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Why do sports fans support or oppose the inclusion of trans women in women's sports? An empirical study of fairness and gender identity

Abstract

This article presents the responses of 4,113 sports fans (55% of whom self-identified as female), collected via an online survey from April 2019 to June 2019, about their views on trans women competing in women's sports. In presenting the data we draw on two recurring themes – gender identity and fairness – to explain the contrasting views surrounding the traditional gendered organization of sports. The overall findings are that just over half of our male and female participants are against the inclusion of trans women, with non-binary participants more supportive and those who preferred not to disclose their gender identity less supportive. The article concludes by suggesting that whilst there is evidence of progressive attitudes amongst our participants, there is also strong resistance to trans women competing in women's sports that is primarily related to the perceived retention of an unfair biological advantage by being assigned male at birth.

Research Context

Across the world, sports remain organized on traditional binary notions of biological difference between the two sex categories of male and female. Kamasz (2018, p. 573) illustrates that whilst sex concerns the biological and physiological attributes bimodally separating males and females (such as XX or XY chromosomes, estrogen, testosterone, penis, vagina, ovaries etc.), gender 'is a cultural and social construction reflecting in the differential self-identities, behaviours and roles associated culturally with biological sex.'

Anderson (2009) explains how the gender binary in sports has always existed in a socially constructed framework, containing assumptions about behaviour, rules and identity that reflect dominant traditional attributes and behaviours surrounding masculinity for boys and men (i.e. strong, tough, and assertive) and femininity for girls and women (i.e. gentle, sensitive, and compassionate). This gender binary has often meant that sports have reflected social inequalities, particularly in relation to gender where women have throughout history been viewed as subordinate to men (Messner 1988).

Since the 1980s, the inclusion of lesbian, gay and bisexual (LGB) athletes has led to sexuality being more prominent in global sports (Anderson, Magrath and Bullingham 2016; Magrath 2018). Although modern sports are not always viewed as welcoming inclusive spaces for LGBTQ (TQ standing for transgender and queer/questioning) athletes, Anderson (2009) has demonstrated that hegemonic gendered structures are changing (primarily surrounding masculinity), but still 'different' gendered bodies remain objectified and excluded. In the case of trans athletes, one of the reasons for this exclusion, according to Travers and Deri (2010, p. 488), is because they have challenged the 'traditional organization of sport on the basis of binary sex categories.'

Trans is often viewed as an umbrella term that refers to those people who have nonnormative gender identities (i.e. that do not conform to established standards or norms to the traditional gender binary) to the sex assigned to them at birth. It could also include individuals who might not identify with any sex category. The term can include transgender, transitioned and formerly transsexual, and comprises individuals who might be seeking legal and medical re-assignment to a new sexual identity that matches their gender identity, other individuals taking hormonal supplements to reflect their new gender identity, whilst some choose to not do either, and other individuals who may be more gender fluid (i.e. their gender identity changes day by day).

Numerous challenges to the gendered organization of sports have arisen in the last several decades, including Renee Richards, a transgender tennis player who, in 1977, competed on the Women's Tour after successfully challenging the Women's Tennis Association against barring her participation (Birrell and Cole 1990). Others include former Olympic gold medal winner, Caitlin Jenner, who announced her transition in 2015, as well as Rachel McKinnon (cycling), Hannah

Mouncey (Australian Rules football and handball), Chloe Jonsson (CrossFit), Andraya Yearwood (athletics), Laurel Hubbard (weightlifting), Tiffany Aubreu (volleyball), Jaiyah Saelua (football), Fallon Fox (mixed martial arts), Alessia Almeri (volleyball), and Jaycee Cooper (powerlifting).

Travers (2018, p. 651) explains how trans participation in sport is intersectional given that ‘race, class, sexuality, gender and nation constitute assemblages of power and privilege.’ In the context of race and gender, Anderson and Travers (2017, p. 3) state how, ‘assumptions of unfair male advantage, for example, lean heavily on a western image of white, middle- and upper-class female frailty. The ways in which women of color who compete in sport are read through this lens reveals the extent to which the sex/gender binary is racialized at a fundamental level.’ Indeed, the intersection of race and gender was played out by Fallon Fox, a mixed-race trans woman, who it was argued posed a threat by competing against cisgender women in the sport of mixed martial arts (MMA). As McClearen (2015, p. 84) outlines in her analysis of Fox, ‘her race certainly codes her in the racist mythology of the threat of the black male body. The discourses that vehemently object to her participation in MMA on the grounds of cis women’s protection also conjure the threat of black men.’

