From Local Fields to Global Spectacles: Sport in the Shadow of the Anthropocene—An Interview with Billy Graef, Brendan Hokowhitu, and Holly Thorpe

BLACK, Jack <http://orcid.org/0000-0002-1595-5083>, CHERRINGTON, James, GRAEFF, Billy, HOKOWHITU, Brendan and THORPE, Holly

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From local fields to global spectacles: Sport in the shadow of the Anthropocene—An interview with Billy Graeff, Brendan Hokowhitu, and Holly Thorpe

Jack Black
Sheffield Hallam University, UK

Jim Cherrington
Sheffield Hallam University, UK

Billy Graeff
Federal University of Rio Grande, Brazil; Stellenbosch University, South Africa

Brendan Hokowhitu
The University of Queensland, Australia

Holly Thorpe
University of Waikato, New Zealand

Abstract

This article brings together key insights from Billy Graeff, Brendan Hokowhitu, and Holly Thorpe to critically examine the relationship between sport and the Anthropocene. Together, each writer explores how sport both shapes and is shaped by environmental transformations, raising questions about its role in the accelerating ecological crisis. They discuss the need to rethink the Anthropocene through interdisciplinary perspectives, such as, feminist, critical, and Indigenous sociologies, emphasizing the agency of the environment and the intersections between sport,

Corresponding author:
Jack Black, A019 Collegiate Hall, Collegiate Crescent, Sheffield, S10 2BP, UK.
Email: j.black@shu.ac.uk

colonialism, capitalism, and industrial expansion. The interview highlights the environmental impacts of mega-events, the material effects of colonialism on sport, and the challenges of governance in sport's sustainability initiatives. While emphasizing the importance of athlete activism and grassroots movements in driving change, they propose that Indigenous knowledges offer valuable insights into alternative epistemologies and practices, challenging dominant capitalist models. Looking to the future, the article anticipates increasing environmental impacts on sport, including health risks, inequalities, and the need for a radical shift towards more sustainable practices. Ultimately, the scholars argue that sport is deeply implicated in the Anthropocene, requiring a reimagining of its role in a world increasingly shaped by ecological crises.

Keywords
colonialism, sustainability, climate change, sports mega-events, environmental change/degradation

Introduction: The role of sport in an ecologically unstable world

The Anthropocene poses profound challenges for societies worldwide, including the realm of sport. As a global, cultural, and economic force, sport shapes and is shaped by environmental transformations, raising critical questions about its role in the face of accelerating ecological crises (Amann and Doidge, 2020; Black and Cherrington, 2020; Cherrington, 2022; Cherrington and Black, 2019, 2022; Millington and Darnell, 2020; Orr, 2024; Soares Moura and Scott, 2023). In this article, we bring together insights from three scholars who reflect on the complex interplay between sport and the Anthropocene, considering its theoretical, political, material, and future implications. Through their respective work, Billy Graeff, Brendan Hokowhitu, and Holly Thorpe critically engage with sport's entanglement with the Anthropocene, offering diverse, yet intersecting, perspectives on its challenges and possibilities.

Holly's research—namely, her work on feminist new materialisms in sport and fitness—serves to rethink how bodies, materiality, and agency are understood in the context of environmental crises (Thorpe et al., 2020). Her scholarship on arrhythmia and the disruption of everyday life explores how global crises—ranging from climate change to pandemics—affect sporting cultures and physical practices (Brice and Thorpe, 2021; Thorpe et al., 2021). Remaining critical of how modern sports systems exacerbate environmental degradation and social inequalities, Holly draws attention to the uneven impacts of ecological crises across different communities. To this end, Brendan's research explores how colonial histories shape contemporary environmental and biopolitical issues, particularly through the lens of Indigenous knowledge and its relation to health and wellbeing discourses (Hokowhitu, 2021; Hokowhitu et al., 2022). This scholarship critiques the global sports complex for perpetuating extractive and exploitative tendencies that have contributed to the Anthropocene crisis, while urging a reconsideration of human and non-human interactions, environmental degradation, and planetary limits (Hokowhitu, 2021). Similarly, Billy's work on sport mega-events highlights how global spectacles, such as, the Fédération Internationale de Football Association (FIFA) World Cup and the Olympic Games, exemplify these extractive dynamics, contributing to environmental degradation, economic inequalities, and urban displacement (Graeff, 2019; Graeff and Knijnik, 2021). Exposing

the systemic issues embedded in the global sports industry, Billy links the spectacle of elite sport to broader structures of ecological and social exploitation (Graeff et al., 2021).

Notwithstanding their critiques, all three scholars emphasize the potential for sport to function as a medium for social and environmental change. They highlight the importance of grassroots initiatives, local (especially Indigenous) knowledge, and progressive alternatives to dominant sporting models as ways to challenge and reimagine sport's role in the Anthropocene.

