



Tilburg Law School
LL.M Law and Technology

**TESTOSTERONE – THE ONLY FACTOR
DIFFERENTIATING MEN AND WOMEN IN
ATHLETICS?**

AN ANALYSIS OF WHETHER THE INTERNATIONAL ASSOCIATION OF
ATHLETICS FEDERATIONS (“IAAF”) ELIGIBILITY REGULATIONS FOR ELITE
FEMALE ATHLETES DIAGNOSED WITH HYPERANDROGENISM CAN BE
REGARDED AS DISCRIMINATION WHICH IS JUSTIFIABLE AND
PROPORTIONATE

AUTHOR:

Tarryn Nadine Howard

Snr: 2044486

Anr: 707110

FIRST SUPERVISOR:

Dr. Bart van der Sloot

SECOND SUPERVISOR:

Ms Tjaša Petročnik

July 2020

Acknowledgements

I would like to express my great appreciation to Dr Tineke Broer for her meaningful support and guidance throughout this process as my initial supervisor. I would also like to thank Dr Bart van der Sloot for stepping in as my main supervisor.

I would also like to thank Ms Tjaša Petročnik for stepping in as my second supervisor.

Thank you to my friends for your all your support and constant encouragement during this LL.M.

Finally, a big thank you to my family. I am forever indebted to you for this opportunity.

Table of Contents

List of Acronyms and Abbreviations	vii
Chapter 1: Introduction.....	1
1.1 Introduction	1
1.1.1 Focus.....	1
1.1.2 Background	2
1.1.3 Ethical/legal problem	4
1.1.4 Relevance	5
1.1.5 Literature Review	6
1.2 Research question and methodology	8
1.2.1 Research question.....	8
1.2.2 Sub-questions.....	8
1.2.3 Methodology	8
1.3 Overview of Chapters	9
Chapter 2: IAAF’s history of Regulation implementation and the CAS’ rulings..	11
2.1 Introduction	11
2.2 The history of implementation of various Regulations by the IAAF	11
2.3 CAS, the Hyperandrogenism Regulations and how it was applied in the matter of Dutee Chand	16
2.4 CAS, the Eligibility Regulations and how it was applied in the matter of Caster Semenya	19
2.5 Conclusion.....	21
Chapter 3: Ethical concerns and consequences of the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development) for elite female athletes.....	23
3.1 Introduction	23
3.2 The scientific integrity relied upon by the IAAF	23
3.3 Ethical concerns of the Eligibility Regulations	27
3.4 Discrimination towards elite female athletes and how this impact upon them	29
3.5 Conclusion.....	31
Chapter 4: Legal compatibility of the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development).....	32
4.1 Introduction	32
4.2 The IAAF, CAS and disputes	32
4.3 The Eligibility Regulations and the ECHR.....	34
4.3.1 Article 8 of the ECHR – respect for private life	34

4.3.2 Article 14 of the ECHR – prohibition of discrimination.....	35
4.4 Justification and Proportionality regarding discrimination	37
4.4.1 Objective Justification.....	37
4.4.2 Proportionality.....	37
4.5 The Eligibility Regulations and the Universal Declaration of Human Rights	38
4.5.1 Article 7 UDHR – right not to be discriminated against.....	38
4.5.2 Article 12 UDHR – right not to be subjected to arbitrary interference	39
4.5.3 Article 22 UDHR – right to social security.....	39
4.5.4 Article 29 UDHR - limitations	39
4.6 Conclusion.....	40
Chapter 5: The effect of gender binary on the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development), athletics and elite female athletes.....	41
5.1 Introduction	41
5.2 Elite Female Athletes with Hyperandrogenism: what to do?.....	41
5.2.1 Participating in a different category.....	41
5.2.2 Complying with the Eligibility Regulations.....	42
5.2.3 Retire from competitive athletics.....	43
5.3 What is the effect of the gender binary that the IAAF has adhered to for years and how does it impact on elite female athletes?	43
5.4 Possible alternatives	44
5.5 The future for Caster Semenya and the Olympic Games.....	46
5.6 Conclusion.....	46
Chapter 6: Conclusion	48
6.1 Literature Gap.....	48
6.2 Research Question and Answer	48
6.3 Importance of Findings and Ideas	48
6.4 Implications of the Findings	50
6.5 Final Thought	52
7. Bibliography.....	viii
7.1 Primary Sources	viii
<i>Case Law:</i>	<i>viii</i>
<i>Legislation:</i>	<i>viii</i>
7.2 Secondary Sources	ix
<i>Books:</i>	<i>ix</i>
<i>Documents issued by official bodies:</i>	<i>ix</i>

Journal Articles:..... *x*
Press:..... *xiii*

List of Acronyms and Abbreviations

DSD	Disorder of Sex Development
IAAF	International Association of Athletics Federations
Eligibility Regulations	Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development)
CAS	Court of Arbitration for Sports
WADA	World Anti-Doping Agency
Universal Declaration	The Universal Declaration of Human Rights
ECHR	The European Convention on Human Rights
IOC	International Olympic Committee
Hyperandrogenism Regulations	Gender Verification with the Regulations Governing Eligibility of Females with Hyperandrogenism
AFI	Athletics Federation of India
Bermon	Dr Stéphane Bermon
Garnier	Pierre-Yves Garnier
BJSM	British Journal of Medicine
ECtHR	European Court of Human Rights
Supreme Court	Swiss Federal Supreme Court
UN	United Nations

Chapter 1: Introduction

1.1 Introduction

1.1.1 Focus

Hyperandrogenism, which affects approximately “5 – 10% of women of reproductive age”¹, is a condition, which results in a woman’s body producing higher levels of testosterone than most other women. Hyperandrogenism in elite sports is considered problematic because the testosterone levels that these elite female athletes naturally produce are regarded as the production of the “male sex hormones.”² The production of androgen testosterone “is restricted to men”³ and is seen as a “dangerous or foreign substance in women’s bodies.”⁴ It is also believed that this higher production of testosterone gives these females an advantage over other elite female athletes that have not been diagnosed with this condition.

Hyperandrogenism is considered to form part of the seven Disorder of Sex Development (“DSD”)⁵ that the International Association of Athletics Federations (“IAAF”)⁶ regulates. What the IAAF particularly wants to regulate is the “endogenous (natural) testosterone levels appropriate to that individual’s unique physiology.”⁷ If an athlete is diagnosed with DSD, that person will be considered as being ‘intersex’. DSD means “a group of rare conditions involving genes, hormones and reproductive organs, including genitals. It means a person’s sex development is different to most other people’s.”⁸ Some of these developments include polycystic ovary syndrome (PCOS)⁹,

¹ Bulent O Yildiz, “Diagnosis of hyperandrogenism: clinical criteria” in Best Practice & Research Clinical Endocrinology & Metabolism [2006] Vol 20, No.2, 167

² Sarah Sloaf, ‘What is Hyperandrogenism? How the Natural Conditions Affects Caster Semenya’ (Inverse, 1 May 2019) <<https://www.inverse.com/article/55421-caster-semenya-hyperandrogenism-iaaf>> date accessed 19 September 2019

³ Sonja Erikainen, *Gender Verification and the making of the female body in sport: a history of the present* (Routledge 2020) 124

⁴ Ibid, p. 124

⁵ Andy Brown, “Questions remain over IAAF Differences of Sex Development Regulations” (The Sports Integrity Initiative, 19 May 2018) <<https://www.sportsintegrityinitiative.com/questions-remain-iaaf-differences-sex-development-regulations/>> date accessed 17 November 2019

⁶ On 9 June 2019 the IAAF revealed its new name, being World Athletics. At the time Caster Semenya challenged the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development), it was still the IAAF. Therefore, any reference to the World Athletics will remain the IAAF for purposes of this thesis.

“IAAF unveils new name and logo”, (*World Athletics*, 9 June 2019) <<https://www.worldathletics.org/news/press-release/iaaf-unveils-new-name-and-logo>> date accessed 23 April 2020

⁷ Andy Brown, “Questions remain over IAAF Differences of Sex Development Regulations” (The Sports Integrity Initiative, 19 May 2018) <<https://www.sportsintegrityinitiative.com/questions-remain-iaaf-differences-sex-development-regulations/>> date accessed 17 November 2019

⁸ United Kingdom National Health Services, ‘Differences in sex development’ (15 August 2019) <<https://www.nhs.uk/conditions/differences-in-sex-development/>> date accessed 27 October 2019

⁹ Bulent O Yildiz, “Diagnosis of hyperandrogenism: clinical criteria” in Best Practice & Research Clinical Endocrinology & Metabolism [2006] Vol 20, No.2, 167

acne, “excessive male-pattern terminal hair growth”¹⁰, hair loss on the scalp and deepening of the voice¹¹, amongst others.

This thesis researches whether the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development) (“the Eligibility Regulations”) of the IAAF on elite female athletes with Hyperandrogenism can be regarded as discriminatory and in the event that discrimination is present, whether this discrimination is justified and proportionate. The Eligibility Regulations, which came into effect on 8 May 2019, impact elite female athletes in two specific areas, namely it is only applicable to elite female athletes who produce more testosterone than what is allowed in competitive sports due to having the XY chromosomes and on those elite female athletes participating in the running events between 400m to 1-mile races.

1.1.2 Background

Mokgadi Caster Semenya (“Caster Semenya”), a middle-distance runner, from the Republic of South Africa participated in her maiden international competition in 2009 in Berlin, Germany at the tender age of 18 years. Even though she managed to win gold in this event on the international athletics stage, Caster Semenya was not congratulated by her fellow athletes or the IAAF; instead, she was criticized and ridiculed. Caster Semenya recently reflected on her maiden athletics event and winning the gold medal where she said that “they said that I was a man. That I had an advantage. That my testosterone was too high.”¹² She further articulated that “they did not see me as a human at all. They saw me as science. They wanted to test my body.”¹³

The tests conducted on elite female athletes are commonly known as sex-testing or gender verification tests, which have various forms, and have been in use for approximately 70 years. It appears that the first attempt at gender verification was conducted by the British Women’s Amateur Athletic Association, which in 1948, required a doctor’s certificate from the athletes wishing to compete.¹⁴ This measure was abandoned soon thereafter due its inefficiency. Thereafter, sex-testing or gender verification tests were conducted by means of the so-called “nude parades, whereby women had to remove their clothing while a panel of doctors looked at their genitalia to visibly determine whether they were women”¹⁵ but in the 1950s the tests were set out in the policies of the IAAF, which included “mandatory physical examinations”¹⁶ which consisted of the nude parades. Presently, sex-testing or gender verification tests include “XX vs. XY chromosome testing”¹⁷ as well as physical, gynaecological and ultrasound

¹⁰ Ibid, p. 168

¹¹ Ibid, p. 173

¹² Mulligan Lauren, ‘I Wanted To Be A Solider’ (The Players’ Tribune, 27 September 2019) <<http://projects.theplayerstribune.com/caster-semenya-gender-rights/p/1>> date accessed 2 October 2019

¹³ Ibid, p.4

¹⁴ Anre Ljungqvist, “Gender Verification” in B L Drinkwater (ed) *Women in Sport: An ioc medical commission publication, women in sport* (John Wiley & Sons, 2000) ,184

¹⁵ Kirsten Frattini, ‘IOC, IAAF, UCI guidelines highlight the need for science and education’ (Cyclingnews, 3 May 2019) <<https://www.cyclingnews.com/features/policing-gender-boundaries-testosterone-sex-testing-and-human-rights>> date accessed 27 October 2019

¹⁶ Ibid, p.8

¹⁷ Ibid, p. 8

imaging.”¹⁸ These tests were initially conducted to ensure that male athletes were not participating as females in female events.¹⁹

Various elite female athletes have been subjected to sex-testing or gender verification testing in order to confirm their gender and to establish that they fall within the IAAF’s Regulations and definitions of what it means to be ‘female’. If elite female athletes have been subjected to sex-testing or gender verification tests and it is discovered that they have Hyperandrogenism, she will be referred to as “intersex or DSD athletes.”²⁰ It appears that the classification of ‘female’ is then no longer applicable to these athletes as they have been classified as belonging to a separate category of gender. As mentioned above, sex-testing or gender verification tests has a long history and the testing has changed over the years. In the 1950s, Foekje Dillema, a Dutch 100 and 200 metres athlete, was the first target of the compulsory gender testing²¹. The Dutch female athletes had to submit themselves to an examination by a gynaecologist and thereafter submit a statement from the gynaecologist confirming that they could participate²². She refused to undergo the testing to confirm that she was indeed female and was consequently banned for life from competing. Upon her death in 2007, a DNA test was conducted to establish if Foekje Dillema was a female. The consent to do so was not obtained from Foekje Dillema herself but from her nephew who provided “samples from worn clothing”²³ to the Erasmus University to conduct this test. It was discovered that she had the XY chromosome with the result that she would have been classified as DSD or diagnosed with a form of hyperandrogenism²⁴. Maria José Martínez-Patiño, a Spanish 100m hurdle runner, was dismissed from the Spanish Olympic team in 1986 since she failed her gender verification test as she was an intersex with the 46 XY chromosomes.

In 2014, Dutee Chand, a 200 and 400 metre athlete from India, was subjected to various gender verification testing and was diagnosed with hyperandrogenism. Dutee Chand was provisionally suspended from participating in all athletics events with immediate effect. Dutee Chand would only be allowed to participate in athletic events if her testosterone levels were lowered to “the permitted threshold of 10 nmol/L”²⁵ in compliance with the IAAF’s Hyperandrogenism Regulations. The Hyperandrogenism

¹⁸ Ibid, p. 9

¹⁹ Cheryl Cooky & Shari L. Dworkin, “Policing the Boundaries of Sex: A Critical Examination of Gender Verification and the Caster Semenya Controversy” [2013] *Journal of Sex Research* 50(2), 107

²⁰ Ibid, p. 1 - 2

²¹ Max Dohle, “Ze zeggen dat ik geen meid ben. De schorsing van Foekje Dillema”, Vereniging voor Gendersgeschiedenis, <<http://www.gendersgeschiedenis.nl/index.php/gendersgeschiedenis/dossiers/224-ze-zeggen-dat-ik-geen-meid-ben-de-schorsing-van-foekje-dillema>> Date accessed 4 June 2020

²² Ibid, p. 1

²³ Kaye N Ballantyne, Manfred Kayser & J Anton Grootegoed, “Sex and gender issues in competitive sports: investigation of a historical case leads to a new viewpoint” (*British Journal Sports Medicine*, 3 May 2011) 46, 614

²⁴ On 8 August 2008, an article was published in *Het Parool* where Max Dohle was interviewed regarding the forensic testing conducted on Foekje Dillema. Max Dohle authored a book on Foekje Dillema was taken aback that Foekje Dillema’s nephew provided articles of her clothing to the Erasmus University to conduct the DNA testing. He said that that was one step too far and had Foekje Dillema known that her clothing would be used for those purposes, “she would have put everything into her hands” (translation) Max Dohle, “Ik weet waar Foekje zich voor schaamde” (*Het Parool*, 8 augustus 2008)

<<https://www.parool.nl/kunst-media/ik-weet-waar-foekje-zich-voor-schaamde~bfd112e/?referer=https%3A%2F%2Fwww.google.com%2F>> Date accessed 4 June 2020

²⁵ Dutee Chand. Athletics Federation of India (AFI) & International Association of Athletics Federations (IAAF) [20 July 2015] CAS 2014/A/3759, 71

Regulations “required ‘advantaged’ women to either have surgical or hormonal interventions to bring their natural testosterone down to a level deemed ‘fair’ to other female athletes.”²⁶ Dutee Chand, however, decided to challenge the Hyperandrogenism Regulations and the matter was heard by the Court of Arbitration for Sports (“CAS”) in March 2015. The CAS held that the IAAF had not provided sufficient evidence to prove that higher levels of testosterone in elite female athletes give them an added advantage and in light thereof, the Hyperandrogenism Regulations was suspended for a period of two (2) years in order to allow the IAAF to submit evidence to support its view. During this interim period, Dutee Chand could continue competing.

1.1.3 Ethical/legal problem

The result of Dutee Chand successfully challenging the validity of the IAAF’s Hyperandrogenism Regulations was that it compelled the IAAF to provide scientific proof “to back up its reasons for creating testosterone limits for women”²⁷, however, this victory was short-lived for all elite female athletes diagnosed with Hyperandrogenism.

In April 2018, the IAAF announced that a further, new set of rules would replace the Hyperandrogenism Regulations in light of the research submitted in the Bermon and Garnier’ IAAF/WADA-funded report (2017). The IAAF introduced the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development)²⁸ (“Eligibility Regulations”) as the new rules and these new rules “share the same rationale as the 2011 regulations.”²⁹ These new rules would state that elite female athletes must reduce their testosterone levels from 10nmol/L to 5 nmol/L by 1 November 2018 and that this level must be maintained should they wish to compete in events ranging from the 400m to the 1-mile race. The rationale for the IAAF specifying these running events as forming part of the Eligibility Regulations is due to the fact that “the 400m and 800m events were among the five identified in Bermon and Garnier’s IAAF/WADA-funded report (2017) as those in which women with high testosterone experienced an advantage.”³⁰ In light of the fact that Dutee Chand “competed in 100 m and 200 m sprints, these new regulations would not apply to her. Caster Semenya’s events are the 800 m and 1500 m, both falling in the range targeted in the IAAF’s draft regulations...”³¹

Caster Semenya decided to challenge the new rules of the IAAF. This was not the first time she has challenged the validity of the IAAF’s Regulations and conduct since 2009. However, on 30 April 2019, the CAS delivered an award regarding the challenges against the Eligibility Regulations brought by Caster Semenya. The CAS unanimously held that while the Eligibility Regulations are *prima facie* discriminatory, they are

²⁶ Daryl Adair, ‘Athlete health and fair play: Kristen Worley case puts women’s sport policy in the dock’ (The Conversation, 21 July 2017) <<https://theconversation.com/athlete-health-and-fair-play-kristen-worley-case-puts-womens-sport-policy-in-the-dock-81361>> date accessed 27 October 2019

²⁷ Kirsten Frattini, ‘IOC, IAAF, UCI guidelines highlight the need for science and education’ (Cyclingnews, 3 May 2019) <<https://www.cyclingnews.com/features/policing-gender-boundaries-testosterone-sex-testing-and-human-rights>> date accessed 27 October 2019

²⁸ IAAF Athletics Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development) (Version 2.0, published on 1 May 2019, coming into effect as from 8 May 2019)

²⁹ Katrina Karkazis & Morgan Carpenter, “Impossible ‘Choices’: The Inherent Harms of Regulating Women’s Testosterone in Sport [2018] Journal of Bioethical Inquiry 15, 580

³⁰ Helen Lenskyj, “Gender, Athletes’ Rights and the Court of Arbitration for Sport” (Emerald Publishing Limited, 2018), 130

³¹ *Ibid*, p. 130

necessary, reasonable and proportionate. Caster Semenya took this award on appeal to the Swiss Federal Supreme Court which, on 31 May 2019, dismissed her appeal against the award of the CAS.

It appears that the decision of the Swiss Federal Supreme Court and CAS introduces the notion that “testosterone is officially a tool to decide whether someone is a man or a woman”³² and that the IAAF was entitled to exercise a margin of appreciation in order to “strike an appropriate balance between protecting the rights of athletes to whom the regulations will be applied and protecting the rights and freedoms of others.”³³ It must, however, be noted that these decisions introduce various ethical and legal problems. The ethical problems that must be considered are whether it is correct that only females are subjected to this treatment of gender classification and the ethical standards of clinical practice³⁴ and the legal problems include invasion of an elite female athlete’s privacy, bodily integrity and freedom to work³⁵, amongst others.

A further issue that overlaps both with the ethical and legal issues, and which must be considered, is the options available to an elite female athlete for her to comply with the Eligibility Regulations, specifically the “medication intervention required to reduce testosterone to eligible levels.”³⁶ There are instances when the mere act taking medication can amount to enhancement or even doping, which is against various organisations rules in competitive sports.

1.1.4 Relevance

The matter of elite female athletes who have been diagnosed with Hyperandrogenism and the most recent Eligibility Regulations as implemented and enforced by the IAAF is of relevance for various reasons.

