

‘Flourishing against the normative’: Exploring the potential for feminist transdisciplinary research within sport studies

Belinda Wheaton, Louise Mansfield, Jayne Caudwell, Beccy Watson

Abstract

The academic field of what in the UK has been termed ‘Sport Studies’ has been a multi- and inter-disciplinary field of teaching and research including the natural sciences (i.e. physiology, biomechanics, motor learning), social sciences (i.e. sociology, anthropology, politics and economics) and humanities (i.e. history, philosophy). Despite this breadth, many researchers and students working outside of positivistic paradigms have had to fight to gain legitimacy for their approaches. For sport feminist researchers, this has been further complicated by a long-entrenched culture of masculinity that operates at many levels from the gendering of the work-place and curricula to the promotion and adoption of particular methodological assumptions and practices. Early sport feminist researchers and activists challenged the male-dominated world of sport, and of sport academe. They showed that women’s lives and experiences mattered. There is a vibrant body of sport feminist research which continues to challenge the ‘normative’ disciplinary boundaries, methodologies, epistemologies, and power relationships within sport. In this chapter, four cis-gender white women feminist researchers who have been active as researchers, postgraduate supervisors, and in feminist praxis, reflect on the potential for and challenge of a transdisciplinary feminist framework within sport related studies.

Introduction

The physically active body, its regulation, representations, and lived experiences, has long been recognised as important by feminists (e.g., Young, 1980; Heywood & Dworkins, 2003; Mansfield et al, 2017; Ratna & Farooq 2018). Our focus here is the challenge sport feminists face when dealing with knowledge production within the multi- and inter-disciplinary institutional contexts of ‘Sport Related Studies.’¹ From its institutional inception in the UK in the mid to late 1970s, sport studies was a multi-disciplinary programme of study including the natural sciences (e.g. anatomy, physiology, biomechanics, motor learning), social sciences (e.g. sociology, anthropology, politics and economics), and humanities (history, philosophy). This is similar for kinesiology in the USA. Emerging from developing critical

¹ The terms have shifted over the past 30 years but the term ‘Sport Related Studies’ is used in the UK national Research Excellence Framework (REF) to encompass both the social sciences/humanities and sport and exercise sciences, as well as leisure/tourism. In the USA kinesiology is the most common term.

theory, constructionist and interpretivist paradigms, and “humanist ideals of social justice, empowerment and freedom” (Fullagar, 2017, p. 249–250), the critical socio-cultural study of sport soon burgeoned. Yet, within kinesiology/sport studies, the knowledge paradigm of positivism was dominant. Positivism is a research tradition associated with the philosopher Comte (1798–1857), which sees reality as that which can be directly observed or experienced through the senses. It assumes the only true or valid knowledge is that based on the principles and methods of the sciences such as control, replication, hypothesis testing and objectivity (Jones, 2022). Positivism was considered the “gold standard” for “true science” (Markula, 2019, p.2), and those working outside of positivistic paradigms had to fight to gain legitimacy for their approaches (Sparkes, 1998; Andrews, 2008; Markula, 2019). As Silk, Francombe and Andrews (2014) argue, this “epistemological hierarchy” is still self-evident:

The epistemological hierarchy – what we can term the epistemological violence, that privileges specific ‘scientific’ ways of knowing – has structurally and intellectually constrained the potential and relevance of the social science of sport in terms of realizing its aims of developing a truly integrative and interdisciplinary approach to the study of physical activity and thereby of society (2014, p. 1272)

For feminist researchers in the social science of sport, this marginalisation of other ways of knowing and doing research in sport studies was further complicated by sports long-entrenched culture of masculinity (Messner & Sabo, 1990), which operates at many levels including the gendering of the work-place and curricula (Markula, 2019). Therefore, inaugural feminist researchers and activists (i.e. early 1980s) had to challenge the male-dominated world of sport, and of sport academe, to show that women’s sporting lives and experiences mattered (see Hargreaves, 1986; Scraton, 1985).

