Contradiction or Cohesion? Tracing Questions of Protection and Fairness in Scientifically Driven Elite Sport Policies

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Much of the resistance and, at times, outright condemnation of including transgender individuals in sports continue to draw upon “scientific” arguments, despite the acknowledged importance of sociocultural and (geo)political factors, resulting in a constructed “either science or human rights” landscape. In this article, I analyze historical scientifically driven International Olympic Committee documents and policies from the Olympic Studies Center to examine if and how sport organizations, such as the International Olympic Committee, have historically balanced these seemingly partitioned considerations in previous regulatory documents, especially those relating to sex, gender, fairness, and protection. Using Sheila Jasanoff’s co-production, I find that, while knowledge informing policies sometimes circulates biologized gender stereotypes, sociocultural and scientific goals have, can, and should exist in cohesion rather than in contradiction.

While memorable for multiple reasons, the 2020 Summer Olympic Games in Tokyo, which took place in 2021 after a year’s delay as a result of the COVID-19 global pandemic, notably featured the first-ever openly transgender and nonbinary Olympic athletes: New Zealand weightlifter Laurel Hubbard, American skateboarder Alana Smith, and Canadian soccer player Quinn. While all three met the International Olympic Committee’s (IOC) eligibility requirements, their inclusion was met with both vociferous support and opposition. On the one hand, critics argued that including transgender individuals (particularly transwomen) in sport was inherently unfair, compromised meaningful participation, and contradicted historical efforts to increase girls’ and women’s participation in sports (Surprenant, 2021). On the other hand, proponents underlined the groundbreaking inclusion of diverse athletes to encourage teachable moments and constructive dialog (Thorpe et al., 2021), along with the health-related benefits of physical activity, role models for younger athletes, and the overarching purpose of sports to foster ideals of inclusion, community, and well-being (Sharrow et al., 2021).

Nearly 3 months after the conclusion of the Tokyo Games, the IOC released its “framework on fairness, inclusion and non-discrimination on the basis of gender identity and sex variations” (“the Framework”), which replaced and updated its previous related guideline. In this document, the IOC recommitted itself to “respecting human rights” and taking action to “foster gender equality and inclusion” (p. 1). Focusing on transgender athletes and athletes with sex variations, the organization outlined 10 principles to “promote and defend at all levels of sport” (p. 2): inclusion, prevention of harm, nondiscrimination, fairness, no presumption of advantage, evidence-based approach, primacy of health and bodily autonomy, stakeholder-centered approach, right to privacy, and periodic reviews. While only encouraging (rather than requiring) other international federations (IFs) to adopt these principles, the Framework was met with praise (Storr et al., 2021) and criticism (Pigozzi et al., 2022); a result of different interpretations of the supporting science and prioritized organizational values (e.g., fairness, inclusion, equity).

Much of the resistance and, at times, outright condemnation of including transgender individuals in sports continue to draw upon “scientific” arguments (Scovel et al., 2022). Likewise, written policies, particularly those denoting (female) eligibility, continue to circulate and privilege scientific knowledges despite the acknowledged importance of sociocultural and (geo)political factors (Posbergh, 2022). In this constructed “either science or human rights” landscape, implementing organizational goals alongside assumed scientific conclusions presents as intractable, impossible, and improbable. This subsequently prompts questions around if and how sport organizations, such as the IOC, have historically balanced these seemingly partitioned considerations in previous regulatory documents, especially those relating to sex, gender, fairness, and protection.

In this article, I examine historical scientifically driven IOC policies and guidelines to contextualize the Framework within these documents. Echoing sociologist Madeleine Pape (2020a), I use the IOC as a case study given the international popularity of the Olympic Games and Olympic Movement as representative of gender relations (and possibilities) within and beyond sport, as well as the IOC’s influence on other sport organizations at the grassroots, club, and collegiate levels (Sotiriadou & Brouwers, 2012). Analyzing policy texts and archival documents collected from the Olympic Studies Center (OSC) in Lausanne, Switzerland, I trace how scientific understandings of fairness and protection have incorporated or accommodated social, cultural, and political organizational commitments. I employ Sheila Jasanoff’s idea of co-production to understand how specific knowledges and policy approaches were and are privileged in constructions of fairness and protection while others are silenced or less dominant. I focus on three questions: (a) What dimensions, topics, or categories from the OSC are most relevant to transgender eligibility guidelines? (b) How do discourses surrounding fairness and protection reinforce, challenge, or negotiate dominant understandings of (gendered) bodies, and how have they evolved and/or remained the same? and (c) How does the entanglement of science and culture shape current guidelines around transgender athlete inclusion (i.e., the Framework)?

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In what follows, I first provide an overview of the substantive literature on fairness and protection in women’s sport, especially as it relates to transgender athletes. Next, I describe the theoretical framework (co-production) and methods used. I then outline how discourses of fairness and protection began to develop and adapt to the IOC Medical Commission’s expanded research interests, alongside the IOC’s commitments to human rights, inclusion, and diversity, ending with an examination into how these “key moments” shape the Framework. I close by discussing how sociocultural and scientific goals can and should exist in cohesion rather than in contradiction, and outline areas of future research.