When disruptions to the natural sex/gender binary occur, Westbrook and Schilt (2013) outline how this can lead to a ‘gender panic’. In the case of trans women competing in women’s sports, Westbrook and Schilt refer to them as being seen to have an ‘improper body’ that gives them an unfair advantage when competing against cisgender (a non-trans identity where people’s gender identify matches their sex assigned at birth) women.

Across the literature, fairness is a concept that is difficult to define as it is understood in a variety of different ways, but it is widely recognized that sport is not always fair or equal as athletes regularly differ in physiological, psychological and sociological characteristics (Coggon,

Hammond and Holm 2008). Thus, in the context of trans participation in sport, Teetzel (2006, p. 231) argues:

...we could most definitely describe a transgendered athlete as acting fairly if he or she follows the rules of the game, embodies the spirit of the game, and makes a commitment to cooperate with his or her competitors in the process of competing.

Although the experiences of trans athletes and the impact of policies in sports has received academic attention (see, for example, Anderson and Travers 2017; Caudwell 2014; Jones et al. 2017; Krane 2018; Love 2014; Phipps 2019; Tagg 2012, Teetzel 2014; Travers 2018; Travers and Deri 2010), very little is known regarding the views of sports fans. To address this, we base this article on the responses of 4,113 sports fans, collected via an online survey, to three important research questions: (1) what are their views on whether trans women should be able to compete in women's sports?; (2) amongst those participants who demonstrate more inclusive views, what are the common reasons behind their support?; and (3) amongst those participants who demonstrate more resistance, what are the common reasons behind their lack of support?

In presenting the results, we draw on contrasting perspectives surrounding the recurring themes of gender identity and fairness. Whilst just under half of our participants, who described themselves as male or female, were supportive of the inclusion of trans women, other participants believed the progress cisgender women (designated female at birth) have made across sports since the 1970s is now challenged by the presence of trans women. This leads to resistance, with those participants who are opposed to the inclusion of trans women maintaining that they retain biological advantages of being born male regardless of their new gender identity. Emerging from this are perceptions of fairness, with concerns that the masculine characteristics gained through puberty (such as aggression, strength, force, and power) are migrated into women's sports and present trans women with an unfair competitive advantage over cisgender women. Other

participants felt there was evidence of a ‘gender panic’, with the supposed threat to women’s sports not yet resulting in significant success for trans women.

Policy

Throughout the history of women’s sports, there have been concerns amongst national and international sports governing bodies about the eligibility to participate. Heggie (2017) outlines how this began in the 1930s when biomedical experts were used by sports organizations to provide scientific tests to verify that women competitors were actually women.¹ With regards to trans participation, throughout the twentieth century most sports governing bodies had no real policy in place and, instead, relied on the simple fact that for women to compete they had to have been identified as female at birth (Love 2017). To try and rectify this, in 2004, the International Olympic Committee (IOC) approved a new policy (referred to as the ‘Stockholm Consensus’) that addressed the eligibility of trans men and women athletes to compete in IOC sanctioned events. Emerging out of this new policy were three key components: (1) trans athletes were required to have undergone gender reassignment surgery; (2) trans athletes were required to have undergone hormone therapy treatment and lived in their newly-assigned gender for at least two years prior to competing in an Olympic event; and (3) trans athletes were required to have been given legal recognition of their new sex by their home government (Travers 2018).

Although widely recognized as an important step for sports to be more inclusive of transgender athletes, the Stockholm Consensus also came under criticism. A number of these concentrated on the policy’s emphasis on following prescribed medical criteria, with Sykes (2006, p. 11) arguing how it ignored ‘all local, economic, cultural, and racial differences in how transsexual athletes have access to sex reassignment surgeries or hormone usage’. Likewise, Carroll (2017) and Love (2014) were critical of the policy for its lack of inclusion surrounding

those who identified as transgender but did not want to undergo genital reconstructive surgery. Critics argued that genital reconstructive surgery had little bearing on athletic performance, whilst Cavanagh and Sykes (2006) highlight how a number of governments refused to provide a legal document designating the new gender identity of those who were transitioning.