By situating sport within the broader political, social, and environmental dynamics of the Anthropocene, the following interview highlights its entanglement with pressing ecological concerns and invites further reflection on how sport can contribute to—or challenge—our responses to sport in the Anthropocene. In considering the work of these three authors, the discussion first considers how sport, as a social and physical practice, can inform broader understandings of the Anthropocene, drawing on interdisciplinary perspectives that challenge and extend dominant frameworks. Second, examining concrete manifestations of the Anthropocene within sport, the contributors analyse how climate disruptions, infrastructural demands, and environmental degradation are reshaping athletic practices, fan engagement, and industry responses. Third, it turns to the governance of sport in an era of environmental precarity, exploring the tensions between sustainability, resource management, and policy responses at institutional and community levels. Finally, the article addresses the uncertain future of sport in an ecologically unstable world, questioning how sporting cultures, structures, and policies may evolve as societies confront the deepening realities of planetary change.

Intersections of sport and the Anthropocene: Critical, feminist, and Indigenous reflections

Jack Black and Jim Cherrington: How do you believe sport, as a field, and the physical cultures it embodies, can contribute to expanding or revising our theoretical understanding of the Anthropocene?

Holly Thorpe: The social sciences—and sport studies—have long been dominated by anthropocentric ways of knowing, with humans at the centre of social theory, methods, and analysis. However, I have been really invigorated by the theoretically innovative research that critical scholars of sport and physical culture are advancing in efforts to expand ways of thinking and knowing sport and human movement practices as entangled with the more-than-human world. Increasingly, sport scholars are leaning into wider academic trends that recognize the limits of human-focused ways of thinking and advancing an 'ontological turn' towards approaches that no longer place human beings at the centre but consider them in their interdependence with other living and non-living beings. Over the past decade, I have been engaging specifically with new materialism as an approach that has contributed significantly to the ontological turn in many disciplines, including anthropology, sociology, education studies, gender studies, and environmental studies.

While there are a host of influential theorists and different approaches to understanding the more-than-human dimensions of sport and movement, I've found feminist scholars, such as, Donna Haraway, Rosi Braidotti, and Stacy Alaimo particularly instrumental in advancing my

thinking about human-environment relations. Such approaches have encouraged me to pay attention to the agency of the environment—rivers, lakes, oceans, mountains, the earth—to what the environment 'does', rather than solely on what humans do in/with/to the environment. New materialisms and more-than-human approaches also prompt us to revisit our ethico-onto-epistemological assumptions about the relationships/relations between bodies, environments, and matter.

Billy Graeff: The discourse on the Anthropocene often neglects crucial nuances essential for understanding its implications. Rather than focusing solely on grand narratives, attention to detail is necessary to validate theoretical frameworks. One such nuance is the timeline of hominid development. While hominids expanded over millions of years, Homo sapiens accelerated this process, correlating with the disappearance of other hominid species.

Historical events like slavery also underwent a radical shift with European colonialism, acquiring a distinctly exploitative character. Even the widely accepted start of the Anthropocene—the 1945 atomic bomb test—was not neutral but a demonstration of geopolitical power. Terms like 'migration' and 'diaspora' can obscure more precise explanations, such as, 'sequestration' and 'extermination', which clarify humanity's impact not only on the environment but on life's diversity.

Similarly, sport, often viewed as a distinct cultural form, is deeply tied to the Industrial Revolution, a key Anthropocene marker. Sport absorbs and erases other physical cultures, shaping them according to its dominant logic. Its global expansion, often at the expense of other traditions, warrants critical inquiry. Understanding sport within the Anthropocene requires attention to class, gender, and race, particularly as our species faces existential threats—from overpopulation to war.

Brendan Hokowhitu: The imposition of the grand narrative of the Anthropocene is itself a very human—specifically, a European modernity—gesture. As a Critical Indigenous Studies (CIS) scholar, I resist such generalisations. 'Anthropo' refers to humanity as a whole, yet the concept depoliticises the atrocities of white capitalist expansion inflicted upon non-white peoples. CIS scholars reject this framing as another Western academic attempt to universalise human history while obscuring power imbalances.

While climate change affects the Global South most acutely, the primary culprits remain colonial, capitalist, and industrial expansion (Whyte, 2017). The Anthropocene, as a concept, is offensive because it fails to differentiate between those who have profited from environmental destruction and those who have suffered from it. As Karera (2019) argues, the Anthropocene narrative disregards imperial injustices and locks us into an apocalyptic framework that ignores the ongoing disposability of certain lives.

A similar critique applies to sport. Though not exclusively Western, modern sport—as we know it—is a product of colonialism, capitalism, and industrial expansion. Equating this version of sport with an innate human activity erases counter-histories and political agency. While Indigenous peoples have 'indigenised' sport, it has largely functioned as a tool of colonial domination. Black and Indigenous sporting bodies have been materialised within the logic of colonial biopower, reinforcing racial binaries. For colonised peoples, the apocalypse has already happened—enslavement, land dispossession, and epistemic destruction. Even our love of

colonial sport is a compression of this history, played out on stolen land, ignorant to their imported psychosis (Black, 2024). There is nothing more human than sport.

JB/JC: Specifically, what interdisciplinary approaches, such as feminist, critical, Indigenous, or new materialist sociologies, help to deepen our understanding of sport's role in acclimatizing to/resisting environmental change?