Firstly, it is relevant because it appears that the IAAF is attempting to distinguish and define the gender of ‘female’ based solely on one aspect, namely the level of testosterone found in women. Research was conducted by experts funded by the IAAF and the World Anti-Doping Agency (“WADA”) and was presented to the IAAF. Based solely on this research, the IAAF has held that “there is broad medical and scientific consensus, supported by peer-reviewed data and evidence from the field, that the high levels of endogenous testosterone circulating in athletes with certain DSDs can significantly enhance their sporting performance.”³⁷ The higher levels of testosterone is “said to confer unfair advantage on the other women in the field”³⁸. Furthermore, some scholars have even suggested that elite female athletes who have the 46 XY chromosomes but with an androgen insensitivity syndrome and “who may or may not have intact testicles will be allowed to compete with women even though they developed some

³² Jacqueline Doorey, ‘Why the Caster Semenya case is a human rights issue’ (CBC Sports, 1 May 2019) <<https://www.cbc.ca/sports/iaaf-caster-semenya-human-rights-1.5115453>> date accessed 18 September 2019

³³ Jonathan Cooper, “Testosterone: the ‘Best Discriminating Factor’” [2019] MDPI 4,36, 8

³⁴ Katrina Karkazis & Morgan Carpenter, “Impossible ‘Choices’: The Inherent Harms of Regulating Women’s Testosterone in Sport [2018] Journal of Bioethical Inquiry 15, 584

³⁵ Jonathan Cooper, “Testosterone: the ‘Best Discriminating Factor’” [2019] MDPI 4,36, 8

³⁶ Ibid, p. 12

³⁷ Roger Pielke Jr, Ross Tucker & Erik Boye, “Scientific integrity and the IAAF testosterone regulations” [2019] The International Sports Law Journal 19, 20

³⁸ Helen Lenskyj, “Gender, Athletes’ Rights and the Court of Arbitration for Sport” (Emerald Publishing Limited, 2018), 108

characteristics that are usually present in men but not in women.”³⁹ This is because, according to these scholars⁴⁰ these female athletes may be able to compete with other elite female athletes provided her testosterone levels are within the acceptable range and that these female athletes do not have a condition that precludes them from using androgens. This is an issue not addressed by the research relied upon by the IAAF. It is, therefore, clear that the IAAF’s Eligibility Regulations is attempting to define a small group of women, approximately 5 – 10% of women, by focusing on a single element of the make-up of a woman.

Secondly, the Eligibility Regulations and the standards it aims to achieve, could be regarded as an infringement upon the affected elite female athlete’s right to bodily integrity and her right to privacy. Furthermore, this matter is of relevance as it can be argued that this conduct amounts to discrimination of a minority group.

Lastly, this matter is of relevance because it has been argued by various experts and organisations that the research the IAAF has relied upon to draft, implement and enforce the Eligibility Regulations is based upon questionable research. Research on Hyperandrogenism and testosterone, amongst other related issues, was conducted by two research groups. The impartiality of the research has been called into question as the one group was headed by Dr Stéphane Bermon and the Monaco Institute Sports Medicine and Surgery. This research group was constituted by numerous members who “continue to have overlapping, and potentially conflicting roles in the IOC, IAAF and WADA as members of various medical commissions and advisory groups.”⁴¹ Furthermore, these agencies have funded the research in this regard. The scope of the research conducted was also called into question when the IAAF released the new Regulations (“Eligibility Regulations”) in April 2018, it stated that the published information was connected to the research conducted by Bermon and Garnier regarding the relationship between performance of elite female athletes and their levels of testosterone. It has been argued that this research “clearly represents the IAAF’s response to the mandate to provide empirical data on the relationship of elite female athlete performance and testosterone that it was given by CAS in the Chand decision”⁴² and “the claim here of ‘peer-reviewed data’ is not correct, as IAAF has refused to release the performance data associated with the cited study to other researchers or even to the journal which published”⁴³ the research of Bermon and Garnier. Based on this, it can be argued that the Eligibility Regulations may be unfair and flawed.

1.1.5 Literature Review

The most important literature that will be considered in this regard are the Hyperandrogenism and Eligibility Regulations, as well as the CAS rulings in the matters

³⁹ Francisco J Sánchez, María José Martínez-Patiño & Eric Vilain, “The New Policy on Hyperandrogenism in Elite Female Athletes is Not About “Sex Testing” [2013] *Journal of Sex Research*, 50(2), 114

⁴⁰ *Ibid*, p. 113

⁴¹ Helen Lenskyj, “Gender, Athletes’ Rights and the Court of Arbitration for Sport” (Emerald Publishing Limited, 2018), 120

⁴² Roger Pielke Jr, Ross Tucker & Erik Boye, “Scientific integrity and the IAAF testosterone regulations” [2019] *The International Sports Law Journal* 19, 20

⁴³ *Ibid*, 20

of Dutee Chand⁴⁴ and Caster Semenya.⁴⁵ The Regulations will define what hyperandrogenism is from the perspective of the IAAF and the CAS rulings will provide an indication of the arguments raised by the elite female athletes and the IAAF in challenging and defending the Regulations.

In order to understand how the IAAF has attempted to implement the Eligibility Regulations, the history of gender verification testing will be considered. This will also indicate how the IAAF has used gender verification as a means of implementing and enforcing the IAAF's Regulations. The sources selected in this regard provide the history of this and explains the gender binary that has been enforced by the IAAF. The rulings of the CAS will also indicate how the Hyperandrogenism and Eligibility Regulations were adopted and implemented.

In determining the scientific integrity of the research relied upon by the IAAF for the Eligibility Regulations, both the research conducted by the IAAF and the articles containing the research being called into question by other experts⁴⁶ will be considered. Some of the literature has argued that the research conducted and relied upon by the IAAF should not be trusted.

Regarding the discrimination that elite female athletes diagnosed with Hyperandrogenism experience, the literature indicates that what the IAAF is attempting to do, is to police sex⁴⁷ in athletics and thereby neatly define 'men' and 'women'. The literature further indicates that a "double standard"⁴⁸ appears to be at play in elite athletics as there is no level of testosterone that is considered as an unfair advantage for male athletes.

The impact of the Eligibility Regulations upon elite female athletes has also been well documented. In general, the literature that is available on this topic indicates that if elite female athletes wish to comply with the Eligibility Regulations, one of the options available to the elite female athlete is surgery or hormonal medication must be taken, and this can have various effects upon the affected female. Some of the effects, besides surgery, include reduced functions "in mental or physical functions"⁴⁹ of these elite female athletes. Lastly, the literature is truly clear in that if an elite female athlete does not comply with the Eligibility Regulations, she will not be allowed to compete in her chosen event.

The Universal Declaration of Human Rights⁵⁰ ("the Universal Declaration") and The European Convention on Human Rights⁵¹ ("the ECHR") will also be considered in an attempt to establish if the Eligibility Regulations are legally compatible with these

⁴⁴ CAS 2014/A/3759 Dutee Chand v. Athletics Federation of India (AFI) & International Association of Athletics Federations (IAAF) (24 July 2015)

⁴⁵ CAS 2018/O/5794 and CAS 2018/O/5798 Mokgadi Caster Semenya & Athletics South Africa v International Association of Athletics Federations (30 April 2019)

⁴⁶ Roger Pielke Jr, Ross Tucker & Erik Boye, "Scientific integrity and the IAAF testosterone regulations" [2019] *The International Sports Law Journal* 19

⁴⁷ Cheryl Cooky & Shari L. Dworkin, "Policing the Boundaries of Sex: A Critical Examination of Gender Verification and the Caster Semenya Controversy" [2013] *Journal of Sex Research* 50(2)

⁴⁸ Jacqueline Doorey, 'Why the Caster Semenya case is a human rights issue' (CBC Sports, 1 May 2019) <<https://www.cbc.ca/sports/iaaf-caster-semenya-human-rights-1.5115453>> date accessed 18 September 2019

⁴⁹ Julian Savulescu, "Ten ethical flaws in the Caster Semenya decision on intersex in sport" (The Conversation) 9 May 2019 <<https://theconversation.com/ten-ethical-flaws-in-the-caster-semenya-decision-on-intersex-in-sport-116448>> date accessed 20 September 2019

⁵⁰ United Nations Universal Declaration of Human Rights, 1948

⁵¹ Convention for the Protection of Human Rights and Fundamental Freedoms, Rome, 4. XI. 1950

legal instruments. These legal instruments in conjunction with other articles will provide various opinions on the infringement of human rights.

Lastly, the literature has indicated that the criteria and rulings of the IAAF do not conform with ethical and legal principles as it differentiates between men and women (including people who have undergone a sex-change) and the rulings regarding the Eligibility Regulations can be considered unlawful as it infringes upon numerous fundamental human rights, most notably the rights contained in the Universal Declaration and the ECHR.

There is a literature gap regarding the manners in which the Eligibility Regulations could be improved upon. Furthermore, Caster Semenya is neither a national nor a citizen of one of the Member States of the European Union and therefore the Charter of Fundamental Rights of the European Union⁵² and other secondary laws of the European Union are not applicable to her. In light thereof, there is a gap in the literature if a third-country national experiences degrading treatment.

1.2 Research question and methodology

1.2.1 Research question

Can the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development) of the International Association of Athletics Federations (“IAAF”) be regarded as justifiable and proportionate discrimination against elite female athletes diagnosed with Hyperandrogenism?

1.2.2 Sub-questions

- (i) What is the history of the IAAF in attempting to implement the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development) and how has the Court of Arbitration for Sports (“CAS”) adopted rulings regarding Hyperandrogenism?
- (ii) What are the ethical concerns of the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development) of the IAAF and the consequences thereof on elite female athletes regarding the scientific integrity of the research relied upon by the IAAF, discrimination towards and how it impacts upon elite female athletes?
- (iii) Is the Eligibility Regulations legally compatible with the European Convention on Human Rights and the Universal Declaration of Human Rights?
- (iv) What effect has the gender binary that the IAAF has been adhering to, had on the Eligibility Regulations and how can these be improved upon?

1.2.3 Methodology

This thesis aims to provide a qualitative assessment of the Eligibility Regulations and the CAS rulings with two European legal instruments concerning the ethical and legal validity of the Eligibility Regulations. Furthermore, the IAAF’s definition of ‘female’

⁵² Charter of Fundamental Rights of the European Union (2000/C 364/01)

will also be considered. A doctrinal legal research approach has also been chosen as a critical analysis of legislation and case law has been conducted. The case law that was considered are the two CAS judgements and the Swiss Federal Supreme Court judgement of Caster Semenya and the IAAF. These cases were considered as a comparison could be made between the outcomes based on the facts of the matters. Additional case law was only considered and compared to the matter between Ms Semenya and the IAAF.

This thesis will also make use of comparative legal research as two different European legal instruments, namely the ECHR and the Universal Declaration will be considered and applied to the Eligibility Regulations. The reason why these two legal instruments have been chosen is because the United Nations joined the matter between Caster Semenya and the IAAF as an *amicus curia* and issued a directive that aims to eliminate discrimination against women and girls in sport. This directive was issued before the matter between Ms Semenya and the IAAF was heard in the CAS. The ECHR was also consulted as this would apply to Ms Semenya.

In order to fully understand and grasp the history of the IAAF and how Regulations have been implemented and enforced, various articles and readings on the IAAF, elite female athletes and how the face of athletics has changed over the years have been consulted. Furthermore, I consulted various articles regarding the social, ethical, and legal aspects related to this matter. Some of the books were relevant to this thesis as it dealt with aspects related to the history of the IAAF and the Regulations and the discrimination of the Eligibility Regulations.

When considering gender verification, not all gender verification research was applicable. Gender verification is a broad subject and therefore the research had to be narrowed down to gender verification in elite female athletes participating in athletics. Another consideration that had to be kept in mind when conducting research on gender verification was the date of publication by the authors. This is because certain articles were published before the Eligibility Regulations were challenged by Ms Semenya. The articles that were selected for comparison to the matter at hand related to gender verification and how it can or cannot be applied to the matter at hand.

Furthermore, when examining the legal provisions in the ECHR, only direct discrimination was considered. This is because indirect discrimination did not have a role in the comparison between the Eligibility Regulations and how it was applied to Ms Semenya.

The journal articles and other material consulted contained interesting viewpoints on different aspects that this thesis attempts to address, such as the alternative options available to the IAAF regarding testosterone and elite female athletes. These articles were also used to compare it to the matter of Ms Semenya.

1.3 Overview of Chapters

In light of the abovementioned sub-questions, Chapter 2 will answer the first sub-question by researching the history of how the IAAF has attempted to implement the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development) and how the CAS has adopted rulings regarding Hyperandrogenism. This analysis will be conducted by considering the case law of Dutee Chand and the Athletics Federation of India and International Association of Athletics Federations⁵³ and Mokgadi

⁵³CAS 2014/A/3759 Dutee Chand v. Athletics Federation of India (AFI) & International Association of Athletics Federations (IAAF) (24 July 2015)

Caster Semenya, Athletics South Africa and International Association of Athletics Federations⁵⁴.

Chapter 3 will consider the ethical concerns of the Eligibility Regulations for the Female Classification (Athletes with Difference of Sex Development) of the IAAF and what the consequences thereof are on elite female athletes regarding the scientific integrity of the research relied upon by the IAAF to enforce their viewpoint. Furthermore, the discrimination which the Eligibility Regulations of the IAAF may highly likely have on elite female athletes as well as the impacts thereof upon elite female athletes will be examined. This assessment will be done by considering the scientific research relied upon by the IAAF and comparing it to the questions of other researchers and the research conducted by these other researchers. Thereafter, the ethical concerns of the Eligibility Regulations will be considered.

Chapter 4 will contemplate whether the Eligibility Regulations are legally compatible with certain rights contained in the Universal Declaration of Human Rights (“the Universal Declaration”) and The European Convention on Human Rights (“the ECHR”). This will be done by examining the relevant provisions, such as the right to private life, the right to privacy, the right not to be discriminated against and that limitations may be placed on the freedoms of individuals as contained in the Universal Declaration, the ECHR, and the Eligibility Regulations. It will be pointed out how these provisions are being disregarded by the IAAF and the Eligibility Regulations.

Chapter 5 will, in general, consider what effect the gender binary that the IAAF has been adhering to, has had on the Eligibility Regulations and how can these be improved upon. Research in this regard will elaborate on the gender binary adhered to by the IAAF and on alternative manners in which to address improvements to the measures implied by the Eligibility Regulations.

⁵⁴ CAS 2018/O/5794 and CAS 2018/O/5798 Mokgadi Caster Semenya & Athletics South Africa v International Association of Athletics Federations (30 April 2019)

Chapter 2: IAAF's history of Regulation implementation and the CAS' rulings

2.1 Introduction

This chapter will answer the first sub-question of this thesis. This will be done by considering the history of how the IAAF has attempted to enforce and maintain the gender binary in elite athletics since the 1930s. In relation thereto, it will also be considered how the IAAF has attempted to enforce the gender binary with the implementation of the various Regulations over the years. Lastly, the rulings of CAS in the Hyperandrogenism challenges of Dutee Chand and Caster Semenya will also be studied.

2.2 The history of implementation of various Regulations by the IAAF

In the first part of the 20th century, notions were present that women were the “weaker sex”⁵⁵ and “femaleness”⁵⁶ was regarded as sort of “physical handicap”⁵⁷ that was vulnerable to the strain of sports and therefore women should not participate in sports, particularly athletics. The founder of the Olympic Games, Pierre de Coubertin, and his peers believed the Olympic Games were to be built on the physical, muscular ability of individuals and these Games were not suitable for women.

A gender binary or divide was also introduced at this time by the IAAF. The simplest way to define a gender binary is by considering the words individually. Binary entails that a variable can have only have one of two values⁵⁸ and gender designates a person as either “masculine, feminine or neuter.”⁵⁹ Thus, when gender binary is considered, it means that a person is either male or female. The IAAF has tried its utmost to maintain this divide in elite athletics due to the differences between elite male and elite female athletes. This is due to various reasons, one being that females have been regarded as the weaker sex for years.

Despite this view, women started to participate in athletics in 1928⁶⁰, which was evidence that women could manage the physical strain involved in sports. At the time, it was believed that these female athletes were “excessively masculinised”⁶¹ to such an extent that these females appeared to be “abnormal”⁶² or “unnaturally male-like.”⁶³ The explanation for these masculine females was provided by new hormonal theories of sex⁶⁴, which emerged, whereby it was suggested that these changes in female athletes could be

⁵⁵ Sonja Erikainen, *Gender Verification and the making of the female body in sport: a history of the present* (Routledge 2020) 24

⁵⁶ Ibid, p. 24

⁵⁷ Ibid, p. 24

⁵⁸ John M. Last, Robert A. Spasoff, Susan S. Harris and Michael C. Thuriaux, “A Dictionary of Epidemiology” (Oxford University Press, Fourth Edition, 2001), 16

⁵⁹ Ibid. p. 75

⁶⁰ Sonja Erikainen, *Gender Verification and the making of the female body in sport: a history of the present* (Routledge, 2020) 28. In 1928, the 800m was included for women at the Amsterdam Olympic Games after persistence to include female athletes at the Olympic Games. The support to include female at the Olympic Games commenced in 1922 by the Fédération Sportive Féminine Internationale (FSFI).

⁶¹ Ibid, p. 24

⁶² Ibid, p. 24

⁶³ Ibid, p. 24

⁶⁴ Ibid, p. 24

hormonal. Newspaper reports that a few former track and field female athletes were “undergoing (hormonally induced) sex changes and becoming men”⁶⁵ caught the attention of the IAAF. Due to this, the IAAF concluded that provision must be made for physical examinations of female athletes if concerns were raised or if there was a “protest”⁶⁶ regarding the female athletes’ gender.

It will be indicated below how the IAAF has attempted to enforce and maintain the gender binary in elite female athletics. As the IAAF must adhere to the International Olympic Committee (“IOC”), the IOC has also been included in the table below. This thesis, however, will only consider the history of the IAAF due to the scope of this paper and because the IAAF’s Hyperandrogenism Regulations were challenged.

Table of gender verification testing conducted on elite female athletes over the years		
Year:	Institution:	Type of test:
1936	IAAF	Physical medical examination
1946	IAAF	Femininity certificates
1966	IAAF	On-site sex testing → naked parades
1967	IOC	On-site gender verification
1968	IOC	Barr body testing
1968	IAAF	Chromosome screening
1972	IOC	Fluorescent body test for the Y-chromosome
1991	IAAF	Health and gender examinations for both males and females
1992	IOC	Polymerase Chain Reaction test (“PCR”) which is a chromosome-based gender verification method for the Y-chromosome-linked SRY gene ⁶⁷
1992	IAAF	Suspicion-based gender verification & procedures during doping tests
2000	IOC	Suspicion-based gender verification
2006	IAAF	Updated suspicion-based gender verification
2011	IAAF	Clinical examination and endocrine assessment
2012	IOC	Hyperandrogenism-related medical examinations
2018	IAAF	Athlete provides blood and/or urine samples

In the 1930s, articles were published in British and American newspapers about “sex changes”⁶⁸ of female athletes swiftly changing into males. The narratives about sex change often unduly involved former female athletes. These changes were often referred to as “metamorphoses”⁶⁹ that linked the sex changes of these females with the new theories on sex⁷⁰. These articles almost always referred to the “metamorphosing athletes’ sporting careers”⁷¹ mainly with regards to “masculinity-connoting sports”⁷² such as

⁶⁵ Ibid. p. 24

⁶⁶ Ibid. p. 24

⁶⁷ Ibid, p. 100

⁶⁸ Ibid, p. 31

⁶⁹ Ibid. p. 31

⁷⁰ In this thesis, I will refer to sex when referring to the label of male or female. Furthermore, I will use gender verification when females were tested to determine if they were female as the texts, I consulted made use of gender verification tests

⁷¹ Sonja Erikainen, *Gender Verification and the making of the female body in sport: a history of the present* (Routledge 2020) 31

⁷² Ibid, p. 31

athletics and tried to contextualise the metamorphoses as a result of participating in athletics.

These stories reached the attention of the IOC and before the 1936 Berlin Olympic Games, the IOC held that all elite female athletes must submit to a medical examination. The IAAF followed the IOF's lead and introduced its own gender verification, which stated that if any objection to a female's sex is raised within two hours after an event, that female athlete must present herself for a medical examination. Thus, due to context and views held in the 1930s on sex, it set the tone for the first gender verification regulation in sport.

In 1946, the IAAF introduced a new policy to ensure the sex divide in elite athletics. This new policy required that elite female athletes must have a femininity certificate. These certificates had to be signed by their local medical practitioner, who had to verify that the athlete was indeed female. This policy remained in force until 1964.

