ENVIRONMENTAL SUSTAINABILITY IN SPORTS, PHYSICAL ACTIVITY AND EDUCATION, AND OUTDOOR LIFE

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ENVIRONMENTAL SUSTAINABILITY IN SPORTS, PHYSICAL ACTIVITY AND EDUCATION, AND OUTDOOR LIFE

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Table of Contents

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EDITORIAL
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Editorial: Environmental Sustainability in Sports, Physical Activity and Education, and Outdoor Life

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Editorial on the Research Topic

Environmental Sustainability in Sports, Physical Activity and Education, and Outdoor Life

Environmental sustainability is one of the most urgent and complex "big issues" facing the contemporary world, as highlighted by its centrality to many of the United Nations' Sustainable Development Goals (SDGs). Environmental sustainability issues take many forms, including: climate change and carbon emissions, waste management, pollution and environmental degradation, the use of scarce natural resources such as water, the use of "dirty" and "clean" energy, the production and recycling of consumer items, and the impacts of modern living on biodiversity and the natural world.

Environmental sustainability is of critical importance to the fields of sports, physical activity and education, and outdoor life, in a whole range of ways. For example, the development of facilities and equipment for these activities requires the use of scarce natural resources, and has significant impacts on the natural environment; the staging of sport events often carries a large carbon footprint and generates vast material waste; physical exercise in many settings carries substantial environmental risks, such as air pollution or excess heat; and, participation in outdoor life activities, such as mountaineering or canoeing, may threaten local biodiversity and micro-climates. Issues of environmental sustainability thus have crucial significance for sport, physical activity and education, and outdoor living, at many different levels: in terms of geographical scale (local, national, regional, and global), in terms of types of activity involvement (as participants and players, spectators, organizers, and investors), and in terms of varieties of expertise and commitment (as professionals, elite competitors, amateurs, and informal participants).

The goal of this Research Topic is to advance knowledge and understanding of the environment and environmental sustainability in the three fields of sport, physical activity and education, and outdoor life. Our aim in developing this Research Topic has been to publish papers that draw on a diversity of disciplinary groundings, and to encompass a broad range of approaches relating to theory, methods, empirical content, and relevance for policy and practice.

The Research Topic builds on the conference on "Sport and the Environment" that was staged in 2019 under the auspices of the European Association of Sport Sociology, and which was hosted by the University of South-Eastern Norway (USN) at its campus in Bø, Telemark. Four of the Research Topic editors have positions at USN and were involved in the event's organization.

The conference might be considered as a "breakthrough event", in being the first to be staged by a leading international social science and sport association with a central thematic focus on the environment.

THE RESEARCH TOPIC ARTICLES

The 11 papers in this collection share a focus on sport and the environment, yet topics vary from more theoretical analyses of the values of modern sport in a sustainability perspective via empirical considerations of material waste and carbon footprint to how sports organizations deal with higher demands for tackling environmental sustainability challenges.

Some international sport organizations seek to deal with environmental sustainability issues by adhering to international standards. Yet, as the article by Naess highlights, this approach has negative as well as positive sides for the sport, as illustrated through the case study of Formula E's pursuit of standardization certification. Naess likens the certification system to a "bazaar economy", where there are various degrees of bargaining and clientelism in play. A very useful four-fold ideal-typical model is advanced, to register different types of environmental sustainability work relating to certification, and which can be applied across different sport organizations.

The "sport for development and peace" (SDP) sector, which uses sport for wider social change, has mushroomed across the world since the early 2000s. However, as the article by Giulianotti highlights, organizational stakeholders and academics with interests in SDP have been slow to examine how this global field can engage with environmental issues. In response, Giulianotti argues that a "socio-ecological" approach should be central to SDP activity and research, to recognize how environmental sustainability may only be tackled effectively if wider issues of social inequality and social justice are adequately addressed. This socio-ecological approach includes challenging "bourgeois environmentalism", advancing democratization (such as through "associative democracy"), and transforming SDP into a "recognition space" that enables the full participation of the most marginal community members.

Indigenous peoples (also known by other terms, such as "first" or "native" peoples) are ethnic minorities which have been affected by the subsequent colonization of their lands by larger ethnic groups. The article by Skogvang examines the indigenous Sámi people in northern Norway, and the roles of festivals, as well as physical and cultural activities, in maintaining and reproducing their culturally distinctive forms of environmental awareness. Skogvang highlights in particular how Sámi festivals are intended to socialize and to educate young people with respect to indigenous cultural beliefs, customs, and practices, including in relation to the environment. Festivals have the further benefit of spreading awareness of the Sámi peoples, and their relationships to the environment, to wider audiences.

A topic rarely considered in relation to sport and the environment is the role of uniforms and clothing. In their article, Brice and Thorpe draw upon a feminist new materialist theoretical approach to consider the environmental impact of fitness clothing, particularly the highly popular style of activewear. Bringing interviews with women and their own lived experiences into conversation with Karen Barad's concept of entanglement, they examine human-clothing-environment relationships, revealing athleisure clothing itself is "an active, vital force that intra-acts with other non-human (and human) matter within the environment". Focusing on both laundering and disposal practices, they demonstrate the ways in which feminist new materialisms encourage moves toward non-anthropocentric understandings of the sport-environment relationship, as well as new ethical practices in our everyday fitness lifestyles.

Sport-related tourism practices are another important topic related to sport travel, consumption and the environment. The paper by Rosenberg et al. applies micro-sociological perspective using Goffman's dramaturgical metaphors and concepts, while engaging empirical data from an ethnographic study of five different multi-day trips in Norway (using skiing, hiking, or biking as modes of travel), to reveal how the "different actors understood, operationalized and practiced elements of sustainability in their everyday lives while on the trips". This examination of nature-based adventure tourism highlights the fascinating interplay between tourists, guides, adventure activities and nature, and ultimately reveals performances of "light" sustainability. The work being done by those in nature-based sport economies, and the complexities and contradictions they must navigate, is an important topic deserving further investigation.

An important and often overlooked aspect in studies on sport and sustainability, according to Braksiek et al. are sport participants' attitudes toward environmentally friendly behavior. While more attention has been paid to such behaviors in research on elite sport contexts, the authors identify a lack of such research at the sport participation grassroots level. Using Icek Ajzen's Theory of Planned Behavior (1991) from the field of social psychology, the researchers surveyed 3,036 male and female members in German community sport clubs for three antecedents of behavior; participants' attitudes toward the behavior, subjective norms, and behavioral intentions. While differences between men and women were detected in the antecedents-intention relationship, the study found that the three antecedents successfully predicted the behavioral intentions of sports club members to act environmentally friendly, concluding that the Theory of Planned Behavior can be fully applied to sports club members and to the grassroots sports context.

"Can sport be sustainable?" is a question rarely asked directly in research on sport and sustainability, though a crucial starting point for research and discussions on sport and sustainability. "It depends" answers Tangen, in an elaborate and personal essay in which he weaves together a colorful tapestry of literatures, illustrative examples and reflections while building on Niklas Luhmann's system theory. According to Tangen, the modern sport ethos with its emphasis on breaking records, and thus "unlimited growth", embodies, reflects and espouses modernity's illnesses at the heart of the current climate crisis. Can the hypertrophic growth of sport and its associated climate and social injustices be counteracted? Not unless, Tangen writes, modern society scales down and moves toward a more "simple but global,

low-tech based society where playful, physical contests may take place locally and be sustainable" (p.14).

Eriksen has written extensively on the concept of overheating in order to understand accelerated change as a major effect of global capitalism. Sport may be seen as both a metaphor and a major driver for this development. In his contribution to this issue he argues that the upward spiral of improved achievement in modern sport can be seen both as an effect of the global market and a carrier of modern values of development and growth. By drawing on the concept of "the red queen effect", referring to forms of competition among species in which improvement is necessary in order to survive, Eriksen scrutinizes the paradoxes inherent in modern sport and applies his analysis as a critique of an unsustainable economic growth.