HT: It is beyond the scope of this response to do justice to the innovative feminist, critical, Indigenous and new materialist approaches being drawn upon to examine the more-than-human dimensions of sport and physical culture. My colleagues and I tried to offer an overview of such scholarship (Thorpe et al., 2020), but this is a quickly evolving area of research with a lot of innovation and creativity. Recently, I was drawn to Nadegger's (2023) engagement with feminist new materialisms to critique alpine skiing's capitalist and extractive relations with nature. Through 'diffractive vignettes', she highlights the tensions within skiing's more-than-human entanglements, arguing that neither continuing 'as usual', nor abandoning the sport, will resolve its troubles. Instead, we must 'stay with the trouble', reflecting on and being moved by these tensions. I've found such approaches really useful in troubling my own relationships within sporting and leisure environments that I am entangled with, including mountains (Thorpe, 2025) and beaches (Jeffrey and Thorpe, In Press) impacted by climate change.

It has been exciting to see critical sport scholars increasingly embracing creative and arts-based methods—e.g., poetic writing, visual montage, photography, music—to help us understand, represent, and evoke sport and movement as more-than-human phenomena. Over recent years I've been leaning into such creative possibilities too, including a photographic exhibition focused on youth, sport and climate change (see www.sportandclimatechange/exhibition). It can be scary to step outside our 'familiar' ways of doing research, but I am finding much joy, inspiration and connection (with community) through these alternative research practices and processes. Additionally, the dialogue between new materialisms and intersectionality (Kontturi et al., 2025) is vital, ensuring that our turn to the more-than-human does not overlook human inequities and injustice.

BG: I see in intersectional approaches, especially those initiated by Brazilian black feminism, great potential for us to find relevant answers in time. Here, a nuanced understanding of the Anthropocene necessitates a shift from broad generalisations to specific minutiae. By critically examining seemingly innocuous concepts like 'sport', and employing precise terminology and problematisation, we can unpack the complex interplay of power, culture, and historical processes that define this epoch. This approach, grounded in critical social theory and intersectional analysis, provides a more robust framework for understanding the multifaceted challenges of the Anthropocene.

BH: Theoretically, Indigenous peoples should reject the Anthropocene because its acceptance of human monism disables the possibility for counter-histories. That is, if we are all responsible for the apocalypse then the slave/master dialectic is resolved and we all become the master. Ironically, the Anthropocene concept treats humans as a species and, as outlined by Marx's unique form of Social Darwinism, it aids the concept that humans have evolved in relation to capitalism, and that their (our) evolutionary demise calls for a 'state of emergency'. Foucault (2003, 80) refers to the 'postevolutionist theme of the struggle for existence' as another master-narrative that 'adopts a biologico-medical perspective', which he suggests eventually forms into

actual racism. That is, the naturalisation of the idea that humans are a single biological species allowed for a social evolutionism where weaknesses within the species pool could be attributed to different races, whilst simultaneously debilitating counter-histories that could challenge the grand narratives of colonialism, capitalism and industrialisation. As Audra Mitchell argues in direct relation to the Anthropocene, the 'risk of equating human forms of agency with "natural forces" is that they come to be seen as inevitable, determinate and less contestable than "political forces"' (Mitchell, 2015).

Disrupted grounds: Climate change, colonialism, and community resilience

JB/JC: Can you provide specific examples or case studies, either from your own work or others, where the effects of the Anthropocene are clearly visible in, and through, sport? This could range from climate-related disruptions (such as, extreme weather events) to the environmental costs associated with the development and maintenance of new sporting infrastructures.

BG: The limitation caused by the devastation of natural resources in certain areas of the planet can be considered a hallmark of the development of the Anthropocene. Thus, the expansion of production chains beyond the borders of the economic axes of North America and Europe seems to me to be very characteristic of the Anthropocene, as a consequence.

Sport mega events have followed this formula to the letter, with territorial expansion, the fractioning of the productive process, and the outsourcing of phases of the productive process (Graeff, 2019) recently being the mantras of organisers in meetings with countries and cities that are potential candidates to host the event. This logic follows the trend of territorial expansion of global capitalism, one of the flagships of the Anthropocene. Traits of uneven and combined development can be clearly seen in such relationships. However, there is something new brought by the Anthropocene theory: there is no other planet. So, there is no 'us' and 'them', nor 'here' and 'there'. The deforestation of the Amazon, driven by a vast network of commercial interests spanning countries like Brazil, the United Kingdom, the United States, Russia, and China, accelerates global warming and intensifies extreme weather events. The recent floods that devastated regions and claimed lives in Brazil, Europe, and the Middle East starkly illustrate these consequences.