Protection and Fairness for Women Athletes and the Women’s Category

Protection and fairness are foundational at all levels of sport, but particularly for the women’s category (Pike, 2022; Schneider, 2020). Both concepts draw from traditional (feminine) notions of women’s bodies and are defined by those in authority positions, subsequently permitting multiple interpretations and implementations (Bekker & Posbergh, 2022; Cooky & Dworkin, 2013; Karkazis & Jordan-Young, 2018; Pape, 2020b). For example, “protection” bears a paternalistic and gendered connotation as it emerged from initial exclusions of women in sporting and physical activity spaces (Verbrugge, 2002; Vertinsky, 1990). This later gave way to the mitigated inclusion of women as they gained some entry but remained barred from certain sports or events (Cahn, 2015). Even upon entering previously inaccessible spaces, sporting authorities and organizations continue(d) to label women athletes as a “protected class,” which is largely contingent on beliefs about the biological inferiority of female athletes (Burke, 2022; Henne, 2014; McDonagh & Pappano, 2008). This, in turn, reinforces biologizations of sex and gender, or, the understanding that such constructs are neutral ways to categorize individuals into groups based on their biology, with these supposed biological “differences” used to justify social policies and guidelines to potentially harmful and/or stereotyping effects (Fujimura et al., 2008).

At the same time, women athletes experience disproportionately high rates of harassment and abuse (Mountjoy et al., 2016) and are considered at higher risk of developing damaging health conditions, which is attributable to systemic forms of oppression (e.g., sexism, racism). In response, sport organizations and medical/scientific sub-committees have published consensus statements and guidelines to provide prevention, diagnosis, and treatment strategies (e.g., the IOC). Yet, these documents often highlight the importance of social and cultural pressures, thereby illustrating the entanglement of biological and sociocultural dimensions (Fausto-Sterling, 2000; Schofield et al., 2021; Thorpe, 2014) and contributes to the multiple, fluid understandings of protection (Posbergh, 2022).

Ideas of fairness similarly engage myriad intertwined considerations, but largely draw upon medico-scientific knowledges, considering the mid-20th century organizational interests in doping and sex testing, and the medical groundings of relevant committees (e.g., the IOC Medical Commission). Furthermore, the veneer of scientific “objectivity” underlines efforts to regulate women’s bodies under discourses of “fairness” and “protection,” particularly through establishing a separate women’s category (Henne, 2014; Karkazis & Jordan-Young, 2018; Pape, 2020b; Schultz, 2021). Correspondingly, sex segregation—which is the dominant sport classification model—requires establishing parameters around who can compete in the women’s category, which often operationalizes ostensibly neutral “scientific” measures and techniques (Tännö, 2000). However, as sociologist Robert Beamish (2009) notes, science cannot “serve as the moral compass for the modern world,” given its inability to unbiasedly judge all values, its Eurocentric origins and ideals, the complexity of the world, and the impossibility of “objective” science (see also Fausto-Sterling, 2000; Jordan-Young & Karkazis, 2019; Wilson, 2015). For instance, a robust body of literature elucidating how sexism and racism intersect in the science behind female eligibility policies to most significantly impact Black and Brown women from the Global South reflects the impartiality of “science” in matters of fairness and protection (Henne & Pape, 2018; Karkazis & Jordan-Young, 2018; Magubane, 2014).

For transgender (namely transwomen) athletes, the complexities of protection and fairness largely underline questions around their inclusion, as illustrated in concerns around bodily harm for cisgender women. In this vein, World Rugby cites physiologically based data to justify its ban of transwomen, noting the purportedly insurmountable performative differences between women and men, and the significant “player welfare risks” (World Rugby, 2021). Notably absent from these discussions around “bodily harm” is the disproportionate number of transgender health disparities (Hugho et al., 2015), which is particularly revealing considering sport organizations’ increased attention to athlete health and well-being. As female masculinity remains a contested ground (Halberstam, 1998; Pieper, 2016), Teetzl (2006) observes that much of the controversy surrounding transgender athlete participation emerged from an “underlying disbelief that an athlete who was born female could compete alongside elite ‘naturally superior’ male athletes” (p. 230).

Likewise, notions of fairness are premised on broadly accepted “scientific” views that men, on average, are stronger and faster than women. Therefore, allowing men and women to compete together would inhibit women from winning or succeeding in sports: a “fact” that several critical sports scholars have increasingly called into question (Channon et al., 2018; McDonagh & Pappano, 2008; Tännö, 2000). As the transgender body complicates the perceived binary between women and men, conventional understandings of gendered bodies (e.g., the “inferior” female body and the “superior” male body) are challenged (Cavanagh & Sykes, 2006), complexifying approaches to equitably, inclusively, and scientifically implement fairness and protection for all athletes.

In all, the multiple considerations within constructs of protection and fairness—and the inadequacy of science to fully define both ideas—prompts critical questions around what dimensions are considered most salient and what types of discourses and knowledges are (strategically or opportunistically) drawn upon to achieve organizational goals. While these discussions are particularly visible in today’s political climate around transgender athletes (Sharrow et al., 2021; Thorpe et al., 2021), similar scenarios have previously appeared before sport organizations and their medical commissions for topics such as female eligibility and doping (Henne, 2014; Pape, 2019; Pieper, 2016). Thus, to parse through the multiple and complex constructions and developments of protection and fairness, I look to Sheila Jasanoﬀ’s “co-production” to examine how scientific and sociocultural considerations converge in the research informing scientifically driven policies.