Despite these criticisms, the implementation of the Stockholm Consensus led to changes across other national and international sports governing bodies who then modified their own conditions of eligibility for trans men and women. For example, in their systematic review of the literature relating to trans sport participation, Jones et al. (2017) explained how a number of sports organizations, including USA Gymnastics, USA Swimming, the Lawn Tennis Association and the Rugby Football Union adapted their policies as a result of this new ruling. Outside of sports at the elite level, Travers and Deri (2010) refer to how some North American softball leagues have become trans-inclusive spaces that are no longer strictly women-only, thus showing how some sports can move beyond the two-sex model to start including trans women and men (all at different stages and variations of transition) as well as those individuals whose gender identity falls outside of the traditional gender binary. This, Travers and Deri (2010) suggest, is evidence of a culturally inclusive shift towards the participation of trans athletes.

The IOC policy was updated in 2015 to remove the requirement for genital reconstructive surgery and replaced it with the need for hormonal treatment for those transitioning from male to female. There was no restriction on trans men's eligibility to compete in men's events, but trans women could compete provided they had declared their gender as female four years prior to competition and have had their testosterone levels below ten nanomoles per litre of blood for at least 12 months before competition (IOC 2015). This policy was further updated in October 2019, when the governing body of athletics, World Athletics, announced that trans women must now

retain levels of natural testosterone below five nanomoles per litre of blood for a period for at least 12 months prior to being declared eligible to compete (BBC Sport 2019). These new regulations also explained how trans women had to provide a signed declaration that their gender identity was female, but they no longer needed their new gender to be recognized in law. Again, however, these later policies have also come under some criticism with Love (2017) illustrating the continued reliance on hormonal control despite a lack of scientific evidence to suggest that higher levels of testosterone are advantageous to athletic performance (see also Karkazis et al. 2012).

Sports and the Gender Order

Pfister et al. (2013, p. 860) describe how gender is ‘understood as a social arrangement that is constructed by means of dominant discourses, anchored in institutions, negotiated in interactions and integrated into individuals’ identities.’ Although men and women experience gender on an individual level, Connell (1987) believed that the gender order can be explained through the power relations between them. To illustrate this, Connell conceptualized hegemonic masculinity – an ideological construct that justified the gender order by explaining the benefits of patriarchy to men and how men occupied different positions within an intra-masculine hierarchical structure. Within this hierarchical structure, Connell believed boys and men aspired to one hegemonic archetype, with those men adhering to the social expectations of masculinity rewarded with the most social and cultural capital. To improve their position, boys and men must subordinate women as well as other men not prescribing to the model (such as gay men) by engaging in a performance of dominance, including the demonstration of masculine qualities such as aggression, strength, toughness and power as well as avoiding any traits associated with femininity. Even though only a small number of men would reach the apex of hegemonic masculinity, it was seen as ideologically normative in the sense that boys and men had to position themselves in relation to it.

To help understand the historical gender order in sport, the first modern Olympic Games in 1896 was a male-only event, with women's sports and their success often suppressed by the social significance of men's sports. Things began to change in the 1960s when the women's movement and the LGB movement led to challenges towards hegemonic masculinity as well as the traditional gender binary across sports (Hargreaves 1994). Supporting this social shift were legislative changes that directly impacted different sports, including the introduction of Title IX in the United States (US) in 1972 that prohibited sexual discrimination in sports educational programs, and the 1975 Sex Discrimination Act in the United Kingdom (UK).

According to Messner (1988), the heart of the women's movement and the fight for equality was to no longer be objects of patriarchy. In order to achieve this aim, women sought to control their own bodies and challenge the hegemonic discourse and dominant ideologies of men and masculinity. In his analysis of the women's movement across different sports, Matthews (2018) outlines that although particular movements emerged throughout the early-to-mid part of the twentieth century, it was between the 1970s and 1990s where greater momentum was gained. These initially included notable movements such as the Women's Sport Foundation in both the US and the UK, but since then there has been a plethora of other women in sport movements all seeking for women's sports to be more widely recognized (whether that be through greater equality, improved financial remuneration or increased print, broadcast, or online media coverage).

