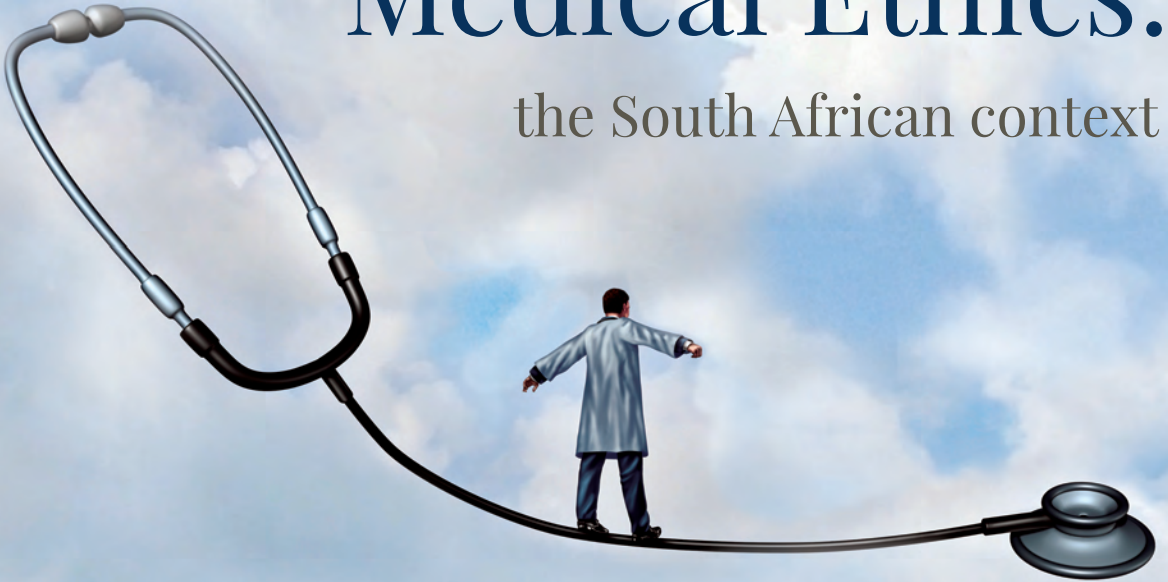


Challenges in Medical Ethics:

the South African context



Editors:

Chris Jones, Mariana Kruger, Juri van den Heever & Anton van Niekerk

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Gender in Sport

Caster Semenya as a case in point

Juri van den Heever & Chris Jones

Biologists may have been building a more nuanced view of sex, but society has yet to catch up. (Ainsworth, 2015:291)

Keywords: agriculture; discrimination; embryology; genetics; IAAF; international athletics; legal systems; neurobiology; Paralympics; physical reality; religion; sex and gender inequality; social reality; World Athletics

4.1 INTRODUCTION

In the social sphere, Western culture is still substantially influenced by the perception that, within the human sexual spectrum, there are only two possibilities. This paradigm dictates that one is either a heterosexual male or a heterosexual female, and Western legal traditions have, over time, reflected these assumptions, ostensibly drawing support from literalist readings of religious texts, superficial observations of the human body, and contingent decisions about physical and intellectual abilities. Despite clear advances in the legal perspective, overly simplified social perceptions about this matter still hold sway in the public mind.

It turns out that the binary interpretation of sexuality, long held as inviolate, is a social construct, whilst in reality, sex and gender differences manifest as a variable combination of factors, expressed as a spectrum of possibilities (see Figure 4.1).

Apart from popular belief generally favouring a binary approach, it appears also to be the position of choice of the International Association of Athletics Federations (IAAF), now World Athletics (WA), as to the legality of their decisions

about the sex and gender of international athletes, as well as claiming sole jurisdiction in the prescription of chemical interventions.

South Africa has been in the spotlight because of the athletic prowess of Caster Semenya in international competitions. As the result of allegations about her sexuality, she refused chemical intervention to lower her testosterone levels and was subsequently banned from certain women's events at international competitions by WA.

However, it must be admitted that legal traditions throughout the ages have, through no fault of their own, attempted to adjudicate fairly with respect to social conventions and the perceived vagaries of human sexuality and gender, without the benefit of the solid, science-based biological approach currently recognised in, for example, the South African Constitution.

The phenomenon of intersexuality in its various forms has long been recognised in ancient cultures and religions as shown by often-portrayed subjects like the life-sized statue, *Sleeping Hermaphroditus*, of the Hellenistic and Roman periods, as well as the sexual proclivities of deities in the Greek pantheon.

That a spectrum of sex and gender differences have existed in nature since time immemorial is also shown by the behaviour of, among others, mammals in the wild, and within domestic herds. Logically, these observations should have led to the obvious conclusion that sex and gender preferences are variable, but instead, for a number of reasons, a simplistic and rigid binary system was settled upon, casting humans definitively as either male or female members of the two sexes.