While there has been an increasing effort to build environmentally friendly sport stadiums since the millenium, the emphasis has been on constructing new arenas as older stadiums are seen as less energy efficient, in line with a widespread belief in international architecture. Wergeland and Hognestad show in their contribution how this belief has served predominantly the commercial interests embedded in the stadiums, as "new" sells more easily than "old". They provide a critical discussion of these tendencies, which have implied a principle of growth both in revenue and in size. By dwelling on two historical stadiums which have been threatened with demolition in recent decades—Stadio Flamino in Rome and Tynecastle Park in Edinburgh—Wergeland and Hognestad highlight the social and environmental importance of reusing stadiums for a greener future.

While research on the sustainability and environmental impact of sport mega events has been quite extensive, smaller and more local events have not been studied to the same degree. Jensen analyses the conceptualization of sustainability regarding sport events in 22 different municipalities in Norway. He finds that sustainability is an "unfinished puzzle" for local policy makers and that there are great variations between the municipalities with regard to how they conceptualize sustainability in their masterplans and how this is translated (or not translated) into event policies. Jensen's analysis reveals the complexity local policymakers face when there is demand for both more events and increased sustainability measures.

Many lifestyle sports participants see themselves as "green". In their article, Langseth and Wyff study surfers' environmental attitudes and action. While they found that most surfers have environmental attitudes, they also found a gap between their expressed attitudes and their actions. This is especially evident in connection with extensive long distance travels, when the search for the most interesting spots, waves and locations tend to overrule environmental concerns associated with such travels. Langseth and Wyff argue that this discrepancy can be seen as the result of a cultural dissonance, as "being green" and extensive travels both have value and are recognized as key to participation within surf cultures.

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All authors listed have made a substantial, direct, and intellectual contribution to the work and approved it for publication.

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ORIGINAL RESEARCH
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Is ISO20121 Certification a Detour or Gamechanger for Eco-Striving Sport Events? A Conceptual Typology

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An increasing number of sport organizations express interest in international accreditation standards as a way of tackling environmental sustainability (ES) challenges. This article, however, argues that the commercial context of these standards and "the bazaar economy" in which its suppliers operate may hamper the diverse solutions needed to reduce the ecological footprint of sport. At the same time, it acknowledges that standards are useful to certain sporting organizations. To sort out the pros and cons of the relation between such standards and ES work in sport organizations, the Formula E (for Electric) championship is used as case example. The championship became the first category in motorsport to receive ISO certification in 2018, and 2 years later, it achieved net zero carbon footprint from inception. On that basis, the article provides a typology that provides coordinates for empirical research on how sport organizations may avoid "organizational hypocrisy" in their ES work by viewing the pros and cons of ISO certification. While the practical implication is insight into what it takes for a sport organization to achieve a specific certification, the academic implication is conceptual coordinates for empirical and comparative research of ES initiatives and certifications.

Keywords: environmental sustainability, formula E, organizational hypocrisy, bazaar economy, green clubs

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INTRODUCTION

Environmental sustainability (ES) and sport events have been coupled since the early 1990s. Partly due to different interpretations of ES (Chernuschenko, 1996, Paquette et al., 2011), as well as inconsistent applications of it by sport governing bodies (Geeraert and Gauthier, 2018), this has however led to a variety of initiatives but little homogenization of ES practice and assessment. For that reason, since the early 2000s, there has been a growing emphasis on developing international and generic *standards* for environmental performance at sport events (Mallen et al., 2010). In a broad sense, standards define normative rules on behavior that are voluntarily adhered to Timmermans and Epstein (2010) and Brunsson et al. (2012). However, given the problem of agreeing upon common measures in sport, authors warned that it could lead to reduction of credibility of environmental performance reports (Mallen et al., 2010; Vanwynsberghe, 2015; Collins and Cooper, 2017) or, in a more general sense, "organizational hypocrisy." This term refers to organizations' inconsistency between talk, decisions, and action (Brunsson, 1989, 2006). Whereas, this inconsistency can be upheld for strategic reasons, i.e., to preserve legitimacy in the face of conflicting stakeholder demands (Cho et al., 2015), it can also become a delegitimizing process as failing to "walk the talk" may overshadow the engagement for ES issues in the first place.

This topic is central to studies that question the ES efforts from sport organizations (Petersson and Vamling, 2016; Johnson and Ehsan Ali, 2017; Malhado and Limdemberg, 2017; Miller, 2017; Geeraert and Gauthier, 2018; Popa, 2019; Dendura, 2020). Among the most vocal critics, we find Boykoff and Mascarenhas (2016) who argue that the IOC and its hosts have

> capitalized on the sustainability zeitgeist without actually embracing significant environmental principles. This amounts to buying the eco-label through aggressive public-relations campaigns rather than forging meaningful environmental policies with positive material ramifications. In short, symbolism swallows substance (Boykoff and Mascarenhas, 2016, p. 2).

A case for sport organizations to address is therefore how organizational hypocrisy, related to ES work, may be reduced. Despite the focus on "certifications," that is, the verification tasks performed by an independent auditing body to ensure that organizations adhere to sustainability standards, criticisms are plenty. It is not given that striving for standards represent the best eco-improving options for all forthcoming events or organizations. Some reasons are, on the one hand, cost, creativity, and credibility issues and, on the other, the certification system's reminiscence of "the bazaar economy" (Geertz, 1978). However, whereas Geertz portrays the bazaar economy as a contrast to a modern capitalist market, mostly because of money's role in the latter, this article follows Fanselow's (1990) argument that these arenas for selling and purchasing products and services are quite similar. Akin to how "market, brand names and trademarks act as classificatory devices by which the provenance of goods in capitalist markets becomes identifiable" (Fanselow, 1990, p. 253), there is a comprehensive folklore in bazaars about preferences and information exchange opportunities.

Most importantly, information in bazaars is "poor, scarce, maldistributed, inefficiently communicated, and intensely valued" (Geertz, 1978, p. 29). Similar to sporting organizations on the look for ISO costs or what it would take for a football club to become certified by one standard or another, the "search for information one lacks and the protection of information one has is the name of the game" (Geertz, 1978, p. 29). For example, when the Health, Safety and Environmental Manager of Manchester United FC, an ISO certified club, was asked if he had any advice to prospective ISO certificants, this is what he said: "make sure you get reputable and credible advice, guidance and support. Be very careful whom you approach[1]" As a consequence, the cases discussed in this article indicate that two procedures become central to customers in sport. The first is clientelization, which is the tendency for repetitive purchasers to establish continuing relationships with particular purveyors of them, rather than search widely through the market at each occasion of need' (Geertz, 1978, p. 30). Because trading "involves an ongoing search for specific partners, not mere offers of goods to the public" (Bertacchini and Lamieri, 2007, p. 142), transactions become interpersonal. Similar to the market for certifications, "Clientelization represents an actor-level attempt to counteract, and profit from, the system-level deficiencies of the bazaar as a communication network" (Geertz, 1978, p. 30). The presence of this effort rests in turn on a specific function of bargaining: "…the sort of information one needs cannot be acquired by asking a handful of index questions of a large number of people, but only by asking a large number of diagnostic questions of a handful of people" (Geertz, 1978, p. 32). Unfortunately, in the context of ISO certification, this kind of clientelization and bargaining may also question the independence of the auditors and thus the entire system. Boiral (2012) cites one of his informants in a study of ISO certification processes that says the auditors "cannot afford to be extremely strict and cause problems (…) because if an auditor is too strict and causes problems, we can just drop him and look for someone else" (cited in Boiral, 2012, p. 649).