This institutional environment has framed our experiences as feminist researchers, lecturers, and postgraduate supervisors housed in sport and leisure departments for over 20 years. In this chapter, we discuss these ongoing challenges for feminist scholars ‘flourishing against the normative’, male-dominant and defined cultures of sport and of the dominant positioning of positivism in sport scholarship. First, we show that despite these challenges, there is a rich history of feminist scholarship, praxis and activism in sport. We outline how

over the past four decades a vibrant body of sport feminist research has emerged, challenging the culture, identity and praxis of sport, fighting for equity and social justice, and providing methodological innovation and contestation to the dominant ways of thinking (e.g., Birrell & Cole, 1994; Caudwell, 2011; Hargreaves, 1994; Heywood & Dworkins, 2003; Mansfield et al, 2017; Ratna & Farooq 2018). We then discuss recent shifts, particularly those towards transdisciplinary [TDR] feminist research, some of which see potential benefits in bridging the long-standing methodological divide between the sciences and social science/ humanities in research about sport. As we outline, TDR is a complex, evolving concept, and subject to different interpretations across academic fields (Archibald, et al. 2018; Choi & Pak, 2006; Klein, 2014). Our discussion here focuses on interpretations of TDR as a way to progress understanding of societies' complex and multi-dimensional 'wicked problems' (Harris, Brown, & Russell, 2010); we highlight opportunities for innovative and emerging research agendas. As Heywood (2017) argues, there is a need to work across the disciplines of social sciences, humanities and natural sciences, with a political imperative to do research differently. We outline that despite a growing momentum amongst some sports feminists to better understand the "relationship between the physiological, psychological, and social body" (Heywood, 2017, p. 46), few feminists to date have risen to the challenge of engaging in such transdisciplinary research involving sport (Thorpe et al., 2022).

This chapter offers discussion about the potential and challenge of a feminist transdisciplinary approach for sport studies. We consider the inclusion of transgender and gender diverse athletes, a contemporary issue in sport that is causing much debate, particularly around trans womens' participation in elite sport, which has had a multi-disciplinary response from sport studies. Through this exemplar, we consider the potential of a feminist transdisciplinary approach for progressing our understanding of the sexed-body and gender in this context. While we view a transdisciplinary feminist framework as having potential to help drive change in ways that align with feminist aspirations that strive for equity and social justice, our discussions show the multiple challenges facing sport feminists seeking to create change.

Towards Transdisciplinary Research in sport feminisms: methodological innovation and different ways of knowing

Organised sport has long been recognised as a male dominated and defined institution, an arena where power is at play (Dunning, 1986; Hargreaves, 1986; Messner & Sabo, 1990). Until the late 20th century, women were understood as physiologically weaker, lacking the strength and natural athleticism of men, with the medical profession promoting the idea that some forms of physical exertion were likely to cause harm, particularly for pregnant women (Vertinsky, 1990). This prevailing medical evidence was the foundation for the relative exclusion of women from taking part in many sports during the 18th and 19th centuries; those sports deemed to require the kind of strength, speed and aggression associated with men and masculinity. Sports in which some women were included at this time such as tennis were those associated with grace and (middle class) ladylike behaviour (Cf Hargreaves, 1986).

From the 1970s onwards, feminist researchers and activists, initially in the USA and UK began to fight for equality of opportunity, access and resources, developing a political movement for gender justice. Much of this early work by sport feminists was informed by feminist liberal model of the sex-gender distinction that highlighted the structural inequalities of gender as a social construction yet reiterated a binary distinction on the basis of sex. This liberal sport feminism challenged the social construction of femininity that resulted in limiting opportunity, access and resources within sport and physical education. Liberal approaches sought to transform-existing institutions that prejudiced and discriminated against women and girls, and their participation. This included challenges to exclusionary and discriminatory practices in sport. Coupled with prevailing medical-science accounts that generally men have biological advantages over women in terms of strength and aerobic capacity, the logic of separate women's and men's sport was established. The principle of separate women's and men's sport is justified as the fair way to ensure women have access to and are included in the highest levels of sporting performance (Coggon et al., 2008). These somewhat descriptive feminist liberal accounts of 'women in sport' were soon challenged to adopt more critical and analytical approaches (Scruton & Flintoff, 2013). Research developed that focused on exposing the barriers to participation across a wider