More recently gender has, understandably, at times, been a controversial issue in the history of international sport. One memorable case that contributed to changes in administration at the international level concerned the amazing athletic prowess of two sisters. By the time the Soviet track and field athletes, Irina and Tamara Press, had accumulated 26 world records between them in international athletics, between 1959 and 1966, widespread doubts about their true sexuality started to circulate, causing them to be colloquially labelled in the Western media as the Press Brothers. Consequently, when the then IAAF instituted compulsory gender testing for women in international sport, commencing with the 1966 European Championships in Budapest, the sisters unexpectedly and permanently retired from international sport, shortly before the event.

The concept of a binary approach in human sexuality still exists in Western culture and, apparently, also within the executive echelons of WA as they continue to insist on the erroneous legality of their position. Meier, Koujer and Krieger

(2021:1) has noted that “[s]ince men’s control of women’s physical activity has been at the heart of masculine hegemony, sports have been a highly gendered social sphere”.

Theberge (2000:322) points out that, historically, sport has been construed as a predominantly male endeavour and consequently males benefited markedly in terms of opportunities and rewards. “This arrangement is both the basis of, and a powerful support for an ideology of gender that ascribes different natures, abilities and interests to men and women” (Theberge, 2000:322). For her, the roots of contemporary sport were laid in the late 19th and early 20th centuries in Britain and North America. In Britain, the Victorian concept of masculinity was promoted through participation in physically tough, competitive games. “Games playing in the boys’ public schools provided the dominant image of masculine identity in sports and a model for their future development in Britain and throughout the world” (Hargreaves, 1994:43).

The IAAF was established in 1912 for the sole purpose of advancing the participation of men in international sporting events. Women were excluded because “[t]he founder of the modern Olympic Movement, Pierre de Coubertin, thought women’s sport was impractical, uninteresting, ungainly, and, I do not hesitate to add, improper” (Meier et al., 2021:2). Between World War I and II, increased participation of women in international events was permitted, but thereby hangs a tale, as noted by Meier et al. (2021:2): “Put simply, men wanted to maintain control over women’s sport so it would not exceed the men’s sport in popularity.”

The aim of this contribution is to review the origins of gender discrimination, the agencies through which it has been perpetuated throughout history, and to offer a possible resolution to the quandary the WA finds itself in.

4.2 PHYSICAL REALITY AS OPPOSED TO SOCIAL REALITY

All life is inescapably subject to the physical realities of our solar system such as gravity, geology, geography, meteorology, and the rotational behaviour of our planet. As humans we are physically constrained and unable to jump over tall buildings in a single leap or run faster than a speeding bullet. In the same way, our sexuality and gender preferences are at the mercy of the physical realities of our embryonic development and intra-uterine influences. It is therefore a *fait accompli* that we are what our physical bodies deem us to be, and it is morally incumbent upon any society to recognise and respect the enduring embrace physical reality executes on the human condition in all its manifestations.

However, humans live in societies where we create our own social reality. We decide where the borders of countries lie, and which pieces of paper denote certain monetary values. Legal systems are socially constructed to serve specific moral conventions of the time and guide daily existence. Equally, religious groupings arise as social realities, each claiming single ownership of the ultimate truth, whilst allocating competitors to a future laced with fire and brimstone. Similarly, “[s]tudies show that wine tastes better if people believe it’s expensive. Coffee labelled *ecofriendly* tastes better to people than identical, unlabelled coffee” (Barrett, 2020:111).

It is noteworthy also to realise that Western society is not alone in harbouring intransient views regarding transgenderism. Steven Spielberg’s remake of the internationally acclaimed stage production of *West Side Story* has initiated negative reactions from the Arab world, because one of the actors portrays a transgender role and the film includes a kiss between two ostensibly male figures. As a result, the film has been banned in certain countries. According to *Netwerk24* (*Netwerk24*) of 8 December 2021 (n.p.), censors in Kuwait and Saudi-Arabia apparently banned the film outright and refused to issue a certificate for distribution, whereas censors in Bahrain, Qatar, Oman and the United Arab Emirates requested the removal of certain scenes. When 20th Century Studios, the distributors of the film, refused to comply, these countries also banned the film. This attitude of a relentless refusal to accept the physical reality of the human condition for what it is and choosing rather to be guided by outdated and ambiguous social realities, generated by fundamentalist interpretations of religious texts, as well as misconceptions about human biology, is paradigmatic of either a perverse unwillingness to acknowledge the real world, or blissful ignorance of human physiology and sexuality. It seems paradoxical that whilst many Arabian countries are technologically advanced, they either prohibit or fastidiously ignore the essential biological basis of the human condition.