To be able to identify further the pros and cons of the strategy of reaching for certification compared to other types of ES work in the context of the principles of the bazaar economy, this article explores the relations between ES, certification standards, and sport organizations. Similar to conceptual papers in general, the aim is to bridge "existing theories in interesting ways, link work across disciplines, provide multi-level insights, and broaden the scope of our thinking" (Gilson and Goldberg, 2015, p. 128) rather than to present in-depth empirical data or quantitatively measure the effect of various ES initiatives. To flesh out this perspective, the next section introduces a brief review on the growth of international standards and certifications, first in general, then in sports. Then, the case of Formula E's road from start-up in 2014 to ISO20121 certification in 2018 is presented with emphasis of what Bakos (2020,p. 77) call the "pre-institutionalization phase." Drawing upon this descriptive review, a typology is introduced, which is "a multidimensional view of the target phenomenon by categorizing theoretical features or dimensions as distinct profiles that offer coordinates for empirical research" (Jaakkola, 2020, p. 23). This typology brings pointers to future research that could enrich our understanding of the relation between ES work, certifications, and sport organizations.

STANDARDS AND CERTIFICATIONS: A BRIEF OVERVIEW

To ensure smooth cooperation and competition between countries, sectors, and industries, some form of standardization have always been sought after. According to Brunsson et al. (2012), an organization that has capitalized on this development has been the International Organization for Standardization (ISO). It was founded in 1947 "to promote the development of standardization and related activities in the world with a view to facilitating international exchanges of goods and services, and to developing cooperation in the spheres or intellectual, scientific, technological and economic activity" (Meidinger, 1999, p. 183). Its success is due to four factors. First, the globalization of the economy and transnational supply chains has made it "necessary to foster a certain homogeneity of management

[1] Cited from "Event sustainability management - ISO 20121 passes 2012 Olympic Games test", iso.org, January 9, 2013. Retrieved from: https://www.iso.org/news/2013/01/Ref1690.html.

systems in order to favor the development of such processes" (Heras-Saizarbitoria and Boiral, 2013, p. 49). Second, this form of auditing reinforces the social legitimacy of organizations through the verification of internal practices "by presumably rigorous, independent and impartial external experts" (Boiral, 2012, p. 634). Third, this homogenization is supposed to ensure the growing diversity of stakeholders by involving third-party bodies in the auditing process (Silva-Castañeda and Trussart, 2016). Fourth, as a result of ever more standards, a possibility to comprise the logic of standards into meta-systems has emerged, which enables organizations to be accountable for their practices beyond technical elements (Uzumeri, 1997).

Despite these benefits, four critiques can be made toward standardization processes. First, the standardization of standardization, so to speak, is hindered by terminological confusion and the lack of a coordinating body. There are technical and non-technical standards, process and outcome standards, and standards inscribed by law and market-driven standards (Brunsson et al., 2012, Nguyen, 2017, Escrig-Olmedo et al., 2019). Second, the codification of the auditing process and techno-scientific values is incommensurable with the social, event-specific, and environmental problems of relevance to the stakeholders (Silva-Castañeda and Trussart, 2016, Naiki and Sakaguchi, 2020). Third, due to the marketization of certifications, Boiral (2012) see this development as an expression of the "degree-purchasing syndrome." Here, the certification—rather than the aims it is intended to achieve—gets primary attention. In his qualitative study of how certification works, Boiral (2012, p. 644–46) discovered that documents were often "prepared for the impending audit rather than to guide operational activities or meet organizational needs" (p. 644), and actual practices were seldom examined by auditors due to a lack of time. Fourth, the privatization of certification standards open for power games between actors in the field related to the declining capacity and competence among nation-states after the end of the cold war (Heras-Saizarbitoria and Boiral, 2013; Derkx and Glasbergen, 2014; Fransen and Conzelmann, 2014). Timmermans and Epstein (2010, p. 79) therefore underline that:

> Depending on the process of standard-setting, standards can imply a lowest common denominator of available options, the power of the strongest party in standardization, a negotiated order among some or all stakeholders, or a confirmation of how things are already done by most parties.

A question that will be explored in next section, therefore, is to what degree do these benefits and downsides of standardization and certification have been addressed in relation to sport?

ES WORK IN SPORT

Since the early 1990s, sport organizations have paid attention to environmental challenges in a multifarious way. Trendafilova et al. (2018) emphasize three particularly well-researched strands in the literature on ES and sport: sport events, sport facilitates, and the relation between sporting activities and nature. What is noteworthy about these strands, as demonstrated by McCullough and Kellison (2018) as well as by Dingle and Mallen (2020), is that they, for the most part, represent tailormade initiatives to connect global ES issues with local solutions. Less attention has been paid to ES work in relation to international standards or what McCullough et al. (2016) call the third wave of sport environmentalism. Wave one was about developing awareness of environmental issues within their particular context, and wave two came when environmental actions at an organizational level (e.g., team and event) began to merge with league or governing body activities (McCullough et al., 2016, p. 1,053). Wave three concerned strategic planning—often internationally. Typical for this wave is that "certification and process evaluation techniques (…) are implemented to provide stability to strategy and action efforts" (McCullough et al., 2016, p. 1,054). This article argues that the typicalities of the third wave became a norm since the London 2012 Olympics coupled the marketization of standards with corporate partnerships and its own engagement in developing a particular ISO standard.

Unlike early certification adopters like the 2006 Turin Olympics [awarded the ISO 14001, Environmental Management and Audit Scheme (EMAS) certification] (Botta and Comoglio, 2007, Dansero and Mela, 2012), the organizers of the 2012 London Olympics were instrumental in creating the management system that subsequently would become the IOC's preferred certification regime for ES work (Ross and Leopkey, 2017). Way before the 2012 Olympic Games, and well before the bid for the Olympics was placed in 2005, the London Organizing Committee of the Olympic and Paralympic Games (LOCOG) had started to work with ES matters. Fiona Pelham, chair of the team who developed ISO 20121 and who worked closely with LOCOG, explains that:

> Existing frameworks at the time were either checklist approaches (limited in their suitability, as it is hard to prescribe generic steps equally applicable across a diverse international event industry) or management systems created for business and focused only on environmental aspects (Pelham, 2011, p. 44).

Therefore, LOCOG and in particular its Head of Sustainability, David Stubbs, collaborated with British Standards (BSI, the UK's National Standards Body, and the first national standards organization in the world) in order to develop a management system designed for events. This standard, which at first became BS8901, brought according to Pelham (2011, p. 45) "attention to the standard and its development process, and supported the work of many event industry individuals passionate for change toward greater sustainability." A revision in 2009, followed by evidence of use internationally, prompted BSI and the Brazilian National Standards Body (ABNT), to jointly submit a proposal to the International Organization for Standardization (ISO) to transform BS 8901 into a global standard (Walker, 2012, p. 6).

Both BS 8901 and the subsequent standard called ISO20121:2012, Event sustainability management systems—Requirements with guidance for use, take a procedural or process-based management system approach that consists of three phases—planning, implementation, and review—and can be applied by organizers, venues, and suppliers of

all types of events (Walker, 2012, p. 7). Basically, it now works like any other ISO standard, which means that the organization following it "must say what it is going to do, how it is going to do it, who is going to do it and by when it is going to get done" (Curcovic and Sroufe, 2011, p. 73). More specifically, the ISO standard includes 29 clauses, which include specific clauses on leadership, supply chain management, event sustainability objectives and sustainable development principles, and statement of purpose and values. As LOCOG was instrumental in operationalizing the forthcoming ISO20121, the result of the Olympics, environmental-wise, confirmed its position in the ISO universe. According to the Commission for a Sustainable London, the Olympic Games watchdog when it comes to ES, "London 2012 has been the most sustainable Games ever" (Commission for a Sustainable London., 2013, p. 2).