During the 1950s and 1960s, international sport became immersed in the tensions between the Western and Eastern Blocs⁷³ of the Cold War. The Cold War resulted in an East/West divide, which meant that there was an "us versus them"⁷⁴ segregation and this became prevalent when the Soviet Union requested to join the Olympic Games in 1952. The Soviet Union was allowed entry to participate in the Olympic Games, but this gave rise to many concerns in the political and social spheres. In the political sphere, the Eastern Bloc, which was largely communist, was regarded as "corrupt or contaminated"⁷⁵ and this corruption and contamination was then transferred onto the bodies of their female athletes as their bodies were a symbol of "their nations' body politic"⁷⁶. In addition, this view gave rise to a belief of "pure versus polluted"⁷⁷ bodies because the female bodies from the Eastern Bloc and their performance levels were regarded as a "negative and potentially dangerous contrast to Western (white middle class) femininity ideals."⁷⁸

The idea of corruption within governments from the Eastern Bloc also provoked scepticism that these governments were polluting the "Olympic ideals with their dubious political agendas as well as their athletes' bodies with artificial substances."⁷⁹ This is due to the fact that it was believed that these governments were providing steroids to their female athletes in order for these athletes to excel at competitions. This shows how the political landscape of the time influenced the realm of sport.

These rumours of polluted bodies possibly competing as such were brought to the attention of the medical authorities of the Cold War. These doctors debated how "best to maintain a dimorphic divide in sport."⁸⁰ Articles were written for various journals on how this can be achieved and one such article published in 1966 in the Journal of the American Medical Association suggested the implementation of a chromosome check for female contestants. The justification for this was that it would "assure the dignity and integrity of the athletes and presumably maintain a clear sex/gender divide."⁸¹ The chromosome check was also recommended in the British Medical Journal as it would exclude

⁷³ Ibid, p. 44

⁷⁴ Ibid, p. 43

⁷⁵ Ibid, p. 60

⁷⁶ Ibid, p. 60

⁷⁷ Ibid, p. 43

⁷⁸ Ibid, p. 61

⁷⁹ Ibid, p. 61

⁸⁰ Lindsay Parks Pieper, "Sex Testing and the Maintenance of Western Femininity in International Sport" [2014] *The International Journal of the History of Sport* (Vol 31, No 13) 1562

⁸¹ Ibid, p.1562

competitors “with male genetic sex”⁸². Swayed by the medical opinions of various doctors and public opinions regarding sex-testing, the IAAF introduced sex-testing in 1966⁸³. The gender verification testing was conducted on-site at competitions and was conducted by means of a physical inspection of the genitals of a female athlete during a nude parade.

Despite the IAAF introducing sex-testing as a means to determine if an athlete was male or female, it proved to be unsuccessful. This is because athletes could pass as ‘female’ even if they were genetically male. Furthermore, the assessments made at the naked parades were based on the medical examiner’s “subjective criteria of appropriately feminine embodiment.”⁸⁴ This means that mistakes could occur. Relatedly, the IAAF was informed that the naked parades were humiliating and degrading as it forced women to undress⁸⁵. The IAAF also attempted to scientifically establish the biological differences between male and female during this time. In 1968, the IAAF replaced physical inspections with chromosome testing⁸⁶.

Although the chromosome testing of female athletes continued, in 1985, the acceptability and necessity of sex-testing female athletes was again questioned. A Finnish clinical genetics professor, Albert de la Chapelle (“de la Chapelle”), published a research article that indicated that the chromosome testing of female athletes was “not only inaccurate but also discriminatory.”⁸⁷ The chromosome testing was not carried out by competent medical staff at all times, which resulted in errors in the results occurring as the results were also misinterpreted by the medical staff. The other errors that occurred was that the interpretation of the results was subject to the medical staff’s subjective understanding of the results. Chromosome testing could also be regarded as discriminatory, according to de la Chapelle, as it unfairly barred female athletes with certain abnormalities from competition. De la Chapelle further recommended that visual inspections of female athletes should be reintroduced.

Notwithstanding the mounting opposition and outcry against the use of sex-testing of female athletes due to the errors that occurred and the female athletes who had been subjected to the humiliating and degrading tests, the IOC persisted in its commitment to gender verification. In light thereof, the IAAF organised a workshop in Monte Carlo, Monaco in November 1990 to discuss femininity in elite athletics. During this workshop, various groups presented proposals and recommendations regarding sex-testing of female athletes. Participants, in particular, requested that sporting bodies abandon the chromosome testing as “the present sex chromatin test is inappropriate and scientifically unsound.”⁸⁸ It was suggested that a physical check-up of all athletes, including male athletes, be adopted. The IAAF noted this advice and months before the opening of the 1991 Tokyo World Championships, chromosome testing was replaced with health and gender examinations that all athletes had to undergo, regardless of sex.

⁸² Ibid, p.1562

⁸³ Ibid, p. 1557

⁸⁴ Sonja Erikainen, *Gender Verification and the making of the female body in sport: a history of the present* (Routledge 2020) 69

⁸⁵ Ibid, p. 70

⁸⁶ Ibid, p. 69

⁸⁷ Lindsay Parks Pieper, “Sex Testing and the Maintenance of Western Femininity in International Sport” [2014] *The International Journal of the History of Sport* (Vol 31, No 13) 1564

⁸⁸ Lindsay Parks Pieper, “Sex Testing and the Maintenance of Western Femininity in International Sport” [2014] *The International Journal of the History of Sport* (Vol 31, No 13) 1564

This attempt by the IAAF to ensure the equal treatment of the sexes in sex-testing was met with criticism almost as soon as it was introduced. These health checks resulted in many misunderstandings, was expensive and there were various cultural concerns regarding the health checks. The IAAF recognised these shortcomings and the probability that “there will never be a laboratory test that will adequately assess the sex of all individuals”⁸⁹ and therefore abandoned the compulsory sex-testing of female athletes.

This abandonment was short-lived as during the 1993 South East Asian Games, four female athletes were expelled due to failing the required gender verification test. While their names were withheld from the public, the editor of *Keeping Track: International Track & Field Newsletter*, Janet Heinonen, picked up on this and argued that women deserved to compete against other participants of their own sex. This led to 16 female runners petitioning for the reinstatement of gender verification for “all ‘high stakes’ women’s events, those in which medals or money could be earned.”⁹⁰ These 16 athletes, known as the Heinonen Sixteen, held that only the implementation of a “new, multifaceted gender verification test would deter male imposters, unmask transsexual participants and identify athletes in the ‘gray area’ of sex.”⁹¹ What the Heinonen Sixteen were actually requesting was for the “introduction of blood testing for total testosterone levels.”⁹² The Heinonen Sixteen’s demands gained credibility as questions regarding sex-testing were discussed at a conference held in 1994 during the Asian Games.

The IAAF continued with its suspicion-based gender verification testing and observation during doping testing from 1994 until 2006. In 2006 Santhi Soundarajan, an Indian middle-distance athlete, was requested to attend a gender verification test. She failed this gender verification test and the IAAF immediately stripped her of her medals and banned her from participating in future competitions. During 2006, the IAAF introduced the Policy on Gender Verification which did not require “compulsory, standard or regular gender verification”⁹³, instead if an athlete or an athletic team raises a suspicion about a particular female athlete’s sex, the IAAF retained the right to test such athlete.

A mere three years later, in 2009, Caster Semenya burst onto the international athletic scene and won her maiden competition. Caster Semenya’s fellow competitors were sceptical of her success and femininity and raised their ‘concerns’ with the IAAF. Based on these suspicions and the IAAF’s own scepticism, it required that Caster Semenya’s “sex/gender be scientifically verified.”⁹⁴ What is very interesting to note is that when the IAAF requested Caster Semenya undergo the sex-testing, the Policy on Gender Verification was in place. This Policy stated that elite female athletes diagnosed with androgen insensitivity syndrome, polycystic ovary syndrome or Turner syndrome, amongst others, were all allowed to compete in athletic events and the IAAF recognized that these “conditions may accord some advantages but nevertheless are acceptable.”⁹⁵

⁸⁹ Ibid, p.1565

⁹⁰ Ibid, p. 1567

⁹¹ Ibid, p. 1567

⁹² Sonja Erikainen, *Gender Verification and the making of the female body in sport: a history of the present* (Routledge 2020) 114

⁹³ Cheryl Cooky & Shari L Dworkin, “Policing the Boundaries of Sex: A Critical Examination of Gender Verification and the Caster Semenya Controversy” [2013] *Journal of Sex Research*, 50(2) 105

⁹⁴ Lindsay Parks Pieper, “Sex Testing and the Maintenance of Western Femininity in International Sport” [2014] *The International Journal of the History of Sport* (Vol 31, No 13) 1568

⁹⁵ Cheryl Cooky & Shari L Dworkin, “Policing the Boundaries of Sex: A Critical Examination of Gender Verification and the Caster Semenya Controversy” [2013] *Journal of Sex Research*, 50(2) 105

Therefore, according to this Policy, Caster Semenya was allowed to participate in her chosen events.

According to media reports, the IAAF requested that Caster Semenya's gender be verified because of her "deep voice, muscular build and rapid improvement in times."⁹⁶ Based on the physical appearances of both Santhi Soundarajan and Caster Semenya, the IAAF reintroduced sex-testing⁹⁷ by replacing the 2006 Policy on Gender Verification with the Regulations Governing Eligibility of Females with Hyperandrogenism ("Hyperandrogenism Regulations) to Compete in Women's Competition on 1 May 2011. This policy stated that female athletes diagnosed with Hyperandrogenism may only compete in women's events if they "notify the IAAF in advance and the IAAF medical manager determines, in consultation with an expert medical panel (established by the IAAF), that the athlete does not have a definite unfair advantage."⁹⁸

Sex-testing in athletics has an interesting and lengthy history, which has been moulded by "geographical, political, racial and gendered concerns."⁹⁹ This can only be compared to a yoyo – sex-testing has always been in a state of flux and based on how the IAAF has implemented various Regulations over the years, it appears this state of flux and uncertainty is here to stay, especially when the matters of Dutee Chand and Caster Semenya are considered.

2.3 CAS, the Hyperandrogenism Regulations and how it was applied in the matter of Dutee Chand

The Hyperandrogenism Regulations were in place from 1 May 2011 and dictated that female athletes with high levels of testosterone can only participate in events if her testosterone levels were lowered "to the permitted threshold of 10 nmol/L"¹⁰⁰ This Regulation required elite female athletes with elevated levels of testosterone to "either have surgical or hormonal interventions to bring their natural testosterone down to a level deemed 'fair' to other female athletes."¹⁰¹ The procedure prescribed by the IAAF commences with a "clinical examination and an endocrine assessment to determine if there are grounds to indicate an athlete with hyperandrogenism"¹⁰² and if Hyperandrogenism is detected, "a full examination and diagnostic process ensues, consisting at minimum of full physical and gynaecological examinations, endocrine assessments of blood and urine, medical and family histories and psychological assessment."¹⁰³

⁹⁶ Ibid, p. 103

⁹⁷ Ibid, p.1569. The IOC also reintroduced sex-testing for the London Olympics, which was to take place in 2012

⁹⁸ Cheryl Cooky & Shari L Dworkin, "Policing the Boundaries of Sex: A Critical Examination of Gender Verification and the Caster Semenya Controversy" [2013] *Journal of Sex Research*, 50(2) 106

⁹⁹ Ibid, p. 1558

¹⁰⁰ Dutee Chand, Athletics Federation of India (AFI) & International Association of Athletics Federations (IAAF) [20 July 2015] CAS 2014/A/3759 71

¹⁰¹ Daryl Adair, "Athlete health and fair play: Kristen Worley case puts women's sport policy in the dock" (The Conversation, 21 July 2017) <<https://theconversaton.com/athlete-health-and-fair-play-kristen-worley-case-puts-womens-sport-policy-in-the-dock-81361>> date accessed 27 October 2019

¹⁰² Rebecca M Jordan-Young, Peter H Sönksen & Katrina Karkazis, "Sex, health, and athletes" [2014] *British Medical Journal* 2

¹⁰³ Ibid, p. 2

During the summer of 2014, Dutee Chand, a 200 and 400 metre athlete from India, underwent a medical examination and was subjected to gender verification testing. Consequently, Dutee Chand was diagnosed with Hyperandrogenism due to the high levels of testosterone. She refused to undergo any surgery or hormonal interventions to lower her testosterone level and was consequently banned. This resulted in Dutee Chand being “prevented from competing after suspicion surrounding gender”¹⁰⁴ and the “first female athlete to challenge the current IAAF Hyperandrogenism Regulations.”¹⁰⁵ Dutee Chand sought two grounds of relief, namely that the Hyperandrogenism Regulations be declared invalid and void and that the Decision Letter, which declared her ineligible to compete, be set aside.

The CAS panel adopted an interesting approach in this matter between Dutee Chand, the IAAF and the Athletics Federation of India (“AFI”), which despite being asked for their support in these proceedings by Dutee Chand played a passive role. One of the reasons for the interesting approach in this matter include that the CAS rejected Ms Chand’s request that the hearing be public even though she opposed the confidential arbitration proceedings¹⁰⁶. Because the IAAF and AFI objected to a public hearing, the CAS regarded this as a lack of agreement between the parties and thus relied upon Rules 44.2 and 57 of the CAS Code.¹⁰⁷ If there is no agreement between the parties regarding a public hearing, the proceedings shall be conducted privately. Secondly, the CAS panel limited the matter to the relief sought regarding the Hyperandrogenism Regulations only. This approach indicates that the CAS panel and subsequent interim award was mostly removed from the specific reasons for Ms Chand’s exclusion from athletics. Furthermore, this matter proceeded on the assumption that Dutee Chand was in contravention of the Hyperandrogenism Regulations, despite the fact that she did not submit to the test prescribed and it was not determined that her testosterone levels were higher than the maximum allowed amount as set out in the Hyperandrogenism Regulations. Lastly, most (if not a substantial portion) of the CAS panel’s analysis occurred on a hypothetical basis.¹⁰⁸ Neither was it established if Ms Chand’s testosterone levels were above the maximum allowable level of 10 nmol/L or that she underwent the three-step screening process as contained in the Hyperandrogenism Regulations nor were her personal circumstances taken into consideration. Ms Chand attempted to explain her personal circumstances to the CAS panel to highlight the “harm and distress”¹⁰⁹ this had caused her but no effort was made to establish the exact regulations applicable to her matter, whether it was the Hyperandrogenism Regulations or national regulations or both.

The CAS panel acknowledged the IAAF’s difficult position of having to join the existence of the male and female binary present in elite sports with the “biological reality that sex in humans is a continuum with no clear or singular boundary between men and

¹⁰⁴ Seema Patel, “The IAAF’s Hyperandrogenism Regulations suspended” [2015] World Sports Law Report 8

¹⁰⁵ Ibid, p. 8

¹⁰⁶ Marjolaine Viret & Emily Wisnosky, “CAS2014/A/3759, *Chand v. AFI & IAAF*, Award of 24 July 2015 in Antoine Duval and Antonio Rigozzi (eds), Yearbook of International Sports Arbitration 2015 (Asser Press Springer 2016) 240

¹⁰⁷ Court of Arbitration for Sport Code: Procedural Rules < <https://www.tas-cas.org/en/arbitration/code-procedural-rules.html>> Date accessed 5 June 2020

¹⁰⁸ Marjolaine Viret & Emily Wisnosky, “CAS2014/A/3759, *Chand v. AFI & IAAF*, Award of 24 July 2015 in Antoine Duval and Antonio Rigozzi (eds), Yearbook of International Sports Arbitration 2015 (Asser Press Springer 2016) 242

¹⁰⁹ Ibid, p. 242

women.”¹¹⁰ The CAS panel noted that the IAAF was attending to this diligently and in order to “create a system of rules that are fair, objective and founded on the best available science.”¹¹¹ This finding of the CAS panel noted that female athletes “are given the benefit of the doubt”¹¹² even though this is not expressly stated so in the text of the Hyperandrogenism Regulations. By this it is meant that the Hyperandrogenism Regulations can at times reveal a medical condition that the female athlete did not know she had and then the IAAF will provide the necessary treatment to the concerned female athlete.

Regarding the challenge of the validity of the scientific basis that testosterone can be used as a marker for purposes of the Hyperandrogenism Regulations, the burden of proof was on Dutee Chand. She had to prove that the scientific basis the IAAF was relying upon was not present. During the matter, Ms Chand was not able to discharge the burden of proof as the scientific evidence she presented was not sufficient to convince the CAS panel that testosterone should not be used as a marker. Therefore, the CAS panel found that testosterone can be as a marker “since the scientific evidence available was insufficient to shift the balance to either side.”¹¹³

Dutee Chand further argued that the Hyperandrogenism Regulations were discriminatory on two grounds, namely sex and due to a natural physical trait of an elite female athlete. It is very interesting to note that the CAS panel observed that both Ms Chand and the IAAF were not in dispute that the Hyperandrogenism Regulations were “*prima facie* discriminatory on two grounds.”¹¹⁴ Even though the IAAF did not dispute the discriminatory grounds of the Hyperandrogenism Regulations, it was unable to prove that there was a difference in performance for elite female athletes diagnosed with Hyperandrogenism. The IAAF thus failed to discharge the onus of proof regarding the discriminatory effects of the Hyperandrogenism Regulations. The CAS panel held that the question of performance advantage between men and women could not simply be answered by referring to testosterone as “there were other factors besides testosterone that may also contribute to the significant male advantage over females.”¹¹⁵ Despite this, the CAS panel opted to hand down an interim award and provided the IAAF with a grace period of two years to present further evidence to corroborate the Hyperandrogenism Regulations.

Upon perusal of the award handed down by the CAS, it is evident that the CAS panel did not introduce a legal framework for the analysis and results, which resulted in the CAS not separating the factual background and legal analysis from one another.¹¹⁶ Furthermore, the CAS panel did not consider any external evidence of the parties when deciding this matter. It merely relied upon the facts before it. It also appears that the CAS panel readily accepted by concessions made by the parties regarding the burden of proof and did not investigate this any further.

Furthermore, the award is remarkably like an “advisory opinion.”¹¹⁷ This is because most of the analysis conducted by the CAS panel was done a hypothetical basis. This ruling appears to be in contrast to the revised CAS Code of 2012, which abandoned

¹¹⁰ Ibid, p. 255

¹¹¹ Ibid, p. 255

¹¹² Ibid, p. 255

¹¹³ Ibid, p. 260

¹¹⁴ Ibid, p. 252

¹¹⁵ Ibid, p. 257

¹¹⁶ Ibid, p. 258

¹¹⁷ Ibid, p. 242

advisory opinions in order to prevent sporting federations from relying upon these rulings as a means to obtain a legal opinion and further attempt to bypass any confrontational proceedings. This ruling appears to have brought back this mechanism “through the backdoor.”¹¹⁸ An advisory opinion is not desirable because it does not resolve a dispute between parties. The CAS panel furthermore also only handed down an interim award as it provided the IAAF an opportunity to submit further evidence regarding the Hyperandrogenism Regulations. This interim award resulted in legal uncertainty as after the interim award was handed down, questions were raised whether it had any legal effect on Dutee Chand as she could compete again.

In conclusion, upon perusal of the award handed down by the CAS, one cannot escape the idea that the CAS panel more readily relied upon the “scientific evidence” submitted by the IAAF than the “professional experience and hypothesis relied upon by the athlete.”¹¹⁹ The CAS panel also considered the practical application of the Hyperandrogenism Regulations and accepted that the provisions of the Hyperandrogenism Regulations “are administered in confidence and with care and compassion.”¹²⁰ When the conduct of the CAS panel is considered, it appears that it was always going to advance the IAAF’s agenda because it did not invalidate the Hyperandrogenism Regulations when it had the opportunity to do so as “one fails to see why the CAS panel – insofar as they considered having the power to make findings with respect to the validity of the Regulations themselves – could not simply have declared the current regulation null and void.”¹²¹ The CAS panel provided the IAAF with an opportunity to rectify itself.

The interim award of the CAS also shows the level of faith the CAS panel places in sport federations to accept and respect the CAS awards and to implement these awards within their respective federations. It can be argued that this approach resembles “informal dispute resolution, verging on mediation”¹²² instead of an actual hearing. Dutee Chand, despite being allowed to participate during this interim period, was left in limbo until the IAAF submitted further evidence to the CAS panel regarding the Hyperandrogenism Regulations to substantiate its claims.