range of contexts, sites and physical practices from physical education and kinesiology, to informal sport and recreation. Research agendas, focused on gender relations as relations of power, developed around sport and oppression (Bryson, 1983), but also empowerment (Theberge, 1987), detailing the sites of negotiation and resistance from recreation/leisure participation to elite performance. In addition, feminist accounts of leisure (Deem, 1982; Green, Hebron & Woodward, 1990) were developing, and complementing feminist theories of sport. In sum, an extensive literature demonstrated the persistence of gendered power relations across diverse sporting practice, and implications for physical education (PE), kinesiology, sport and physical activity (PA) (Birrell & Cole, 1994; Markula, 2005; Messner & Sabo, 1990). Whilst there was an expanding repertoire of analysing women's location in sport in diverse contexts, the sex-gender couplet was often reiterated despite efforts to refute biological essentialism and to challenge homogeneous accounts of gendered identity.

Meanwhile, a focus on critiquing dominant forms of knowing (see e.g. Kelly *et al.* 1994), challenging positivistic 'evidence-seeking' agendas, and informed by critical and poststructuralist feminist research agendas and epistemological debates was developing. Long-standing core pillars of feminist research such as making the research process visible, engaging researcher reflexivity, challenging the positionality and standpoint of the researchers, ethical relationships between the researcher and research participants, a rejection of researchers assuming authorial authority, ways of trying to connect with the reader in alternative ways, and highlighting the power relations and silences exposed through the process were evident in sport research (Mansfield *et al.*, 2017).

Feminist scholarship across PE, sport, PA and leisure continues to reflect the centrality of theory-practice interrelationships, often referred to as feminist praxis, which is commonly underpinned by research evidence (Scruton & Flintoff, 2013). An ongoing focus is girls' and women's participation in sport, and to increase opportunities for girls and women to aspire to, engage and achieve in sport. Attention has also been directed at discourses of the athletic body, and persistent stereotyping in sports media (Bruce, 2016, Samie & Sehioglu, 2015) with implications for how gender and sport are perceived as well as culturally transmitted. Critical feminist analysis has also been extended to leadership where "there

remains a continuing absence of women in decision-making positions” (Adriaanse & Claringbould, 2016, p. 550) across governance, management, coaching, and officiating.

The limited presence of women is exacerbated by interrelationships across race and gender (Rankin-Wright & Norman, 2018). In addressing persistent inequalities, feminist sport researchers have become increasingly aware of the need to engage with whiteness and difference, epistemologically and methodologically (Ratna & Samie, 2018; Watson & Scraton, 2018). The need to shift the persistent dominance of the Western/global north in knowledge production, and to challenge the persistence of Eurocentric worldviews, and ongoing sporting legacies of imperialism and colonialism is increasingly recognised (Ratna & Samie, 2018; Toffoletti, et al., 2018).

Much of the work outlined above reflects the contribution of sport feminism from the perspective of the social sciences. This work continues, and our analysis of South African runner Caster Semenya (Wheaton et al. 2020) shows how normative Western notions of gender binaries reproduce unequal power relations that persistently, detrimentally impact performance-driven active bodies, particularly women in the Global South. However, we engage with how scientific evidence, including discussion about testosterone’s impact on performance, is used in the surveillance, regulation and exclusion of women’s bodies (see Pape, 2020). The use of science-based accounts of bodily differences has a long-history in sport, from explanations of women as weak and frail (Vertinski, 1990), to seeing Black sporting bodies as physiologically distinct and produced through (now largely disputed) science ‘facts’. Such accounts, while now recognised as biological racism, continue to drive myths about Black male physical superiority, and white intellectual authority (Carrington and McDonald, 2002; Carrington, 2010). Accounts of Black women athletes remain marginalised within and across a range of social science disciplines. (Razack & Joseph, 2021; Vertinsky & Captain, 1998). Within sport feminism, queer feminist accounts (Linghede, 2018; Linghede & Larsson 2017; Sykes, 2009,2011) have contested the science of the sexed-body and celebrated bodies that dispute, disrupt and dislocation normative assumptions of sex as pre-discursive. Instead, “sex” as wholly biological and the premise of the sex-gender distinction are debunked through the tradition of a Butlerian perspective. Yet, significantly,

there has been little bridging of the methodological spaces between social sciences (e.g., queer sport feminists) and natural sciences (e.g., sport physiologists).