Due to this success, the London Olympics' efforts to develop ISO20121 set off an "organizational isomorphism" among other major sporting events (Ross and Leopkey, 2017). The theoretical argument is that organizations in search of legitimacy will at some point begin to become similar due to external demands of what constitutes good governance. In line with how this isomorphism may be coercive, normative, or mimetic (DiMaggio and Powell, 1983, 1991), an example trending toward coercive isomorphism is found in Bakos's (2020) study of ES work at the 2018 Commonwealth Games, where respondents emphasize pressure from LOCOG on other venues to adapt the standard of the 2012 Olympic. On the mimetic side, Rio (2014) which received ISO20121 certification the same year, apparently mirrored the London 2012 Olympics strategy. Besides highlighting the need for "a good management and reporting system to implement effective sustainability measures" (Rio, 2014, p. 38), it says, without further explanation: "The most relevant management system for events is ISO 20121" (Rio, 2014, p. 38). Moreover, the report refers to the London Olympics as the benchmark 16 times, and Rio (2014) sent as part of their pre-Games briefing program 153 observers to experience the Olympic Games to attend 53 official sessions (Rio, 2014, p. 102). Others, as will be demonstrated below with the case of Formula E, are examples of normative isomorphism—finding inspiration from the development of a field-specific norm—but adjusting it to its own capacities (see, e.g., Nichols et al., 2017).

THE CASE OF FORMULA E

The Formula E championship has grown considerably in terms of spectatorship, technological development, and commercial interest since its inaugural race in Beijing, China, in 2014. While Formula E can be criticized as it moves around the world to race (responsible for 72% of its carbon footprint[2] and reinforce the energy-intensive consumption patterns of late-modern society, it has also done more than other sport organizations by actually developing—not only promoting—CO_2-reducing technology like energy-efficient electric engines and powertrain parts transferable to road cars. For that reason, Krivevski (2018) claims that Formula E has one of the lowest carbon footprints among international sporting events. Even more importantly, the championship has according to Næss and Tjønndal (2021) an approach to "legacy" in ways that mirror LOCOG's David Stubbs' view on what events may bring of ES change: "taken at a large scale, the relatively temporary diversion of resources to deliver the Games can be significantly outweighed by the longterm gains from achieving a sustainable legacy" (Stubbs, 2011, p. 118).

Connected to international accreditations, these ES efforts by Formula E have materialized in two ways. The first came in 2018 when the championship received third-party ISO certification in 2018 and, second, in 2020, when the championship became the first sport with certified net zero carbon footprint from inception. Guided by the recommendations set out by the UN Framework Convention on Climate Change (UNFCCC), Formula E utilized three strategies to achieve this latter award, which is shared with only two other companies in the world: effective measurement of carbon output, prioritizing reducing its footprint and offsetting remaining unavoidable emissions[3]. In other words, it seems to have made it to the top of its aim pyramid in terms of sustainability. What is interesting in the context of this article is that in the *eStory*, Formula E's official "value pamphlet" from 2015 (Wilbaut, 2015), certification is never mentioned—although the focus is on how Formula E as an ecosystem for ES-friendly innovations can improve air quality, provide cleaner mobility solutions (electric ones), and make a positive impact on urban development. In early 2021, with Formula E having raced 50 times in 20 cities and organized six championship seasons across the world, this begs the question of how ISO certification was achieved.

The Formula E's side of the story is told mainly by Senior Sustainability Consultant Julia Pallé. In a master class with Pallé streamed on YouTube in July 2020, facilitated by Factory Berlin TV[4], she underlined that "don't reinvent the wheel" was a key principle for their environmental work when she joined the company in 2014 from French tire manufacturer Michelin. This meant reading up on the FIA's environmental strategies, scouring UN recommendations as mentioned above, and picking certain known eco-relevant themes that would align with the championship's core issues. Racing in cities, this meant focusing on air quality, energy use, and waste management. To coordinate the efforts to improve on these areas, Pallé says that the next step was to develop a management system to anticipate the expectations in the stakeholder network and find partners that could operationalize tasks. After 1 year of work and racing, Formula E earned some acclaim for its environmental efforts. This opened according to Pallé new doors, such as invitations to join Sport and Sustainability International (which I will return

[2]"Formula E: achieving net zero carbon footprint", formulae.com, September 21, 2020. Retrieved from: https://www.fiaformulae.com/en/news/2020/september/three-steps-to-net-zero).

[3] "Formula E claims first sport to have net zero carbon footprint", September 21, 2020. Retrieved from: https://www.racetechmag.com/2020/09/formula-e-claims-first-sport-to-have-net-zero-carbon-footprint/.

[4] "Driving the Future: Masterclass with Julia Pallé (Formula E)," Factory Berlin TV, July 22, 2020. Playtime 58:15 minutes. Retrieved from: https://www.youtube.com/watch?v=D-upisARrfkandfeature=youtu.be.

to below), and the green light from Formula E's leaders to expand the ambition from environmentalism to sustainability. This meant including social and economic legacy as well as environmental concern in the equation and strive for what Pallé considered the natural next step: ISO20121 certification, as the aftermath of the London Olympics had proven its relevance to event environmentalism.

At this point, in 2015, the challenge was not only to get ISO certified but sell that specific idea internally. A bottom-up approach was chosen as the ISO certification required all hands on deck and implementation of ES work in all departments. In another interview Pallé, who later became Sustainability Director of Formula E, said that:

> The greatest challenge was to create that culture of sustainability within the business. A cultural shift is something really deep and that takes time. You need to be very patient, very stubborn and to truly create synergies. Start building very strong collaborations with your staff and with your exec team. Everyone needs to believe in it. It's not in a couple of days, or even months, that you can create that[5].

Gradually, Formula E gathered new friends outside motorsports. Pallé mentions in the master class that Formula E was part of the foundation for the UN's Sports for Climate Action framework, such as public endorsements from Greenpeace and invitations to join the French Ministry of Sport's roundtable on sport and sustainability. However, their work was delayed because, in 2015/16, the eco-friendly initiatives were not sufficiently convincing to those who instead criticized the championship's environmental impact from its logistics and intrusion in residential areas (races were held in cities only, on temporary, purpose-built racetracks). Whereas, some events went very well, and major car manufacturers began to enter the championship full time, some situations demonstrate a fallout with the stakeholders and the residents of the city. Most notably, this regards the 2016 season finale in London's Battersea Park. According to the UK branch of SGS (Société Générale de Surveillance), the Swiss-based accreditation company that helped the Rio (2014) Olympics to achieve ISO20121 status and later would do the same with Formula E, the race was:

> preceded by a lengthy protest by an action group that claimed motorsport would harm the environment and deprive local people of their tranquility, in spite of the inherently-low emissions and noise levels of the cars participating[6].

SGS however overlook other reasons to the protests, as the building of race facilities in a historical parkland created restrictions on public use, damaged the greenery, and disturbed local wildlife (including the local zoo, whose animals needed to be moved to make space for construction work) (Smith, 2019, Sturm, 2019). Yet, according to SGS, which describes itself as "the world's leading inspection, verification, testing and certification company" dating back to 1878[7], this awakening "was pivotal in Formula E's resolution to build on its established environmental management system by seeking official certification of its credentials with the voluntary global standard ISO 20121[8]" Aiming for ISO certification of the management system, by contrast, would in SGS's view "demonstrate that the organization had a complete identification and understanding of its impacts on the environment and local communities[9]" More specifically, SGS sets out to examine the Formula E's "holistic approach to sustainable event management." This included, SGS writes, the implementation of a waste management system and community engagement projects to ensure social inclusivity.