2.4 CAS, the Eligibility Regulations and how it was applied in the matter of Caster Semenya

Upon conclusion of the matter between the IAAF and Dutee Chand, the IAAF conducted further research regarding the acceptable testosterone level for elite female athletes and in April 2018 announced that based on the research conducted by the institution, the Hyperandrogenism Regulations would be replaced with new rules. These new rules would be known as the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development) (“Eligibility Regulations”). These new rules would dictate that elite female athletes must reduce their testosterone levels from 10 nmol/L to 5 nmol/L by 1 November 2018 and this level of testosterone must be maintained for a period of six months should such an elite female athlete wish to compete in events ranging from the 400m to the 1-mile race.

¹¹⁸ Ibid, p. 242

¹¹⁹ Ibid, p. 251

¹²⁰ Ibid, p. 255

¹²¹ Ibid, p. 271

¹²² Ibid, p. 243

Caster Semenya, like Dutee Chand, challenged the validity of the Eligibility Regulations by means of arbitration proceedings in June 2018. The relief sought by Caster Semenya was that the Eligibility Regulations be declared unlawful and that it should not be implemented as it is discriminatory, arbitrary, disproportionate and “therefore violate the IAAF Constitution, the Olympic Charter, the laws of Monaco, the laws of jurisdictions in which international athletics competitions are held, as well as universally recognised fundamental human rights.”¹²³ The IAAF’s responses to these challenges were that the Eligibility Regulations do not discriminate against any elite female athlete based on a characteristic of that particular elite female athlete, the Eligibility Regulations are required as it is a “necessary, reasonable and proportionate means of pursuing the legitimate aim of safeguarding fair competition and protecting the ability of female athletes to compete on a level playing field.”¹²⁴

The CAS panel that presided over this matter was composed of some of the same panellists that presided over the matter between the Dutee Chand and the IAAF. In this matter, as in the former matter, the CAS panel limited itself to reaching a decision with the evidence presented and submitted by the parties. Collectively, the panel concluded that the Eligibility Regulations are “*prima facie* discriminatory since they impose differential treatment based on protected characteristics”¹²⁵ of certain elite female athletes. It was also held that the Eligibility Regulations are discriminatory on the “grounds of legal sex...it follows that the Regulations are also *prima facie* discriminatory on grounds of innate biological characteristics.”¹²⁶

The CAS panel went further and stated that if a rule is discriminatory, it may be valid if it is necessary, reasonable and proportionate to achieve a legitimate goal. The CAS panel then considered each of these in turn. With regards to necessity, the CAS panel held that the IAAF had met both the necessity and legitimacy requirements with the Eligibility Regulations as these Regulations will ensure that elite female athletes without the 46 XY chromosomes are protected from elite female athletes that have those chromosomes and that it, therefore, be acceptable to determine who may and may not participate in certain events. Regarding the proportionality requirement, the CAS panel held that the IAAF has met this requirement as well as the Eligibility Regulations do not require any elite female athlete diagnosed with Hyperandrogenism to undergo any surgery to bring their testosterone levels within the acceptable range; rather, these elite female athletes may use oral contraceptives to reduce their high levels of testosterone.

Even though the CAS panel expressed concern over the practical application of the Eligibility Regulations and found that the Eligibility Regulations are *prima facie* discriminatory, it still dismissed Caster Semenya’s claim. Upon perusal of the award handed down by CAS, one cannot avoid the notion that the CAS panel was not prepared to go against the IAAF and hand down an award of invalidity of the Eligibility Regulations. The same notion was noted in the Dutee Chand matter.

The award of the CAS resulted in Caster Semenya appealing against the award by lodging her appeal at the Swiss Federal Supreme Court (“the Supreme Court”). The Supreme Court adjudicated on the matter and held that it had extremely limited power in

¹²³ Executive Summary of Mokgadi Caster Semenya and Athletics South Africa v International Association of Athletics Federations [2018] Court of Arbitration for Sport [2019] CAS 2018/O/5794 and CAS 2018/O/5798

¹²⁴ Ibid, p. 2

¹²⁵ Ibid, p. 3

¹²⁶ Ibid, p. 3

cases of review of international arbitration and will, generally, only hear appeals “with high probability to be well founded.”¹²⁷

The Supreme Court held that based upon a summary examination of the matter, “Caster Semenya’s appeal does not appear with high probability to be well founded.”¹²⁸ This was because, according to the Supreme Court, the CAS panel had extensively examined the expert evidence provided by the IAAF that elite female athletes with the 46 XY chromosomes have an added advantage over other elite female athletes. Furthermore, the Supreme Court held that it “is bound by this finding regarding the impact of 46 XY DSD on performance.”¹²⁹ The Supreme Court also took into account the fact that the Eligibility Regulations of the IAAF did not violate the integrity or non-discrimination of the affected elite female athletes and these Regulations did not violate the public order, and in light thereof dismissed Caster Semenya’s appeal.

Upon closer consideration of the two abovementioned matters that were before the CAS, it is notable that the CAS “reached two contradictory rulings.”¹³⁰ This is because in the matter of Dutee Chand, the Hyperandrogenism Regulations in the interim award were suspended on the grounds of “discrimination against the female category”¹³¹, but in the Caster Semenya matter, the Eligibility Regulations were confirmed on the grounds that “although discriminatory, they are necessary to maintain a ‘level playing field’ and to ‘protect’ the female category.”¹³² Similarly, when the appeal to the Supreme Court is considered, it is noted that this court appears to have changed its decision in a short space of time as the appeal to the Supreme Court in June 2018 “briefly reversed the 2019 CAS Award, and suspended the regulations, but a subsequent ruling in July by the same court reversed the previous ruling...”¹³³ This change not only leads to uncertainty within elite female athletics but also resulted in Caster Semenya not being able to compete at the September 2019 World Championship held in Doha, Qatar.

2.5 Conclusion

When the history of how the IAAF has attempted to enforce and maintain the gender binary in elite athletics is considered, it is evident that the IAAF has attempted to do this since the 1930s. This has taken numerous forms, from physical examinations to naked parades to blood and urine testing of elite female athletes who appear or are suspected to be different from the ‘norm’ of women being the weaker sex. The research has shown that the IAAF has always done its utmost to ensure the gender binary and even allowed the sport to be influenced by the political climate at the time, an example of this was when the Soviet Union joined the Olympic Games and the fear was present that these elite female athletes had ‘polluted’ bodies.

Based on the matters before the CAS, one cannot escape the notion that the CAS panel was not prepared to hand down a ruling against the IAAF. In the Dutee Chand matter, both parties agreed that the Hyperandrogenism Regulations were discriminatory, and the CAS panel even noted that these Regulations were *prima facie* discriminatory,

¹²⁷ Press Release of the Swiss Federal Supreme Court Interlocutory order of 29 July 2019 (4A_248/2019)

¹²⁸ Ibid, p. 2

¹²⁹ Ibid, p. 2

¹³⁰ Silvia Camporesi, “When does an advantage become unfair? Empirical and normative concerns in Semenya’s case” [2019] J Med Ethics 45: 700

¹³¹ Ibid, p. 700

¹³² Ibid, p. 700

¹³³ Ibid, p. 700

yet the CAS panel still opted to provide the IAAF with a lifeline. The lifeline was a period of two years to submit further evidence to back up its claims that testosterone above a certain level within elite females results in an unlevel playing field. Furthermore, the interim award of the CAS in this matter has been regarded by many as an advisory opinion, which is not permissible in terms of the revised CAS Code and led to legal uncertainty. In the Caster Semenya matter, the CAS held that the Eligibility Regulations were also *prima facie* discriminatory but that it was necessary, reasonable and proportionate. The Swiss Federal Supreme Court appears to have followed the example of the CAS.

Chapter 3: Ethical concerns and consequences of the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development) for elite female athletes

3.1 Introduction

This chapter will answer the second sub-question of this thesis. This will be done by considering the scientific integrity relied upon by the IAAF for the Hyperandrogenism Regulations as well as the Eligibility Regulations. This will be done by comparing the research relied upon by the IAAF and that of other experts who questioned the research. Thereafter, the ethical concerns of the Eligibility Regulations will be considered where it will be shown that the research as well as the ethical standards for biological research relied upon by the IAAF has also been called into question. In this section it will be noted that the IAAF did not respect the confidentiality of the elite female athlete's personal information and medical records. Lastly, the discrimination towards elite female athletes and how this impact upon them will be considered.

3.2 The scientific integrity relied upon by the IAAF

Scientific integrity does not have one universal definition. The definition most apt in this matter is that it consists “of proper reasoning processes and handling of evidence essential to doing science” and it is further defined as “a respect for the underlying empirical basis of science.”¹³⁴ The scientific integrity of the two reports authored by Doctor Stéphane Bermon (“Bermon”) of the Monaco Institute of Sports Medicine and Surgery and Pierre-Yves Garnier (“Garnier”) of the International Association of Athletics Federations Health and Science on behalf of the IAAF will be considered and compared to the questions raised by other experts. The statement made by the IAAF that their research was peer-reviewed will also be considered as well as the level of transparency of the IAAF.

The panel in the CAS suspended the Hyperandrogenism Regulations, which the IAAF introduced in 2011. This suspension was for a period of two years as handed down in its ruling in the matter between Dutee Chand and the IAAF.¹³⁵ During this period, the IAAF was required to submit expert reports and written evidence to support its claim that elite female athletes, such as Dutee Chand, who had been diagnosed with Hyperandrogenism did indeed have a performance advantage. It is assumed that to measure the actual magnitude of performance advantage an elite female athlete with Hyperandrogenism may possess, seems almost impossible. This is because if female athletes had been provided with exogenous testosterone, which it is alleged the IAAF did, producing an increase in endogenous testosterone and monitoring its effect over a period

¹³⁴ Roger Pielke Jr, Ross Tucker & Erik Boye, “Scientific integrity and the IAAF testosterone regulations” [2019] *The International Sports Law Journal* 19: 19

¹³⁵ Dutee Chand, Athletics Federation of India (AFI) & International Association of Athletics Federations (IAAF) [20 July 2015] CAS 2014/A/3759 71

of time, “whilst discounting other variable (such as training) would be an almost impossible task.”¹³⁶

There are two noteworthy aspects that must be considered. Firstly, Bermon and Garnier were two of the researchers employed by the IAAF to attend to the instructions provided by the CAS in its ruling and the authors of various reports published by the IAAF. Bermon, Garnier and the members of their research team had associations with the IAAF and WADA and these potential conflicts of interest have not been addressed. Secondly, when the CAS suspended the Hyperandrogenism Regulations in order for the IAAF to submit further evidence in support of its claims regarding testosterone levels in elite female athletes and the advantage these women may have, only then was the research of the IAAF published even though in 2011 the IAAF had allegedly already conducted research regarding the advantage that testosterone may have for elite female athletes. This information was only published in 2017.

A month before the two-year deadline provided by the CAS, on 3 July 2017, the IAAF held a press release wherein it was stated that “the study found that in certain events female athletes with high testosterone levels benefit from a 1.8% to 4.5% competitive advantage over females with lower testosterone levels.”¹³⁷ Bermon further stated at this press release that the aim of the researchers was to “defend, protect and promote fair female competition. Imagine the magnitude of the advantage for female athletes with testosterone levels in the normal male range...if they were allowed to compete against so-called normal women.”¹³⁸ This differed from what was contained in the report published by Bermon and Garnier.

The report which was published in July 2017 in the *British Journal of Medicine* (“the BJSM”) was based on a study conducted between the relationship of testosterone levels and various athletic performances at the 2011 and 2013 IAAF World Championships¹³⁹. In this report, the authors state that their study while conducting the research could not provide “evidence for causality between androgen levels and athletic performance but can indicate associations between androgen concentrations and athletic performance.”¹⁴⁰ This report further stated that elite female athletes with elevated levels of testosterone “appears”¹⁴¹ to have a “1.8 – 2.8% competitive advantage”¹⁴² in the 800m race and that performed “4.5% and 2.9%”¹⁴³ in hammer throw and pole vault respectively. Although this research was based on mere associations, it led to the publication and implementation of the Eligibility Regulations.

¹³⁶ Andy Brown, “Questions remains over IAAF Differences of Sex Development Regulations” (The Sports Integrity Initiative, 19 May 2018) < <https://www.sportsintegrityinitiative.com/questions-remain-iaaf-differences-sex-development-regulations/>> date accessed 17 November 2019>

¹³⁷ Helen Lenskyj, “Gender, Athletes’ Rights and the Court of Arbitration for Sport” (Emerald Publishing Limited, 2018), p. 127

¹³⁸ Ibid, p. 127

¹³⁹ The 2011 World Championships occurred in Daegu, Korea and the 2013 World Championships occurred in Moscow. The subjects consisted of 2127 athletes of both male and female sexes and who had competed at both World Championships as contained in Helen Lenskyj, “Gender, Athletes’ Rights and the Court of Arbitration for Sport” (Emerald Publishing Limited, 2018), 127

¹⁴⁰ Stéphane Bermon and Pierre-Yves Garnier, “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*, 15 May 2017, 3

¹⁴¹ Ibid, p. 5

¹⁴² Ibid, p. 5

¹⁴³ Ibid, p. 5

This report does not state two particularly important aspects. Firstly, it does include the eight criteria, which the medical community has agreed upon, to determine a person's sexual status. In order to determine a person's sexual status, the following criteria must be considered: "(i) sex chromosome constitution; (ii) sex hormonal pattern; (iii) gonadal sex, i.e., testes or ovaries; (iv) internal sex organs; (v) external genitalia; (vi) secondary sexual characteristics; (vii) apparent sex, as presumed by others and consequently the role in which a person is reared; (viii) psychological sex or gender identity, i.e., that which a person presumes himself or herself to be."¹⁴⁴ Instead, the research conducted and consequently relied upon and published by the IAAF relies on one of the eight mentioned criteria, which is the chromosome pattern of an athlete.

Secondly, this report did not state that the study conducted at the 2011 and 2013 IAAF World Championships was from events where allegations were present that considerable doping had occurred. A study, which became known as the Tübingen Study, established that "between 29% and 34% of the 1800 athletes taking part in the 2011 Daegu Worlds had doped during the previous year."¹⁴⁵ The fact that IAAF did not immediately announce the positive results for the doping ahead of the Moscow 2013 World Championships "could mean that athletes who had doped competed."¹⁴⁶ This was confirmed by Papa Massata Diack, the son of the former IAAF President Lamine Diack¹⁴⁷.

The abovementioned press release and report also differed to what Bermon stated when he said that "females with high androgen levels had 2 – 5% competitive advantage"¹⁴⁸ thereby just rounding up the figures as he saw fit, disregarding the report and the information that had been published. He also did not mention that the higher percentage of performance increase did not relate to a running event, but rather a field event.

The Eligibility Regulations cite the research conducted by Bermon and Garnier as critical evidence regarding advantages associated with performance of elite female athletes diagnosed with Hyperandrogenism. It is very interesting to note that the researchers stated that "there is broad medical and scientific consensus, supported by peer-reviewed data and evidence from the field, that the high levels of endogenous testosterone circulating in athletes with certain DSDs can significantly enhance their sporting performance."¹⁴⁹ The research of the IAAF has been critiqued by numerous researchers¹⁵⁰ and one such example is by Professor Pielke.¹⁵¹

¹⁴⁴ Anre Ljungqvist, "Gender Verification" in B L Drinkwater (ed) *Women in Sport: An ioc medical commission publication, women in sport* (John Wiley & Sons, 2000) ,183 – 193

¹⁴⁵ Andy Brown, "Questions remain over IAAF Differences of Sex Development Regulations" (The Sports Integrity Initiative, 19 May 2018) <<https://www.sportsintegrityinitiative.com/questions-remain-iaaf-differences-sex-development-regulations/>> date accessed 17 November 2019

¹⁴⁶ Ibid

¹⁴⁷ Ibid

¹⁴⁸ Helen Lenskyj, "Gender, Athletes' Rights and the Court of Arbitration for Sport" (Emerald Publishing Limited, 2018), p. 128

¹⁴⁹ Roger Pielke Jr, Ross Tucker & Erik Boye, "Scientific integrity and the IAAF testosterone regulations" [2019] *The International Sports Law Journal* 19: 20

¹⁵⁰ The researchers that have critiqued the research of the IAAF include Silvia Camporesi; Katrina Karkazis and Morgan Carpenter; Amanda Menier; Peter Sonksen et al as referred to in Roger Pielke Jr, Ross Tucker & Erik Boye, "Scientific integrity and the IAAF testosterone regulations" [2019] *The International Sports Law Journal* 19: 19

¹⁵¹ Roger Pielke Jr, Ross Tucker & Erik Boye, "Scientific integrity and the IAAF testosterone regulations" [2019] *The International Sports Law Journal* 19: 18-26

The research has been criticised on numerous aspects, such as the fact that the IAAF appears to have based the interpretation of a real competitive advantage on “speculation, physical characteristics of female athletes or a comparison of male and female anatomy”¹⁵² and not as other researchers have interpreted this as meaning “an advantage observed in actual elite competition among females...”¹⁵³ Another criticism levelled against the research of the IAAF was that it was not peer-reviewed data as when the research data of the IAAF was requested by Pielke, their request was declined. Some researchers requested this research data in order to conduct an independent assessment and possible duplication of the results as these results formed an imperative foundation for the Eligibility Regulations and because these results were reached in-house by the IAAF. Thus, it is misleading of the IAAF to state that the evidence is peer-reviewed as when this claim was made by the IAAF, peer-review had not occurred and thereafter peer-review of the data had also not occurred.

Bermon eventually provided a partial subset of the data to Pielke but once again was not completely transparent regarding the research provided as on 7 July 2018, the BJSM published a further report authored by Bermon and others, “which included the acknowledgement of methodological changes that had resulted in changes to sample sizes and calculated performance differences compared to the original 2017 study.”¹⁵⁴ In this further report, Bermon states that the research team has addressed the criticism received and that they “aggregated results...”¹⁵⁵ for the running events of 400m to 1500m.

The researchers conducted their own independent assessment of the research but could not duplicate the same results as the IAAF. Some of the errors that were noted was that the IAAF had duplicated athletes, times and phantom times¹⁵⁶ in their research and findings. Some of the other errors that were noted were in the event categories of the women’s 400m, 400m hurdles, 800m and the 1500m, which led the researchers to believe that the other research conducted by the IAAF should also contain errors.

When the partial dataset was provided to the researchers, Bermon mentioned to the researchers that the dataset “contained some errors.”¹⁵⁷ This was also confirmed in the 2018 publication of Bermon and others, which stated that “we have excluded 230 observations, corrected some data capture errors and performed the modified analysis on a population of 1102 female athletes.”¹⁵⁸ The researchers compared the reports of 2017 and 2018 and noted that only 220, and not 230, observations were excluded from the one research to the next and the researchers thus concluded that information contained in the 2018 report would also be erroneous. This view was confirmed when Pielke applied the correct data to the erroneous research and found that it “significantly undermines any conclusions that can be drawn...”¹⁵⁹ Even though these identified errors were brought to

¹⁵² Ibid, p. 19

¹⁵³ Ibid, p. 19

¹⁵⁴ Ibid, p. 21

¹⁵⁵ Stéphane Bermon, Angelica Lindén Hirschberg, Jan Kowalski & Emma Eklund, “Serum androgen levels are positively correlated with athletic performance and competition results in elite female athletes”, *British Journal of Sports Medicine*, 2018, Vol 52, No 23, 1531

¹⁵⁶ Phantom times means that the time was recorded does not correspond to any athlete that participated in that event. This is important to the research as it will have an impact on the results and can lead to inaccuracies and errors in the results and research relied upon.

¹⁵⁷ Roger Pielke Jr, Ross Tucker & Erik Boye, “Scientific integrity and the IAAF testosterone regulations” [2019] *The International Sports Law Journal* 19: 22

¹⁵⁸ Ibid, p. 22

¹⁵⁹ Ibid, p. 23

the attention of Bermon and Garnier and the BJSM, the IAAF and the BJSM did nothing about it. This view was reinforced when a spokesperson of the IAAF informed the New York Times newspaper that the conclusions reached in the 2018 report will not be changed from the conclusions reached in the 2017 report. This position was also expressed by the head of the IAAF.

Therefore, when the information above is considered, it is evident that the researchers and therefore the IAAF based their research on incorrect findings. Bermon and others based a lot of their research and results on associations and by combining results from different running events. Even when they were informed of the errors, they proceeded with the implementation of the Eligibility Regulations. Therefore, the findings cannot be relied upon. In light thereof, the scientific integrity has correctly been called into question and cannot be considered as scientifically sound or meeting the minimum threshold of scientific integrity. Furthermore, the IAAF has on numerous occasions not been transparent regarding their research or when other experts requested the data.