A Co-Productionist Approach: Knowledge Processes, Institutional Practices

Feminist science and technology studies scholar, Sheila Jasanoﬀ (2004), introduces “co-production” as an analytical framework that
asks how science (and technology) is “co-produced” with social, cultural, and political dimensions. As Jasanoff (2004) writes,

Co-production is shorthand for the proposition that the ways in which we know and represent the world (both nature and society) are inseparable from the ways in which we choose to live in it … society cannot function without knowledge any more than knowledge can exist without appropriate social supports. Scientific knowledge in particular, is not a transient mirror of reality. It both embeds and is embedded in social practices, identities, norms, conventions, discourses, instruments, and institutions. (p. 2)

Simply, co-production posits that science and technology are inextricably entwined with societal, cultural, and political dimensions (Latour, 1987). While not a “fully fledged theory,” co-production is instead an “idiom—a way of interpreting and accounting for complex phenomena so as to avoid the strategic deletions and omissions of most other approaches in the social sciences” (Jasanoff, 2004, p. 3). In doing so, co-production explores the process through which knowledge becomes authoritative and aligns with this project’s aim to trace the development of “fairness” and “protection” in scientifically supported sport policies. Importantly, co-production considers both social and (techno) scientific influences without giving primacy to either. As Jasanoff (2004) notes, the purpose is to avoid pure constructivist and positivist epistemological approaches to phenomena and instead, provide a strategy for explaining the processes of knowledge-making with consideration to science and values, objectivity and subjectivity, constructed and real.

Through focusing on the process of knowledge production, co-production not only asks what is, but how knowledge is produced and circulated, or made obsolete (Jasanoff, 2004). Through this perspective, Jasanoff (2004) observes that knowledge—specifically “expert knowledge”—is developed through a complex composition of multiple scientific, cultural, political, geographic, and social components, which are influenced by (differing) contexts, situated knowledges, and political agendas (Epstein, 2021; Pellizzoni, 2014). Institutions, in particular, are central within the “diverse actors or configurations of interests and values” (Forsyth, 2020, p. 1041). More specifically, a co-productionist approach explores how knowledge-making is folded into (strategies of) governing, as well as how institutions (as vehicles of governance) constitute the production and utilization of knowledge (Jasanoff, 2004).

The attention to the importance of institutions is a unique aspect of co-production (Pape, 2021). In particular, Jasanoff (2004) highlights the role of institutions and state power in knowledge-making and scientific practices. For policymaking settings, institutions are particularly salient as they are “required to interpret evidence, make law, standards methods, disseminate knowledge, or ratify new identities” (Jasanoff, 2004, p. 40). Through centering institutions and individuals aligned with the state, co-production “offers new ways of thinking about power, structures, expertise, knowledge, and relations of authority” (Hallberg & Kullenberg, 2019, p. 43; see also Epstein, 2021; Pape, 2021).

Through this lens, I trace the co-produced knowledges of fairness and protection in IOC scientifically supported policies to draw out the multiple and intersecting knowledges guiding policy creation and implementation, as well as the role of the IOC (as an institution and governing authority) in privileging or silencing certain discourses. At the same time, I highlight the inseparability of scientific, sociocultural, and political dimensions in constructions, developments, and adaptations of fairness and protection, particularly in scientifically driven policies and topics.

**Methods**

Data consisted of policy texts and supporting secondary media documents, which were publicly available online, and archival documents collected from the OSC archives in Lausanne, Switzerland. The OSC has an embargo limit of 30 years on most archival documents, which creates a notable time gap between available documents and the IOC’s first official transgender policy in 2004 and limited the number of explicit archival references to transgender athletes. As such, I reviewed “fonds” (i.e., topically organized archival collections) that I thought might include relevant documents, meeting minutes, and/or correspondences. This included IOC Presidents Brundage, Killanin, and Samaranach; the Medical Commission; the Athletes Commission; and the Olympic Program Commission, in addition to the IOC meeting and executive meeting minutes. Throughout this process, I examined documents that engaged questions of science, gender, and inclusion: central topics to transgender athlete inclusion. For example, in the Medical Commission fond, documents on “burn-out,” or when young athletes suffer “physically and mentally from becoming too heavily involved [in their sport] too soon” (P5, p. 1), often described the differences between girls and boys in the frequency and severity. This attention to gendered distinctions then led me to collect all related files on “burn-out.”

Overall, I identified seven categories: (a) gender verification testing; (b) testosterone; (c) birth control and pregnancy; (d) women’s participation in the Olympic Games; (e) Olympism (i.e., the philosophy of the Olympic Games, which the IOC characterizes as a “philosophy of life”); (f) doping and, (g) burn-out. Collected documents included published and unpublished materials such as meeting minutes, correspondences, keynote addresses, reports, scientific studies, and reports/requests from IFs. The relevant archival materials were typed and were nearly all in English or translated into English. I assigned codes to the cited materials as follows (see Appendix).

Policy and archival documents were analyzed through a two-step approach: thematic analysis, followed by Foucauldian discourse analysis. Braun and Clarke (2006) describe thematic analysis as a “method for identifying, analyzing and reporting patterns (themes) within data” that also permits retention of unedited language in the data and fluidity in the process of grouping codes and generating themes (p. 79). I iteratively read the policies and documents, extracting and annotating phrases and passages (while also recording what category they were excerpted from) that were relevant to my research questions (Markula & Silk, 2011). I sorted these excerpts into two separate codebooks, one for policies and one for archival documents, and thematically grouped them into categories such as “biologized stereotypes,” “governance,” and “human rights.” I then conducted a Foucauldian discourse analysis of both data sets to investigate how and under what contexts these themes appeared in archival documents. In particular, a Foucauldian discourse analysis approach locates dominant discourses and knowledges and asks, “where they come from and how they have become dominant” (Liao & Markula, 2009, p. 40). Throughout this analytic stage, I was attentive to which discourses were mobilized to shape ideas of fairness and protection, and how knowledge(s) informing policy texts were shaped (un)evenly by science and/or organizational values. As I began writing, I iteratively consulted relevant literature to contextualize my findings.
Findings

To trace the developments of fairness and protection in IOC documents and policies, I present my findings as “key moments” (Birrell, 2007; Birrell & McDonald, 2012). I do not provide a strictly chronological or comprehensive history, but rather, I aim to identify notable points of change pertaining to “fairness” and “protection.” I identify three key moments in all: (a) early beginnings and the IOC Medical Commission’s focus on sex control and doping, (b) expanding and complicating areas of “scientific” research and governance, and (c) today’s transgender “issue.”