Pallé, however, underlined in the master class that SGS at first did not realize the full extent of the challenge Formula E was up against with its global traveling and mobile setups. Hence, she says, the two companies collaborated in developing the connection between strategy and operationalization to reach ISO standards. Apart from SWOT analyses and other preparations, Formula E and SGS organized a large stakeholder meeting based on what Pallé names a SMART approach (a concept from management thinking, first coined by Doran, 1981). In this process, local communities, or cities, were, according to Pallé, one of the most important stakeholders to be involved due to urban challenges with air pollution and mobility solutions. Given Formula E's work to address these issues, SGS later published the collaboration as a case study. In the case study report, Pallé says that, apart from the ingenuity required to comply with the ISO management system, there was also a legal issue that would turn out to become far more complex than anybody expected, apparently. As it says in the report:

> Not only was there the documentation preparation and review and proof gathering, but the necessity for development of a Legal Register, which records all legislation directly or indirectly applicable to operations and activities, in every location an event is held. This is made more complex as, in many cases, events held from year to year may be in different locations within the same country, each with its various requirements and characteristics (SGS, 2018, p. 3).

According to Pallé, reaching for ISO certification meant altering the coordination of the FE business: "We were successful because we gathered all of the departments of the business around the table—communications, event managers, procurement—and identified key issues and carried out contextual analyses of those issues" (cited from Campelli, 2018). Furthermore, a specific ISO

[5] "Julia Pallé: Driving Formula E's Sustainability Strategy", Medium.com, November 8, 2020. Retrieved from: https://charlotte-hook.medium.com/julia-pall%C3%A9-driving-formula-es-sustainability-strategy-a97f8e546097.

[6] "Formula E achieves demanding event sustainability certification", SGS.com, September 2, 2018. Retrieved from: https://www.sgs.co.uk/en-gb/news/2018/09/formula-e-achieves-demanding-event-sustainability-certification.

[7] "ABB FIA Formula E championship receives ISO20121 certification from SGS", SGS.com, August 20, 2018. Retrieved from: https://www.sgs.co.uk/en-gb/news/2018/08/abb-fia-formula-e-championship-receives-iso-20121-certification.

[8] "Formula E achieves demanding event sustainability certification", SGS.com, September 25, 2018. Retrieved from: https://www.sgs.co.uk/en-gb/news/2018/09/formula-e-achieves-demanding-event-sustainability-certification.

[9] "Formula E achieves demanding event sustainability certification", SGS.com, September 25, 2018. Retrieved from: https://www.sgs.co.uk/en-gb/news/2018/09/formula-e-achieves-demanding-event-sustainability-certification.

20121 Working Group was, according to Campelli (2018), set up "with a dedicated representative from each department, with additional working groups built around topics like community engagement, waste management and supply chain." The final push for ISO certification came in 2017 and 2018, going for third-party certification (the most highly rated certification) where onsite auditors according to Pallé at the master class examine whether you can prove, document, and demonstrate that you do everything that is stated by the management system for ES work. Apparently, it worked, as Formula E received the ISO certificate in August 2018, 1 month after the New York races.

In early 2021, Pallé leads the central contact team, which has a representative in each racing team to ensure coherence in the sustainability policy. These moreover work together with the rest of the team as well as the rest of Formula E to develop the sustainability practices[10]. In achieving the net zero carbon footprint achievement, for example, Formula E worked with Quantis, a life cycle assessment consultancy that also aided the 2016 Rio Olympics in creating an environmental calculator[11], to calculate the overall footprint of the championship. To offset this Formula E's emissions from the past six seasons, the championship has, alongside "traditional" projects like optimizing transport and logistics, invested in Gold Standard (GS, a non-profit organization established by the World Wildlife Fund, SouthSouthNorth and Helio International in 2003 and HQ'ed in Switzerland) and Verified Carbon Standard UN projects in line with the UNFCCC's Clean Development Mechanism. Among the projects, Formula E lists the building of 15,555 methane digesters on the Chinese island of Hainan in which organic matter, including manure and waste, is anaerobically degraded into methane gas through microbial action—saving 53,000 tons of CO_2 per year[12] Again, the market rules: According to Gold Standard's own help desk, it sells Verified Emission Reductions (carbon credits) on behalf of the project developers running these projects. Project developers can then sell their credits at any price above the minimum price based on the Fairtrade carbon credit pricing model[13].

This carbon market in which both ISO-certified companies and carbon credit brokers are placed is in other words filled with actors collaborating through what Pratash and Potoski (2006) name "green clubs." According to Foubert's study of GS diffusion (2010, p. 22), such clubs in particular provides "its members with several advantages, such as the possibility to build organizational reputation thanks to the established reputation of the club and its sponsors." Affiliation with these green clubs moreover enable organizations to use the certification as a branding mechanism and access a network of what Foubert (2010, p. 22) call "environmentally pro-active organizations, which has more visibility than an organization left alone." In this way, Formula E-SGS relationship and its ES strategy is an example of the argument that Brunsson et al. (2012) make from the impact of standardization on organizational structures and administrative procedures. Interestingly, the case example of Formula E as "devotee" (see **Figure 1**) shows that this devotion or desire to be a member of the club does not have to be there from the beginning. It may equally well emerge when the organization is scaling up or increasing its complexity to further its mission, thus *investing* in certification as a business strategy. Supporting this view is the publication on Formula E's own website—along the news of having maintained its ISO20121 certification for 2020—of a quote from Ana Inacio, SGS Auditor: "Formula E has been embedding sustainability season-on-season—exploring new initiatives, engaging with local communities and suppliers, and applying robust impact assessments. It is taking the lead in sustainable motorsports and setting a new benchmark for the industry[14]."

A CONCEPTUAL TYPOLOGY

Earlier in this article, we discussed how the London 2012 Olympics was the starting shot for sporting organizations in acquiring international certifications as evidence that their environmental policies are credible. Our subsequent exploring of Formula E as one of the key proponents for continuing this approach, generated an impression of it as a *devotee* to the ISO solution for demonstrating ES credibility (see the round spot in **Figure 1** for a more precise location). Put short: These organizations, as exemplified not only by Formula E but also by the Rio Olympics and Manchester United FC's multiple ISO certifications in 2012 where SGS again was involved[15], go all-in to make their investment worthwhile in a certification market that show signs of becoming what Geertz (1978) and others have named a "bazaar economy." However, as addressed by Pallé, Formula E also had to engineer solutions on how to apply certification criteria to Formula E due to the lack of knowledge at SGS. Meanwhile, many sport organizations, especially smaller ones, have chosen to tackle ES challenges in other ways, and by other means. To explain the use of this term, I will use the story of Formula E above as a signpost for a comparative typology whose aim is to enable broader examinations of the relationship between ES issues, certification standards, and sport organizations. The typology thus represents possible approaches to certification in a bazaar economy. The following examples are consequently not an exhaustive list of cases fleshing out each approach, but only

[10]This was explained by Palle in conversation with Professor Simon Chadwick during the 'Webinar: Sport and sustainability - lessons from Formula E', hosted by Emlyon Business School on November 18, 2020.

[11]The entire case study of the 2016 Rio Olympics was retrieved March 1, 2021, from: https://quantis-intl.com/about/our-work/case-studies/#modal-448.

[12] "Formula E: achieving net zero carbon footprint", formulae.com, September 21, 2020. Retrieved from: https://www.fiaformulae.com/en/news/2020/september/three-steps-to-net-zero.

[13]"How are carbon credits on the marketplace priced?" Gold Standards Help Desk, November 30, 2020. Retrieved from: https://goldstandardhelp.freshdesk.com/support/solutions/articles/44001966875-how-are-carbon-credits-on-the-marketplace-priced.

[14]"Formula E maintains ISO 20121 certification for sustainable events,", fiaformulae.com, January 14, 2020. Retrieved from: https://www.fiaformulae.com/NEWS/2020/January/formula-e-maintains-iso20121.