3.3 Ethical concerns of the Eligibility Regulations

The IAAF has faced and continues to face an ethical conundrum regarding the Eligibility Regulations as well as the Hyperandrogenism Regulations. The ethical conundrums that will be considered in this regard relate to the scientific integrity of the research relied upon for both the Hyperandrogenism and Eligibility Regulations, the issue of how the IAAF conducted its research and obtained data and the use of a retrospective clinical study.

This is important to consider because if Regulations have been based on erroneous data, it should be corrected or not implemented at all. The scientific integrity of both the Hyperandrogenism Regulations and the Eligibility Regulations has been called into question, as mentioned above. This view is reinforced when one considers that the World Medical Association President, Dr Leonid Eidelman, said that “we have strong reservations about the ethical validity of these regulations. They are based on weak evidence from a single study, which is currently being widely debated by the scientific community.”¹⁶⁰ If the World Medical Association advised physicians globally not to participate in implementing the Eligibility Regulations of the IAAF, the sporting world must stop and pay attention as the IAAF remains steadfast in their research and Regulations to police elite female athletes.

Secondly, and associated with the above, is the issue of modern ethical biological research. When athletes participate at events, such as the World Athletics Championships, they give their consent to the IAAF to conduct anti-doping tests. Part of the consent provided by the athlete is that the IAAF will retain these samples for a period of 10 years. What occurred in practice was that at the events held in 2011 and 2013, athletes were instructed by the IAAF to provide both blood and urine samples for the IAAF to develop a biological passport. A biological passport “is an athlete’s biological profile that’s developed over a period. A sudden anomaly could indicate that there’s a doping or some

¹⁶⁰ Kirsten Frattini, ‘IOC, IAAF, UCI guidelines highlight the need for science and education’ (Cyclingnews, 3 May 2019) <<https://www.cyclingnews.com/features/policing-gender-boundaries-testosterone-sex-testing-and-human-rights>> date accessed 27 October 2019

other issue.”¹⁶¹ What the IAAF actually did was hand these samples to its medical commission, which then conducted its own research to establish the hormone levels of athletes. The athletes were not informed of this. Their express and informed consent for the procedure of hormone research was not obtained. The IAAF tried to justify their conduct by stating that this was done for doping purposes, but WADA expressly stated at the Dutee Chand matter¹⁶² that “the regulations on Hyperandrogenism or difference of sex development had nothing to do with anti-doping.”¹⁶³

Closely linked to this is that in order for the IAAF to conduct its research on the effects that testosterone and Hyperandrogenism has on elite female athletes, it provided certain elite female athletes with endogenous testosterone to track and monitor its effect upon the athlete. Jonathan Taylor, of Bird & Bird LLP, assisted with the drafting of the Eligibility Regulations suggested that the IAAF did rely upon such methodologies. He further mentioned that the IAAF managed to “dose females...I don’t know how they got ethical approval, but they did.”¹⁶⁴

Lastly, the IAAF used a “retrospective clinical study”¹⁶⁵ on four young female athletes, aged between 18 – 21, after the London Olympics in 2012, when complaints of these four athletes were received¹⁶⁶ to justify and add to its research. These four young athletes were referred to the Reproductive Endocrinology Department of the University of Nice by the IAAF. These athletes “were told that a gonadectomy (removal of undescended testicles) would be likely to lower their lower their testosterone levels and allow them to continue to compete...”¹⁶⁷

Even though the IAAF denies responsibility for telling these athletes that, they still underwent a plethora of tests and procedures including karyotyping, where the chromosomes of these females were tested to determine if there were any genetic problems, disorders or diseases¹⁶⁸, radiography and quite surprisingly “partial clitoridectomy”¹⁶⁹ (is the partial or complete removal of the clitoris). Even though the

¹⁶¹ Steve Cornelius, “Caster Semenya: the legal and ethical issues that should concern us all” (The Conversation, 31 July 2019) <<https://theconversation.com/caster-semenya-the-legal-and-ethical-issues-that-should-concern-us-all-117636>> date accessed 25 February 2020

¹⁶² Dutee Chand, Athletics Federation of India (AFI) & International Association of Athletics Federations (IAAF) [20 July 2015] CAS 2014/A/3759 71

¹⁶³ Steve Cornelius, “Caster Semenya: the legal and ethical issues that should concern us all” (The Conversation, 31 July 2019) <<https://theconversation.com/caster-semenya-the-legal-and-ethical-issues-that-should-concern-us-all-117636>> date accessed 25 February 2020

¹⁶⁴ Andy Brown, “Questions remain over IAAF Differences of Sex Development Regulations” (The Sports Integrity Initiative, 19 May 2018) <<https://www.sportsintegrityinitiative.com/questions-remain-iaaf-differences-sex-development-regulations/>> date accessed 17 November 2019

¹⁶⁵ Helen Lenskyj, “Gender, Athletes’ Rights and the Court of Arbitration for Sport” (Emerald Publishing Limited, 2018), 122

¹⁶⁶ These four young women agreed to surgery in France to remove internal testes that accounted for their levels of testosterone. The medical team of the IAAF also proposed additional surgery that was not related to athletic performance, such as vaginoplasty, partial clitoridectomy and estrogen replacement therapy as contained in Helen Lenskyj, “Gender, Athletes’ Rights and the Court of Arbitration for Sport” (Emerald Publishing Limited, 2018), 122

¹⁶⁷ Andy Brown, “Questions remain over IAAF Differences of Sex Development Regulations” (The Sports Integrity Initiative, 19 May 2018) <<https://www.sportsintegrityinitiative.com/questions-remain-iaaf-differences-sex-development-regulations/>> date accessed 17 November 2019

¹⁶⁸ Medline Plus, “Karyotyping” <<https://medlineplus.gov/ency/article/003935.htm>> date accessed 20 January 2020

¹⁶⁹ Patrick Fénelichel, Françoise Paris, Pascal Philibert, Sylvie Hiéronimus, Laura Gaspari, Jean-Yves Kurzenne, Patrick Chevallier, Stéphane Bermon, Nicolas Chevalier & Charles Sultan, “Molecular

partial clitoridectomy does not form part of the gender verification testing and it is “beyond the policies’ mandate”¹⁷⁰, this procedure has been used as an intervention for “feminisation surgery.”¹⁷¹ Although these four young athletes consented to the procedure, it has been argued that the procedure of clitoridectomy is not “medically indicated, does not relate to real or perceived athletic ‘advantage’, and is beyond the policies’ mandate.”¹⁷² It was further argued that this type of surgery should have “no role in interventions undertaken for athletes’ eligibility or health.”¹⁷³

A report of this procedure was published wherein it was stated that the goal was “to determine whether high levels of testosterone in the four young women would reveal undiagnosed XY DSD...”¹⁷⁴ This report was authored by Bermon *et al* but it contained sufficient information to identify the four female athletes and the publication of these four athlete’s personal information and confidential medical records were in contravention of medical ethics and the 2011 IAAF Regulations.

Therefore, not only has the IAAF not adhered to the Helsinki Declaration¹⁷⁵ regarding the standard of ethical biological research, it also proceeded to use samples obtained from athletes under false pretences for its own purposes. Furthermore, the IAAF did not respect the confidentiality of personal information and medical records as it published this information under the guise of a ‘clinical study’. The IAAF has obtained consent in the form of blanket consent and thus managed to make use of research to pursue their goals by using these ‘other’ or ‘different’ women as an end to their means and not as means to an end.

3.4 Discrimination towards elite female athletes and how this impact upon them

The matter of discrimination appears to have just as long a history as ensuring the binary division in elite athletics. The discrimination that elite female athletes have been subjected to, and which will be considered below, include sex and racism. It is important to consider this as if something, such as a Regulation of the IAAF, is discriminatory towards a group of people, it should not be implemented due to contravening a fundamental human right. A rule that contravenes a fundamental human right should only be implemented if it can be regarded as a justified and proportional limitation of that particular right.

Not only have elite female athletes faced discrimination based on sex, but they have also been subjected to racism. Although it is no longer mandatory that elite female athletes have to attend a gender verification test, if a fellow competitor or a member of a team’s management staff raise a suspicion about another female athlete’s ‘femininity’ to the IAAF or the IAAF has its own suspicion, that female athlete will be subjected to a gender verification test¹⁷⁶. During these gender verification tests, the medical professionals may

Diagnosis of 5 α -Reductase Deficiency in 4 Elite Young Female Athletes Through Hormonal Screening for Hyperandrogenism [2013] The Endocrine Society E1057

¹⁷⁰ Rebecca M Jordan-Young, Peter H Sönksen & Katrina Karkazis, “Sex, health, and athletes” [2014] British Medical Journal, 2

¹⁷¹ Ibid, p. 2

¹⁷² Ibid, p. 2

¹⁷³ Ibid, p. 2

¹⁷⁴ Ibid, p. 123

¹⁷⁵ WMA Declaration of Helsinki – Ethical Principles for Medical Research involving Human Subjects, June 1964

¹⁷⁶ Ibid

take note of the hirsutism scale developed by D Ferriman and J D Gallwey in the 1960s¹⁷⁷ or the Tanner scale.¹⁷⁸ The hirsutism scale is more commonly used between the two.

The hirsutism scale has medicalised hair by “gendering hair growth”¹⁷⁹ in relation to the type of hair, location of the hair and the pattern thereof. If an elite female athlete has hair in areas that are commonly categorised as male, the elite female athlete will fail the visual test and require further medical attention.

When one considers the reference image used in the grading of the hirsutism, it is noted that the woman appears to be of white Western ethnicity, has light hair, a small waist with a petite frame that is not covered by muscles.¹⁸⁰ This scale is outdated, culturally biased and extremely subjective. It is very interesting to note that of the elite female athletes who challenged the IAAF in the CAS, “none were white.”¹⁸¹ This has led some to believe “that gender verification practices have not only been discriminatory against female athletes. But they are also inherently racist.”¹⁸²

Body Area	Date of exam :				
Upper Lip					Score
Chin					Score
Chest					Score
Upper Abdomen					Score
Lower Abdomen					Score
Arms					Score
Thigh					Score
Upper Back					Score
Lower Back					Score
TOTAL SCORE					

Figure 1: Prescribed evaluation sheets with sketches that are to be used during the hirsutism scoring for hair on the lips, chin, chest, stomach, legs and pubic area according to Ferriman and Gallwey (source: Marion Müller)

¹⁷⁷ The Ferriman-Gallwey score is a method used to evaluate and determine the excessive body hair (also known as hirsutism) in men and women where normally the hair would be minimal or non-existent. Body parts such as the lips, chin, stomach and pubic area are examined and then scored

¹⁷⁸ Sonja Erikainen, *Gender Verification and the making of the female body in sport: a history of the present* (Routledge 2020) 131

¹⁷⁹ *Ibid*, p. 132

¹⁸⁰ Marion Müller, “Constructing Gender Incommensurability in Competitive Sport: Sex/Gender Testing and the New Regulations on Female Hyperandrogenism” 16 March 2016 (Springer, 39: 405 - 431), 423

¹⁸¹ Kirsten Frattini, ‘IOC, IAAF, UCI guidelines highlight the need for science and education’ (*Cyclingnews*, 3 May 2019)

¹⁸² *Ibid*

Therefore, elite female athletes who have been diagnosed with Hyperandrogenism will continue to be considered as ‘different’ and therefore subjected to discrimination on the grounds of sex and race. They will continue to be viewed and treated differently as the IAAF believes that this is the only way to maintain a level playing field between elite female athletes.

3.5 Conclusion

In conclusion, it is concerning that an international institution, such as the IAAF, has relied upon research that contains errors and has consequently implemented Regulations that are based on incorrect data. Even though the errors were brought to the IAAF’s attention, it decided to proceed with the data and Regulations. Therefore, the scientific integrity of the research relied upon by the IAAF has been called into question.

It is further concerning to note that the IAAF obtained consent from young athletes and provided treatment that was not necessary in aid of their research. The same applies for the consent obtained from athletes to use their blood and urine samples for other purposes and to ensure a level playing field. Lastly, even though the IAAF has argued on numerous occasions that it needs to protect elite female athletes and that a level playing field in female athletics must be present, it appears that the IAAF’s conduct, research and Regulations only perpetuates and encourages discrimination of elite female athletes who have been diagnosed with Hyperandrogenism and thus look ‘different’ to their Western, competitors.

Chapter 4: Legal compatibility of the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development)

4.1 Introduction

This chapter will answer the third sub-question of this thesis. This will be done by considering the relationship between the IAAF, the CAS and disputes which arise. Furthermore, the legal compatibility of the Eligibility Regulations with the European Convention on Human Rights¹⁸³ (“the ECHR”) and the Universal Declaration of Human Rights¹⁸⁴ (“the Universal Declaration”) will be done by examining and comparing the relevant provisions in the ECHR and the Universal Declaration.

4.2 The IAAF, CAS and disputes

Here the relationship between the IAAF and elite athletes will be considered in the context of the recourse available to athletes if a dispute arises between an athlete and the IAAF. The relationship between the IAAF and elite athletes is not one that can generally be considered as equal. This is because the IAAF is the party that possesses the most power and is the party who decides upon the rules and regulations, which is applicable to elite athletics. One such example is the procedure decided upon by the IAAF if a dispute arises between itself and an elite athlete. According to the Eligibility Regulations, if any dispute does arise, the dispute shall fall within the exclusive jurisdiction of the CAS.¹⁸⁵ While such a provision may not necessarily be regarded as bad, it must be noted that the parties do not have the option to approach a national court to resolve the issue and the CAS is a quasi-judicial body. This means that the CAS is not a court of law, but its decisions are final and binding upon the parties. The CAS settles disputes brought before it by means of arbitration.

In terms of the relationship between the IAAF and the elite athlete, the IAAF has expressly stated that the jurisdiction of the CAS must be accepted by the athlete. The matter of Ms Pechstein¹⁸⁶, an elite speed skater, can be considered in this regard. In this matter, Ms Pechstein submitted to anti-doping tests for the International Speed Skating Union, which she failed. She was consequently suspended for two years. She appealed against this decision by instituting proceedings in the CAS, which decision the CAS upheld. Ms Pechstein then appealed to the Swiss Federal Supreme Court, but this appeal was also dismissed. Ms Pechstein then launched proceedings before the European Court of Human Rights (“ECtHR”) where she asked the court to determine if her consent to the jurisdiction of the CAS in the event of disputes can be regarded as been given freely by her. The ECtHR ruled in her favour.

The ECtHR declared itself competent to hear such cases even though the CAS is “neither a state court, nor public Swiss state entity, but a privately-owned institution.”¹⁸⁷

¹⁸³ Convention for the Protection of Human Rights and Fundamental Freedoms, Rome, 4.XI.1950

¹⁸⁴ United Nations Universal Declaration of Human Rights, 1948

¹⁸⁵ Article 5.2 of the Eligibility Regulations for the Female Classification (Athletes with differences of Sex Development) (Version 2.0, published on 1 May 2019, commencing into effect as from 8 May 2019)

¹⁸⁶ ECtHR, *Affaire Mutu et Pechstein c. Suisse*, No 40575/10 et 67474/10, 2 October 2018

¹⁸⁷ Nathalie Voser, Benjamin Gottlieb, “How the European Court for Human Rights interferes in (Sports) Arbitration” (Schellenberg Wittmer Ltd, Switzerland, 19 December 2018) <

The ECtHR found that the athletes' right to a fair trial as contained in article 6 ECHR had been violated by the CAS and that Ms Pechstein had not voluntarily agreed to arbitration. This is because the ECtHR held that by "not accepting the arbitration clause would have meant that she could no longer pursue her professional activities and, as a consequence, to earn her living by practising her sport."¹⁸⁸

If an elite athlete decides to appeal a decision handed down by the CAS, the athlete must be aware that such an appeal will be subject to the jurisdiction of the Swiss Federal Tribunal as set out in The Code on International Private Law 1987 ("the Code").¹⁸⁹ It must also be noted that an alleged violation of the ECHR cannot be raised directly before the Supreme Court. This is because the Code sets out the limited grounds on which an award handed down by the CAS may be challenged, which is applicable to international arbitrations. Due to this, the ECHR will only be indirectly applicable. The ECtHR set a legal precedent in the *Mutu and Pechstein v Switzerland*¹⁹⁰ case in that the court will not "shy away from interfering in certain types of what is called compulsory arbitration"¹⁹¹.

Furthermore, the ECtHR will proceed to hold the Member State responsible if such a State allows compulsory arbitrations to take place within its borders. This is due to two reasons. Firstly, because the contents of article 6 ECHR forms part of public policy. Public policy has been defined to include "any fundamental legal principle incorporated into Swiss jurisprudence."¹⁹² Secondly, Member States are liable for violations of human rights in "arbitration proceedings seating in their territory"¹⁹³, which have occurred in cases of compulsory arbitrations.

Moreover, the compulsory arbitration between Caster Semenya and the IAAF appears to be very similar to that of Ms Pechstein¹⁹⁴ as the Eligibility Regulations have also dictated that when a dispute arises between itself and an athlete, the CAS will have exclusive jurisdiction to adjudicate upon the dispute. Thus, it can be considered that the IAAF, the CAS and the Supreme Court have all disregarded Caster Semenya's rights as contained in article 6 ECHR.

In conclusion, the compulsory arbitration that Caster Semenya was subjected to by the IAAF in the CAS did not occur within the realms of the ECHR and therefore her right to a fair trial as contained in article 6 ECHR has not been respected by the CAS or the Supreme Court and has consequently been infringed upon.

<http://arbitrationblog.kluwerarbitration.com/2018/12/19/how-the-european-court-for-human-rights-interferes-in-sports-arbitration/>> date accessed 25 March 2020

¹⁸⁸ Ibid

¹⁸⁹ Switzerland's Federal Code on Private International Law (CPIL) of December 18, 1987

¹⁹⁰ ECtHR, *Affaire Mutu et Pechstein c. Suisse*, No 40575/10 et 67474/10, 2 October 2018

¹⁹¹ Nathalie Voser, Benjamin Gottlieb, "How the European Court for Human Rights interferes in (Sports) Arbitration" (Schellenberg Wittmer Ltd, Switzerland, 19 December 2018) <

<http://arbitrationblog.kluwerarbitration.com/2018/12/19/how-the-european-court-for-human-rights-interferes-in-sports-arbitration/>> date accessed 25 March 2020

¹⁹² Richard Anderson, Charlotte Hair & Sarah Kroll, "The Semenya Case: Balancing Fair Play and Human Rights" (*WS Society*, 23 August 2019) <<http://www.wssociety.co.uk/features/2019/8/23/the-semenya-case-balancing-fair-play-and-human-rights-considering-the-cass-decision-to-uphold-the-iaaf-eligibility-regulations>> date accessed 24 March 2020

¹⁹³ Nathalie Voser, Benjamin Gottlieb, "How the European Court for Human Rights interferes in (Sports) Arbitration" (Schellenberg Wittmer Ltd, Switzerland, 19 December 2018) <

<http://arbitrationblog.kluwerarbitration.com/2018/12/19/how-the-european-court-for-human-rights-interferes-in-sports-arbitration/>> date accessed 25 March 2020

¹⁹⁴ ECtHR, *Affaire Mutu et Pechstein c. Suisse*, No 40575/10 et 67474/10, 2 October 2018

4.3 The Eligibility Regulations and the ECHR

On 7 May 2019, the IAAF stated in a press release that it was a private body, which exercises private contractual powers and therefore “it is not subject to human rights instruments such as the Universal Declaration of Human Rights or the European Convention on Human Rights.”¹⁹⁵ Despite this, the IAAF further stated that it is committed to treating everyone equally and in a non-discriminatory manner. This extends to race, gender, political or religious views or any other immaterial factor. According to the IAAF, this commitment to treating everyone equally is the reason for the “provision of a female-only competition category”¹⁹⁶ and this is the only manner in which to guarantee that elite female athletes have an equal chance to “excel and to secure the social and other goods”¹⁹⁷ offered by elite sports.

The Supreme Court rejected Caster Semenya’s appeal, which meant that she would have been able to approach the ECtHR. It is important to note here that Caster Semenya did not make use of this opportunity.¹⁹⁸ Although the ECHR states that it is applicable to both nationals and non-nationals of the EU, Caster Semenya would still have to raise jurisdictional arguments as she is a South African citizen and not a citizen of any of the European Union Member States. Even though this matter did not proceed to the ECtHR, various provisions in the ECHR are still applicable.