Human laws also represent a version of social reality and undergo radical changes at times. A good example in this case are the so-called laws of apartheid as well as the laws historically enacted in the United States of America restricting the civil rights of African Americans.

It is clear therefore that gender in sport is a biological issue and should be considered from a biological point of view in terms of a spectrum and not from the outdated view that humanity consists only of heterosexual men and women.

In discussing human sexuality and gender, there needs to be a distinct separation between physical and social reality, because for many social reality masquerades as a factual, fixed, and unchangeable guide to their life world. In reality, this is a

misconception, because only physical reality allows us a factual approach, which can be tested. Thus, social reality reflects chosen protocols of time and place, all of which are subject to change. In this regard, human sexuality and gender lie within the parameters of physical reality and should be examined and judged as such.

4.3 THE ORIGINS OF DISCRIMINATION

The question remains as to when discrimination against women became historically established, and by what means was it so successfully maintained. For this reason, it is necessary to briefly visit past human societies and their social practices.

It is illustrative to observe that in modern, mobile egalitarian hunter-gatherer societies there is a distinct lack of gender discrimination as decision-making and influence within such groups are most often equally divided between men and women. Dyble et al. (2015:1) has suggested that the egalitarian structure of modern, mobile hunter-gatherer groups reflects conditions pertaining to ancient human societies and can therefore offer constructive inputs, illuminating the phenomenon of sex equality. They link gender inequality to the rise of agriculture and pastoralism. Once heritable resources such as land and livestock became important determinants of reproductive success, sex-biased inheritance and lineal systems started to arise, leading to wealth and sex inequalities. "Understanding hunter-gatherer sex-egalitarianism and the shift from hierarchical male philopatry typical of chimpanzees and bonobos to a multilocal residence pattern is key to theories of human social evolution" (Dyble et al., 2015:3).

Lewis and Maslin (2018:361) note that

[w]hile modern-day hunter-gatherer societies are not the same as those living thousands of years ago, both historically and in modern times the evidence is they tend to be relatively egalitarian. The highly mobile groups that save no food or other resources are particularly equal. In these groups no person has authority over any other; this lack of authority also means a lack of dependency.

Alesina, Guiliano and Nunn (2013), investigating the origin of gender roles as related to agricultural practices in the pre-industrial era have shown that the transition from shifting cultivation, employing the hoe, and digging stick, traditionally employed by women, to plough cultivation, represented a watershed with regard to gender roles.

Unlike the hoe or digging stick, the plough requires significant upper body strength, grip strength, and bursts of power, which are needed

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to either pull the plough or control the animal that pulls it. Because of these requirements, when plough agriculture is practiced, men have an advantage in farming relative to women. (Alesina et al., 2013:470)

From this evolved the perception that men were more suitable to the physical tasks required by agriculture whilst women were best suited to the less arduous environment within the home. “These cultural beliefs tend to persist even if the economy moves out of agriculture, affecting the participation of women in activities performed outside the home, such as market employment, entrepreneurship, or participation in politics” (Alesina et al., 2013:471). More surprisingly, they note that:

Our findings provide evidence that current differences in gender attitudes and female behaviour are indeed shaped by differences in traditional agricultural practices. Specifically, we have shown that individuals, ethnicities, and countries whose ancestors engaged in plough agriculture have beliefs that exhibit greater gender inequality today and have less female participation in non-domestic activities, such as market employment, firm ownership, and politics. In an effort to better identify a channel of cultural persistence, we examined the children of immigrants. We find that among these individuals who face the same labor markets, institutions, and policies, a heritage of traditional plough agriculture is still associated with more unequal gender attitudes and less female labor force participation. (Alesina et al., 2013:527-528)

Thus, the transition from mobile hunter-gatherer societies to pastoral and agricultural practices represented a watershed with reference to the position of women in society. Shifting perceptions within belief systems also increasingly contributed the establishment of gender inequalities during the transition from Polytheism to Monotheism.

Ancient Egypt evolved from a nomadic culture to a powerful state, dependent on slave labour. However, the highly complex State Religion remained polytheistic where natural objects like the sun and the moon were still, respectively, revered as Ra and Khonsu, together with a variety of animals that populated their pantheon of deities. This environment was not devoid of discrimination, but men and women were at least legally equal, which meant that for women like Hatshepsut and Sobekneferu it was possible to attain the executive position of Pharaoh (Cornelius, 2022).

From Egyptian religious thought and other polytheistic world views, alternative religious world views, like Judaism, emerged, conflating and reinterpreting the then extant cosmic explanations and deities, clothing it with specific religious

and political thoughts as necessary. Judaism, in turn, served as source material for the three Abrahamic religions, all of which included attitudes, beliefs, and myths condoning discrimination on the basis of sex and gender which are still functional in modern-day Christianity. Judaism itself evolved from polytheism, through monolatry (worshipping one deity but acknowledging the existence of many) to monotheism which acknowledged only one, true universal male god for all people, as does Christianity today.