Taken together, these findings demonstrate that, while fairness and protection often circulate and privilege medico-scientific discourses, these knowledges are always co-produced with sociocultural, (geo)political, and psychological considerations, particularly through reinforcing biologized gender norms and greater (organizational) prioritization of diversity, inclusion, and human rights.

Early (Scientific) Beginnings of the IOC Medical Commission: Doping and Determining “Sex”

Commitments to fairness and protection have always been fundamental to the Olympic Movement, the IOC, and, upon its creation in 1967, the IOC Medical Commission. The centrality of these twin goals, particularly for the IOC Medical Commission, was made transparent by Dr. Eduardo Hay, who remarked that, “The principal aim of the IOC Medical Commission is the protection of the athlete’s health and life, and as the second objective the Commission endeavors to safeguard fair play, equality for all toward the goal of ‘victory’” (M9). “Fairness” extended to “equality for all” and “protection” was understood as safeguarding athlete health and fair play; goals that immediately engage physiological realities and social, cultural, and political interpretations of what constitutes “fair play.”

Although issues of doping and determining who “counted” as a woman were initially brought to the attention of the IOC in the 1930s and again in the 1950s, the IOC did not take concrete action until creating its Medical Commission (Pieper, 2016). The Commission was tasked with creating “medical controls concerning both doping and the establishment of sex” (P1), which manifested in administering and organizing dope controls, and evaluating a woman’s sex to determine her eligibility for the women’s category. As the IOC Medical Commission’s members consisted of “well-known experts in the field of sports medicine” (P1), their approaches to issues of gender verification and doping controls were explicitly labeled as being “based on scientific facts” (M10). Paired with the characterization of doping and gender verification as “medical controls” and the latter requiring medical examinations (by physicians), the Commission’s medico-scientific groundings were solidified.

Consequently, early definitions of doping and gender verification were often concise, quantitative, and driven by (inaccessible) medical understandings and language. One year after the IOC Medical Commission was created, standardized drug tests and gender verification measures were enforced for the first time at an Olympic Games (i.e., the Grenoble Games; Pieper, 2016). In the aftermath, Dr. Jacques Théibault submitted a report on the administration of dope control and gender verification, dedicating multiple pages to descriptions of the methods employed. As the doctor primarily responsible for overseeing gender verification testing at Grenoble, he explained that the processes to “affirm totally the diagnosis of sex” included:

research of the Bar corpuscles in the cellular nucleus of the Buccal mucous membrane after hydrolysis by hydrochloric acid and toluidine blue coloring (or 1% violet Cresyl). The presence of the chromatin corpuscles is exclusive to the female sex and will be evident whenever there are two chromosome X. (P2, p. 4)

Using medical rhetoric (e.g., “Bar corpuscles,” “Buccal mucous membrane,” “chromatinian corpuscles”) is both highly precise and inaccessible to the point of discursive elitism (Thurlow & Jaworski, 2017), and reinforces a separation between those well-versed and those less familiar with these discourses. The inaccessibility of medical knowledge, which “has always been the expression of a closed social class” (Gensini et al., 2005, p. 64) to outsiders fortifies medicine’s unquestioned authority and purported objectivity (Karkazis, 2008). Similar strategies appear in the IOC Medical Commission’s handling of doping, as many early documents and reports outline the pharmacological effects, adverse effects and dangers, and prevention and diagnosis strategies with extremely technical and precise medical terminology (M7, M8). Although relying on medico-scientific discourses and knowledges aligned with the scientific foundation of the IOC Medical Commission, the result was purportedly unbiased but narrow interpretations and implementations of fairness and protection.

Despite the dominance of medical discourses, normative ideals relating to sex, gender, and bodies were subtly incorporated or referenced to regulate and enforce (constructions of) fairness and protection, as illustrated in gender verification rationales. Before describing the doping and sex testing methods employed in his 1968 report, Dr. Théibault outlined the motivation behind implementing both tests at the Grenoble Games. For gender verification testing or, as he characterized it, “research into femininity,” he explained the importance of this “issue” was due to these so-called females who are as strong as oxen and who break so many records. It is inevitable that sooner or later the real representatives of the weaker sex will feel persecuted and will demand that their feminine records be attributed to them. (P2, p. 1)

In essence, women who excelled at sport were depicted as stealing opportunities from the “real representatives of the weaker sex”: arguments that are echoed in anti-transgender opinions today (Sharrow et al., 2021). By casting doubt on their femininity through labels such as “so-called females,” Dr. Théibault’s comments reinforce gender stereotypes around what a woman’s body should, and is, capable of achieving (in sport), thereby aligning with assumptions of the superior and athletically adept male body versus the inferior and athletically inept female body. Such ideas were reaffirmed by the IOC Medical Commission in its unanimous decision to not conduct sex tests “on a random basis but on all the three finalists,” thus implying that women who were athletically successful were (possibly) men (M5, p. 1). Yet, the purported incompatibility of women with the demands of physical activity and sport are not based in immutable scientific “facts” but instead, are derived from false sex/gender dichotomies shaped by sociocultural and (geo)political expectations and logics (Fausto-Sterling; Westbrook & Schilt, 2014).