In highlighting some notable examples, in tennis, the formation of the World Tennis Association in 1973 was a result of the leading women's tennis players objection to the significant difference in prize money offered to women in comparison to men. A few years previously, in 1971, the FA lifted what had been a 50-year ban on women's football in the UK after men returning from World War I challenged the FA to prevent women from playing football on their grounds

(Cleland 2015). Following examples like this, the profile of women's sports built slowly and included the addition of the women's marathon to the Olympic program at the 1984 Games in Los Angeles and the inaugural women's football World Cup in 1991 (by way of comparison, the first men's football World Cup was held in 1930).

Fink (2015) outlines how the 2012 Olympic Games held in London was another important milestone for women as every country competing in the event was represented by at least one female athlete (out of the total number of competitors, the number of women was nearly 45%) – an achievement that led to it being referred to as 'The Women's Games'. Furthermore, Cooky (2018) outlines how the US women's success at the 2015 football World Cup led to extensive coverage in the US media, resulting in their matches receiving a higher number of viewers than the finals of the National Basketball Association and the National Hockey League. Likewise, Toffoletti and Palmer (2019) refer to the growth and status of women's sports in Australia and how they are challenging gender norms. There has also been a change in the UK with the satellite broadcaster, BT Sport, providing exclusive coverage of the Women's Super League in football and another satellite broadcaster, Sky, introducing a weekly program, 'Sportswomen', dedicated to women's sports, as well as increasing its coverage of women's sports including netball, cricket, golf and rugby.

Although women's sports have started to become embedded in the mainstream in many countries across the world, it now is dealing with an increasingly pertinent question: that surrounding the inclusion of trans women. Given the growth of women's sports from the late twentieth century, the aim of this article is to examine the views of sports fans on trans women competing in women's sports.

Method

The internet has added a new dimension to sports research by allowing platforms, such as Facebook, Twitter and more specific sports fan websites and message boards to be used for academic research (Cleland, Dixon and Kilvington 2019). Throughout his research projects looking at a range of social issues across different sports, the lead author has developed relationships with editors at over 150 sports fan websites across the world (including countries such as the UK, US, Australia, Canada, and mainland Europe) who allow the use of their respective site to advertise an online survey to examine a particular topic on their message board facility. This was again the primary approach taken to address the research questions in this article, but to widen the scope for potential responses a press release was published by the university of one of the authors and disseminated by each author via their own social media accounts.

In distributing the survey on the internet, ethical approval was gained from one of the authors institutions and we followed the ethical guidelines established by The Association of Internet Researchers, notably focusing on alleviating potential harm, protecting privacy, gaining informed consent and avoiding deception. The opening post on each fan message board contained an introductory paragraph about the research that included a link taking potential participants directly to the participant information sheet that provided an overview of the research project, details on who the researchers were, the ethical considerations, such as the level of confidentiality provided to participants (for example, no personal details were captured outside of sex, age, and where they lived in the world) as well as details regarding the storage and use of their data. There was no obligation to complete the survey as participation was completely voluntary, so they could simply choose to ignore the request to participate in the research. For those participants who did

proceed, at the end of the survey they were reminded that they were providing informed consent when they clicked 'submit' to register their views.

In conducting research on the internet, Cleland et al. (2019) explain how the combination of quantitative and qualitative methods can enhance the depth, richness, and rigor of the research findings. To address the two research questions raised earlier, the survey consisted of a mix of closed questions and open-ended questions, where participants were offered the opportunity to expand on their views. To do this, some questions contained two parts, where participants were invited to open a hyperlink to a published news story and reflect on its content. For example, one question was based on an article published in the *Guardian* newspaper by Australian trans athlete, Hannah Mouncey (2018), who argued for greater inclusion of trans women in women's sports. We wanted to know whether participants agreed with Mouncey and to provide a more detailed explanation of their thoughts. Outside of this approach, we also asked specific open-ended questions, including what the participants thought of the policies introduced by international and national sports governing bodies regarding the inclusion of trans athletes.