In the polytheistic phase, the Hebrew God, Jehovah or Yhwh, had a consort or companion wife, Asherah, a deity primarily worshipped by women of the ancient near East. Dever (2005:188) attests to the fact that Asherah was "... long venerated in Canaan as patroness of mothers". According to Römer (2015:172):

[...] the goddess Asherah was associated with Yhwh as his *parhedros* [sitting beside or near] but she was also worshipped independently of him, especially by women in the form of the Queen of Heaven. It is only with the beginning of the reign of Josiah that we find Yhwh alone without his Ashera.

During the evolution of Jehovah from a warlike deity to a god of neighbourly love, as expressed by the third person of the Trinity, Ashera was systematically excised from the texts of the Old Testament, and thus also from religious observance, although the Christian Bible still contains 39 muted references to her existence. This literary manoeuvre further entrenched the subsidiary position of women in Hebrew and subsequent Christian societies. "To be the only true god means to have no partners. Thus, Yhwh is traditionally considered to be an 'unmarried' god, and the allusions to goddesses in the Bible, notably to Asherah, have been interpreted as referring to non-Yahwist cults. This is the way the editors of the Bible finally decided to present matters" (Römer, 2015:160).

Dever (2005:100) notes that the Hebrew word *ʾāšērāh* occurs over 40 times in the Hebrew Bible. In addition, Römer (2015:161) points out that the word *ʾāšērāh* is used 40 times in biblical texts "... mostly with the article" and that in places where the masculine plural is employed, it "... is an artificial creation of the editors of the Bible in order to avoid any possible allusion to the goddess Asherah". In sharp contrast to the biblical texts, "a close link between Yhwh and Asherah is attested in the inscriptions found at Kuntillet Ajrud and Khirbet el-Qom" (Römer, 2015:162).

The Catholic version of Christianity and its male-centred dogma is infamous for its transgressions against humanity, and particularly against women, whose position in society thereby further deteriorated. It created, from the religious

perspective, a binary society with men dominating the existence of women, taking decisions about and for them, usually in their absence, on what is permissible in terms of behaviour in general, religious conduct, and more specifically, the ludicrous attempts by the allegedly celibate church hierarchy to dare to prescribe and pronounce on sexual conduct within marriage. It is interesting to note that the period of time when the Catholic Church virtually ruled the West is often sardonically referred to as the Dark Ages.

The unequal treatment of women by men continued through known history on multiple fronts, a case in point being women's suffrage, which is still not universally implemented. It appears evident then that gender inequality in sport constitutes only the tip of the iceberg that women still face, but it is of significant importance because international sport personalities are continually in the public eye and women athletes serve as role models on a variety of levels. Sex and gender inequality have developed over thousands of years and have been driven by social reality employing a variety of subversive tactics in establishing male dominance. Women have thus been wronged and subjugated by what is commonly referred to as the pillars of society, namely male representatives of mainstream religions, law, politics, the economic community, and, as this contribution attempts to show, long excluded from fair and free competition in international sporting events.

4.4 THE LEGALITY OF THE IAAF'S CLAIMS

Michele Krech, at the time a doctoral candidate at the New York University School of Law, served as consultant to the legal team of Caster Semenya in *Mokgadi Caster Semenya v International Association of Athletics Federations*, CAS 2018/O/5794. Krech (2019) succinctly outlines the misplaced burdens of gender equality in Caster Semenya's case against the IAAF and notes that "[t]he highly anticipated decision of the Court of Arbitration for Sport (CAS) in *Caster Semenya v International Association of Athletics Federations* (IAAF), has quickly become its most (in)famous" (Krech, 2019:66). The case revolves around regulatory issues which make it possible for the IAAF to block certain female athletes from competing on the grounds that they exhibit differences in sexual development. Krech (2019) has extensively analysed and concisely summarised the legal misinterpretations surrounding the case of Caster Semenya. Unfortunately, limitations of space prevent an extensive exposition of all her arguments. Consequently, we refer only to what we regard as a summary of her most salient points. For an in-depth exposition of her legal approach, interested readers are referred to Krech (2019:66-76).

Krech (2019:66) criticises the CAS findings as “tentative and incomplete” and lacking “conclusive authority”. She accuses the CAS Panel of actually sidestepping the application of “... the widely recognised legal framework for the analysis of such claims” (2019:66) and in her view compromising the Panel’s attempt at fair adjudication. “Instead, the decision in *Semenya v IAAF* makes clear that the CAS stamp of approval is no guarantee of human rights appliance” (2019:66).