Co-produced knowledge extended beyond gender stereotypes into human rights and “ethics” commitments. For instance, in response to a suggestion that the chromosome sex test being “replaced by a visual test,” IOC Medical Commission chairman Prince Alexandre de Mérode did not draw upon previous scientific
arguments underscoring the improved “scientific” accuracy of the Barr body test over visual checks (Cooky & Dworkin, 2013). Instead, he noted that “the Commission had chosen chromosome tests as they were less unpleasant than clinical tests. Human dignity had to be respected” (M1, p. 13, italics added for emphasis). Put differently, the importance of human rights was a vital and central concern, even and especially concerning scientifically based procedures and approaches.

Doping discussions particularly illustrated the centrality and malleability of ethics (Henne, 2014). Explorations into the “fundamental problems of doping” underscored impacts on athlete health, but especially focused on doping’s violation of “the basic ethical principles of the Olympic spirit” (M15, p. 27). The “ethical principles of the Olympic spirit,” or “Olympism,” consists of multiple considerations including a recognition that practicing sport is a human right, promoting peaceful society and preservation of human dignity, and no discrimination of any kind (IOC, 2020). These qualities manifest, as the IOC emphasizes, into a “way of life” (IOC, 2020). Given that Olympism is imbued into every facet of the IOC, its policies and supporting research, even in those that are scientifically driven, are never devoid of social, cultural, and (geo)political considerations. Despite the profuse medico-scientific discourses in discussions of sex control and doping, human rights and inclusion were prioritized to the point where IOC Medical Commission member Professor Arnold Beckett observed, “the philosophy of the Medical Commission had always been and would always continue to be that it would prefer to have guilty people escape than one innocent person judged guilty” (M11). Simply, sociocultural, and political consequences were always as important as scientific “facts.”

Beyond Doping and Sex Control: Complicating “Scientific” Research and Policies

As scientific knowledge and technology modernized and complexified, so too did the IOC’s management of dope controls and sex tests. In addition, the IOC Medical Commission began to expand its research into other areas (M6), which was reflected in the broader IOC and Olympic Movement’s attention to topics such as the representation of women, elevating athlete voice, and educating young athletes. Correspondingly, there emerged a more concerted effort to consider relevant ethical, (geo)political, social, and cultural considerations. While maintaining its utilization of medico-scientific knowledges, the IOC Medical Commission (and the IOC more broadly) more overtly embraced these other dimensions in its policies and supported research.

In the case of sex testing, proliferating disagreements with testing procedures and necessity highlighted ethical issues and the multiplicity of sex/gender. A memorandum concisely illustrated these dual concerns as the authors described sex testing as “irresponsible from a medical point of view, and unethical,” later noting that among the three primary criteria of sex—chromosomal, somatic, and psychosocial—the Barr body exam elicited no information about the somatic or psychosocial sex (P3). Then-IAAF (International Association of Athletics Federations, now World Athletics) vice president Dr. Arne Ljungqvist echoed this logic in a meeting between the IAAF and the IOC as he highlighted the tests’ insufficiency to identify women who benefited from “unfair” physiological advantages (M14, p. 18). Following multiple conversations within and between the IOC, the IOC Medical Commission, and external “experts,” the IOC ended mandatory sex testing in 1999 (Pieper, 2016).

Still, concerns around “fairness” for women athletes and the women’s category persisted into several avenues. In 1980, the IAAF requested to include the women’s 3,000-m run, 400-m hurdle race, and marathon (M10), with the marathon prompting debate and conversation over whether women could run 26.2 miles without substantial damage to their physiology (e.g., heart, oxygen absorption, hormonal levels, reproduction). Following observations and research by sports physiologists, it was noted that, Contrary to the traditional opinion that the physical performing capacity of a woman is limited and that she cannot be exposed to greater strain mainly with respect to her endurance, sports physiological research and experience have shown completely different results . . . . There is no relevant sports medical contra-indication against women running marathon races. (C1)

Contemporary medical and scientific evidence demonstrated that women could successfully run and compete in endurance races, which directly contradicted historical opinions. This shift in perception around the relationship between women’s bodies and the physical demands of (endurance) sports demonstrates, not only the changeability of science over time, but also the inherent gendered, political nature of interpreting medico-scientific “facts” (Cahn, 2015). Without denying the veracity of the developing and developed research “proving” that women could run in endurance events—women had been running in IAAF-recognized marathons since 1926 (World Athletics, 2022)—the emergence of these conclusions neatly and perhaps opportunistically aligned with the IOC’s proclamations of increasing women’s participation and representation in the Olympic Games, the IOC, and the Olympic Movement.

Efforts to increase the participation and inclusion of women utilized multiple approaches and were driven by a broad emphasis on investing in young athletes and health-related research. The relationship between Olympic athletes and young athletes, particularly around doping, was recognized by IOC Medical Commission member Dr. Beckett who wrote, “if these [Olympic athletes] were known to be using drugs as a permitted adjunct in competitions, then there would be a further pressure to escalate the misuse of drugs in society” (P4). Nearly 20 years later, IOC member Mr. Franco Carraro echoed these same sentiments: “one of the most worrying aspects of the doping issue was not the doping of high-level athletes but that of mediocre or young athletes” (M2, p. 16).