In turn, there is an entrepreneurial logic deeply embedded in sports thinking, and, therefore, in sport mega events, which prevents any progress in environmental terms. So, not to lose the reference to the Amazon, let us take the example of the construction of the 2014 World Cup football stadium in Amazonia, Brazil, a state that has no culture or tradition of massive public assistance in events related to sports. One would imagine that, when it comes to the Amazon, the lungs of the world, the largest tropical forest on the planet, extreme care would be taken by FIFA and the Brazilian government. An illustration of how things work in the world of sport mega events reveals that, tragically, this was not the case. In 2014, for example, the total (not average) number of paying spectators at the Amazonian state football tournament was 37,862 fans, according to figures from the Amazonian Football Federation. 58 games were played in the state championship, averaging 652 paying people per game. The total capacity of the 'Amazonia Arena', constructed to host 4 matches during the 2014 World Cup, is

42,300 people. The arrangement made to build the stadium, 'Amazonia Arena', ended up producing four different stadia, with values increasing from around £80 million to more than £160 million. Besides the stadium that hosted the four World Cup matches, a new stadium was built for the club that supplied the space for the construction of the first stadium. Another stadium was built in a mini–Olympic Villa in the east area of Manaus (Amazonas state capital city). These two were Official Training Centres for the World Cup. Finally, a fourth stadium was constructed to be used in the case of need (Graeff, 2019). Nothing could be more representative of the role of sport mega events in the Anthropocene and/or better record the entrepreneurial spirit of our times.

BH: Indigenous scholarship on colonialism's material effects has largely focused on land loss and appropriation. As Hardt and Negri (2009, 15) argue, 'the concept of property and the defence of property remain the foundation of every modern political constitution'. Colonial capitalism has not only dispossessed Indigenous peoples but also led to environmental degradation, linking colonialism directly to the Anthropocene. Much of this literature has focused on juridical and environmental aspects, centring on human sovereignty. Surprisingly, little attention has been given to the materiality of colonialism in relation to disciplinary power and governmentality.

Foucault (2004) provides a useful framework for examining this connection, particularly through his concept of 'milieu'—the interaction between individuals, populations, and their social and natural environment. Milieu is central to governmentality because it reflects how space is shaped through both human and natural forces. In colonial towns, spaces were deliberately structured—roads were laid, rivers diverted, and neighbourhoods constructed—all within a broader system of governance that controlled movement, behaviour, and interactions. Crucially, spaces for sport and recreation were embedded within this planning. Whether intended or not, Indigenous peoples became participants in a colonial milieu where sports fields played a significant role in shaping their worldviews.

Foucault (2004, 22) explains power through a triad: sovereignty, which capitalizes territory; discipline, which structures space hierarchically; and security, which manages a milieu through planning for events. Applied to sport in my hometown of Ōpōtiki, sovereign power involved the confiscation of Whakatōhea land. Disciplinary power structured the town's layout, including spaces of discipline, such as, Native Schools and sports fields. Security power involved the colonial state's ongoing monitoring and planning, whether through responses to natural disasters, like the 1964 flood, or surveillance of Indigenous communities.

Disciplinary power, as Foucault (1995, 141) describes, is exercised through 'enclosures' such as schools and prisons, where bodies are isolated and regulated. I extend this idea to include the sports field. The sportsground, stadium, and playing field are sites of disciplinary enclosure that symbolically and physically bring nature under human control. The manicured and segmented field embodies the colonial desire to dominate nature—flattening, mowing, delineating space to exert power over the environment. This contradicts holistic Indigenous environmental epistemologies, which emphasize a genealogical connection to land. From an Indigenous perspective, the sportsground is not merely a place of recreation but a manifestation of colonial control over both space and identity.

This raises the question: why do Indigenous peoples, myself included, have such a deep love for sport? I argue this attachment represents a form of false consciousness and alienation. Marxist theory explains that workers experience alienation when separated from the products of their

labour. For Indigenous peoples, the alienation is twofold: they labour on stolen land while also being severed from their traditional epistemologies—ways of knowing and relating to the world that were once embedded in material and cultural practices. The Māori All Black playing for their 'nation' on a rugby field becomes a powerful symbol of this alienation, where colonial capitalism has redefined both labour and meaning within a system that remains fundamentally extractive.

Through Critical Indigenous Studies (CIS), this analysis takes on further significance. Pre-capitalist Indigenous societies derived meaning from their labour, embedding it in epistemologies of nature. The forced separation from these systems under colonial capitalism represents more than economic alienation; it is a profound disruption of Indigenous ways of knowing, being, and relating to the land. Re-examining sport through this lens allows us to see how deeply colonial power structures shape not only physical space but also identity and belonging.

HT: I am going to offer an example that is very close to my heart. Three years ago, at the tail end of the pandemic, my family and I moved to my hometown of Gisborne (and region of Te Tairāwhiti), a small city on the east coast of the North Island of Aotearoa New Zealand. Since returning, our region has been badly impacted by climate change, particularly with repeated extreme weather events. In 2023 alone, our region experienced nine extreme rainfall events (including Cyclone Gabrielle), with five States of Emergency declared. The effects of these adverse weather events, and repeated flooding, have been greatly exacerbated by processes of capitalism (particularly extractive land-use in farming and forestry) and colonialism (further intensifying the effects on remote, rural and isolated Māori communities).