According to Krech (2019:75), the IAAF maintains that it is exempt from international human rights laws, however “[t]he IAAF’s position in this regard completely ignores the UN *Guiding Principles on Business and Human Rights* which delineate the responsibility of all business enterprises, including transnational ones such as the IAAF, to respect all internationally recognised human rights” (2019:76). The stated position of the IAAF, rather than complying with the UN *Guiding Principles on Business and Human Rights*, is to defend the CAS ruling, claiming that “CAS is competent to rule on all legal claims, including human rights claims, and it did so in its recent ruling, in favour of the IAAF” (2019:76).

Semenya confronted the CAS with the Eligibility Regulations for Female Classification, known as Differences of Sex Development Regulations (DSD), resulting in the CAS Panel conceding that the “... regulations at issue are prima facie discriminatory on the basis of protected characteristics, namely sex and gender ...” The CAS Panel also acknowledged “... in principle, that the burden of proof shifts from the claimants (the athletes) – having established that the relevant regulations are prima facie discriminatory – to the defender of the regulations (the IAAF) to justify the discrimination” (Krech, 2019:67).

In her extensive legal analysis, Krech (2019:74) is pointedly at odds with the claimed legality of the assertions by WA, stating her arguments in convincing detail. However, in the interests of brevity we will restrict ourselves to a few brief and final comments. She points out that the Panel also failed to address discrepancies in the regulations which allow the same female athlete to compete as a male in some events and as a female in other events, and questions discrepancies in the regulations which the Panel failed to address properly, such as “... how it is reasonable and necessary that the DSD regulations apply to certain running events but not to the events in which the IAAF’s own study shows the highest correlation between testosterone and performance benefit; hammer throw and pole vault” (Krech, 2019:73). Clearly at odds with the legal proceedings in the case, she unequivocally states that “[m]ore broadly speaking, the CAS decision in *Semenya* serves to underscore, rather than to address, the serious challenges of securing human rights – particularly gender equality – in the context of sport” (Krech, 2019:76), finally concluding that the CAS has

“... proven itself incompetent to conduct a full and proper human rights analysis” (Krech, 2019:76).

In summary, it would seem that the insistence of WA on the legality of their position represents a too narrow interpretation, relying overtly on the social reality of legal views, as opposed to the physical realities of human sexuality, a relevant point expressed by Krech (2019:70) as “[l]egal reasoning, especially when fundamental rights are at stake, must take account of the real world as it exists, as opposed to the hypothetical utopia we may hope to one day live in”. In this respect, it is important to acknowledge that it is not incumbent upon the individual to conform to the social realities of the legal system, it is for the legal system to recognise, protect, and champion the physical reality of the biological basis of human sexuality and gender.

4.5 THE VIEW FROM BIOLOGY

4.5.1 Genetics

In the social environment, where sex is still perceived in binary terms, intersexuality remains problematic. “Few legal systems allow for any ambiguity in biological sex, and a person’s legal rights and social status can be heavily influenced by whether their birth certificate says male or female” (Ainsworth, 2015:288). Medical researchers and doctors have long been aware of the complexities of sexuality:

[...] doctors have long known that some people straddle the boundary – their sex chromosomes say one thing, but their gonads (ovaries or testes) or sexual anatomy say another. Parents of children with these kinds of conditions – known as intersex conditions or differences or disorders of sex development (DSDs) – often face difficult decisions about whether to bring up their child as a boy or as a girl. (Ainsworth, 2015:288)

Sex is therefore much more complicated than what it seems at first. The time is past when the presence or absence of a Y chromosome determined if an individual is a male or female. However, things are even more complicated than that. It is known now that the sex chromosomes do not have the last word, and in spite of what the sex chromosomes may suggest, the gonads (testes and ovaries) and the sexual anatomy can be indicators of a quite different scenario.

During the initial stages of development, the sex of the human embryo is indeterminate, so much so that at five weeks, the future external genitals are represented by a single external cellular *anlage*, the genital tubercle, which possesses the potential to develop into the external genitals of either of the

two traditional sexes, boy or girl. At six weeks, the gonads differentiate into either ovaria or testes, each secreting the specific hormones that further drive internal and external development. At this time, testosterone facilitates a male developmental pattern, assisting in the regression of the female sexual attributes. When the ovaries release oestrogen in the absence of testosterone, it promotes the development of the female sexual system causing the regression of male sexual attributes.