The survey was conducted between April 2019 and June 2019 and received a total of 4,113 responses. 55% of the participants self-identified as female, 25% male, 7% non-binary and 13% who preferred not to disclose this information. With regards to their age, 26% were aged 18-29, 26% were aged 30-39, 24% were aged 40-49, 17% were aged 50-59, and 7% were aged 60+. Based on our previous experience of conducting online surveys with sports fans, we are well aware of the self-selection issues, but we felt that this method was the most appropriate for this study as it emphasizes anonymity and reduces the potential bias of social desirability from face-to-face research. We were also aware that on a topic area such as this we cannot discount that a minority of respondents might have sought to skew the results, hence why such a large number of responses

from all over the world were collected as these would then have minimal impact. In presenting the results, we make no claim to be representative of all sports fans across the world, but it does provide a large number of views on trans women competing in women's sports.

Taking account of the effects of the identity, background, purposes, or presence of researchers on what is being investigated is of importance to any project. In 1970, Alvin Gouldner encouraged 'reflexivity' to combat the myth that social science can be objective, impartial, or value-free. Researchers, by the sheer fact that they exist in specific social contexts, are participants in the same reality as their subjects, so cannot stand apart to study and validate from a neutral, disengaged position. Berger and Luckmann (1991, p. 25) once likened this impossible task to 'trying to push a bus in which one is riding.'

For the purpose of transparency, this study was undertaken by three white, heterosexual, cisgender males. We have not complicated our analysis with epistemological questions about the viability of our findings but, in common with most social researchers, have remained mindful of our status and vigilant about not allowing our own preconceptions to impact the analysis of data unnecessarily. All researchers strive to recognize their preconceptions, expectations, and what Gouldner (1970) called 'domain assumptions', in an effort to make their findings sustainable, credible and justifiable, yet without ever being disinterested. Whilst objectivity is never possible in the social sciences, impartiality and disinterestedness is often served when researchers themselves have no reason to promote a particular position. In this instance, the researchers, as cisgender males, proceeded with the project as impartial scholars without any preconceived hypotheses.

In analysing the results, descriptive statistics explain the responses to the closed-ended questions, whilst a thematic analysis approach was adopted to analyse responses to the open-ended

questions. Our first stage of inductively analysing the qualitative data collected from each question consisted of each author independently engaging in a manual process of open coding to start reducing the data by categorizing significant patterns and commonalities into first and second order themes (Bryman 2015). Once the phased process of open coding across each question had ended for each individual author, we then collaborated in a collective process of analysis that eventually led to us identifying two recurring themes that will now inform the results section of this article: (1) gender identity; (2) fairness. Of course, we cannot provide responses to the open-ended questions from all the 4,113 participants, so the quotes we use below are illustrative of the two recurring themes that emerged from the data.

Gender Identity

Across our findings were responses that indicated support for the inclusion of trans women in women's sports. For the question referring to the 2018 *Guardian* article written by Hannah Mouncey, for example, just under half (44%) of both female and male participants agreed with Mouncey that sports needed to be more inclusive to trans women, compared to 67% of non-binary and 36% of those who preferred not to disclose their gender identity.

Amongst those participants who were more accepting of the inclusion of trans women in women's sports, a recurring narrative across the qualitative data was that 'trans women are women' (this exact phrase was stated over 100 times). Reflecting these thoughts was this response by a female participant (aged 46) from Philadelphia: 'Policing trans women across sport is just another way society and the media polices and enforces conventional standards of femininity onto women and girls, but trans women are women. The quicker we accept that the better.' As outlined by Travers and Deri (2010), there are sports policies that are more inclusive towards gender identity, such as the softball league in North America, and some of our participants such as this female

participant (aged 26) from Toronto, welcomed moves like this: 'I play in a women's professional league with a trans woman. I believe women's sports is probably the most inclusive environment in the world.'

Other participants, as illustrated by this female participant (aged 43) from Chicago, recognized that as trans participation was likely to increase across women's sports in the future, there was the need for public discussion to take place so that sports fans could be more accepting of trans women in sporting competition:

Given the likely increase in trans women seeking to compete, this issue isn't going to conveniently disappear in women's sports. It's imperative that experts draw distinctions between biology and genetics and sociological theories of gender in an open way so that knowledge can be shared, and discrimination reduced.