Furthermore, it is known that ableist normativity persists (Kiuppis, 2018) and heteronormative discourses continue to dominate. Homophobia, biphobia, sexism and racism continues to marginalize and exclude lesbian, gay and bisexual athletes (Denison, Bevan & Jeanes, 2021; Rollé et al., 2022; Shaw, 2019). Nonetheless, over recent decades lesbian, gay and bisexual (LGB) participants in Western contexts such as USA, UK, Europe, Australia and New Zealand have witnessed greater visibility and increased participation from engaging in sport. Often these positive experiences have developed through grassroots organisations, such as PrideSport and LEAP sport in the UK, which advocate equality and inclusion. The work of social scientists (e.g., feminists, historians, sociologists, pedagogists and political scientists), have provided evidence-based studies to demonstrate barriers to participation such as abuse, discrimination, hostility, prejudice and violence. In this regard, social scientists, working with community providers, have contributed to progressing the sporting opportunities for LGB. However, it is timely, and arguably urgent, to explore the often-forgotten groupings of transgender, queer, non-binary and gender diverse participants (see Caudwell, 2020; Pérez-Samaniego *et al.* 2016). As our feminist analysis of Caster Semenya highlights (Wheaton et al. 2020), it is timely for feminist social scientists and community providers to work with sport scientists to address the current unfurling of regulatory and exclusionary policy impacting transgender, queer, non-binary and gender diverse participation.

Epistemologically, there have been discernible shifts to 'new' ways of approaching research on gender and sport including exploring Post Qualitative Inquiry (PQI) and new materialism (Fullagar, 2017; Markula, 2019 Thorpe, Clark & Brice 2021). These shifts begin to engage with principles of TDR. For example, Thorpe, Clark and Brice's new materialist approach draws on Karen Barad's theories and approach (i.e. agential realism, concept of apparatus and diffraction) to consider key issues across women's sport, health and fitness. In line with feminist new materialism in other research areas (e.g. Taylor, Ulmer & Hughes, 2020), their conceptualization of transdisciplinarity is as "ethico-onto-epistemo-logical practices and politics of knowledge production" (2020, p.152). While such insight (in sport and beyond)

have clearly contributed to “creative approaches to transdisciplinarity” (Thorpe et al 2022, p. 364), as Thorpe et al. (2022) recognise, this provides a different “conceptualization of transdisciplinarity” (p. 367) to other bodies of work. As we outline in the next section, TDR is a concept that is evolving and subject to different interpretations by different audiences (Choi & Pak, 2006), and therefore, some conceptual clarity is required.

Transdisciplinary research: an evolving concept for feminist sport scholars

Despite TDR’s increasing prevalence across many research fields, there is a lack of consensus within and across fields about what actually constitutes transdisciplinary research (Klein, 2014; Choi & Pak, 2006; Archibald, Lawless, Harvey, et al. 2018). The fields of health and sustainable management of the environment are key areas where TDR has proliferated because it is being seen as a way to progress understanding of societies’ complex and multi-dimensional ‘wicked problems’ (Harris, Brown, & Russell, 2010). As Harris, Brown, and Russell (2010) discuss, the resolution of such complex problems needs a “new approach to the conduct of research”, the ways we construct our knowledge as well as the “decision-making based on that research” (p. 4). This requires a commitment to mutual-learning (Harris, Brown, and Russell, 2010; Choi & Pak, 2006). We briefly review these literatures, to draw attention to three key, interrelated tenets.

First, while multi- and inter-disciplinary research retain a disciplinary frame, TDR aims to transcend disciplinarity in order to view the dynamics of entire systems or problems in more holistic ways using a “shared conceptual framework” (Choi & Pak, 2006, p.356). Inherent within this approach is a blurring of disciplinary boundaries with the aim to generate new approaches and methodologies (Harris, Brown & Russell, 2010). This is most often interpreted as involving research teams across the ‘natural’ and social sciences, and humanities, working “jointly to create new conceptual, theoretical, methodological, and translational innovations, to address a common problem” (Harvard Transdisciplinary Research in Energetics and Cancer Center, undated, cited in Heywood, 2017 p. 43).