Changes to any of these processes can have dramatic effects on an individual's sex. Gene mutations affecting gonad development can result in a person with XY chromosomes developing typically female characteristics, whereas alterations in hormone signaling can cause XX individuals to develop along male lines. (Ainsworth, 2015:289)

It has also been shown that a DSD known as congenital adrenal hyperplasia (CAH) induces the production of abundant male sex hormones. Consequently, "...XX individuals with this condition are born with ambiguous genitalia (an enlarged clitoris and fused labia that resemble a scrotum)" (Ainsworth, 2015:290). It is therefore patently clear that the complexities of sex and gender are not binary and cannot be represented as a simple dichotomy.

4.5.2 Brain structure

Swaab and Garcia-Falgueras (2009) have contributed an extensive series of salient insights on the sexual differentiation of the brain, as it applies to gender identity and sexual orientation. Their argument clearly invalidates a binary approach, highlighting the role of the brain in the inherent complexity of human sexuality.

Once the differentiation of the sexual organs into male or female is settled, the next thing that is differentiated is the brain, under the influence, mainly, of sex hormones on the developing brain cells. The changes (permanent) brought about in this stage have organizing effects later, during puberty, the brain circuits that developed in the womb are activated by the sex hormones. (Swaab & Garcia-Falgueras, 2009:17)

The observed structural differences in brain development results from reciprocal influences between hormones and developing brain cells. This phenomenon is regarded as

[...] the basis of sex differences in a wide section of behaviours, such as gender role (behaving as a man or a woman in society), gender identity (the conviction of belonging to the male or female gender), sexual orientation (heterosexuality, homosexuality or bisexuality) and sex differences regarding cognition, aggressive behaviour and language organisation. (Swaab & Garcia-Falgueras, 2009:18)

To complicate matters further they reveal, in the same article that

[t]he environment of a developing neuron is formed by the surrounding nerve cells and the child's circulating hormones, as well as the hormones, nutrients, medication and other chemical substances from the mother and the environment that enter the fetal circulation via the placenta. All these factors may have a lasting effect on the sexual differentiation of the brain. (Swaab & Garcia-Falgueras, 2009:17)

According to Swaab and Garcia-Falgueras (2009:18), the prenatal hormonal influences can, in effect, establish gender identity, although the uterine environment, in such a case, may be insufficiently equipped to allow complete genital differentiation. The sexual differentiation of the human brain adds further complications to sex and gender choices in that it is "... also expressed in behavioral differences, including sexual orientation (homo-, bi-, and heterosexuality) and gender identity, and in differences at the level of brain physiology ..." (Swaab & Garcia-Falgueras, 2009:19). Thus, it is patently evident that gender is under the influence of numerous factors, which can lead to transsexuality.

Putting paid to an enduring myth, Swaab and Garcia-Falgueras (2009:21) make the important point that sexuality is not reversible, and that the sexuality of children raised by transsexual or homosexual parents will not be affected. In conjunction with a wide array of published research, they make a compelling case discussing an array of important prenatal factors that can influence sexual development during pregnancy. Phenobarbital and diphantoin prescribed for epileptic women during pregnancy add to the risk of delivering a transgender child (Swaab & Garcia-Falgueras, 2009:21). "Both these substances change the metabolism of the sex hormones and can act on the sexual differentiation of the child's brain" (Swaab & Garcia-Falgueras, 2009:21). Early development is also the time during which sexual proclivities are resolved, under the sway of our genetic make-up as well as factors affecting the interplay between the developing brain and the sex hormones (Swaab & Garcia-Falgueras, 2009:22). Prenatal causes of homosexuality, heterosexuality, or bisexuality can be the result of the intake of chemicals like nicotine, amphetamines, or thyroid medication. An extremely interesting phenomenon, known as the fraternal birth order effect, links the possibility of a boy being homosexual to the number of older brothers he has, and is "... putatively explained by an immunological response by the mother to a product of the Y chromosomes of her sons" (Swaab & Garcia-Falgueras, 2009:23). Excessive stress during pregnancy has also been identified as a contributing factor in producing a child with homosexual tendencies.

Swaab and Garcia-Falgueras (2009:22) make the telling statement that

[s]exual orientation in humans is also determined during early development, under the influence of our genetic background and factors that influence the interactions between the sex hormones and the developing brain. The apparent impossibility of getting someone to change their sexual orientation is a major argument against the importance of the social environment in the emergence of homosexuality, as well as against the idea that homosexuality is a life-style choice.

Homosexuality has had an enduring presence throughout known history, right up to the present, and the questions most often asked are if its presence could possibly confer an evolutionary advantage in a population, and if so, by what means, as persons with homosexual orientation do not procreate. It is, of course, untrue as many homosexual males marry and have children, perhaps in an attempt to conform to the accepted behaviour dictated by society, only later to revert to an exclusively same-sex lifestyle. According to Swaab and Gardia-Falgueras (2009:23), an acceptable solution would be to show that the genetic features controlling homosexuality also have a positive effect on procreation. Camperio-Ciani, Corna and Capiluppi (2004:2217) have found just that and reported that “female maternal relatives of homosexuals have higher fecundity than female maternal relatives of heterosexuals”.