While intending to provide insights into (young) athletes’ health, research on burn-out (which was thought to especially affect young athletes), often circulated and drew upon biologized and reinforced gender stereotypes. In 1985, Dr. Beckett created and participated in a special commission to determine the frequency of burnout and potential solutions (C2, P5). Through consultations with several individuals and organizations, the commission found that burn-out was rampant throughout all competition levels, but especially for girls:

The burn-out of young people in some sports is becoming an increasingly serious problem. The evidence to date indicates that girls are more at risk than boys. There is also evidence indicating that the hormonal balance in girls can be seriously upset by strenuous exercise, especially when taken beyond reasonable limits. (C2)

While purportedly based in scientific evidence, Dr. Beckett’s observation—that girls are more at risk for experiencing burnout than boys and have the potential to suffer greater physical
consequences—draws upon biological stereotypes that girls’/women’s bodies were and are weaker than boys’/men’s bodies (McDonagh & Pappano, 2008). Despite framing these physiological and hormonal aspects as “concerns,” Dr. Beckett’s analysis ultimately normalized gendered bodily hierarchies through mobilizing (co-produced) medico-scientific discourses.

Lastly, the confluence and multidimensionality of sex/gender, science, fairness, and protection were also reflected in the nearly simultaneous characterizations of birth control as a banned substance and pregnancy as a form of doping. For 5 months in 1987, norethindrone—a progestin found in most oral contraceptives—was added to the IOC’s list of banned substances given its transformation in the body “in a small amount [of] the anabolic steroid, Nandrolone” (C3, C4). Its removal was motivated by profuse criticisms from multiple organizations and individuals who underlined the chemical, pharmacological, practical, and ethical dilemmas. For instance, Dr. Andrew Pipe from the Canadian Academy of Sport Medicine observed that “many female athletes are resentful of this regulation, and feel their well-being is jeopardized by a process designed to apprehend a cheating minority” (M13, p. 52). Correspondingly, and confronted with questions around how fairness was constructed and who benefitted/was harmed, the IOC Medical Commission voted to rescind the ban on norethindrone, despite medical evidence indicating the performative advantages resulting from oral contraceptives (M13).

Less than a year later, concerns around pregnancy as a doping method emerged in a letter to Mérode (C5), paralleling a discussion in an IOC Medical Commission meeting 4 years prior. In initial discussions, the idea was dismissed as members did not feel “that such a procedure would be of benefit to the female athletes” (M12). One member went so far as to assert that “the persons concerned had obviously not observed women during their first few weeks of pregnancy, when they were frequently ill” (M12). Ultimately, in both 1984 and 1988, the IOC Medical Commission did not invest significant time or research into such claims and pregnancy was never formally considered a doping mechanism.

Nonetheless, the close chronological proximity between oral contraceptives (which is often a method for preventing pregnancy) and pregnancy illustrates the operationalization of co-produced scientific “evidence” to govern and regulate women’s bodies: approaches that are always guided by sociocultural and political aims despite (strategic) utilizations of medico-scientific knowledges (Jordan-Young & Karkazis, 2019; Pape, 2020b; Posergh, 2022). Such was also the case for norethindrone. The expediency with which its initial ban and removal occurred, as driven by both the ethical criticisms and (re)interpretations of science, demonstrates the malleable nature of medico-scientific evidence in order to opportunistically achieve multiple, or even contrasting, political, organizational, personal, or sociocultural goals: a messy landscape that continues today, particularly in discussions around transgender athlete inclusion.

The Transgender “Issue”

While questions around if and how to include transgender athletes (at all levels of sport) are particularly salient today, the topic was first broached in the 116th IOC Session, which was held soon after the Stockholm Consensus release (M3). In Dr. Ljungqvist’s capacity as the newly appointed IOC Medical Commission chair and participant on ad-hoc committee that proposed a consensus for “person who has changed sex to compete in sports competitions” (IOC, 2004), he stated that,

There had been many newspaper headlines stating that the IOC was “opening the door” to transgender athletes. This, however, was false. The door had always been open, but there had never been any regulations governing transsexuals’ participation in the Games. They had “identified” rather than “opened” the door. (M3, pp. 15–16)

In response to questions regarding the guideline’s development, Dr. Ljungqvist noted that the available “empirical data . . . was very limited because this was a hidden problem in society. People did not usually come forward with this problem” (M3, p. 17). Then-IOC President Rogge closed the discussion and assured that the “IOC Medical Commission and Executive Board wanted to protect women from the unfair advantage of physiology of original gender” (M3, p. 17). While assumedly intended to assuage concerns over the inclusion of transgender (especially transwomen athletes), President Rogge’s operationalized discourses of fairness and protection privileged biologized understandings of gender as co-produced through binary assumptions of the “superior male body/inferior female body” (Pape, 2019, 2021).