Among LGBTQ athletes, trans women often attract greater attention because of their challenge to how people view the traditional gendered organization of sports. The assumption being that the sex of people at birth means they should identify that way throughout their life. Indeed, reference to biological sex and how this corresponds to gender identity in women's sports was also a prominent feature of the data. Representing the views of a number of those participants who were against the inclusion of trans women was this response by a female participant (aged 53) from Barcelona:

Sex is immutable and gender is a social construct which only serves to reinforce gender stereotypes and gender stereotypes are by and large detrimental to women and girls. Which sport someone should complete in should be based on their biological sex and never their gender identity.

Likewise, this female participant (aged 33) from New York stated:

A woman is a woman and a man is a man. If you choose to medically change your sex then you sacrifice the right to compete in sports at a professional level other than at the highest denominator. Through your own choices you have moved outside of a recognized gender division often found in sports.

Reactions like this were reflective of the need amongst a number of female participants for a separate division of gender in sport where women's sports should only be available to cisgender women. According to Tagg (2008), those trans women that do not fit the dominant conception of gender by undergoing some form of transition to another gender identity are stigmatized and considered deviant. By disrupting the traditional gendered organization of sports, Cunningham and Pickett (2018) outline that a consequence is they are more likely to suffer from increased abuse and discrimination. In illustrating this amongst our data was this response by a female participant (aged 44) from Belfast:

We have seen athletes like Lauren Hubbard, Fallon Fox, Rachel McKinnon, Andraya Yearwood achieve honours, fame and publicity they would never achieved, and had never achieved, while acknowledged as males – all have gone, overnight, from mediocre male athletes, to overwhelmingly strong 'female' athletes.

This female participant (aged 61) from Guadalajara concurred:

All those males identifying as females have such a biological advantage over cisgender women, that their results mean nothing. I watch sports to see the best men and women compete. Not to see the best women beaten by mediocre men who could not beat other men but happen to be taller, faster, stronger – whatever former male attribute(s) was or were needed in the sport they chose to compete in after their transition.

Responses like this across the data highlighted a continued hegemonic discourse amongst some sports fans that is built almost exclusively on the assumption that men have greater biological advantages than women and no amount of policy interventions or transition to a new gender identity will change that. Whilst in previous descriptions, Connell (1987) has stated how the dominant characteristics of masculinity, such as strength, dominance and power, must remain unavailable to women, a number of our participants believe trans women are challenging this through their participation in women's sports. For some of our participants, like the examples above, trans women are still seen as men through a constant reference to them retaining biological

and physical advantages, including strength and power, regardless of the extent of transition they have gone through to meet the eligibility criteria to be able to compete in women's sports. The assumption being amongst some of our participants that trans women remain physically superior and different to cisgender women, who are seen as naturally weaker, submissive and less aggressive. Indeed, this assumption is not just present in sports fans with McClearen (2015) highlighting how those media sources opposed to the inclusion of MMA fighter, Fallon Fox, framed her as a man that posed a physical danger to cisgender women. While this point is challenged by a segment of the participants, as evidenced by the recurring reference that 'trans women are women', the prevailing binary sex system is upheld by other participants that question the authenticity of trans women's proclaimed gender identity.

Fairness

Following on from debates surrounding gender identity, the other most recurring theme in the data surrounded the perception of fairness in women's sports. For those participants against the inclusion of trans women was continual reference to the traditional gendered organization of sports and how the assumed hegemonic advantage trans women had over cisgender women meant that the competition across women's sports was unfair. By way of illustration was this response by a female participant (aged 32) from Liverpool:

There are physical differences between the sexes, because male and female bodies develop at different rates during puberty, that make competition between the two groups categorically unfair and in some cases dangerous. Sex is a biological reality that has real life consequences, to suppose that feeling feminine or masculine is more relevant to a sports competition is unrealistic at best. At worst, women will no longer be able to compete in their own category. Madness!

This female participant (aged 47) from Bristol shared similar thoughts:

It's absolutely madness to suggest that women can possibly compete and win against men. Trans women will always have the competitive edge as men are just stronger than women. It's incredibly sad that talented and hardworking women will lose out to people who were born as men. It's not a level playing field.