4.5.3 Embryology¹

Western culture has long favoured the binary concept of recognising only two sexes. It reflects the view of legal systems and clearly, the public at large, as this particular mindset is continually bolstered by linguistic expressions in common use, such as right or wrong, left or right, black or white, us or them, and him or her. In the real world, however, human sexuality is vastly more complex and interesting. Fausto-Sterling (1993:21) points out that

[...] if the state and legal system have an interest in maintaining a two-party sexual system, they are in defiance of nature. For biologically speaking, there are many gradations running from female to male; and depending on how one calls the shots, one can argue that along that spectrum lie at least five sexes – and perhaps even more.

However, in the past and especially during medieval times, the options were clear in that sexuality was unambiguously binary, and hermaphrodites who strayed from their chosen sex and attempted to straddle the fence, did so at their own peril. Fausto-Sterling (1993:23) notes that

1 For an in-depth discussion, see Jones and Van den Heever (2021).

[i]n Europe a pattern emerged by the end of the Middle Ages that, in a sense, has lasted to the present day: hermaphrodites were compelled to choose an established gender role and stick with it. The penalty for transgression was often death. Thus, in the 1600s a Scottish hermaphrodite living as a woman was buried alive after penetrating his/her master's daughter.

In view of the complexity of human sexuality, as currently understood, the binary approach is outdated and wrong, as is shown by the differential intra-uterine development of genetic, physiological, neurological, and anatomical features, culminating in a diverse spectrum of at least fifteen possible sexual options, sequentially interspaced between heterosexual males and heterosexual females.

4.6 A PRECEDENT AND AN ALTERNATIVE

It would be unfair of us to explicitly criticise the legality of the position of WA regarding the sexuality and gender preferences of international athletes, without suggesting what may be a plausible alternative. In this respect, the Classification Code of the International Paralympic Committee (IPC) comes to mind. This administrative body regulates a multitude of athletes, exhibiting bodily differences pertaining to intellectual, genetic, physiological, and anatomical aspects. Whilst no strict parallels can be drawn between these two international groupings, it is telling that the IPC appears to continually communicate in a respectfully supportive and non-judgemental manner with their members and charges. There appears also to be no coercive attempts at influencing athletes in any way with regard to the rules for competitive endeavour. In contrast, the WA is, rightly or wrongly, perceived as a vacillating and irresolute administrative body that hides behind suspect legal manoeuvres that they regard as inviolate, whilst attempting to coerce athletes in lowering their testosterone levels by chemical intervention.

Instead, the IPC has consulted widely over the years, and continues to do so, thereby delivering an extensive and detailed classification system that acknowledge the physical constraints of a wide variety of athletes, thusly providing a platform enabling paralympic athletes to experience the thrill and satisfaction of competing against peers at the international level. The IPC Classification Code outlines ten primary impairment types, eight referring to physical impairments, and one each to visual and intellectual impairment. The categories are further refined to include a large number of subdivisions, tailored to best showcase the athletic abilities of specific categories of athletes. We would like to think that the achievements of the IPC are not beyond the abilities of WA, and while the circumstances are not identical, relying on the perceived legality of their position, WA is in an untenable position and should consider alternative solutions that

obviates the indignities and discrimination experienced by athletes during legal confrontations, because the burden of proof lies not with athletes, like Semenya, but with WA.

Spectrum of human sexual characteristics									
	normal female	simple constitutional masculinism	adrenogenital masculinism	female homosexual	female transvestism	female intersex without disorder	true hermaphrodite	Turner's syndrome	
typical sex chromosomes	XX	XX	XX	XX	XX	XX	XX	XO	
gonads female male	○ ●	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	○ ○	
sex hormones { oestrogens (female) androgens (male)	normal F	increased for female	increased for female	normal F	normal F	normal F	normal F or low	low	
	normal F	increased for female	increased for female	normal F	normal F	normal F	normal F or low	low	
external anatomy									
phallus { penis clitoris	normal size	normal size	enlarged	normal or enlarged	normal or enlarged	enlarged	normal penis or enlarged clitoris	normal size	
	F	F	F	F	F	F	F	F	
urination	normal	irregular or nil	nil	normal or irregular	normal or irregular	normal	usually nil	nil	
menstruation	+	+	+	+	+	+	+	+	
fertility	+	+	+	+	+	+	+	+	
psychological sex	F	F	F	M or F	neutral or M	F or M	For M	F	