[15] "14001 first for Manchester United", Transform.iema.net, February 23, 2012. Retrieved from: https://transform.iema.net/article/14001-first-manchester-united; see also "Event sustainability management - ISO 20121 passes 2012 Olympic Games test", iso.org, January 9, 2013. Retrieved from: https://www.iso.org/news/2013/01/Ref1690.html.

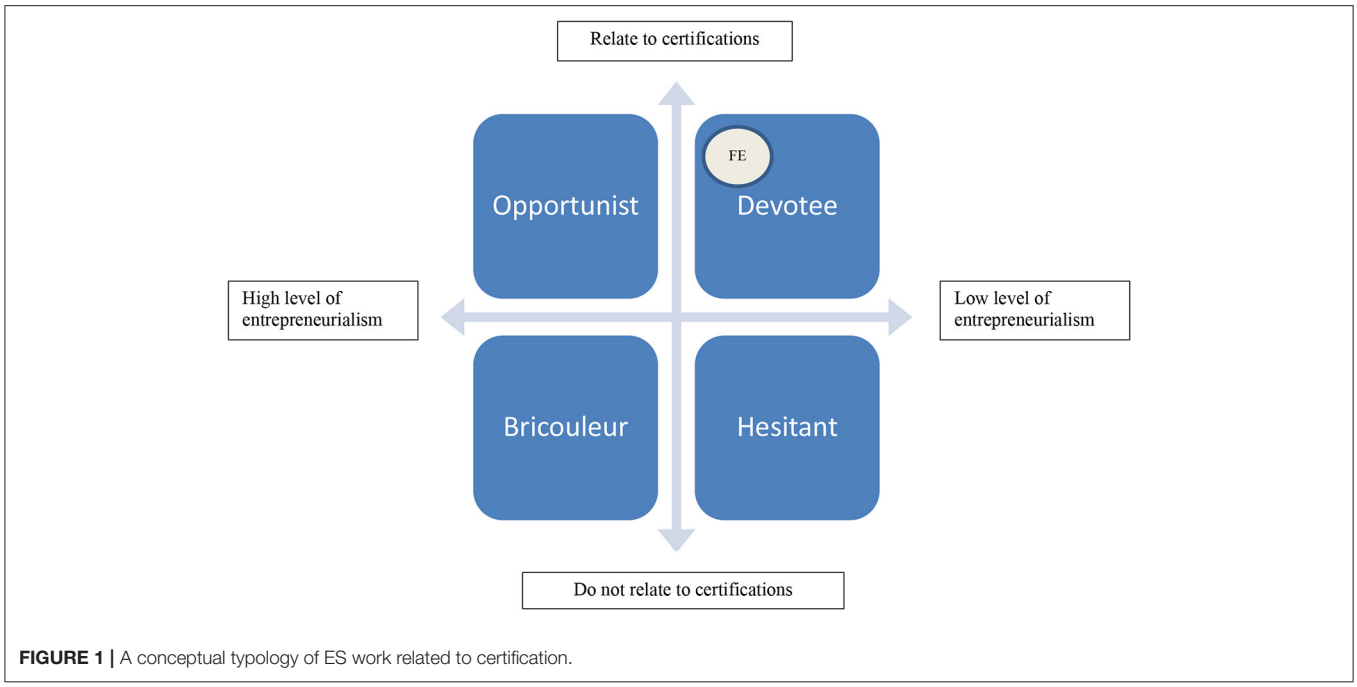

FIGURE 1 | A conceptual typology of ES work related to certification.

serves as indications of ways to approach the topic of ES work and certifications in sport.

Down to the bottom left, we find *bricoleurs*. A key issue for these organizations is to combine entrepreneurship, which in ES work has long been encouraged (Ratten, 2019), with acknowledged practices. The question is whether universal standards help or hinder them in this work. In the UK, empirical research demonstrates that football clubs like Manchester City FC and events like FA Cup Final have actively searched to reduce their "ecological footprint" since years back (Collins and Flynn, 2008, Collins and Cooper, 2017). A related approach is offered by Kellison and Hong's (2015) study of building of eco-friendly sport facilities. In their sample of 25 pro-environmental sport facilities spanning four continents, all sharing the same goal, the researchers found considerable diversity and innovativeness in the interaction between designers, owners, stakeholders, and the general public. A third example is that the New York Yankees has hired sport's first environmental science advisor in the shape of Dr. Allen Hershkowitz in 2019 (Campelli, 2019). Although being lauded for being instrumental in the Yankees' carbon offsetting projects like delivering cookstoves in economically deprived regions in Africa, thoughts on ISO certification are nowhere to be found in Hershkowitz' work. This despite the fact that Hershkowitz co-founded and now chairs the sustainability network Sport and Sustainability International (SandSI), established in 2016, where Formula E's sustainability boss Julia Pallé in 2018 was elected president.

For the *hesitant*, the worry is lack of transparency, efficiency, and cost issues related to certification processes (see, e.g., Andersson, 2016). For example, a study of ISO14001, a standard designed to aid companies toward managing environmental issues and awarded to the 2006 Turin Olympics, showed that despite vast implementation in the US and the UK, "it is not connected directly enough to environmental performance" (Curcovic and Sroufe, 2011, p. 73). Moreover, the mere cost can be high or low, depending on the characteristics of the organization. According to Schuurman (1997), whose study was based on a sample of 1880 companies in the USA and Canada, the average total implementation cost for ISO14001 certification depended on turnover, number of employees, and classification. For a company with 11–25 million USD in turnover and 150–500 employees, this meant a cost of USD 121,000 (Schuurman, 1997, p. 25). More recently, NQA, a global certification body based in the UK, informed in 2017 that "The exact quote given [for ISO certification] will vary based on the certification body's rates, your organization and the standard you're seeking certification for[16]" A similar stance was taken in July 2020 by ISO Update, an information site on ISO-related issues. Although not willing to estimate the total cost for certification, it still says that "You can expect an average ISO Certification to cost around $3,000–$5,000 annually[17]" Other suppliers of certifications, like ISO Accelerator in the UK, offer ISO14001 Environmental Management System certification "from just £695" and in addition deliver "fast-track certification," which "typically takes just 2 working days[18]"This is possible, ISO Accelerator claims, due to a different business operation than other certification bodies[19].

For organizations taking an *opportunist* approach, the assessment of the value of choosing one standard over the

[16] "What are the Costs of Third Party Certification?" Nqa.com, July 20, 2017. Retrieved from: https://www.nqa.com/en-gb/resources/blog/july-2017/costs-of-third-party-certification.

[17] "The Cost of ISO Certification", ISOupdate.com, July 20, 2020. Retrieved from: https://isoupdate.com/general/the-cost-of-iso-certification/.

[18] Read more about pricing and the like at ISO Accelerator at: https://www.iso-accelerator.co.uk/learn-more/how-much-does-it-cost.

[19] Read more about ISO Accelerator at: https://www.iso-accelerator.co.uk/about/faqs.

other, or combining certifications, is key to their decision. These combinations, moreover, may be motivated by economic or environmental considerations. ISO Update, for instance, claims that "While certification may seem expensive, the opportunity cost of no certificate is much greater. Consider the number of deals you've lost without certification, the level of inefficiencies you run from wasteful practices and processes, and the associated long-term costs[20]" This development runs the risk of turning into a self-fulfilling prophecy, as companies with multiple certifications, according to Wiengarten et al. (2017, p. 131), are "significantly better performers with regard to environmental and occupational health and safety compared to companies without multiple certifications." This "the more the merrier" kind of thinking may create a shopping spree of various certifications as the diversity of the certification market enables event organizations "to choose based on affordability and the potential to improve their image" (Andersson, 2016, p. 25). For example, in their study of pro-environment sport facilities, Kellison and Hong (2015, p. 254) refer to Leadership in Energy and Environmental Design (LEED) certification as desirable, as it was "one of the earliest and most prominent of these certification systems." As a final example substantiating this category, Naiki and Sakaguchi's (2020) uses the struggle behind the delivering of sustainable agricultural and fishery products to what should have been the Tokyo 2020 Olympics to discuss whether local certification programs soon may outperform global ones.