However, as Feminist TDR scholar Lesley Heywood (2017) argues, and to re-iterate a point made above, feminist research in sport, rarely involves research teams that cross the disciplinary divide between the sciences and the social science and humanities. While some

feminist new materialist scholars are engaging critically with the sciences, often their “arguments remain based on their own individual readings of scientific and medical research” rather than a dialogue working with scholars from across the social and physical sciences (Thorpe, et al., 2022 p. 365). We return to this key point below; that is the need to challenge and trouble conceptions of research, method and praxis across the social sciences, humanities and natural sciences.

Second, alongside the integration of ideas from different research disciplines are so-called “extra-scientific” insights (Jahn et al., 2012: 9) informed by those invested in, and affected by the problem (Brunach & Özerol, 2019). TDR is framed by objectives which intend to collapse artificial boundaries between academic and non-academic sectors and civil society (Nicolescu, 2006; Harris, Brown & Russell, 2010). For McGregor (2009) such new TD knowledge is created beyond the boundaries of disciplines and in the spaces in which everyday problems are lived out, and created. This links to the third key tenet; that the new knowledge intended can only be created through a new methodology where stakeholders or end-users must be involved in the co-design (and sometimes delivery) of research (Choi & Pak, 2006). Producing new types of knowledge through TDR can only be achieved through “complex and integrated, mutually learned insights” (Torkar & McGregor, 2012, p. 67). Inherent in this process is the need for research teams to develop a ‘critical and self-reflexive research’ approach to enable connections between the “distinct epistemic, social–organizational, and communicative entities” that constitute the problem context (Jahn et al., 2012, p.9-10).

A TDR methodology is commonly recognised as fourfold (Torkar & McGregor, 2012, p. 68; Nicolescu, 2002, 2006, 2013; Choi & Pak, 2006) (i) the ontological pillar which argues for the need to recognize multiple levels of reality, (ii) the logic pillar proposing that there is more to theory/logic than simple assertions and negations of a proposition, (iii) the epistemological pillar emphasizing knowledge complexity and emergence, and (iv) the axiological pillar underlining the importance of recognizing the role of values in integrated research.

The above discussion of tenets and pillars of TDR seeks to demonstrate the intricacies of the approach and what might be required. There are methodological principles within this framing that clearly intersect with a logic of inclusion through a focus on a 'middle ground' for methodological work. It is in this middle ground where researchers can accept that there are diverse methodologies, but that these differences can provide fruitful in considering transformative ways of doing research and advancing knowledge about gender.

It is important to acknowledge that feminists recognise the multiple layers of ontology and epistemology (Wheaton et al, 2017), and this has informed sport feminist methodologies seeking to challenge the limits of knowledge produced by narrow gendered perspectives (Scruton & Flintoff, 1992). Feminists scholars, including in sport studies, have emphasised that who you are, and the context in which researcher and participants live, work and play makes a difference to reality and knowledge production. This ontological thinking dovetails with the epistemological notion that gender relations are complex and we do not yet have all the answers about them. Ontology also overlaps with a feminist focus on reflexive (axiological) work to understand the way that personal biographies and values intersect with cultural, political, economic ideologies and structures in understanding gender-power relations (Hargreaves, 1994). In this sense there are existing connections between the tenets and pillars of TDR and the underpinning principles of feminism.

In the next section, we consider transdisciplinary initiatives to bridge the sciences, social sciences, and humanities in feminist sports research and consider how transdisciplinarity provides fertile ground for the development of innovative and creative ways for feminist scholars to advance knowledge for flourishing against the normative in sport studies.

Bridging the sciences, social sciences and humanities in transdisciplinary feminist sports research

As we have outlined, kinesiology departments have long been identified as institutional battlegrounds, where the dominant force tends to be the natural scientists with "functionalist, measurement- minded research agendas" (Markula, 2019; p1). Sport

feminists have expressed reticence about working with scientists who claim to be transdisciplinary, yet continue to privilege their perspectives (see Markula, 2019). However, Lesley Heywood (2017) has argued at some length that TDR has the potential to reconcile these methodological and epistemological differences adopted by the sciences and the humanities in sport and health contexts, and that further progress is urgent (see Wilson, 2015). Her arguments are worth some attention.