Understandably, sport was not the immediate thought for most people as they evacuated their homes or supported their community during the weeks and months of challenging recovery, but these rain events have significantly impacted community sport. Since early 2024, I have been leading a project titled 'Community sport in uncertain times: Learnings from sports clubs and organizations for flood-effected Tairawhiti Gisborne'. This project has been in collaboration with local Māori researchers and organizations, and their place-based and Indigenous ways of knowing the environment, weather and the community have been integral throughout the project. With the aim to understand how rangatahi (young people) have been impacted by repeated extreme weather events, including their sporting participation, and how sports clubs and organizations have responded to repeated flooding and their key learnings, we have conducted interviews and focus groups with 45 rangatahi aged 13–25 years old, and 22 coaches, managers, leaders and parent volunteers of community sports clubs (rowing, swimming, surf lifesaving, surfing, skateboarding, kayaking, rugby, waka ama). The repeated rain events have significantly impacted the running of community sports clubs, particularly for those involved in water-based sports, such as, surfing, surf lifesaving, rowing, kayaking and waka ama. Every time it rains heavily, the rivers (awa) and oceans (moana) are filled with large woody debris (log waste from forestry), silt, and untreated sewage that makes participation hazardous.

As I listen to the youth talk about how these events have impacted the places they participate in sport, and in-turn, their own motivation and opportunities to train, compete, socialize, and support one another, I often find myself reflecting on Clifton Evers' important writings on 'polluted leisure' in the Anthropocene (Evers, 2019). When I listen to the rangatahi, I am amazed at the embodied, affective and sensory knowledge they obtain through their interactions with

flood-effected sporting environments, and their highly astute observations of the impacts of climate change on the places and spaces they love. Many are highly aware of the roles of capitalism and colonialism in the problems we are facing here, some are angry, furious even, and many are active in rebuilding their community and preparing for future events. Talking with sports clubs has also been hugely insightful, revealing the power of community sport for people to come together—to grieve, support, refocus and rebuild. In many cases, our sporting communities are intimate relational webs of care that become more important in the context of climate change recovery and mitigation.

The contradictions of sport in the Anthropocene: Power, environmental justice, and governance

JB/JC: In what ways do you see the political dimensions of the Anthropocene shaping the governance of sports, especially in relation to environmental justice, resource allocation, and climate policies?

BH: Accepting that to be Indigenous is to be in constant contradiction, I love sport (i.e., the version of competitive sport that we now accept as 'sport'), and, to preface this section, I'm a Liverpool FC (LFC) men's team fan, and have been since I was five years-old, when I lived in England for a year. My relationship with LFC highlights, possibly, the complexity of global sport and the production of subjectivities. I am a complicated fan who both adores a team and dislikes the politics that the team generally stands for in terms of the leagues and competitions it plays in. Driven by revenue, global football in general continues to grow rapidly with the expansion of competitions, such as, the men's World Cup, to grow from 32 to 48 teams in 2026. There are obvious concerns for the climate and for player welfare.

In terms of sport governance, the national and international ecosystem suggests a model of power most akin to what Foucault referred to as 'governmentality'. Foucault (2004, 108) describes 'governmentality' as a complex system of institutions, strategies, and techniques designed to govern populations. This form of power operates through political economy as its primary framework of knowledge and relies on security mechanisms as its key means of implementation. For 'governmentality' to work as a concept, we need to think of the European football community as a discrete population comprised of multitudes of fiefdoms. The concept of governmentality asks us to move away from thinking about power as repressive (i.e., as sovereign), towards thinking about power as productive (i.e., managerial). UEFA's governmentality is thus predicated on the security of European football's political economy as determined by interpretations of data and discourse.

In terms of environmental justice, UEFA have determined that climate change is a key social responsibility. As an example, UEFA (2021, 4) states, 'We have a responsibility to ensure football fits in a sustainable, safe and diverse society. Our activities can only be implemented when the direct and indirect impact on environments, societies and economies has been acknowledged'. Following from this, UEFA president, Aleksander Čeferin, outlined: 'By reaching a Europe-wide audience of millions, football has the potential to dramatically shift mindsets on climate change—a critical first step to getting everyone involved in creating a climate-neutral' (UEFA, 2021, 4). Data and discourse have become central to how footballing bodies provide

governance, that is, how they produce discourses about themselves and how they are viewed by others within a global political economy.

HT: There are signs of change, with many sports organizations and sporting events developing and implementing 'sustainability' initiatives. Yet, too often such initiatives are highly performative, only offering superficial modifications to practice, without asking the bigger, more challenging questions, or willing to make drastic changes. Mega events, such as, the Olympics, tout claims of sustainability, but continue to engage in wildly contradictory practices. For example, Belinda Wheaton and I wrote about the Paris 2024 Olympic Games and the 'greenwashing' that was evidenced through the hosting of surfing in Tahiti (Wheaton and Thorpe, 2024). Such inconsistencies and contradictions are rife across the sports industry!

In my early thinking about action sports (i.e., surfing, climbing, snowboarding) in the Anthropocene, I drew upon the writing of researchers who have discussed the close relationship participants have with the natural environment and how it can lead to heightened 'ecological sensibilities' (Olive, 2016). While action sports communities have long been involved in environmental initiatives, rarely have participants been willing to give up their own highly consumptive lifestyles (Laviolette, 2006; Stoddart, 2011; Wheaton, 2007). It is these everyday embodied and affective tensions that I find myself regularly coming back to, particularly as my own moving body is enmeshed in such contradictions.