In fact, the inclusion of trans women was not just a female concern with male participants, including this one (aged 44) from London, raising similar doubts surrounding their inclusion:

Most trans women have benefitted from going through puberty as a male and, as a result, have been aided by testosterone. This generally leads to the male being taller, developing muscle more quickly and easily, and being faster than females. The athletes that change gender will have accrued the benefits of testosterone before competing against female athletes who have not gone through male puberty and enjoyed the subsequent physical advantages. Consequently, the competition is then distorted and is unfair.

Likewise, this male participant (aged 46) from Brisbane stated:

The 'switch' from a man to a woman makes a mockery of the reason for separate women's sports in the first place – to protect women from the overwhelming physical advantage men have through the natural acquisition of massively increased testosterone when going through puberty. It's not a genuine transition – it's the taking of male biological advantages over females and injecting it into the female sports arena. That's unfair.

From individual responses like this and many hundreds of others we could have used, it is clear that despite the introduction of policies by international and national sports governing bodies, a number of fans still believe that trans women retain unfair biological advantages. Some participants directly questioned the introduction of trans-inclusive policies, including this female participant (aged 42) from Middlesbrough: 'It's political correctness gone mad in the field of sport for governing bodies to say they are allowing for a level playing field in women's sports', whilst this female participant (aged 37) from Nottingham went further: 'Why are the governing bodies of different sports even considering letting trans women compete given that they will clearly have a biological advantage over cisgender women competitors?'

Despite views like this reflecting a consensus of participants opposed to the inclusion of trans women on the grounds of fairness, in a review into the scientific literature about whether there is an athletic advantage for transitioned athletes, Devries (2008) found no compelling scientific evidence of any advantages or disadvantages from those athletes who had transitioned. Similarly, Jones et al. (2017, p. 701) outline:

Currently, there is no direct or consistent research suggesting transgender female individuals (or male individuals) have an athletic advantage at any stage of their transition (e.g. cross-sex hormones, gender-confirming surgery) and, therefore, competitive sport policies that place restrictions on transgender people need to be considered and potentially revised.

Like the concerns raised above by those participants that are against the inclusion of trans women, the assumption is that testosterone is a male hormone and thus provides significant physical advantages to men after going through puberty, yet Fausto-Sterling (2000) outlines its presence, at varying levels, in everybody. Furthermore, other researchers have pointed to numerous other factors that impact sport performance, like socio-economic status, geography, and nutrition (Amy-Chinn 2012). As argued by MacKinnon (2017, p. 43), 'the sporting world is confounded by athletes whose bodies, identities, and hormonal profiles do not fit neatly into binary sex-segregated competition categories.' This was also a feature of the data as illustrated by this extract by a female participant (aged 24) from Cape Town:

Opposition to trans athletes is based in unscientific conservatism that projects cultural gender roles onto human bodies, assuming that "woman" is a biologically inherent status rather than a social role, and assuming in a distinctly un-feminist way that all women must have identical soft, weak, feminine bodies that are naturally inferior to big strong men. Human biology, including that related to sex, is not nearly this simple.

There has been regulative change that allow trans athletes to compete in sport, but there is not a simple solution in terms of hormone therapy. For example, Karkazis et al. (2012) illustrated how there is a lack of evidence stating how higher testosterone levels in athletes allows them to perform

better than those with lower levels. However, it is clear that those governing bodies implementing policies across sports believe that hormonal intervention mitigates the potential unfairness of higher testosterone than cisgender competitors. Therefore, some trans women athletes might take estrogen (a female hormone) as well as androgen blockers that neutralize the impact of testosterone on muscles.

Indeed, the methods and policies in place to protect the fairness of competition across women's sports were deemed appropriate by a number of our participants. One recurring feature amongst those participants who were supportive of the inclusion of trans women was highlighted by this female participant (aged 68) from Toronto:

Most sports authorities have set minimum a length of time that a trans woman must be undergoing hormone therapy, and there are maximum permissible levels of testosterone to qualify as a female athlete. There is no scientific evidence that trans women athletes are any stronger or have any physical advantage over cisgender women athletes. In fact, trans women have taken hormone treatment often have lower testosterone levels than cisgender women.

Likewise, this female participant (aged 43) from London concurred:

Very few trans women have had any success in different sports. Under IOC rules that are increasingly being applied across different sports, hormone regimes are quite strictly controlled. The idea that you can self-identify and boom you are racing women tomorrow is quite simply untrue.