4.3.1 Article 8 of the ECHR – respect for private life

The idea of private life is interpreted broadly to include guarantees such as physical, psychological and moral integrity, identity and privacy. It has been argued that the Eligibility Regulations do not respect the principles of “informed consent or medical ethics”¹⁹⁹ and certain elite female athletes, such as Caster Semenya, have felt “coerced into unnecessary tests and treatment in order to maintain their careers and livelihood.”²⁰⁰ Consent cannot be regarded as informed if the possible consequences or outcomes have not been explained to the person in question and if this person is only agreeing to be able access something.

In this regard, the case of *Y. F v Turkey*²⁰¹ is to be considered as in that matter the complainant was compelled to undergo a gynaecological examination without her consent. The complainant argued that the examination constituted a breach of article 8 of the ECHR. The Court found this interference was not in accordance with law and held

¹⁹⁵ IAAF publishes briefing notes and Q&A on Female Eligibility Regulations (IAAF, 7 May 2019) <<https://www.worldathletics.org/news/press-release/questions-answers-iaaf-female-eligibility-reg>> date accessed 25 March 2020

¹⁹⁶ Richard Anderson, Charlotte Hair & Sarah Kroll, “The Semenya Case: Balancing Fair Play and Human Rights” (*WS Society*, 23 August 2019) <<http://www.wssociety.co.uk/features/2019/8/23/the-semenya-case-balancing-fair-play-and-human-rights-considering-the-cass-decision-to-uphold-the-iaaf-eligibility-regulations>> date accessed 24 March 2020

¹⁹⁷ Ibid

¹⁹⁸ At the time of writing this paper, no case regarding the challenge of the IAAF’s Eligibility Regulations of testosterone in elite female athletics as adjudicated upon by the ECtHR could be found

¹⁹⁹ Richard Anderson, Charlotte Hair & Sarah Kroll, “The Semenya Case: Balancing Fair Play and Human Rights” (*WS Society*, 23 August 2019) <<http://www.wssociety.co.uk/features/2019/8/23/the-semenya-case-balancing-fair-play-and-human-rights-considering-the-cass-decision-to-uphold-the-iaaf-eligibility-regulations>> date accessed 24 March 2020

²⁰⁰ Ibid

²⁰¹ *Y. F v Turkey* 24209/94; (2003) 39 EHRR 715; [2003] ECHR 391

that “a compulsory medical intervention, even if it is of minor importance, constitutes an interference with this right.”²⁰²

When Eligibility Regulations and the conduct of the IAAF is considered in regard to article 8 and the abovementioned case is applied to the matter of Caster Semenya, it can be argued that the IAAF and the Eligibility Regulations are infringing upon elite female athletes’ right to respect for private life by forcing elite female athletes who have been diagnosed with Hyperandrogenism to undergo medical treatment, and possibly gender verification testing, in order to comply with the Eligibility Regulations. The medical intervention will not be sought freely and voluntarily by elite female athletes but will be obtained merely to comply so that their futures and careers are not terminated due to possessing a natural, physical trait.

4.3.2 Article 14 of the ECHR – prohibition of discrimination

It is important to note that discrimination has been classified into direct and indirect discrimination. Direct discrimination occurs when individuals who are in similar situations should receive similar treatment and “not be treated less favourably simply because of a particular protected characteristic that they possess.”²⁰³ Indirect discrimination, on the other hand, occurs when the treatment is based on a seemingly neutral rule if it “disadvantages a person or group of persons as a result of their particular characteristic.”²⁰⁴ This thesis will consider direct discrimination.

Direct discrimination

Direct discrimination consists of three parts. Firstly, an individual must receive less favourable treatment - this is “at the heart of direct discrimination.”²⁰⁵ Secondly, the less favourable treatment is compared to another individual in a similar situation. This is known as a comparator, which will be a person in essentially similar circumstances. The main differences between the individuals will be the “protected ground.”²⁰⁶ And thirdly, there must be causation. To meet this requirement, it needs to be established if the person would have been treated less favourably if the individual was of a different sex, race, age or in any adverse position under one of the other protected grounds. If this is answered affirmatively, then the less favourable treatment is caused by the grounds in question.

Article 14 of the ECHR lists various protected grounds, which includes, but is not limited to, sex, race, colour, language, religion and other status. The ECtHR has interpreted the protected ground of other status broadly and has included “sexual orientation, gender identity and transgender status.”²⁰⁷ The treatment elite female athletes

²⁰² Ibid, at paragraph 33

²⁰³ Handbook on European non-discrimination law 2018 edition (Publications Office of the European Union, 2018) 42

²⁰⁴ Ibid, p. 42

²⁰⁵ Ibid, p. 44

²⁰⁶ Ibid, p. 45

²⁰⁷ Richard Anderson, Charlotte Hair & Sarah Kroll, “The Semenya Case: Balancing Fair Play and Human Rights” (*WS Society*, 23 August 2019) <<http://www.wssociety.co.uk/features/2019/8/23/the-semenya-case-balancing-fair-play-and-human-rights-considering-the-cass-decision-to-uphold-the-iaaf-eligibility-regulations>> date accessed 24 March 2020

with the 46 XY DSD receive from the IAAF can be extended to discrimination based on this other status as contained in article 14 ECHR.

If the requirements of direct discrimination are applied to the Eligibility Regulations and the treatment Caster Semenya has received from the IAAF, all three requirements have been met. Regarding the first requirement, Caster Semenya has received less favourable treatment in comparison to her competitors. In terms of the second requirement, Caster Semenya has received less favourable treatment in comparison to her competitors that also participate in the 800m or 1500m track events that she participates in. Caster Semenya's competitors are in essentially the same circumstances – they are all elite female athletes and they all participate in certain track events - the only difference is that she has been diagnosed with Hyperandrogenism and her competitors not.

Furthermore, because of this diagnosis, the IAAF wants Caster Semenya to take medication to lower her naturally occurring testosterone, while her competitors do not have to do this. Caster Semenya has always regarded herself as female²⁰⁸ and therefore she can rely on her gender identity as a protected ground of other status as contained in article 14 ECHR. Lastly, causation has also been met as if Caster Semenya did not possess this other status, she would not have been treated less favourably. She would have been treated in the same manner as her competitors without Hyperandrogenism.

Therefore, in determining whether direct discrimination has occurred, one is assessing “whether the less favourable treatment is due to a protected ground that cannot be separated from the particular factor being complained about”²⁰⁹ and the Eligibility Regulations and the treatment received from the IAAF is doing precisely this. Caster Semenya has received less favourable treatment because of a protected ground, which cannot be separated from her and therefore has been subjected to direct discrimination.

In order to establish if direct discrimination has occurred, the ECtHR in numerous cases²¹⁰ makes use of a formulation that there must be a “difference in the treatment of persons in analogous, or relevantly similar, situations.”²¹¹ When a complainant lodges an application regarding the treatment she has experienced, she must show that she was directly affected by these measures.

Thus, the Eligibility Regulations and the treatment Caster Semenya received from the IAAF cannot be regarded as legally compatible with the ECHR as even if the facts of Caster Semenya's matter broadly relate to the “issues that are protected under the ECHR”²¹², which it is argued that it does, it is possible for a complaint of discrimination to “fall within the scope of a particular right, even if the issue in question did not relate to a specific entitlement granted by the ECHR.”²¹³ Also, the measures implemented by

²⁰⁸ Julian Savulescu, “Ten ethical flaws in the Caster Semenya decision on intersex in sport” (The Conversation) 9 May 2019 <<https://theconversation.com/ten-ethical-flaws-in-the-caster-semenya-decision-on-intersex-in-sport-116448>> date accessed 20 September 2019

²⁰⁹ Handbook on European non-discrimination law 2018 edition (Publications Office of the European Union, 2018) 50

²¹⁰ ECtHR, *Biao v Denmark* [GC], No 38590/10, 24 May 2016 at paragraph 89; ECtHR, *Carson and Others v the United Kingdom* [GC], No. 42184/05, 16 March 2010 at paragraph 61; ECtHR, *D. H and Others v the Czech Republic* [GC], No. 57325/00, 13 November 2007 at paragraph 175; ECtHR, *Burden v the United Kingdom* [GC], No. 13378/05, 29 April 2008 at paragraph 60

²¹¹ Handbook on European non-discrimination law 2018 edition (Publications Office of the European Union, 2018) 43

²¹² *Ibid*, p. 30

²¹³ *Ibid*, p. 30

ECtHR, *A.H and Others v Russia*, No. 6033/19 and 15 other applications, 17 January 2017 at paragraph 380F

the IAAF in the Eligibility Regulations has directly affected her. Therefore, the Eligibility Regulations and the treatment received from the IAAF infringes upon her right to a fair trial, her right to privacy and the right to non-discrimination.

4.4 Justification and Proportionality regarding discrimination

4.4.1 Objective Justification

If it is alleged that a person has received differential treatment, which amounts to discrimination then in terms of the ECHR, the discrimination is subject to an objective justification. Differential treatment can be justified if it “pursues a legitimate aim and where the means to pursue that aim are appropriate and necessary.”²¹⁴

In order to determine if the difference in treatment can be justified, the ECtHR held that a difference in treatment amounts to discrimination if “it does not pursue a legitimate aim or if there is not a reasonable relationship of proportionality between the means employed and the aim sought to be realised.”²¹⁵

When the Eligibility Regulations are considered in this regard, it appears that the Eligibility Regulations attempts to pursue the legitimate aim of ensuring a level playing field amongst elite female athletes participating in certain restricted track events.

When the means chosen to achieve this aim is considered, however, it appears that the Eligibility Regulations are not proportionate and necessary to achieve this particular aim. This is because the relationship between what the Eligibility Regulations are attempting to achieve, and the measures used to achieve this are not proportionate with one another.

4.4.2 Proportionality

To determine if the differential treatment is proportional, it must first be determined if the treatment is justified.

If the differential treatment is justified, in order to determine if the differential treatment is proportionate, the court must be satisfied that there is no other way of achieving that particular result which “imposes less of an interference with the right to equal treatment” and the aim that it wants to achieve is “important enough to justify this level of interference.”²¹⁶

When the Eligibility Regulations are considered in this regard, it is also noted that there are other means by which the IAAF can achieve the same result of ensuring a level playing field instead of forcing elite female athletes to either submit to lowering their testosterone levels by means of medication or possible surgery or to leave competitive sport completely. The other means that are available to the IAAF is that it can remove testosterone as the only factor that determines the difference between male and females and make use of a variety of indicators to indicate when an elite female athlete may have a competitive advantage.

²¹⁴ Handbook on European non-discrimination law 2018 edition (Publications Office of the European Union, 2018) 92

²¹⁵ ECtHR, *Burden v. the United Kingdom* [GC], No. 13378/05, 29 April 2008 at paragraph 60; ECtHR *Guberina v Croatia*, No. 23682/13, 22 March 2016 at paragraph 69

²¹⁶ Handbook on European non-discrimination law 2018 edition (Publications Office of the European Union, 2018) 93

An examination of the jurisprudence of the ECtHR regarding differential treatment relating to matters deemed to be at the heart of personal dignity, “such as discrimination based on race or ethnic origin, private and family life”²¹⁷ are not as easy to justify as matters relating to social policy issues.

When the Eligibility Regulations and the conduct of the IAAF is considered, it is evident that the aims that the Eligibility Regulations attempts to achieve and the means to achieve this cannot be regarded as justifiable differential treatment or that such treatment is proportionate. The differential treatment is on numerous grounds that the ECtHR jurisprudence has indicated that is more difficult to justify, such as Caster Semenya being treated differently due to her private life. The Eligibility Regulations and the conduct of the IAAF can therefore be regarded as discriminatory.

4.5 The Eligibility Regulations and the Universal Declaration of Human Rights

The United Nations (“the UN”) has been very vocal in its opposition to the IAAF’s Eligibility Regulations. It has done this by means of writing a letter to the President of the IAAF²¹⁸ in September 2018, adopted a Resolution²¹⁹ on the Elimination of discrimination against women and girls in sport and joined the legal battle of Caster Semenya²²⁰ as *amicus curiae*. It did all of this because the UN denounced the Eligibility Regulations as a violation of human rights. In light thereof and since the IAAF stated in the press release that it was not bound to the Universal Declaration of Human Rights, the Universal Declaration should be briefly considered.

The Universal Declaration provides a “useful framework against which to identify”²²¹ potential human rights concern regarding the Eligibility Regulations and the treatment Caster Semenya has received from the IAAF. There are various articles relevant but the most relevant in this regard are articles 7, 12, 22 and 29.

4.5.1 Article 7 UDHR – right not to be discriminated against

This article deals with discrimination and states that all shall be equal before the law and “entitled without any discrimination to equal protection of the law.”²²² This means that all should not be discriminated against.

If the Eligibility Regulations and the treatment Caster Semenya has received from the IAAF is considered, it is evident that she has been discriminated against by both as the Eligibility Regulations are only applicable to a select number of elite female athletes and she has been subjected to numerous gender verification tests in an attempt to prove her gender identity.

²¹⁷ Ibid, p. 93

²¹⁸ Dainius Pūras, Nils Melzer & Ivana Radačić, “Mandates of the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health; the Special Rapporteur on torture and other cruel, inhuman or degrading treatment or punishment; and the Working Group on the issue of discrimination against women in law and in practice”, 18 September 2018

²¹⁹ United Nations General Assembly, “Elimination of discrimination against women and girls in sport”, 20 March 2019 < <https://undocs.org/A/HRC/40/L.10/Rev.1> > date accessed 16 January 2020

²²⁰ CAS 2018/O/5794 and CAS 2018/O/5798 Mokgadi Caster Semenya & Athletics South Africa v International Association of Athletics Federations (30 April 2019)

²²¹ Jonathan Cooper, “Testosterone: the ‘Best Discriminating Factor’” [2019] MDPI 4,36 p. 7

²²² Article 7 Universal Declaration of Human Rights

4.5.2 Article 12 UDHR – right not to be subjected to arbitrary interference

Article 12 UDHR refers to one's right to privacy, which includes his or her family, home life and correspondence. Interferences with this right is not permitted and neither are attacks upon a person's reputation and/or honour. In terms of this right, all have the "right to protection of the law against such interference or attacks."²²³

If the Eligibility Regulations and the treatment Caster Semenya has received from the IAAF is considered, it is evident that her right to privacy has been infringed upon when the details of her undergoing gender verification testing and the results thereof were leaked to the press and further that her reputation has been attacked and tarnished by allegations that the elevated levels of testosterone is the reason for her success, thus implying that there is an element of deception that has occurred on the part of Caster Semenya.

4.5.3 Article 22 UDHR – right to social security

This right refers to the need to ensure that everyone shall have their rights and freedom protected without discrimination, which include grounds such as race, sex, colour, birth or other status.

When the Eligibility Regulations and the treatment received from the IAAF is considered, it is apparent that Caster Semenya has been subjected to discrimination on the grounds of sex due to being female and on the ground of other status. These rights are "indispensable for their dignity and the free development of their personality"²²⁴ which means that even if a female has 46 XY DSD but has recognised and regards herself as female, her right to do so should be respected. Caster Semenya was registered as female at birth and still regards herself as female. Therefore, the Eligibility Regulations and the treatment received from the IAAF does not respect this right.

4.5.4 Article 29 UDHR - limitations

This right recognizes that limitations may be placed on the freedoms of individuals provided that these limitations are lawful and that they are "solely 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."²²⁵

The IAAF had argued that the Eligibility Regulations were indeed necessary and reasonable in order to ensure a level playing field amongst elite female athletes. The CAS and the Supreme Court agreed with these arguments. When it is considered that the IAAF is aware that Eligibility Regulations is based on incorrect research but persisted with its implementation and enforcement in any event, it is difficult to understand how the Eligibility Regulations meet the just requirements or are in place for public order or for the general welfare of society and appears to only perpetuate the goal of the IAAF.

²²³ Article 12 Universal Declaration of Human Rights

²²⁴ Jonathan Cooper, "Testosterone: the 'Best Discriminating Factor'" [2019] MDPI 4,36 p. 7

²²⁵ Article 29 Universal Declaration of Human Rights

4.6 Conclusion

In conclusion, when the Eligibility Regulations and the treatment received from the IAAF in the case of Caster Semenya is considered, it is apparent that the Eligibility Regulations are not legally compatible with either the ECHR or the Universal Declaration.

In addition, it can be argued that there are violations of her rights, which include the right to a fair trial, restricting her to freely develop her personality by labelling her gender against her own preconceived ideas, interfering with her dignity and privacy by forcing her to undergo gender verification testing, infringing on her right to privacy by leaking information of these gender verification tests to the press and forcing her to divulge extremely personal information about herself in the CAS and the Supreme Court and lastly having her reputation tarnished by “being labelled a cheat.”²²⁶ Furthermore, it appears that both the IAAF and CAS have a “large degree of autonomy” and thus they can structure their own legal norms, and this unfortunately is what appears to have occurred in the matter with Caster Semenya.

²²⁶ Jonathan Cooper, “Testosterone: the ‘Best Discriminating Factor’” [2019] MDPI 4,36 p. 8

Chapter 5: The effect of gender binary on the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development), athletics and elite female athletes

5.1 Introduction

This chapter will answer the fourth sub-question of this thesis. It will be considered which options are available to elite female athletes in terms of the Eligibility Regulations and their careers in competitive athletics. The effect of gender binary that the IAAF has adhered to for years will be considered in relation to the impact it had on the IAAF with the result that the Eligibility Regulations were implemented. Here, the effect that the gender binary has on elite female athletes will also be considered. Thereafter, alternative ways in which the Eligibility Regulations can be improved upon will be considered. This will also incorporate what the future holds for Caster Semenya and the 2020 Olympic Games.

5.2 Elite Female Athletes with Hyperandrogenism: what to do?

As an elite female athlete, it must be quite daunting to be diagnosed with Hyperandrogenism when you were not even aware that this was applicable to you and furthermore that your entire future career is dependent upon one of three options. The three options available to the elite female athlete in these circumstances is to either to participate in a different category, comply with the Eligibility Regulation or retire from competitive athletics.

5.2.1 Participating in a different category

Article 2(6) of the Eligibility Regulations provides an elite female athlete, who does not meet the Eligibility Conditions and who has failed or refused to submit herself to a medical assessment with three further options. Firstly, she may participate in competitions at the national level and she may participate in competitions at the international level provided it is not athletic events between 400m and 1 mile. Secondly, she may participate in any event at both the national and international level in the male category and thirdly, while this category has not yet been introduced by the IAAF, she may participate in any event at both the national and international level in the intersex category or a category with a similar grouping²²⁷.

If an elite female athlete diagnosed with Hyperandrogenism, such as Caster Semenya, had to participate in the male category, it will go against everything the IAAF is trying to ensure and protect – a level playing field. The IAAF has on numerous occasions indicated that there are vast differences in performance between males and females and therefore to place females in the male categories creates confusion regarding the viewpoints of the IAAF. Furthermore, if an elite female athlete had to participate in a

²²⁷ Article 2(6) Eligibility Regulations for the Female Classification (Athletes with differences of Sex Development) (Version 2.0, published on 1 May 2019, commencing into effect as from 8 May 2019)

male category, by simply doing so, she “discloses that she has an intersex variation violating her privacy and calling her identity into question.”²²⁸

In the event that she decides to compete at the national level and not in her preferred field of choice – in other words, not in the restricted events – this may hamper her potential to excel in her chosen field and therefore impact upon her ability to earn a living. The IAAF has also indicated that the “scope of the restricted events”²²⁹ may be amended to include further restrictions in other categories. This has the potential to exclude the option of elite female athletes participating in events at the national level.