Over recent years I have observed some quite powerful forms of environmental activism coming from athletes and sporting communities living with such tensions and contradictions. For example, while the snow sports industry, and ski resort clientele are highly privileged, there are some interesting forms of politics that have emerged. Over the past decade, snow sport athletes have increasingly been getting involved with climate-related initiatives, with some recognizing the environmental impacts of their highly mobile and consumptive careers (Thorpe, 2012, 2025). For example, professional U.S. snowboarder, Jeremy Jones, set up non-profit, Protect Our Winters (POW), in 2007 after acknowledging the damage his own snow-chasing lifestyle was doing to the environment. Today, POW is an international nonprofit focused on activating passionate outdoors people and initiating legislation regarding climate change. Many high-profile athletes, across a range of mountain sports (climbing, skiing, snowboarding, mountain biking), use their social media accounts to speak publicly about their environmental concerns, to educate their followers about various events and campaigns, and their own everyday efforts to reduce the impact of their lifestyles on the environment.

Despite widespread awareness campaigns, and the use of professional action sport athletes as environmental ambassadors, few snow sports corporations or competitive leagues are changing event structures (reducing events), or rethinking the high-carbon international travel practices of their athletes, staff, and/or spectators. Recently, however, POW campaigned for the Fédération Internationale de Ski (FIS) to change the competition calendar to 'account for travel impact and climate change', with social media posts featuring images of excavators on a glacier in Zermatt preparing an area for a World Cup ski race. With more than 37,000 signatures (including from many FIS athletes), the POW petition stated: 'It is clear that FIS has done far too little to be the climate leader we need at this critical time' (change.org, 2023). While FIS was disgruntled by the POW campaign, by late 2023 the international federation had signed the United Nations Sport for Climate Action Framework (UNFCCC) and committed to reduce carbon emissions by 50% by 2030. I consider this a potent example of how athletes' environmental activism,

with the support of international sporting communities, can affect organizational change (Orr, 2025).

Personally, I am highly sceptical that international sports organizations and mega event organizers will naturally 'do the right thing'. So, we need to see more athlete activism and sporting communities calling for international sports organizations to rethink some of their highly destructive policies, practices and procedures. The future of sports organizations and events ultimately depend on their willingness to listen and respond to the demands of their communities of athletes, fans, advertisers, and consumer base. Surely, if we make enough noise (as POW did above), international sports organizations and mega events will have to listen and respond!

BG: If we consider overpopulation, pollution and the increasing contamination of food as just some of the urgent problems that characterize this new era, but also some of the most relevant ones, then it seems to me that issues, such as, sport mega events, could indeed be included in the mix of challenges and solutions.

Studies have shown, for example, that holding sport mega events can result in significant greenhouse gas emissions (Cerezo-Esteve et al., 2022; Collins et al., 2009), contributing to global warming and climate change. In addition, the construction of new sports facilities often involves the destruction of natural habitats and the expulsion of local communities, generating negative social and environmental impacts (Graeff, 2019).

Thus, despite the potential of sport to promote sustainability being widely mentioned by interested parties, the history of the development of sport mega events reveals a complex web of interests and power that makes it difficult to implement significant changes. The progressive dominance of countries and interests from the Global North, as well as the growing influence of economic thinking within the International Olympic Committee (IOC) and FIFA, shape decisions and priorities, often relegating environmental issues to the background, or to an infertile showcase.

JB/JC: How do you think sports organizations, governments, and communities can (or should) navigate the tensions between sports participation and ecological sustainability?

BH: UEFA does have power. It can ban teams from competition if they break, for instance, their Financial Fair Play regulations. In relation to the environment they could make coercive top-down decisions that could, for instance, lead to a raft of changes to address European footballs' massive footprint. In the leagues UEFA control, they could ban seating allocation to away supporters so that international travel is minimised. This extreme example would be an effective way to improve the impact on the environment, but would be deeply unpopular. Thus, sporting governance seen through this lens becomes one of political management. As Foucault (2004, 5) puts it in relation to theft, 'What, therefore, is the comparative cost of the theft and of its repression, and what is more worthwhile: to tolerate a bit more of the theft or to tolerate a bit more repression?'. The cost of environmental inaction, its financial and social costs to footballs' political economy under such governmentality does not come about by a moral imperative, rather, the acceptable average for its occurrence can be determined based on the perception of the audiences' norms: the phenomenon is deemed acceptable within limits.

HT: This is the question we've been wrestling with here in Aoteaora/New Zealand. So, alongside the project I mentioned above, we hosted a one-day national symposium titled 'Sport in a Changing Climate' in Tairāwhiti (see www.sportandclimatechange.com). Across the symposium, we worked to bring learnings from local, national and international leaders into dialogue. The symposium was grounded in place-based and Indigenous knowledge, and was the beginning of creating a 'community of practice' in which the knowledge of national, regional and local sports organizations, community groups, local youth, and researchers were equally valued. We are working to share resources and to continue building the momentum, keeping each other accountable, but also extending support to groups who sometimes can feel quite alone in their struggles to support their sporting communities in the face of climate change. Building relationships across local, regional and national organizations and communities will be key to navigating the tensions between sports participation and ecological sustainability in a changing climate.

