Reasons*. Oxford University Press, Oxford.
- Scott, W.R., 1998. *Organizations: Rational, Natural and Open Systems*. Prentice Hall, Upper Saddle River, N.J.
- Sen, A., 2002. *Rationality and Freedom*. Harvard University Press, Cambridge, Mass.

- Sheridan, H., 2003. Conceptualizing 'Fair Play': A Review of the Literature. *European Physical Education Review* 9, 163–184. <https://doi.org/10.1177/1356336X03009002003>
- Smart, J.J.C., Williams, B., 1973. *Utilitarianism: For and against*. Cambridge University Press, Cambridge.
- Sonkson, P., 2015. Medical and Ethical Concerns Regarding Women with Hyperandrogenism and Elite Sport. *Journal Of Clinical Endocrinology and Metabolism* 825.
- Swiss Federal Court, 2019. Press Release of the Swiss Federal Court 30 July 2019 [WWW Document]. URL https://www.bger.ch/files/live/sites/bger/files/pdf/en/4A_248_2019_yyyy_m_m_dd_T_e_09_54_21.pdf
- Thomas, C., 2016. Built for speed: what makes Usain Bolt so fast? *The Telegraph*.< <https://www.telegraph.co.uk/usain-bolt-worlds-fastest-man/0/built-for-speed-what-makes-usain-bolt-so-fast/>>
- Tucker, R., 2017. Testosterone, performance & intersex athletes: Will the IAAF evidence be enough? [WWW Document]. *The Science of Sport*. URL <https://sportsscientists.com/2017/07/testosterone-performance-intersex-athletes-will-iaaf-evidence-enough/>
- Wallace, R.J., 2018. Practical Reason. *The Stanford Encyclopedia of Philosophy*.
- Wiesemann, C., 2011. Is there a right not to know one's sex? The ethics of "gender verification" in women's sports competition. *Journal of Medical Ethics* 37, 216–220. <https://doi.org/10.1136/jme.2010.039081>
- World Medical Association, 2019. Press Release [WWW Document]. World Medical Association. URL <https://www.wma.net/news-post/physician-leaders-reaffirm-opposition-to-iaaf-rules/>
- Xavier, N.A., McGill, J.B., 2012. Hyperandrogenism and Intersex Controversies in Women's Olympics. *The Journal of Clinical Endocrinology & Metabolism* 97, 3902–3907. <https://doi.org/10.1210/jc.2012-2792>
- Zaum, D., 2013. *Legitimizing International Organizations*. Oxford University Press, Oxford.

APPENDIX

The appendix includes the following documents:

1. The constitutional purposes of the IAAF (2019)
2. IAAF Eligibility Regulations for the Female Classification (the DSD Regulations)
3. IAAF's Explanatory Notes to the DSD Regulations
4. CAS 201805794 Semenya v IAAF (extract)