Following the Stockholm Consensus’ release, discussions around transgender athletes and eligibility policies remained sparse until January 2010 when the IOC Medical Commission convened a meeting with scientific experts to update its recommendations (M4). Around 5 years later, the IOC replaced the Stockholm Consensus with its 2015 consensus on sex reassignment and hyperandrogenism wherein the “overriding sporting objective is and remains the guarantee of fair competition” through protecting the health and safety of all athletes and the integrity of the women’s category (IOC, 2015, p. 2). This new regulation was prompted by the “growing recognition of the importance of autonomy of gender identity” and that “require[-ing] surgical anatomical changes as a pre-condition to participation . . . may be inconsistent with developing legislation and the notions of human rights” (IOC, 2015, p. 2). Moreover, surgery can often be impossible or inaccessible due to economic, structural, and geographic-related barriers (Wesp & Deutsch, 2017). Thus, rather than requiring surgery, the IOC set a limit for 10 nanomoles of testosterone per liter of blood for transwomen seeking to compete in the female category, with no restrictions for transmen. Though the document did not detail specific treatments to achieve this testosterone standard, the shift to hormone monitoring was intended to increase accessibility for and inclusion of transgender athletes.

Yet, increasingly, the IOC’s new testosterone thresholds came under scrutiny, particularly in light of the complex relationship between testosterone and performance (Jordan-Young & Karkazis, 2019). Therefore, after a 2-year consultation with athletes, IFs, and human rights, legal, and medical experts, the IOC released the Framework (IOC, 2021). However, several researchers in the sport, exercise, and medicine fields have criticized the Framework for its lack of scientific basis, implementation challenges, and the possibility of extreme consequences (Pigozzi et al., 2022). Concurrently, critical sports scholars have highlighted the Framework’s limitations as it continues to operate within sex segregation and a strict gender binary (Storr et al., 2021), thereby reasserting a dichotomous and hierarchical model of biological difference (McDonagh & Pappano, 2008; Pape, 2019; Tännösjö, 2000). However, the impacts are not felt evenly across all communities of women and instead, disproportionately affect those who do not fit within Western normalized female body standards (Henne & Pape, 2018; Karkazis & Jordan-Young, 2018).
At the same time, the reticence to reimagine beyond a sex-segregated system and binary classifications of bodies has undergirded much of the IOC’s policymaking processes and corresponding research, as illustrated in the example of burn-out. Without denying the material and physiological differences between women’s and men’s bodies, framing burn-out as particularly disruptive to girls’ hormonal cycles and thereby characterizing them as high(er) risk, circulated and reinforced both women’s inferiority and the paternalistic need to protect women from injury (McDonagh & Pappano, 2008). While the Framework attempts to push back against stereotypes surrounding women’s athletic ability and assumptions of “unfair” competitive advantages that correspond to “sex variations, physical appearance and/or transgender status” (IOC, 2021, p. 4), through firmly noting that “most high-level organized sports competitions are staged with men’s and women’s categories competing separately,” the IOC and its Framework fall short of addressing sport’s problematic structure (IOC, 2021, p. 2).

Still, the Framework’s principles are aligned with many of the IOC’s previous scientifically driven discussions and resulting policies in terms of ethical, practical, and systemic considerations and consequences. For instance, the Framework encourages other sporting organizations to move away from “relying on testosterone as a one-size-fits-all measure of eligibility” for the women’s category through acknowledging the potential damage to the health and well-being of (transgender) athletes that may occur from mandating a specific form of medical treatment (Storr et al., 2021). In the case of the IOC’s short-term ban on norethindrone, similar arguments underlined the ethical and practical difficulties of presenting a narrow number of medical options for a specific community of individuals (i.e., women). Dr. Roy Voy, Chief Medical Officer of the United States Olympic Committee in particular, argued that requiring women to find a different form of birth control can be nearly impossible for women as “once the right oral contraceptive is found, few women wish to, or are able to change to another” (C3).

Adding further medical contextualization to Dr. Voy’s point, Dr. Andrew Pipe, Director of the Canadian Academy of Sport Medicine, wrote that, “it has been pointed out that the decision as to which oral contraceptive preparation is prescribed for a woman is a judgement that should be made on clinical grounds and no other” (P6). Echoing prochoice discourses (Powell, 2022), an individual’s oral contraceptive decision should be between the individual and medical professionals, not sport organizations or policymakers. On a practical level, in the case of the IOC’s (temporary) ban on norethindrone, accessing the necessary physician visits to change prescriptions, which “may require frequent visits, considerable time, logistical and financial obligations,” contradicts overarching commitments to increasing participation of all athletes in organized sports (a goal that is simultaneously recognized by the Framework’s critics).

Although the importance of free choice for (women) athletes with regard to medical treatments is universally agreed-upon, “that the athlete must comply at all levels is coercive” (Karkazis & Carpenter, 2018, p. 583). Put differently, demanding that athletes (i.e., women) subscribe to a particular medical treatment to obtain an arbitrary eligibility standard—whether framed as mandatory or “voluntary”—violates principles of care, dignity, privacy, and ultimately, fairness for all athletes (Karkazis & Carpenter, 2018). As such, the Framework recognizes the historical (and, in some cases, contemporary) role of eligibility criteria and policies in perpetuating systemic discrimination and severe harm on certain women (Bekker & Posbergh, 2022) and thereby attempts to create an approach that comprehensively attends to the intersections of science, gender, medical care, and human rights, moving toward a “contemporary vision of gender-inclusive sport” (Bekker et al., 2022; Storr et al., 2021, para. 25).