BG: As I highlight in my work on the geopolitics of sport (Bettine et al., 2018; Graeff, 2019; Graeff et al., 2019), mega sporting events are often used as instruments of power and propaganda, serving the interests of large corporations and countries that 'buy' the Games to use them as propaganda windows. The logic of profit and spectacle, which often guides the organisation of these events, overrides the need for measures to minimize environmental impacts. Given this scenario, the possibility of an effective change towards more sustainable practices in mega sporting events seems remote. Although isolated initiatives and awareness-raising efforts are important, transforming the current model requires a deeper paradigm shift that questions the power structures and values that govern the world of sport. And this also seems to be the broader problem: co-dominant governments and corporate interests have been fundamental to the acceleration of our Anthropocene condition, that is, to the acceleration of the conditions of our own extermination.

Sport's role in the Anthropocene: Future considerations

JB/JC: You all see opportunities for sport to act as a medium for social and environmental change, highlighting, among other things, the importance of grassroots initiatives, local (Indigenous) knowledge, and more progressive alternatives to global sporting spectacles. Looking ahead, how do you envision the future of sport in a world increasingly shaped by the Anthropocene?

HT: Sadly, we don't have to look into the crystal ball to imagine such futures. I am writing this as many parts of Los Angeles (the home of the next Olympic Games in 2028) are burning to the ground. Hundreds of thousands of residents have been displaced, and many have lost their homes and businesses. Schools and sports clubs, facilities and stadium will also have been burned in the process. The chemical-filled fire retardant sprayed over hillsides and neighbourhoods will run off into waterways and oceans, as will many other toxic wastes from the fires. As I mentioned above, my hometown continues to be impacted by adverse weather events that are impacting community sport participation, as well as the hosting of various national sports tournaments. So, climate change is impacting sport now.

For those of us who have lived through climate change-related disasters, we don't have to try hard to imagine how sport is going to be impacted in a quickly changing climate. But for

many others, those who have (luckily) yet to experience such devastating effects, perhaps it is harder to imagine how their own everyday lives—their work, their family's health and well-being, and their sporting participation and consumption—are going to be radically impacted in the Anthropocene. As these events become more frequent, I hope that people can move beyond thinking about their own individualistic sporting pleasures, and be prompted to understand sport as intimately connected to the earth, the sky, the weather, the flora, and fauna.

BH: Although I do not want to end on a pessimistic note, I finish with two sporting examples from my two favourite 'sports', football and surfing. Given I am a fan of one of the world's biggest football clubs in terms of global fanbases, I unfortunately do not envision sport as a kind of panacea for environmental degradation and social inequalities. Yes, there will be local initiatives that can be held up as 'making a difference', but the constant drive to 'grow the game' will continue sports' relationship with late-capitalism. Anyone familiar with UEFA's centrepiece competition, the Champions' League, will know that the 2024/25 season marked the beginning of a new format that has essentially increased the total matches by 50% (i.e., 125 to 189). In its second and third tier competitions, the Europa League and the Conference League have moved to similar formats. The majority of these games are between clubs from different nations, meaning essentially UEFA has endorsed a change in format that will increase its carbon footprint by 50%. Why would UEFA do this given the rhetoric it espouses surrounding 'Football and Social Responsibility and Environmental Commitment'? The move by UEFA to change the format was in direct response to an ill-fated move by the biggest clubs in Europe to form a 'Super League'. For UEFA, the failed attempt required a drastic intervention that paid little heed to environmental justice and other issues, like player welfare. Hence, the discourse UEFA puts out about itself, and how it manages its 'environmental commitment', revolves around the popularity of their game having the potential to influence its 'audience of millions'.

To this extent, when I refer to sport, I do so in relation to it being a western phenomenon, or rather, I do not view sport as it is most commonly thought of today to be generalisable to the human lexicon. It is not a structure common to human experience, and, therefore, how we analyse it must be post-structural. That is, the sport we come to comprehend today as 'sport' is not a truth that we should accept as inherently stable. This does, theoretically at least, leave room for the possibilities of other forms of truth to exist. Hence, 'alternative' sports can serve to destabilise dominant narratives and could lead to environmental change.

Surfing, emanating out of Hawai'i and then alternative Californian culture in the 1960s, was the leisure activity that had the most potential to disrupt the dominant narrative because it was anti-competitive and lifestyle focused. I'm a surfer. Growing up in a rugby-centric small rural Aotearoa/New Zealand town in the 1970s and 80s, surfing was definitely an 'alternative' sport, often frowned upon as a 'waste of time', and for dope smoking hippies. Surfing's image has changed markedly since then. I recently viewed a surfing competition held in a wave pool, hosted by RedBull in Wales. It reminded me that sport did not develop as an aside to the so-called Anthropocene, it manifested out of the colonial, industrial capitalist, and late-capitalist milieu. The wave pool is a manifestation of a desire for perverse predictability, genealogically linked back through time to the colonial desire to control nature. It's perverse because it commodifies nature. One of the key dialectics of the Anthropocene is human/nature. The dialectic to be resolved is/was how do humans relate to nature, that is, are we part of it or separate from it? Modernity largely resolved the dialectic through the dominance of the rational white hetero-

patriarch. What is happening in post-modernity? I discuss the wave-pool here because it brings the human/nature dialectic into sharp-relief in relation to sport. Alternative sports provide some hope in relation to an ethos at least that is not driven by capital, and surfing was one of those sports because it represented a different logic. In a wave pool sponsored by RedBull there only remains a pastiche of that lifestyle.