Heywood (2017) details a rethinking of the foundations of modern science, challenging the doctrine of objective reality and the “separation between the knowing subject and reality” (Nicolescu, 2015, p. 21 cited in Heywood, 2017, p. 44.), which researchers in the social sciences and humanities do not always recognise (Heywood, 2017, p. 42; Frost, 2016). Second, she draws on her own research seeking to understand how “mind, body, affect, culture, and cognition all mutually inform one another” (2017, p. 46) in human movement (see Heywood, 2011, 2015; Heywood et al., 2010). She found the work of affective neuroscientists (i.e. how neurobiological mechanisms inform physically active bodies) to be helpful in exploring how affective dimensions can inform behaviour (2017). Heywood developed a TDR perspective, to show the inextricable links between “neurobiology and culture/power/discourse in informing human movement” (Heywood, 2017, p. 42). She argues, “if power operates at every level of human life”, one of the levels that needs to be considered is the biological (2017, p. 45).

The work of sport feminists Holly Thorpe, Clark, and Brice, with sport physiologist Sims (e.g. Thorpe et al., 2022), taking inspiration from Elizabeth Wilson’s “gut feminism” (2015), urges feminists to rethink their resistance to biological “data”. Thorpe et al. explore the athlete health condition known as relative energy deficiency (RED-S), due to restricted or disordered eating and/or overtraining (Dudgeon, 2019). They (2022) apply a TDR approach in order to bridge disciplinary divisions, aiming to shift the focus from diagnosing, treating and supporting individual athletes to a more multi-dimensional understanding of the embodied experiences of RED-S. This involves academics and practitioners (e.g. health professionals, coaches, and athletes) working together (Thorpe et al., 2022). Whilst not without difficulties and limitations, including the effective integration

of these different perspectives and epistemologies, the work shows how feminists leading inter-disciplinary teams, within a TDR model, can potentially progress research for women in sport and health contexts.

New avenues for knowledge of women's bodies, inclusion and social justice, particularly the sexed-body binary arrangement that governs most sports can potentially develop through TDR. In the final section we offer a discussion of transgender, non-binary and gender diverse (trans) athletes and participation in sport. Trans women's participation in particular has received attention in recent times. Therefore in line with arguments that the TDR "imagination" (Harris et al., 2010) is productive for addressing such complex and multidimensional problems, we explore the potential of a feminist-led transdisciplinary framework to provide richer and more nuanced analysis than multidisciplinary approaches.

Sport and trans participation: the potential for TDR to progress understanding and social justice

Within sport studies, it is acknowledged that research is required to explore transgender, queer, non-binary and gender diverse (trans) sport participation. Specifically, research approaches and methodologies that rise to the challenge of current steps to regulate and exclude transgender, queer, non-binary and gender diverse bodies from sport. At community and recreational levels, equality and inclusion aspirations remain paramount given that statistics demonstrate significant health and wellbeing inequalities for trans people and communities (e.g., Public Health England, 2017), especially youth (Connolly, *et al.*, 2016). Transgender, non-binary and gender diverse participants face often unwelcoming and hostile responses to their participation, which as transgender mountain-biker Kate Weatherly has articulated, has included death threats (Brettkelly, 2022).

Trans women's participation in elite sport that is the focus of contemporary media attention. The issue has received a multi-disciplinary response from sport studies. Many sport governing bodies are struggling with the existence of trans women, which is no

surprise given how slow change in social attitude has been towards women's freedom to participate in sport, especially lesbian participation. Regarding the latter, Griffin (2012) discusses how, during the late 1900s, lesbian athletes were viewed as the pariahs of sport. She makes the point that "[a]lthough lesbians may be viewed as women who look or act like men, some people view transgender and intersex women as actually being men, in most places making them ineligible to compete" (2012, p. 106).

While published research and debate about trans athletes comes from across disciplines including sociology of sport (Barras, 2021; Caudwell 2022), sport philosophy (Burke, 2022a,b; Pike, 2021), and sport science (Harper et al., 2021), there are differences and tensions in research approaches and objectives. Generally, social scientists aim to critically evaluate exclusion and inclusion (Knott-Fayle et al. 2021). This approach has involved arguments presented by sport philosophers for inclusion (Burke, 2022 a). However, those aligned with the natural or biological sciences in sport studies, as well as populist commentaries, tend to centre the seemingly absolute axiom of fairness based on biological markers of bodies particularly testosterone levels and its impact on strength, which leads to the acclaimed logic of excluding trans athletes, especially trans women from their chosen sport. This focus on the foundation of separate women's and men's sport as fair in biological-sex terms, reflects sport philosopher's arguments for exclusion (e.g., Pike, 2021). There are clearly contesting arguments both across sports' multiple disciplines and within some disciplines.