**Conclusion**

In all, fairness and protection are far from universal, unbiased truths. Rather, these ideas reflect a confluence of ethical, sociocultural, and (geo)political dimensions that then shape how and when science is interpreted, operationalized, or, in some cases, questioned to balance multiple organizational goals. Despite the IOC Medical Commission’s medico-scientific origins, as its interest and research in different areas expanded, so too did its attention to human rights, (gender) diversity, and inclusion. Notably, these considerations were not viewed as incongruent with scientific evidence, but rather, one of many factors, as reflected in the removal of the norethindrone ban. Despite this concerted attention to social, cultural, and political values, biologized gender stereotypes persisted throughout this co-produced knowledge, as illustrated in the perceived higher risk of girls to develop burn-out and their potential for hormonal damage due to strenuous exercise. Subsequently, co-produced knowledge informing policies and guidelines, much like ideas of fairness and protection, are complex, messy, and malleable.

For transgender eligibility policies, the perceived “either/or” landscape of human rights versus scientific “facts” is a pretense. While it might appear that such policies predominantly, if not exclusively, rely on medico-scientific evidence to underpin their guidelines—a characteristic often mobilized by proponents of bans or significant restrictions on transgender athletes—instead, policies consist of an intricate blend of medical, scientific, and sociocultural dimensions, as unbiased science does not and cannot exist (Fausto-Sterling, 2000; Jordan-Young & Karkazis, 2019). Indeed, ignoring organizational commitments to human rights, inclusion, and diversity because of “objective scientific facts” is a political choice (Bekker & Posbergh, 2022), and is both unaligned with previous scientifically driven fairness- and protection-based guidelines (as illustrated throughout this article) and inherently contradicts (the veneer of) objective scientific evidence. With this in mind, while the Framework is not without flaws (e.g., its reinforcement of binary, hierarchical classification categories), its centering of human rights and emphasis on inclusion, in tandem with scientific evidence, is appropriate and just (Greepy & Lenskyj, 2022).

In considering the future of the IOC’s policymaking efforts (and indeed, other international sports federations), I would maintain that through examining past policies and guidelines through a co-productionist lens, there might be cautious optimism for the future. This is not to dismiss the notable instances in which IFs and the Court of Arbitration for Sport (sport’s highest ethical court) have selectively applied science on issues around gender, testosterone, and performative advantages (see Pape, 2019 for a more robust discussion of the Court of Arbitration for Sport’s decision on Dutee Chand) or growing calls for sex testing at multiple levels of sport (Rosenberg, 2022). Yet, amidst the (sometimes vicious) backlash to trans inclusion efforts, there is a growing body of work by reputable international organizations, researchers, and academics that has critically interrogated the scientific basis for anti-transgender arguments, thereby increasing awareness around how, when, and why science is co-produced and politicized (Canadian Centre for Ethics in Sport, 2022). Likewise, the IOC’s release and continued support for its Framework, particularly in response to expressed concerns over the Framework’s “lack
of scientific basis,” illustrates a meaningful step toward developing less exclusionary and biocentric policies (Martowicz et al., 2023). Put simply, in placing the past in conversation with the present, perhaps there is reason to hope for a productive future.

While this article fills a necessary gap in tracing the development of fairness and protection in scientifically driven policies for sports organizations, there are two significant limitations. First, it is tailored to the IOC Medical Commission, its guidelines, and the broader Olympic Movement. While the IOC often acts as a template for other sport organizations and their policies, this article’s findings remain somewhat unique to the IOC, particularly given the organization’s international reach, breadth of resources and funding, and well-kept archives. Thus, to construct a more comprehensive examination on the confluence of scientific and sociocultural dimensions in policymaking, future research should examine how other (sports) organizations have interpreted fairness and protection through multiple and/or specific knowledge(s) and rationales. Second, while archival materials provide important historical context and insights, this data source is limited in providing a more comprehensive picture of how, why, and through what means fairness and protection are created and upheld in policies. To address this gap, future research should include multiple data sets, such as (social) media, newspaper articles, and/or interviews with relevant contributors.

Acknowledgments
This work was supported by the Olympic Studies Centre’s PhD Students and Early Career Academics Research Grant Programme and the University of Maryland’s Whitlark Endowed Fellowship.

Notes
1 An important exception was the chairman of the IOC Medical Commission and IOC member Prince Alexandre de Mérode, who held this position from 1967 until his death in 2002. While Mérode lacked a medical background, he expressed great interest in the doping problem at the time. As such, then-IOC president Avery Brundage appointed Mérode as president of the IOC Medical Commission, though not without great controversy. For an overview of Mérode’s legacy, see Dimeo et al. (2011).

2 As the first official policy on transgender eligibility from an international sports organization, the Stockholm Consensus required sexual reassignment surgery for all transgender athletes pre- and postpuberty, along with a minimum of 2 years in an individual’s newly assigned gender. For those who had sexual reassignment surgery after puberty, they were also required to have “legal and governmental recognition of their gender conferred by their country of citizenship; hormonal therapy administered by medical [personnel] to minimize ‘gender-related advantages’ in competition; and live for a minimum of two years in their newly assigned gender” (Cavanagh & Sykes, 2006, p. 76).

References


Appendix: IOC Sources

Correspondence
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C4 1987, July 22. Letter, Claus Clausnitzer to Prince Alexandre de Merode, Chairman of the IOC Medical Commission.
C5 1988, May 24. Letter, Manfred Donike to Prince Alexandre de Merode, Chairman of the IOC Medical Commission.

Minutes of the IOC sessions
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M2 1994, September 4–5, 103rd IOC Session.
M3 2004, August 10–12, 29, 116th IOC Session.
M4 2011, July 6–9, 123rd IOC Session.

Minutes of the meetings of the IOC Medical Commission
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M7 1970, June 12.
M8 1971, July 29.
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