JB/JC: Will sport and societies adapt to new environmental conditions, and if so, what changes might we expect in the nature, structure, and governance of sporting events?

HT: I have no doubt that sport—from the local, national and international—and physical culture are going to have to change, to adapt as our waterways and air become increasingly polluted, as our fields, gyms and stadium are flooded, burned, or blown away. But such changes are going to challenge some of our deepest assumptions about sport. For decades (longer even), we've been bombarded with messaging that participation in sport is 'good' for us, physically and socially 'good' for individual human health and wellbeing. So, inevitably, it can be very challenging to rethink sport as 'bad' for the environment, from mega-events to our everyday consumption practices (think clothing, equipment, travel) (Brice and Thorpe, 2021). As well as raising awareness of our own individual, collective and organizational environmental impacts, how might we come to rethink our sporting participation *with* (rather than on) natural environments? How might this change when, where and with whom we participate? Might reimagining more-than-human sporting participation (our moving bodies entangled with water, land, air, weather, flora and fauna) change how we engage in practices of care for/with nature?

Furthermore, while we typically think about sport participation as being 'good' for our health, sport in the Anthropocene will come with a whole host of health risks. When the air is full of smoke, ash or dust, when the oceans and rivers are polluted with micro-plastics, septic waste, or toxic chemicals, we might finally have to rethink some of the deeply embodied, and not unproblematic, assumptions that sport is 'healthy' and 'good' for us. I anticipate that such realizations will provoke great discomfort for many sporting participants and enthusiasts, and some sporting scholars too. But each time we participate in our favourite sporting past-times, or consume a mediated sporting event, we would do well to consider: What are the possible negative impacts of such practices on the natural environment? How do we make meaning of (justify, dismiss, wrestle with) such tensions and contradictions? How might we (or rather, how must we) reimagine sport—the politics and purpose of sport—in the Anthropocene?

As we know, many people want to escape the stressors of daily life through the doing and watching of sport, and I anticipate these desires will be amplified in the context of a changing climate. But the hegemonic structures of sport (capitalism, colonization, patriarchy) are so deeply entrenched in our sporting participation and consumption practices, that the necessary changes—reimagining sport *with* the environment rather than merely a stage for our human exceptionalism and excellence—is likely to be a painful process. Many will resist, refuse to change, and it is likely that the few remaining unpolluted or undamaged sporting spaces will only be available to the wealthy, those who can afford access. I'm sorry if this all sounds a bit gloomy, but there is a very real risk that some of the worst aspects of sport (exclusion, racism, sexism, ablism) will be exaggerated as unpolluted sport and physical culture are only accessible to the elite and most privileged.

BG: My shift towards studies in the field of Sport for Development Peace (SDP) is partly due to my low level of hope in sport mega events and my greater affinity with people who are involved in initiatives of the nature that SDP encompasses. Of course, I am not naïve, and do not see any solutions in such initiatives. However, I prefer to be closer to people who at least ask themselves about the problems and solutions to the issues we are currently experiencing, rather than to people who represent interests that have led us to this situation, and who work to accelerate its consequences, without major concerns about the medium or long term. One of the strongest signs of this second tendency was the unfolding of the issues linked to FIFA and the scandals of the 2010s. I had become friends and corresponded frequently with Andrew Jennings during that period (Jennings, 2011). One day, I went to his house and we talked at length. He had handed over the 'FIFA-Gate' documents to the United States and we were anxiously awaiting the developments. In short, arrests were made, FIFA gave in, and awarded another World Cup to the United States, and the caravan moved on. One of the important issues for Jennings at that time was related to Human Rights, since the hosting of the World Cup in Qatar had brought to light some interconnected issues. FIFA then created a body to think about such Human Rights issues and appointed Coca-Cola as a permanent member. We were not disappointed, nor surprised, but in a way saddened by the hypocrisy. Accordingly, this case reflects, in a way, my perspective on the future of sport, at least in terms of that linked to mega events and transnational forces: despite all the scenic moves that are made, the structure does not allow for solutions to be actually sought.

BH: I do believe that the subjugated knowledges of Indigenous cultures and their genealogical relationship to 'nature' provide examples of epistemologies and logics that question the foundations of capitalism, yet our knowledges have largely been disqualified as mythical and naïve. In the challenging times ahead, Indigenous communities will find themselves in 'ok' stead due to the resilience formed as was/is necessary living through a colonial apocalypse. The genealogical knowledges and relationality that Indigenous communities have retained will also be key to our survivance.

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ORCID iDs

Jack Black https://orcid.org/0000-0002-1595-5083
Jim Cherrington https://orcid.org/0000-0002-9824-231X

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