pure gonadal dysgenesis	XY	male intersex testicular feminization syndrome	Klinefelter's syndrome	male transvestism	male homosexual	adrenogenital feminism	simple constitutional feminism	male with hypospadias	normal male
XY	XY	XXY	XY	XY	XY	XY	XY	XY	XY
●	●	●	●	●	●	●	●	●	●
normal M	normal M	normal M	normal M	normal M	normal M	normal M	normal M	normal M	normal M
normal M	normal M	normal M	normal M	normal M	normal M	normal M	normal M	normal M	normal M
									
normal or enlarged	normal size	small to moderate	small	normal size	small	small	small (may resemble enlarged clitoris)	normal size	
F	F	M	M	M	M	M	F	M	
nil	nil	+	+	+	+	+	+	+	
+	+	+	+	+	+	+	+	+	
F	F	neutral or M	neutral or F	M, F or both	M	M or rarely F	M	M	

FIGURE 4.1 Table summarising the spectrum of human sexual characteristics (Jost, 1971:104-105)

To us, the existence of the Paralympics creates both a precedent and a way out. We are convinced that it would be morally judicious not to chemically intervene with the naturally expressed spectrum of human sexuality. The essential differences between men and women dictate that they should not compete against one another. Therefore, there is no demand to masculinise women or feminise men to allow equal competition against one another.

A possible way out of the conundrum would be for WA to create further competitive categories to, at least, accommodate the five sexes, advocated by Fausto-Sterling (1993:21). An anticipated objection in this regard would be that the possible paucity of competitors in certain items would not justify a separate competition. For us, the answer would be to include these athletes in international events of WA, in separate categories. After all, in the binary system the two designated categories do not compete against one another, so why would a quinary system, albeit more complex, be any different? If such an arrangement seems propitious, it might even be acceptable in the future to consider inviting the Paralympic Movement to compete as a separate category, under the same umbrella.

We are satisfied that we have, to all intents and purposes, stated the case from biology as best we could, and have demonstrated, through the hard biological evidence of selected researchers, that a problem exists. It is natural to expect that this discrepancy should be investigated further and addressed in a humane and ethical way.

4.7 CONCLUSION

The acrimony that has ensued around the question of gender in sport has serious moral implications for how we view ourselves. Anton van Niekerk (2020:8), commenting on the nature of morality, has noted that “[i]t is the universal acknowledgement that all our actions can and ought to be submitted to the set of expectations known as the demand of obligation”. From this, it follows that our deeds and behaviour have implications and will be evaluated and judged by society. “Yet if biologists continue to show that sex is a spectrum, then society and state will have to grapple with the consequences and work out where and how to draw the line. Many transgender and intersex activists dream of a world where a person’s sex or gender is irrelevant” (Ainsworth, 2015:291).

Above all, to attempt legislation in the absence of necessary and relevant data on a subject as important as human sexuality, whilst the pertinent details have been available in the public domain for years, is tantamount to the worst kind of discrimination thinkable. Parallels in this regard would be the ludicrous defence

of the legality of the apartheid laws, with the consent of both State and Church, all the while pointedly ignoring extensive and freely available biological data to the contrary. A more recent parallel is the unconscionable attitude of religious bodies, specifically, the Dutch Reformed Church in South Africa, pointedly denying the biological reality of human sexuality in favour of religious texts that were written and compiled by individuals who were totally ignorant of the psychological, physiological, anatomical, and genetic complexities of the human condition.

In this instance, the IAAF is guilty on at least two counts. Firstly, aiding and abetting an outdated and provably false conception of human sexuality and secondly, persisting to defend this interpretation whilst failing to implement necessary and humane changes, reflecting our biological heritage, abundantly supported by published data based on embryological, anatomical, physiological, and neurological research which unanimously attest to the physical reality of the human condition. With reference to the latest insights about sex and gender in general, Ainsworth (2015:288) notes that “[t]hese discoveries do not sit well in a world in which sex is still defined in binary terms. Few legal systems still allow for any ambiguity in biological sex, and a person’s legal rights and social status can be heavily influenced by whether their birth certificate says male or female”. We are not encouraging WA to comply with our suggestions, but merely stating that human inventiveness, sense of fairness, and originality has overcome many obstacles in the past. We are suggesting that the present attitude and declarations of WA are indeed suspect, and in our view, short-sighted and wrong. It is also true that competitions like the Paralympics exist to show that there are alternative decisions that can be made. The onus is on WA to, instead of continuing a controversial and decidedly wrong path, find alternative means to allow competition honestly and openly in the international world of sports.

Finally, we wish to underscore our initial statement that humans are in every respect biological entities, as is every other life form on the planet, and to plumb the depths of the human experience in all of its manifestations, all we have is the human body. We are our bodies and can only experience the world through our bodies. Our sexuality and gender are expressed within an extensive spectrum generated by the physical realities of our biology and should not be subservient to the inadequacies and ethereal misconceptions of social reality.

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