DISCUSSION, CONCLUSIONS, AND IMPLICATIONS

By using Formula E's road to ISO certification and net zero carbon footprint as case example, this article has discussed the relation between ES work in sport organizations and certification standards. Is striving for certification a detour or a gamechanger for eco-striving sport organizations that seek to reduce "organizational hypocrisy"? The answer to that depends on what sport organizations are ready to invest in a certification, to what degree the organization is equipped, either organizationally or by disposition, to address conflicting logics, and whether the organization is ready to operate the market in order to maintain the certification. In particular, it depends on whether the organization is capable of handling the logic in a system where, similar to the bazaar, "little is packaged or regulated, and everything is approximative," making the possibilities for bargaining along non-monetary dimensions enormous (Geertz, 1978, p. 31).

Thus, one aspect is necessary to address: Whatever category a sporting organization may belong to in the typology developed above—the opportunist, the devotee, the hesitant or the bricoleur—they are all part of an international development where the certification of ES standards is embedded in what appears to be a bazaar economy. In lieu of state coordination, the changing role of civil society, and the proliferation of private actors in global governance (Glasbergen and Schouten, 2015, p. 86), working the bazaar economy of certifications rely—like in Geertz' original study (1978)—on making decisions on the basis of distorted knowledge and information asymmetry. A final example: For a sporting company desiring to become certified net zero carbon footprint since inception, for example, numerous agencies are ready to offer their certifications like vendors in a bazaar. Whereas Formula E worked with Quantis, as mentioned above, the Formula E Mahindra Racing Team chose the ALLCOT Group to make it the first FIA World Championship entrant to be certified net zero carbon footprint[21]. This lack of coordination combined with sub-markets, along with the devastating effects from the Rio Olympics on the environment despite its ISO certification (Malhado and Araujo, 2017) and high-profile marketing from Formula E, surely evoke suspicions of "greenwashing." According to the strongest critics, Formula E is nothing but hypocritical in its sustainability vision (Ariès, 2018), and Helmut Marko, a senior consultant to the Red Bull Formula 1 teams, said in 2020, "Formula E is for us only a marketing excuse from the automotive industry[22]."

Nevertheless, whether ISO certification is a detour or a gamechanger—or perhaps even a greenwashing exercise—also depends on what the ES aims for the organization are. In the case of Formula E, the business impact of the certificate was an obvious pull factor[23] However, it is not certain that all organizations can defend this kind of investment toward their stakeholders. Selecting an alternative to certification may conversely generate an impression that the organization does not take ES seriously, as legitimacy comes from adherence to the system and approval from its auditors. At the same time, in several cases, the freedom to create innovative solutions outside certification regimes seems far greater than doing what is necessary to become a member of the "green club" and turning ES work into a product whose cost–benefit ratio is determined by market forces and private initiatives. In fact, going for certification may strengthen the impression of organizational hypocrisy by making ES promises that are hard to keep and being accused of "buying" green credentials. Rather than being an example of conventional "decoupling", which happens when "organizations abide only superficially by institutional pressure and adopt new structures without necessarily implementing the related practices" (Boxenbaum and Arora-Jonsson, 2008, p. 81), it might signal "organized hypocrisy." Instead of implying that talk, decisions, and actions are decoupled, they are "coupled in a way other than usually assumed" (Brunsson, 2006, p. 115–116).

The implications for researchers are thus that to address the pros and cons of seeking ISO certification compared with other ES initiatives, they should go deeper into what appears to be a

[20] "The Cost of ISO Certification", ISOupdate.com, July 20, 2020. Retrieved from: https://isoupdate.com/general/the-cost-of-iso-certification/.

[21] "Mahindra Racing First Formula E team and FIA World Championship Entrant to be certified net zero carbon footprint since inception", mahindraracing.com, February 4, 2021. Retrieved March 10, 2021, from: https://www.mahindraracing.com/team-certified-net-zero-carbon-footprint/.

[22] "Formula E boss: Electric series 'flattered' by criticism from F1". *Autosport*, July 21, 2020. Retrieved from https://www.autosport.com/fe/news/150747/formula-e-boss-flattered-by-f1-criticism.

[23] "ABB FIA Formula E championship receives ISO20121 certification from SGS", SGS.com, August 20, 2018. Retrieved from: https://www.sgs.co.uk/en-gb/news/2018/08/abb-fia-formula-e-championship-receives-iso-20121-certification.

bazaar economy of ISO certifications and examine empirically and comparatively the road from idea to certification and finally its effects. For instance, what if clientalization becomes a threat to the system because it "partitions the bazaar by creating relationships between buyers and sellers based on 'those in the know,' meaning that new arrivals to the bazaar may be far more exposed than regular participants to the vagaries of information flows" (Depledge and Dodds, 2017, p. 150)? To provide a starting point for exploring this diversity, this article offers a conceptual typology that, rather than being an exhaustive explanation of how sport organizations relate to the ISO universe, is a map of possible positions that can be used to compare practices.

DATA AVAILABILITY STATEMENT

The original contributions generated for the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements. Written informed consent was not obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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Standing Still at Full Speed: Sports in an Overheated World

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In evolutionary biology, the "Red Queen Effect" refers to a form of inter- or intra-species competition where continuous improvement is necessary in order to survive and thrive, since the other species/individuals evolve. In sport, the same mechanism can be easily observed, and this article explores its implications. It discusses improved training regimes, scientific diets, innovative techniques enhancing performance, and technological improvements such as fibreglass skis. It argues that the upward spiral of improved achievement can be seen as an effect of the global market, or of the modern values of development and growth which are celebrated in modern sports. The world of competitive sports is not just an integral part of global capitalism, but it also mirrors and mimes its internal logic. The kinship between sport and war is obvious, and many sports grew out of military training. But since much of the world has been spared the horrors of war for generations, in the very same period that capitalism has become ever more hegemonic and globalised, sports in the 21st century have come to resemble market competition more than bloody events on the battlefield. Not least for this reason, the treadmill paradox, or Red Queen effect, easily discernable in market economies as a driver for change, whether progressive or destructive or both, can fruitfully be applied as an analytical lens through which to view sport. The question nevertheless remains to be answered as to whether the improved achievements of athletes lead to an improved spectator experience or the opposite. In this question lies an inherent paradox of contemporary world civilisation, with a literal as well as a metaphorical bearing on the critique of the unsustainable growth economy.

Keywords: competition, skiing, sustainability, evolution, treadmill

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"*Well, in OUR country," said Alice, still panting a little, "you'd generally get to somewhere else—if you ran very fast for a long time, as we've been doing."*

"A slow sort of country!" said the Queen. "Now, HERE, you see, it takes all the running YOU can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"

"I'd rather not try, please!" said Alice.

—Lewis Carroll: *Through The Looking-Glass*

INTRODUCTION: THE TREADMILL CONUNDRUM

In evolutionary biology, the Red Queen Effect refers to a particular aspect of competition (Van Valen, 1973) or a long-term result of sexual selection. As in the situation involving Alice and the Red Queen, an organism, or species, is forced to evolve continuously merely to survive, since its competitors, prey or predators evolve. As rabbits become faster, foxes have to follow suit in the

longue durée of evolution. An organism has to evolve merely to retain its niche, simply because its prey, predators or competitors evolve. In Ridley's (1993) account, the emphasis is on intraspecies competition. If you are a young spruce in a dense forest, you will have to grow to a height of 20 or even 30 m in order to absorb enough sunlight to reproduce, since you are surrounded by trees of roughly the same height as yourself. There is no immediate evolutionary or individual advantage in this competitive race, which is why I propose to call it a treadmill syndrome. The trees, one might say, would have been just as healthy and happy if they had settled for a height of 5 or 6 m; what forces them to grow taller is the height of their neighbours, and the taller tree produces the most acorns, thereby spreading DNA programming its offspring to grow tall as well.