5.2.2 Complying with the Eligibility Regulations

In order to comply with the Eligibility Regulations, not only must an elite female athlete be legally recognised as either female or intersex, but she must reduce the level of her blood testosterone to below 5 nmol/L continuously for a six month period by means of oral contraceptives and thereafter this level must be maintained for as long as she wishes to compete in the restricted events in the female category.²³⁰

Elite female athletes wanting to comply have two options to lower their testosterone. The first option is by means of taking medication, also known as pharmacologically and the second option is by means of surgery. If she chooses the pharmacological route, she will have to take medication, such as oral contraceptives. However, “it is not always possible to lower testosterone pharmacologically – and can take months.”²³¹ Maintaining the low levels of testosterone in the long term can produce side effects, which will diminish the quality of life of the athlete and can even have serious medical consequences. The serious side effects can include diuretic effects causing extreme urination, thirst and electrolyte imbalances; development of glucose intolerance or insulin resistance; headaches; hot flushes and nausea amongst other side effects. Furthermore, certain medication can damage the liver and “disrupt other necessary steroid production.”²³²

Although the Eligibility Regulations do not expressly state that surgery is required, it does state that an Expert Medical Panel of the IAAF will review such an athlete’s case and provide recommendations on how to proceed. Although it is ultimately the decision of the elite female athlete to follow the advice of the IAAF’s Expert Medical Panel, “it is entirely possible that gonadectomy and other medical interventions may be performed as part of a medical plan”²³³ in order for her to comply with the Regulations. The surgical procedure can cause irreversible harm, such as diabetes, depression and may even sterilize women.

²²⁸ Katrina Karkazis & Morgan Carpenter, “Impossible ‘Choices’: The Inherent Harms of Regulating Women’s Testosterone in Sport [2018] *Journal of Bioethical Inquiry* 15, 585

²²⁹ *Ibid.*, p. 585

²³⁰ Article 2(3) Eligibility Regulations for the Female Classification (Athletes with differences of Sex Development) (Version 2.0, published on 1 May 2019, commencing into effect as from 8 May 2019)

²³¹ Rebecca M Jordan-Young, Peter H Sönksen & Katrina Karkazis, “Sex, health, and athletes” [2014] *British Medical Journal* 1 – 3, 2

²³² *Ibid.*, p. 2

²³³ Katrina Karkazis & Morgan Carpenter, “Impossible ‘Choices’: The Inherent Harms of Regulating Women’s Testosterone in Sport [2018] *Journal of Bioethical Inquiry* 15, 583

Even though these potential side effects on elite female athletes are known to the IAAF, it appears that the IAAF's approach is "to lower testosterone, irrespective of potential adverse effects."²³⁴

5.2.3 Retire from competitive athletics

The other alternative available to an elite female athlete should she not meet the IAAF's requirements of the assessment or not wish to undergo the pharmacological or surgical route, is to retire from competitive athletics. If she chooses this route, not only will her livelihood end but it may raise suspicions regarding her gender identity.

5.3 What is the effect of the gender binary that the IAAF has adhered to for years and how does it impact on elite female athletes?

Over the years, the IAAF has attempted to strictly maintain the divide between male and female categories and has attempted to ensure a level playing field, regardless of the measures taken or the potential costs to elite athletes. In this part of the thesis, it will be considered what effect the gender binary that the IAAF has adhered for years has had on the Eligibility Regulations. It will also be considered what effect this has on elite female athletes.

When women started participating in athletics, it was regarded as problematic because it provoked "gendered anxieties"²³⁵ about the destruction of the clearly defined lines of the sexes. These anxieties continued over the years since males were masquerading as females, women from the Eastern bloc started competing in Olympic Games and excelling, the same applied for Chinese female athletes and eventually female athletes from the Global South. Thus, as the times changed, so did the need to control the division between the sexes. To control this sex divide, the IAAF introduced various means to ensure that females were indeed females, such as gender verification testing.

Gender verification is mainly motivated by these anxieties. The regulations over the years have targeted the elite female athletes who "were seen to represent this breakdown."²³⁶ This is because their appearances contravened widespread cultural beliefs about the "natural appearance and capabilities of female bodies."²³⁷

The socio-political and culturally designed norms have influenced how the IAAF views gender over time. Initially it was thought that females are too weak to participate in sport and that a woman's physical build was for the purpose of childbearing.²³⁸ When women were allowed to participate in athletics, newspaper articles after the events reported that the athletes had "suffered great strain from their efforts" and "many collapsed in exhaustion or burst into tears at the end of the race."²³⁹ Due to this excessive strain that female athletes coupled with a "loss of feminine beauty"²⁴⁰, women's athletes

²³⁴ Rebecca M Jordan-Young, Peter H Sönksen & Katrina Karkazis, "Sex, health, and athletes" [2014] *British Medical Journal* 1 – 3, 2

²³⁵ Sonja Erikainen, *Gender Verification and the making of the female body in sport: a history of the present* (Routledge 2020), 26

²³⁶ *Ibid*, p. 149

²³⁷ *Ibid*, p. 149

²³⁸ *Ibid*, p. 26

²³⁹ *Ibid*, p. 28

²⁴⁰ *Ibid*, p.29

was removed and only reintroduced in 1960. Various theories of sex emerged, which “carried the authority of science in general and biology and medicine in particular.”²⁴¹ During this period, the world experienced two World Wars and the Cold War. The result of the Cold War was an ‘us vs them’ ideology and it was believed that female athletes from the Eastern Bloc were not pure and thus rules had to be implemented on how to regulate female bodies participating in sport. The same can be said for Chinese female athletes and eventually female athletes from the Global South. This shows that the theories and regulations regarding sex differences in sports, were interwoven with discourses of a racial, class and colonial nature. These have defined the bodily norms of an elite female athlete – “white, Western and middle/upper class.”²⁴²

The socio-political and culturally designed norms of the present day continue to have an influence on the IAAF. The effect that the binary division has upon elite female athletes is that if an elite female does not fit the ‘norm’ and is identified as such, she will be excluded from the female category of competitions and regarded as someone that requires “corrective or normalising medical interventions.”²⁴³

Therefore, it is evident that the gender binary has influenced the IAAF as over the years the IAAF has implemented various measures to attempt to maintain the divide between the sexes. If an elite female athlete does not fit the ‘norm’, she will be called out. The effect of the gender binary is that IAAF is constantly policing the divide between the sexes and thus appears to be redrawing the gender lines.

5.4 Possible alternatives

The IAAF has followed the binary division between male and female categories within elite athletics and has dictated the terms when elite female athletes with unacceptably high levels of testosterone must ensure compliance with the Eligibility Regulations, failing which, they may not participate in certain restricted events. There are, however, three other possible alternatives available to the IAAF to change this.

The first option would be to discard the binary division between the male and female categories and create separate categories “based on the level of testosterone or more complex algorithms.”²⁴⁴ Although this option presents challenges of feasibility and applicability, it is theoretically possible as explored by various other scholars²⁴⁵, who provided information about practically applying this. One such challenge is that if the binary division is removed, a new group for athletes to participate in would have to be created. Bermon of the IAAF, speaking in his personal capacity, said that he has the “feeling someday it will happen, and probably in five or 10 years.”²⁴⁶ This is an indication that the IAAF is aware that there are alternative possibilities within which to classify people and ensure a level playing field.

²⁴¹ Ibid, p.150

²⁴² Ibid, p. 150

²⁴³ Ibid, p. 150

²⁴⁴ Silvia Camporesi, “When does an advantage become unfair? Empirical and normative concerns in Semenya’s case” [2019] J Med Ethics 45: 703

²⁴⁵ Ibid, p. 703

The other scholars include Foody and Savulescu; Cooky and Dworkin; Sudai; Know *et al* and Binachi

²⁴⁶ Sean Ingle, “Court has Semenya’s career in its hands – and decision could affect all of sport” (*Sportsblog*, 18 February 2019) <<https://www.theguardian.com/sport/blog/2019/feb/18/caster-semenya-testosterone-levels-female-sport-court>> date accessed 3 April 2020

The potential downside of such a category being introduced is that females with elevated levels of testosterone may have to compete with males and males with lower levels of testosterone may have to compete with females. The chances of winning then becomes even smaller and may prevent some athletes from participating at all. A further potential downside in terms of human rights would be an infringement of the right to privacy and bodily integrity as if athletes are participating in events where there is no division between sexes, people may question their sex and assumptions may arise that such an athlete is competing in such a category because of testosterone levels that do not fall within the normal range contained in Regulations.

The second option would be to rectify the biological advantages with “external, non-pharmacological interventions aimed at modifying the environment and not the athletes’ bodies.”²⁴⁷ There are other sports, which has made external modifications to address any advantages some competitors may have. One such example is horse racing, where weights are sometimes added to the jockey to eliminate any advantage. This could possibly also be applied to elite female athletes who have elevated levels of testosterone. Another possibility would be to modify the track. There are numerous external modifications that can be considered, and this will be “more respectful of the athletes’ biology than pharmacological interventions.”²⁴⁸

The downside of this option, however, is that it does not consider the natural traits of a person, which assists them in sports. This is especially relevant when male athletes, such as Michael Phelps and Usain Bolt are considered. Even if weighted clothing is placed on them, this will not shorten Michael Phelps arms, hands and shoulder breadth and it will not shorten Usain Bolt’s legs or lung capacity. This option, however, has not been explored to a great extent and appears to be less feasible than creating different categories based on the levels of testosterone.

The third option that is also available, but which has not been suggested in academic literature, is that an independent research institution conducts the necessary research on the testosterone levels of elite female athletes and how these levels of testosterone influence their performances. If this option is adhered to, it will most highly likely perpetuate the notion that the only thing that can distinguish a male and a female is testosterone. Such as institution will go against everything that the opponents of the IAAF’s policies have been fighting against. Furthermore, if such an option is followed, the binary divide that the IAAF is so reliant upon, will only continue and become deeper.

Thus, the above-mentioned options can be considered as other alternatives available to the IAAF regarding the classification of male and female elite athletes. Although these alternative options will have the potential to be less negative and intrusive upon elite female athletes, it does not appear to solve the issue surrounding higher levels of testosterone in female athletes. Furthermore, elite female athletes with higher levels of testosterone could still be excluded from competition as the alternative options mentioned still consider testosterone as the only aspect that determines whether someone is male or female and physical traits of athletes are not thoroughly taken into account.

²⁴⁷ Silvia Camporesi, “When does an advantage become unfair? Empirical and normative concerns in Semenya’s case” [2019] *J Med Ethics* 45: 703

²⁴⁸ *Ibid*, p. 703

5.5 The future for Caster Semenya and the Olympic Games

Losing her battles in the CAS and the Supreme Court meant that unless Caster Semenya submitted to the Eligibility Regulations or compete in a different category, she would not be able to compete at the 2019 World Athletics Championships, which was held in Doha, Qatar and the 2020 Olympic Games in Tokyo, Japan.

Caster Semenya had previously said that she does not want to change her body and that she does not know “what effects that medicine will have on my body for the rest of my life”²⁴⁹ and therefore upon receipt of the Supreme Court’s judgment, Caster Semenya did not participate in the 2019 World Athletics Championships. It appeared that she had given up on her career in competitive athletics. That was until 13 March 2020, when she announced on her Instagram account that she would be changing events and wanted to compete in the 200m athletic event at the 2020 Olympic Games. In her Instagram post, she states that it was not an easy decision to make but she was looking “forward to the challenge and will work hard...”²⁵⁰ The 200m athletic event is not regarded as part of the restricted events of the IAAF’s Eligibility Regulations and therefore Caster Semenya would be able to participate in that event without having to alter her naturally occurring testosterone levels.

For Caster Semenya to compete in the 200m event at the 2020 Olympic Games she would have had to qualify, therefore. Unfortunately, the COVID-19 virus had taken over the world and on 24 March 2020, the IAAF announced that the 2020 Olympic Games in Tokyo had been postponed to 23 July 2021.²⁵¹ We will have to wait until the COVID-19 pandemic is over in order to establish if Caster Semenya will qualify for the 200m athletic event or if the IAAF will amend the restricted events in the Eligibility Regulations to include the 200m.

5.6 Conclusion

The intentions of the IAAF and the Eligibility Regulations have revealed that there are limited options available to elite female athletes who have been diagnosed with Hyperandrogenism – either comply, participate in a different category or retire from competitive athletics.

There are other options available to the IAAF to ensure an equal or level playing field, such as categorizing competitors according to their levels of testosterone, but it appears that the IAAF prefers the binary position along the male/female divide with testosterone as a deciding factor. This binary division is intertwined with discourses of a racial, class and colonial nature. The ‘ideal’ elite female athlete has, on numerous occasions, been defined as a white, Western women from a middle/upper class.

It is also evident that the gender binary has influenced the IAAF over the years because as the times have changed, so has the gender verification testing and Regulations.

²⁴⁹ Mulligan Lauren, ‘I Wanted To Be A Solider’ (The Players’ Tribune, 27 September 2019) <<http://projects.theplayerstribune.com/caster-semenya-gender-rights/p/1>> date accessed 2 October 2019

²⁵⁰ Ockert de Villiers, “Caster Semenya says she will switch distances to the 200m in bid to qualify for Tokyo Olympics” (ABC, 14 March 2020) <<https://www.abc.net.au/news/2020-03-14/caster-semenya-switches-to-200m-tokyo-olympic-tilt/12056368>> date accessed 24 March 2020

²⁵¹ World Athletics, “World Athletics statement on postponement of Tokyo 2020 Olympic Games” (World Athletics) <<https://www.worldathletics.org/competitions/olympic-games/news/tokyo-2020-olympic-games-postponed-2021>> date accessed 3 April 2020

The gender binary will continue to influence elite female athletes who do not fall within the 'norm' of an elite female athlete for years to come.

Chapter 6: Conclusion

6.1 Literature Gap

Caster Semenya is a South African elite female athlete who has the DSD of 46 XY chromosomes. This, according to the IAAF, gives her an added unfair advantage in comparison to her fellow competitors who do not have higher or elevated levels of testosterone. When considering which European Union legal instrument or legislation is applicable to Caster Semenya, it appeared that a literature gap was present. This is because Caster Semenya is neither a national nor a citizen of one of the Member States of the European Union. Therefore, the Charter of Fundamental Rights of the European Union²⁵² and other secondary laws of the European Union are not applicable to her matter. Another literature gap that was noted regarded the way the Eligibility Regulations could be improved upon. It is not certain if the change in the Regulations over the last few years and in quick succession has anything to do with this.

6.2 Research Question and Answer

This thesis aimed at answering the question of whether the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development) of the International Association of Athletics Federations (“IAAF”) can be regarded as justifiable and proportionate discrimination against elite female athletes diagnosed with Hyperandrogenism?

Based on the research conducted, it is evident that the IAAF is of the view that the only way to maintain a level playing field is to introduce and implement the Eligibility Regulations. The Eligibility Regulations and the IAAF treat women, such as Caster Semenya, who have been diagnosed with Hyperandrogenism differently – amounting to discrimination which cannot be justified. This differential treatment is neither objectively justifiable nor proportionate. This is because the aims it attempts to achieve infringe upon fundamental human rights and there are other means that the IAAF could have utilised to obtain the same result. Therefore, the Eligibility Regulations for the Female Classification (Athletes with Differences of Sex Development) of the IAAF cannot be regarded as justifiable or proportionate discrimination.

6.3 Importance of Findings and Ideas

The research of the history of how the IAAF has attempted to enforce and maintain the gender binary in elite athletics indicates that the IAAF has attempted to do so since the 1930s, which has taken various forms. The forms include physical examinations of the elite female athletes, naked parades and blood and urine samples from females suspected of being different from the ‘norm’. It is also evident that the sport was influenced by the political climate during the Cold War. This also led to the IAAF implementing various gender verification measures to ensure that elite female athletes did not have ‘polluted’ bodies.

²⁵² Charter of Fundamental Rights of the European Union (2000/C 364/01)

The IAAF has attempted for several years to ensure that the gender binary remains in place. It appears that the IAAF will go to great lengths to ensure a clear distinction between the sexes is always be maintained. The gender binary has influenced the IAAF because as times have changed, so has the gender verification testing and Regulations. Provision had been made for male athletes masquerading as female athletes, elite athletes from the Eastern Bloc with their 'polluted' bodies, the successful Chinese female competitors, and female athletes from the Global South. This has indicated that the IAAF is not only policing gender but is also constantly redrawing the gender lines.

These attempts developed over the years and eventually resulted in the implementation of the Hyperandrogenism Regulations. These Regulations were challenged by Dutee Chand in the CAS. The CAS panel noted that these Regulations are *prima facie* discriminatory but was not prepared to declare these Regulations invalid and void. Instead the IAAF was provided with an opportunity to submit expert research to support their claims that elevated levels of testosterone in elite female athletes give them an added advantage. This award of the CAS has been regarded by many as an advisory opinion. Before the Eligibility Regulations were implemented, Caster Semenya challenged their validity as well. The CAS also held that these Regulations were *prima facie* discriminatory but further ruled that it was necessary, reasonable and proportionate and therefore dismissed Caster Semenya's challenge.

Upon perusal of the rulings handed down by the CAS in the two abovementioned matters, one cannot escape the notion that the CAS is not prepared to rule against the IAAF and would rather provide the IAAF with an opportunity to rectify anything that may not be based on solid scientific research. Furthermore, the rulings of the two matters were contradictory. This is because in the Dutee Chand matter, the Hyperandrogenism Regulations were merely suspended but, in the Caster Semenya matter, the Eligibility Regulations were confirmed. The same was noted when the decisions of the Supreme Court were considered. These inconsistencies not only lead to uncertainty within elite female athletics, but it also resulted in Caster Semenya not being able to compete at the September 2019 World Championship in Doha, Qatar.

The most noticeable ethical concern about the Eligibility Regulations was that the scientific integrity of the research relied upon by the IAAF was called into question. The research conducted by the IAAF was done by a research team with close ties to the IAAF/WADA and therefore a possible conflict of interest was present but not addressed by either institution. Various experts highlighted the mistakes made in the research and brought it to the attention of the IAAF, however, the IAAF decided to stand by the Eligibility Regulations and implement it accordingly.

Intricately linked to the ethical concerns of the Eligibility Regulations is discrimination. The discrimination is found on several levels. Firstly, the Eligibility Regulations are only applicable to elite female athletes and not to elite male athletes. Thus, there is discrimination present based on sex. Secondly, discrimination is present within the elite female category as the Eligibility Regulations are only applicable to elite female athletes who participate within the running events of 400m to 1 mile and who have been diagnosed with Hyperandrogenism. Lastly, elite female athletes who are of colour and diagnosed with Hyperandrogenism are also subjected to racism. If a suspicion has been raised about a female athlete, she will be subjected to a gender verification test. At these tests, a medical professional may make use of a scale that is outdated, culturally biased and extremely subjective to evaluate the body hair of the elite female athlete. The research also indicated that elite female athletes diagnosed with Hyperandrogenism will

continue to be considered as ‘different’ and therefore treated differently on grounds of sex and race.

Although the IAAF has attempted to argue that the differential treatment elite female athletes diagnosed with Hyperandrogenism have received, pursues the legitimate aim of levelling the playing field in certain running events, the means used by the IAAF to pursue that aim cannot be regarded as proportionate or necessary. This is because there are other, less intrusive means available to the IAAF to achieve the goal of levelling the playing field. These, it is argued, appear not to have been considered by the IAAF.

The Eligibility Regulations was compared to provisions contained in the ECHR and the Universal Declaration to determine the legal compatibility of the Eligibility Regulations. It was found that the Eligibility Regulations violates numerous provisions of both legal instruments, such as the right to private life and the right not to be discriminated against, amongst others. It was also established that a compulsory medical intervention, even if it is of minor relevance, will be regarded as an interference with the right to private life.

The Eligibility Regulations has stated that the CAS has exclusive jurisdiction to attend to disputes between the IAAF and an elite female athlete. The ECtHR set legal precedent when the IAAF compels an athlete to accept the jurisdiction of the CAS. The ECtHR held that in such an instance, the athlete would not give consent freely and voluntarily and that such an agreement infringes on the athlete’s right to a fair trial. It appears that this is what also occurred in the matter with Caster Semenya.

There are also other options available to the IAAF regarding elite female athletes with elevated levels of testosterone. These include removing the binary divide in race categories or allowing athletes, regardless of sex, with similar levels of testosterone to compete against each other. It is questionable whether these alternative options will be feasible in practice as presently, they are mostly theoretical arguments, except for the weighted clothing for jockeys. These are just some of the manners that can ensure a level playing field. It, however, appears that the IAAF is determined to have separate male and female categories and with prescribed levels of testosterone for elite female athletes in restricted events.

6.4 Implications of the Findings

The research conducted for this thesis has highlighted two findings, which are of relevance for the present and future elite female athletes diagnosed with Hyperandrogenism.

The most important implication is that testosterone appears to be the only marker with which the IAAF is willing to determine whether someone can participate within the restricted events of the 400m to 1-mile track events as testosterone, according to the IAAF, is the only thing that provides an elite female athlete with an advantage.