Other participants went further and described the presence of a 'gender panic' amongst those opposed to the inclusion of trans women. Summarizing the thoughts of many participants was this response by a female participant (aged 39) from California: 'The perceived threat of trans women is purely theoretical fear mongering – it's playing into the hands of creating unnecessary panic and concern', whilst this non-binary participant (aged 21) from Philadelphia outlined:

Trans women are a very small minority of women, and regulations already require they demonstrate low testosterone before competing. They have been competing for over a decade and we have seen very few examples of them winning. We should expect some to win, because statistically they should win around 1-2% of competitions, but we have not seen them

dominating like some people have predicted. People act as though if there is a trans woman in a particular sport the result is a foregone conclusion that she will win. It is not.

Some participants referred to how the fair play doctrine is not fully applied in any notable public and media discourse regarding the physiological differences found amongst male athletes. Instead, the development of boys into men through puberty and the subsequent growth of testosterone and physiological advantage is often seen as natural (Heggie 2017). However, using the example of former American swimmer Michael Phelps, Bianchi (2017) explains how men's sports have a history of 'unfair' genetic attributes, with Phelps' size 14 feet, long wingspan, production of less lactic acid and double-jointed ankles giving him an added advantage over his competitors. As one male participant (aged 23) from Arizona explained: 'While male athletes such as Michael Phelps are praised for abilities that allow for advantage in sports, trans women and intersex folk are demonized for almost non-existent "advantages", whilst this female participant (aged 45) from Toronto argued: 'When men are genetically outside of the fair play norm in a way that enhances their performance potential, they are merely considered to be lucky.'

Conclusion

The traditional gender binary was predominant throughout most of the twentieth century, but there are many more salient challenges to the gender binary in the twenty-first century. While some might dismiss it as an ephemeral phase, the condition of instability and change in the ways in which we regard our sexual and gendered selves has already affected large sections of society. Education, the military, the criminal justice system, and other major social institutions have been obliged to respond to the changes wrought over the first two decades of the new century. Different sports have also responded, but not consistently: while some sports organizations have introduced policies regarding the participation of trans athletes, others have simply allowed competitors who

identify as woman to compete as women, and similar with men. Moreover, in parts of the US, legislation either exists or is being proposed at the time of writing that supersedes sports organizations and mandates rules for inclusion and exclusion. In Idaho, Arizona, Georgia, Iowa, New Hampshire, and other states, for example, there are requirements that effectively mean that sports organizations' policies are becoming redundant.

As the first study to conduct a large-scale analysis of sports fans' views on trans women competing in women's sport, this article has two main concluding elements. Firstly, the emergence of the women's movement in the 1970s led to women making inroads into sports that were organized on the traditional gender binary. By the early twenty-first century, women had established their presence in practically all major sports, including basketball, football, rugby, and the newer sports, like MMA and skateboarding. Women's competitions ran in parallel with men's, and while in many cases women's events occupied equal prestige to their men's equivalent, one of the findings presented in this article is that there is a hegemonic discourse amongst a majority of participants that transgender women have manifold physical advantages, particularly in sports requiring strength and speed, and will continue to carry advantages which are deemed to be unfair, regardless of the extent of their transition and new gender identity. Secondly, our data reflected not simply a dislike, or mistrust of trans women, but also evidence of discriminatory prejudice amongst some participants that is comparable with the obstruction of women's sports during the twentieth century. This presents an irony: cisgender women once faced the same kind of obstacles that a range of women's sports now place in front of trans women.

Overall, just over half of our female (and male) participants believe that the position of women is being undermined by the incursions of athletes who hold a significant biological advantage from being born a male that will allow them to dominate women's competitions. For

those that hold this view, only by prohibiting trans women or imposing strict limitations can women's sport be guaranteed its integrity. Conversely, some of our participants were supportive of the inclusion of trans women who wish to compete as the person they are (rather than as they were assigned at birth and socialized into) and consider attempts to keep them out of their chosen sport as exclusionary. Thus, given our empirical findings, there is no one-size-fits-all solution: each individual sport must address the issue in its own way. This is not an option: it is a necessity.

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Notes

¹ For a history of medical and scientific sex-verification testing, see Birrell and Cole (1990), Heggie (2014), Pieper (2016), and Sykes (2006),

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