The schism that is evident between disciplinary approaches reflects a focus on either inclusion or fairness based on notions of the biological body (i.e. exclusion). The current turn to, and emphasis on, fairness underpins recent sport policy, such as World Rugby's shift to the exclusion of trans women in May 2021, and the World Aquatics regulation of trans participants in 2022. In 2021 UK Sport published 'new' 'Guidance for Transgender Inclusion in Domestic Sport' (September 2021), which follow on from the 2013 (revised 2015) 'Transgender Inclusion in Sport' guidelines. In the nine-page Summary document, it is noteworthy that two pages of content under the heading 'Sports Science', presents physiological accounts of the body. As we have noted, the use of science-based accounts of bodily differences has a long and problematic history in sport (see Wheaton et al., 2020). In

the case of transgender athletes, scientific facts, particularly about testosterone's impact on performance (Pape, 2020) are central in the 'evidence' used by those in decision-making positions, and the public discourses. For example, Lord Sebastian Coe, President of World Athletics, has been vocal in the media about 'science' trumping other disciplines (particularly social science) in understanding, and the treatment of trans women, non-binary women and gender diverse women:

We've always been guided by the science ... I'm really over having any more of these discussions with second-rate sociologists who sit there trying to tell me or the science community that there may be some issue. There isn't. Testosterone is the key determinant in performance (Coe *cited in* Ingle, 2022).

In sum, these multi-disciplinary approaches advocate either inclusion or regulation/exclusion of transgender athletes. Therefore might a different direction be imagined via a feminist-led transdisciplinary framework, which could provide the context for the generative possibilities of a move away from multi-disciplinary approaches and have potential to build bridges between researchers and progress policy formation? Building on long-standing feminist research commitments to using approaches and methods that are self-reflexive, critical, and ethically and politically focused on equity and social justice, we argue that the logic of engaging all 'stakeholders' is a necessary condition for a feminist TDR methodology. Research and researchers need to centre the experiences of diverse trans people. This requires the development of relationships between partners, and recognising the inherent power relationships within these relations. Such a co-production approach must go beyond consultation to facilitate sharing and understanding of ideas, expertise and experiences (Mansfield, Kay, Anokye, & Fox-Rushby, 2019).

For sport feminists this would mean taking a stance of reciprocity in which those involved in TDR make sense not only of methodological and conceptual differences and similarities, but address the complex power dynamics of contested meaning in setting up TDR research agendas, agreeing research design, and in selection of data collection methods, analysis techniques and reporting strategies (Mansfield, 2017). The 'middle ground' in which the logic of inclusion takes place is perhaps where some of the hardest work occurs in TDR. It is messy and replete with confrontations, contradictions and contestations. Yet it is a space for creativity to thrive thus enabling new ideas and new knowledges to flourish. TDR methodology can embrace and enable cultures of reflexivity, which we argue are central to

ensuring the explicit and critical evaluation of the way that the aims, motivations, expertise, and methodologies of all those involved, in a TDR project, might influence the knowledge production process. Reflexivity alongside a stance of reciprocity provides the core processes by which learning and adaptation take place (Antonacopoulou, 2006). For us, it is the fundamental foundation for a feminist TDR methodology. As such, it is not only a matter of working with other disciplines within sport related studies, but a matter of re-shaping methodological approaches to enable meaningful TDR findings.