If a chromosome test is conducted on an elite female athlete and it is established that she has 46 XY chromosomes, she will be regarded as having a Disorder of Sex Development (“DSD”) and therefore her testosterone levels will be high, which will result in her having an added advantage over her competitors. This added advantage, according to the IAAF, will result in an unlevel playing field.

It is noteworthy that the chromosome test, and therefore testosterone, appears to be the only test that the IAAF is willing to use to determine an elite female athlete’s sexual status. Such a test completely disregards the other seven criteria to determine one’s sexual

status, this is not only unfair to the elite female athlete, but the application of the criteria used by the IAAF, which is skewed in favour of one party will only provide partial results in favour of one party. Such results, which it is argued are skewed, can have ripple effects in an elite female athlete's life – ranging from possible disqualification from her profession as an elite athlete to her questioning her own identity.

Thus, by only focusing on one aspect, such as testosterone, to determine whether an elite female athlete has an advantage and therefore should not be allowed to compete, is unfair and should not be used as a sole indicator. Testosterone should not be the only marker that is considered – by doing this, the natural talent of the elite female athlete, her training, her diet and her naturally occurring physical traits are not taken into account. By only using testosterone, the impression is created that testosterone is the only deciding factor used when determining who is a man and who is a woman.

The second implication that the research highlighted is that the IAAF appears steadfast in their determination to implement the Eligibility Regulations.

The reason for this is twofold. In the first instance, when the IAAF published its report on the research it conducted for the Eligibility Regulations, it excluded certain pertinent information from the public, such as the fact that the information collected during the 2011 and 2013 World Championships included athletes that could have made use of doping the previous year and that certain athletes were provided with testosterone. Furthermore, when mistakes in the research were brought to the attention of the IAAF and the IAAF admitted to these mistakes, the IAAF still proceeded with the adoption and implementation of the Eligibility Regulations. It does not appear that the IAAF attempted to correct their erroneous research and include the corrected research in the Eligibility Regulations. In the second instance, even though the Eligibility Regulations can be regarded as discriminatory in its treatment of a select few females on a protected ground, it still proceeded with enforcing the Eligibility Regulations.

The CAS confirmed that the Eligibility Regulations were *prima facie* discriminatory but concluded that the discrimination is necessary, reasonable and proportionate. It appears that the CAS was not willing to rule against the IAAF and not to declare the Eligibility Regulations null and void. With the Swiss Federal Supreme Court also dismissing Caster Semenya's appeal, one cannot escape the notion that these institutions are not prepared to go against the IAAF and would rather let certain elite female athletes experience unjustified differential treatment in furtherance of the IAAF's goals.

The research question of this thesis and the research conducted indicates that the Eligibility Regulations are discriminatory to a select number of elite female athletes. It further indicates that this discrimination cannot be regarded as objectively justifiable or proportionate. A question that is now raised is what should, and can the IAAF do to improve the Eligibility Regulations so that it is no longer discriminatory towards a select number of elite female athletes. Certain alternative options on how the IAAF can deal with elite female athletes with higher levels of testosterone have been proposed but none of these options are found in practice; these alternative options are only theoretical proposals at this stage. Therefore, more research and practical application of alternative options should be considered to ensure that elite female athletes with higher levels of testosterone can participate in their chosen events without being singled out or discriminated against.

6.5 Final Thought

Even though Caster Semenya has said on numerous occasions that she is female, the IAAF by means of the Eligibility Regulations do not believe so. The effect of the Eligibility Regulations can be summed up nicely when the quote of Caster Semenya is considered. She was quoted as saying “I just want to run naturally, the way I was born. It is not fair that I am told I must change. It is not fair that people question who I am. I am Mokgadi Caster Semenya. I am a woman and I am fast.”²⁵³

²⁵³ Kevin Sully, “Caster Semenya Is Taking The IAAF To Court” (*Flotrack*, 18 July 2018) <<https://www.flotrack.org/articles/6213905-caster-semenya-is-taking-the-iaaf-to-court>> date accessed 26 April 2020

7. Bibliography

7.1 Primary Sources

Case Law:

CAS 2014/A/3759 Dutee Chand v. Athletics Federation of India (AFI) & International Association of Athletics Federations (IAAF) (24 July 2015)

CAS 2018/O/5794 and CAS 2018/O/5798 Mokgadi Caster Semenya & Athletics South Africa v International Association of Athletics Federations (30 April 2019)

Y. F v Turkey 24209/94; (2003) 39 EHRR 715; [2003] ECHR 391

ECtHR, *Affaire Mutu et Pechstein c. Suisse*, No 40575/10 et 67474/10, 2 October 2018

ECtHR, *Carson and Others v the United Kingdom* [GC], No. 42184/05, 16 March 2010

ECtHR, *Burden v the United Kingdom* [GC], No. 13378/05, 29 April 2008

ECtHR *Guberina v Croatia*, No. 23682/13, 22 March 2016

ECtHR, *A.H and Others v Russia*, No. 6033/19 and 15 other applications, 17 January 2017

Legislation:

Charter of Fundamental Rights of the European Union (2000/ C 364/01)

Convention for the Protection of Human Rights and Fundamental Freedoms, Rome, 4. XI. 1950

Switzerland's Federal Code on Private International Law (CPIL) of December 18, 1987

WMA Declaration of Helsinki – Ethical Principles for Medical Research involving Human Subjects, June 1964

United Nations Universal Declaration of Human Rights, 1948

7.2 Secondary Sources

Books:

Erikainen, S., *Gender Verification and the making of the female body in sport: a history of the present*, Routledge, 2020, p. 1 – 186.

Handbook on European non-discrimination law, 2018 Edition, Publications Office of the European Union, 2018, p. 3 – 295.

Last, J. M., Spasoff, S., Harris, S., & Thuriax, M. C., *A Dictionary of Epidemiology*, Oxford University Press, 2001, p. 1 – 196.

Lenskyj, H., *Gender, Athletes' Rights, and the Court of Arbitration for Sport (Emerald Studies in Sport and Gender)*, Emerald Publishing Limited, 2018, p. 203 – 222.

Arne Ljungqvist, "Gender Verification" in B L Drinkwater (ed) *Women in Sport: An IOC medical commission publication, women in sport* (John Wiley & Sons, 2000) ,183 – 193

Viret, M., & Wisnosky, E., CAS2014/A/3759, Chand v. AFI & IAAF, Award of 24 July 2015 in Duval, A., & Rigozzi, A., (eds), *Yearbook of International Sports Arbitration 2015* (Asser Press Springer 2016), p. 235 – 274.

Documents issued by official bodies:

Court of Arbitration for Sport Code: Procedural Rules, available at: < <https://www.tas-cas.org/en/arbitration/code-procedural-rules.html>> Date accessed 5 June 2020

Eligibility Regulations for the Female Classification (Athletes with differences of Sex Development) (Version 2.0, published on 1 May 2019, commencing into effect as from 8 May 2019)

Executive Summary of Mokgadi Caster Semenya and Athletics South Africa v International Association of Athletics Federations [2018] Court of Arbitration for Sport [2019] CAS2018/O/5794 and CAS 2018/O/5798

IAAF publishes briefing notes and Q&A on Female Eligibility Regulations (IAAF, 7 May 2019) <<https://www.worldathletics.org/news/press-release/questions-answers-iaaf-female-eligibility-reg>> date accessed 25 March 2020

“IAAF unveils new name and logo”, (*World Athletics*, 9 June 2019) <<https://www.worldathletics.org/news/press-release/iaaf-unveils-new-name-and-logo>> date accessed 23 April 2020

Press Release of the Swiss Federal Supreme Court Interlocutory order of 29 July 2019 (4A_248/2019)

United Nations Human Rights Office, Dainius Pūras, Nils Melzer & Ivana Radačić, “Mandates of the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health; the Special Rapporteur on torture and other cruel, inhuman or degrading treatment or punishment; and the Working Group on the issue of discrimination against women in law and in practice”, 18 September 2018 < https://www.ohchr.org/Documents/Issues/Health/Letter_IAAF_Sept2018.pdf> date accessed 16 January 2020

United Nations General Assembly, “Elimination of discrimination against women and girls in sport”, 20 March 2019 < <https://undocs.org/A/HRC/40/L.10/Rev.1>> date accessed 16 January 2020

World Athletics, “World Athletics statement on postponement of Tokyo 2020 Olympic Games” (*World Athletics*) <<https://www.worldathletics.org/competitions/olympic-games/news/tokyo-2020-olympic-games-postponed-2021>> date accessed 3 April 2020

Journal Articles:

Bulent O Yildiz, “Diagnosis of hyperandrogenism: clinical criteria” in *Best Practice & Research Clinical Endocrinology & Metabolism*” [2006] Vol 20, No.2 pp 167 – 176, available at: [https://www.sciencedirect-com.tilburguniversity.idm.oclc.org/science/article/pii/S1521690X06000212](https://www.sciencedirect.com.tilburguniversity.idm.oclc.org/science/article/pii/S1521690X06000212)

Cheryl Cooky & Shari L Dworkin, “Policing the Boundaries of Sex: A Critical Examination of Gender Verification and the Caster Semenya Controversy” [2013] *Journal of Sex Research*, 50(2) 103 – 111, available at: <http://web.b.ebscohost.com.tilburguniversity.idm.oclc.org/ehost/results?vid=0&sid=25428050-5d2a-4f1e-9747-558d81d0b8b9%40pdc-v->

[sessmgr01&bquery=%28AU%2Bcooky%2BAND%2B%28IS%2B%25220022-4499%2522%29%2BAND%2BDT%2B2013&bdata=JmRiPXBiaCZ0eXBIPTEmc2VhcmNoTW9kZT1TdGFuZGFyZCZzaXRIPWVob3N0LWxpdmU%3d](http://web.b.ebscohost.com/tilburguniversity.idm.oclc.org/ehost/results?vid=0&sid=2e57aced-4a9c-4ee6-823f-e96992760400%40pdc-v-sessmgr01&bquery=%28AU%2Bcooky%2BAND%2B%28IS%2B%25220022-4499%2522%29%2BAND%2BDT%2B2013&bdata=JmRiPXBiaCZ0eXBIPTEmc2VhcmNoTW9kZT1TdGFuZGFyZCZzaXRIPWVob3N0LWxpdmU%3d)

Francisco J Sánchez, María José Martínez-Patiño & Eric Vilain, “The New Policy on Hyperandrogenism in Elite Female Athletes is Not About “Sex Testing” [2013] *Journal of Sex Research*, 50(2), 112 – 115, available at: <http://web.b.ebscohost.com/tilburguniversity.idm.oclc.org/ehost/results?vid=0&sid=2e57aced-4a9c-4ee6-823f-e96992760400%40pdc-v->

[sessmgr05&bquery=%28AU%2Bsanchez%2BAND%2B%28IS%2B%25220022-4499%2522%29%2BAND%2BDT%2B2013&bdata=JmRiPXBiaCZ0eXBIPTEmc2VhcmNoTW9kZT1TdGFuZGFyZCZzaXRIPWVob3N0LWxpdmU%3d](http://web.b.ebscohost.com/tilburguniversity.idm.oclc.org/ehost/results?vid=0&sid=2e57aced-4a9c-4ee6-823f-e96992760400%40pdc-v-sessmgr05&bquery=%28AU%2Bsanchez%2BAND%2B%28IS%2B%25220022-4499%2522%29%2BAND%2BDT%2B2013&bdata=JmRiPXBiaCZ0eXBIPTEmc2VhcmNoTW9kZT1TdGFuZGFyZCZzaXRIPWVob3N0LWxpdmU%3d)

Jonathan Cooper, “Testosterone: the ‘Best Discriminating Factor” [2019] *MDPI* 4,36, 1 – 15, available at: <https://www.mdpi.com/2409-9287/4/3/36>

Katrina Karkazis & Morgan Carpenter, “Impossible ‘Choices’: The Inherent Harms of Regulating Women’s Testosterone in Sport” [2018] *Journal of Bioethical Inquiry* 15, 579 – 587, available at: <https://link-springer-com.tilburguniversity.idm.oclc.org/content/pdf/10.1007%2Fs11673-018-9876-3.pdf>

Kaye N Ballantyne, Manfred Kayser & J Anton Grootegoed, “Sex and gender issues in competitive sports: investigation of a historical case leads to a new viewpoint” (2011) *British Journal Sports Medicine* (3 May 2011), 46, 614 – 617, available at: <https://bjsm.bmj.com/content/bjsports/46/8/614.full.pdf>

Lindsay Parks Pieper, “Sex Testing and the Maintenance of Western Femininity in International Sport” [2014] *The International Journal of the History of Sport* (Vol 31, No 13) 1557 – 1576, available at: <https://www-tandfonline-com.tilburguniversity.idm.oclc.org/doi/full/10.1080/09523367.2014.927184>

Marion Müller, “Constructing Gender Incommensurability in Competitive Sport: Sex/Gender Testing and the New Regulations on Female Hyperandrogenism” 16 March 2016, *Springer*, 39: 405 - 431, available at: <https://link-springer-com.tilburguniversity.idm.oclc.org/article/10.1007/s10746-016-9397-1>

Patrick Fénelichel, Françoise Paris, Pascal Philibert, Sylvie Hiéronimus, Laura Gaspari, Jean-Yves Kurzenne, Patrick Chevallier, Stéphane Bermon, Nicolas Chevalier & Charles Sultan, “Molecular Diagnosis of 5 α -Reductase Deficiency in 4 Elite Young Female Athletes Through Hormonal Screening for Hyperandrogenism” [2013] *The Endocrine Society* E1055 – E1059, available at: <https://www.ncbi.nlm.nih.gov/pubmed/23633205>

Rebecca M Jordan-Young, Peter H Sónksen & Katrina Karkazis, “Sex, health, and athletes” [2014] *British Medical Journal* 1 – 3, available at: <https://www.bmj.com/>

Richard Anderson, Charlotte Hair & Sarah Kroll, “The Semenya Case: Balancing Fair Play and Human Rights” (*WS Society*, 23 August 2019) <<http://www.wssociety.co.uk/features/2019/8/23/the-semenya-case-balancing-fair-play-and-human-rights-considering-the-cass-decision-to-uphold-the-iaaf-eligibility-regulations>> date accessed 24 March 2020

Roger Pielke Jr, Ross Tucker & Erik Boye, “Scientific integrity and the IAAF testosterone regulations” [2019] *The International Sports Law Journal*, 18 – 26, available at: https://www.researchgate.net/publication/330953042_Scientific_integrity_and_the_IAAF_testosterone_regulations

Seema Patel, “The IAAF’s Hyperandrogenism Regulations suspended” [2015] *World Sports Law Report* 8 – 11, available at: <http://irep.ntu.ac.uk/id/eprint/25874/>

Silvia Camporesi, “When does an advantage become unfair? Empirical and normative concerns in Semenya’s case” [2019] *J Med Ethics* 45: 700 – 704, available at: <https://jme.bmj.com/content/45/11/700?resolvedby=highwire.org>

Stéphane Bermon and Pierre-Yves Garnier, “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*, 15 May 2017, 1 – 7, available at: <https://bjsm.bmj.com/content/51/17/1309>

Stéphane Bermon, Angelica Lindén Hirschberg, Jan Kowalski & Emma Eklund, “Serum androgen levels are positively correlated with athletic performance and competition

results in elite female athletes”, *British Journal of Sports Medicine*, 2018, Vol 52, No 23, 1531 – 1532, available at: <https://bjsm.bmj.com/content/52/23/1531>

Steve Cornelius, “You can play as long as you don’t win. Legal perspectives on the regulations pertaining to the participation of women with hyperandrogenism in women’s athletics”, 4 January 2017 (*GSLTR* Vol 7. No. 4 December 2016), 1 – 16

Press:

Andy Brown, “Questions remain over IAAF Differences of Sex Development Regulations” (*The Sports Integrity Initiative*, 19 May 2018) <<https://www.sportsintegrityinitiative.com/questions-remain-iaaf-differences-sex-development-regulations/>> date accessed 17 November 2019

Daryl Adair, ‘Athlete health and fair play: Kristen Worley case puts women’s sport policy in the dock’ (*The Conversation*, 21 July 2017) <<https://theconversation.com/athlete-health-and-fair-play-kristen-worley-case-puts-womens-sport-policy-in-the-dock-81361>> date accessed 27 October 2019

Jacqueline Doorey, ‘Why the Caster Semenya case is a human rights issue’ (*CBC Sports*, 1 May 2019) <<https://www.cbc.ca/sports/iaaf-caster-semenya-human-rights-1.5115453>> date accessed 18 September 2019

Julian Savulescu, “Ten ethical flaws in the Caster Semenya decision on intersex in sport” (*The Conversation*) 9 May 2019 <<https://theconversation.com/ten-ethical-flaws-in-the-caster-semenya-decision-on-intersex-in-sport-116448>> date accessed 20 September 2019

Lauren Mulligan, ‘I Wanted To Be A Solider’ (*The Players’ Tribune*, 27 September 2019) <<http://projects.theplayerstribune.com/caster-semenya-gender-rights/p/1>> date accessed 2 October 2019

Kevin Sully, “Caster Semenya Is Taking The IAAF To Court” (*Flotrack*, 18 July 2018) <<https://www.flotrack.org/articles/6213905-caster-semenya-is-taking-the-iaaf-to-court>> date accessed 26 April 2020

Kirsten Frattini, ‘IOC, IAAF, UCI guidelines highlight the need for science and education’ (*Cyclingnews*, 3 May 2019) <<https://www.cyclingnews.com/features/policing-gender-boundaries-testosterone-sex-testing-and-human-rights>> date accessed 27 October 2019

Max Dohle, “Ze zeggen dat ik geen meid ben. De schorsing van Foekje Dillema”, Vereniging voor Gendersgeschiedenis <<http://www.gendersgeschiedenis.nl/index.php/gendersgeschiedenis/dossiers/224-ze-zeggen-dat-ik-geen-meid-ben-de-schorsing-van-foekje-dillema>> date accessed 4 June 2020

Max Dohle, “Ik weet waar Foekje zich voor schaamde” (Het Parool, 8 augustus 2008) <<https://www.parool.nl/kunst-media/ik-weet-waar-foekje-zich-voor-schaamde~bfd112e/?referer=https%3A%2F%2Fwww.google.com%2F>> date accessed 4 June 2020

Medline Plus, “Karotyping” <<https://medlineplus.gov/ency/article/003935.htm>> date accessed 20 January 2020

Nathalie Voser, Benjamin Gottlieb, “How the European Court for Human Rights interferes in (Sports) Arbitration” (Schellenberg Wittmer Ltd, Switzerland, 19 December 2018) < <http://arbitrationblog.kluwerarbitration.com/2018/12/19/how-the-european-court-for-human-rights-interferes-in-sports-arbitration/>> date accessed 25 March 2020

Ockert de Villiers, “Caster Semenya says she will switch distances to the 200m in bid to qualify for Tokyo Olympics” (ABC, 14 March 2020) <<https://www.abc.net.au/news/2020-03-14/caster-semenya-switches-to-200m-tokyo-olympic-tilt/12056368>> date accessed 24 March 2020

Richard Anderson, Charlotte Hair & Sarah Kroll, “The Semenya Case: Balancing Fair Play and Human Rights” (WS Society, 23 August 2019) <<http://www.wssociety.co.uk/features/2019/8/23/the-semenya-case-balancing-fair-play-and-human-rights-considering-the-cass-decision-to-uphold-the-iaaf-eligibility-regulations>> date accessed: 24 March 2020

Sarah Sloaf, ‘What is Hyperandrogenism? How the Natural Conditions Affects Caster Semenya’(Inverse, 1 May 2019) <<https://www.inverse.com/article/55421-caster-semenya-hyperandrogenism-iaaf>> date accessed 19 September 2019

Sean Ingle, “Court has Semenya’s career in its hands – and decision could affect all of sport” (Sportsblog, 18 February 2019) <<https://www.theguardian.com/sport/blog/2019/feb/18/caster-semenya-testosterone-levels-female-sport-court>> date accessed 3 April 2020

Steve Cornelius, “Caster Semenya: the legal and ethical issues that should concern us all” (The Conversation, 31 July 2019) <<https://theconversation.com/caster-semenya-the-legal-and-ethical-issues-that-should-concern-us-all-117636>>

United Kingdom National Health Services, ‘Differences in sex development’ (15 August 2019) <<https://www.nhs.uk/conditions/differences-in-sex-development/>> date accessed 27 October 2019