However, there is scope for sports feminism to turn these challenges inwards and face conflicting feminist points of view. For instance, there are tensions within feminism surrounding the category 'woman' and 'womanhood' that need to be worked through. In this respect sports feminist can engage with transfeminism to explain transgender, non-binary and gender diverse experiences of sport (see Barras, 2021; Caudwell, 2020 & 2022). The potential of transfeminism in advancing trans social justice and inclusion is clear because transfeminism starts with "the recognition of the intersections of sexist and transphobic oppressions" (Bettcher, 2017, p. 2). However, transfeminism is new to sport studies, and only recently applied to explain transgender, non-binary and gender diverse experiences of sport (see Barras, 2021; Caudwell, 2020,2022). The introduction of transfeminism to TDR is not straightforward as it challenges some aspects of traditional sports feminism. For example, progress was secured on many fronts because of the feminist conceptualisation of the sex-gender distinction. This meant that women's liberation hinged on the acceptance that sex is biological (fixed and stable) and gender is socially constructed. As such, socialisation, social attitude and challenging sexism resulted in greater opportunities for girls and women. And yet, as Hines (2020) demonstrates, this movement was followed by a feminist theory that highlighted sex as not pre-discursive and also socially constructed. It is this development in our understanding of sex and gender that enabled transfeminism as well as queer feminism to build on non-essentialist notions of the body. These debates within feminism are not new; Black and post-colonial feminists have long critiqued traditional feminists concepts such as the category 'woman' as raced and classed (white, middle class)(Griffin, 2012; Ratna & Samie, 2017). These debates within feminism

add another layer of complexity to the challenges facing feminist transdisciplinary research in sport studies.

To summarise, we do not seek to 'define' what a TDR approach would look like, rather to broaden understanding and present possibilities that can lead to more equitable policy and practice. Feminist sport studies has a long history of intervention as well as forging interdisciplinary, multi-disciplinary and at times transdisciplinary relations. As we have outlined, there is also a growing dialogue between feminism, and health and sport science in some spheres (e.g. Heywood, 2017; Wilson, 2015; Thorpe et al, 2022). We recognise that given the often unresolved and hostile opinions on trans women from within some forms of feminism, and within the dominant discourse of 'fairness', it might not be possible to develop such a feminist transdisciplinary approach to trans issues in sport. However, the potential of transfeminism in advancing trans social justice and inclusion is clear. The challenge for sport feminism is to connect with transfeminists housed within the multiple disciplines of sport studies and build research projects with and for trans participants.

Conclusions

In this chapter, we have reflected on the potential for, and challenges of transdisciplinary feminist frameworks within sport related studies. We have shown that there is a history of sport feminism that provides a foundation for the development of feminist TDR. And yet, despite a growing momentum amongst some sports feminists to better understand the "relationship between the physiological, psychological, and social body" (Heywood, 2017, p. 46), few sport feminists, to date, have risen to the challenge for engaging in such transdisciplinary research involving sport (Thorpe et al 2022). Our discussion has focused on understandings of TDR to progress knowledge of society's complex and multi-dimensional 'wicked problems'. This is to demonstrate the scope for sport feminist TDR. We highlight that alongside conceptual, methodological and theoretical innovation, there is the need to work across disciplines including the social sciences, humanities and natural sciences. Moreover there is a need to work across the artificial boundaries in cross sector strategies that include stakeholders for whom TDR will make a difference (Mansfield, 2017). In this

way, there is a real possibility to develop a sensibility, methodology and ethical practice to do research differently.

We have indicated, given the long-standing institutional challenges for feminist scholars seeking to address the male-dominated and defined cultures of sport, and the “bioscientization” of kinesiology/sport studies” scholarship (Markula, 2019, p. 9), that the slowness to engage with TDR is unsurprising. A vibrant body of sport feminist research continues to challenge the ‘normative’ disciplinary boundaries, methodologies, epistemologies, and power relationships of sport related subjects, and, at this level, the work can be described as ‘flourishing against the normative.’ Moving forward, as new issues emerge, e.g., sport policy that regulates and excludes trans women, then new normatives are constructed. It is at this point when we witness the possibility of a feminist TDR approach, with its potential to inspire the growth of knowledge, understanding and knowledge exchange and stimulate and support action needed to make a difference to peoples’ lives.

In summary, feminist research approaches and sensibilities that are self-reflexive, critical, ethical, and centre relations of power, are well suited to the core areas underpinning a TDR approach. In particular, that knowledge production is informed by those invested in, and also affected by the problem (Brunach & Özerol, 2019), and such co-learning and co-production has a commitment to ethical mutual-learning (Harris, Brown & Russell, 2010). As the debates surrounding trans athletes illustrates, while there are innumerable challenges, feminist TDR has the potential to help overcome the “cultural limitations in the ways we think”, our divided modes of inquiry and “self-justifying belief systems” (Harris, Brown & Russell, 2010, p. 5), which continue to limit ethical and equitable social change, both in sport, and beyond.

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