Although it may look like an accelerated standstill, treadmill competition drives evolution, forcing species and individuals to improve their achievements relative to others over the generations. The "competitive edge" often invoked in technology and business refers to a quality enabling a company, product or activity to "edge" ahead of the others, who will in turn have to follow suit. There is a resemblance, in other words, between the cheetah evolving greater speed to catch gazelles who are nimbler and faster than their ancestors, and mobile phone developers looking to eclipse their competitors with a sleeker design, better camera or larger screen.

One may ask why this model from evolutionary biology should be applied to processes taking place in society. There is widespread wariness toward applying evolutionary models to the social sciences, often with good reason. Yet, treadmill phenomena are so easily identifiable in social life—in sport, fashion, technology, academic publishing, just to mention a few examples—that the pattern resemblance with events on the savannah, or in the forest, is nothing less than striking (Hessen and Eriksen, 2012 is a book-length exploration, in Norwegian, by an anthropologist and a biologist, of this phenomenon). A main difference between cultural and evolutionary treadmills is the fact that humans can decide to do things differently if the spirals of the treadmill threaten to become destructive. One characteristic of the globalised resource economy is nevertheless the lack of an actor, a governor or thermostat (Eriksen, 2016), which would have been capable of regulating growth and slowing change down when necessary. Like industrialists or investors, the decision-makers in the world of competitive sport have no choice but to play according to the rules, trying to gain those extra inches enabling them to catch more sunlight, as it were, than their close neighbours. While this form of competition is integral to capitalist growth and what is known as progress, it is also, as a guiding principle for life and economic activity, a recipe for ecological disaster. It encapsulates, in a nutshell, the double bind of contemporary industrial capitalism, suspended in mid-air between growth imperatives and a desire for sustainability.

The world of competitive sports is not just an integral part of global capitalism, but it also mirrors and mimes its internal logic. The kinship between sport and war is obvious, and many sports grew out of military training. But since much of the world has been spared the horrors of war for generations, in the very same period that capitalism has become ever more hegemonic and globalised, sports in the 21st century have come to resemble market competition more than bloody events on the battlefield. Not least for this reason, the treadmill paradox, or Red Queen phenomenon, easily discernable in market economies as a driver for change, whether progressive or destructive or both, can fruitfully be applied as an analytical lens through which to view sport.

Indeed, it can be said that the treadmill principle is scarcely more applicable to any other phenomenon than competitive sports, and it is pithily, if inadvertently, epitomised in the Olympic motto *Citius, Altius, Fortius*—Faster, Higher, Stronger. A group of anthropologists who studied a major sport event as a ritual (Klausen, 1999), were faced with a conundrum. Doing an in-depth study of the Winter Olympic Games at Lillehammer in 1994, they drew on earlier anthropological research on rituals in non-state societies for inspiration. However, these rituals typically were devoted to transitions between life stages (Turner, 1969; Bloch, 1986), religious transcendence (Bell, 1997), the glory of the nation (Kapferer, 1988; Connerton, 1989) or competitive masculinity (Geertz, 1973). The event under scrutiny certainly had elements of several of these, especially nationalism and masculinity, but it did not quite seem to fit. In the end, the research group agreed that this particular ritual was a celebration of modernity—speed, efficiency, growth for growth's sake without an ulterior aim. It went without saying that faster was better.

The similarity with Aldous Huxley's *Brave New World* is striking. In his famous 1932 novel, he depicted a consumerist, hedonistic society which had forgotten the art of storytelling, where tragedy had been erased from the cultural repertoire, and where the only acts of worship were the regular songs of praise to Ford (a cheap, but irresistible pun on "Lord").

The phenomenon itself is well-known, but not sufficiently theorised: It doesn't help that your team improves if the other teams improve more. Your achievement is relative to that of others. None of the finalists in the 100 m dash at the Seoul Olympics in 1988 would have qualified 20 years later. If the competitors acquire swimsuits which reduce friction (or lighter and stronger hockey sticks, or football boots which fit like a second skin), you have to emulate, if possible with a slightly superior solution.

Treadmill competition is tacitly known and acknowledged across the world of competitive sports. As some of my examples will show, the spiral of improvement through competition is often inherently environmentally destructive. A more difficult question, which I will also raise, concerns whether the spectator experience has improved. Is speed skating more fun to watch now than it was in the 1960s? It certainly was more popular, in countries like the Netherlands, Sweden and Norway, at that time. Has football (soccer) become more entertaining to watch now that the speed, precision, fitness and technique of the players is immeasurably superior to that of the previous century? The question cannot be answered unequivocally, but it deserves to be asked.

TREADMILLS IN NORDIC SKIING AND BEYOND

Winter sports, unfamiliar in most of the world, have a substantial and commercially important niche in the affluent, cold countries, although the popularity of the different sports vary. Curling is huge in Canada, but marginal in Finland. Alpine skiing is popular in the Alps, less so in Sweden, where ice hockey is a national sport. Cross-country skiing, although practised across the cold regions of the planet, is nowhere else nearly as popular as in Norway, and unsurprisingly, Norwegians tend to win most of the medals in international competitions. Nordic skiing is also an important element in Norwegian national identity, and is practised recreationally by a large proportion of the population.

Teams of specialists, funded by the Norwegian state, ensure optimal conditions for the elite participants. A busload of ski wax, machinery for preparation and fine-tuning and about a dozen dedicated waxers accompany the national team wherever it goes, and the science of waxing has developed rapidly. In the 1960s, a photo was taken of the elite skier Harald Grønningen ahead of the 50 km race at Holmenkollen in the forest above Oslo, applying wax to his pair of wooden skis. Soon after, waxing was done not by the skiers themselves but by specialists, and in the 1970s, wooden skis were replaced by fibreglass skis, amidst controversy as purists continued to vouch for wood until they saw no option other than converting to the superior material. As to waxing, chemistry professors have been involved as consultants, analysing the relationship between the quality and temperature of the snow and the wax, or sticky wax, or powder, or glider, to be applied to the skis. This research, aimed to improve the performance of the national team, has an air of secrecy comparable to that surrounding lab tests of coronavirus vaccines or nuclear experiments. However, the competition has no choice but follow suit, lest they are left behind. As the Red Queen says to Alice, you have to run as fast as you can to stay in the same place. Today, even junior skiers at the elite level need to have several pairs of skis and boots (for classic and skating races), a cupboard full of wax and related products, an iron and a tuning kit, plus brushes, cork and a few more implements. When I was a boy half a century ago, the typical child had one pair of skis, and their family would have at their disposal four tubs of wax for different temperatures and a square cork for applying the wax, doubling as a scraper to remove old wax. While this modest adaptation remains widespread, the proliferation of specialised gear is perceptible to anyone who enters a contemporary sports shop: It is sufficiently large to require a map for orientation, and the amount of skiing equipment for sale is extraordinary in its quantity and diversity.

New methods for training are continuously developed along with aerodynamic, functional clothing, optimal diets and scientifically based tactics, comparable to that of the battlefield. Records are continuously broken, yet there can only be one winner and a total of three medallists. For every winner, there are many losers, and the relationship of winners to losers is constant regardless of everybody's improved performance. Since competition is relational, the performance of the others is crucial, and their slump is your good luck. This, too, is constant. Within the group (which could be a team of individual athletes), there may be team spirit, solidarity and mutual support (even if sometimes ambiguous); between groups competing for the same scarce resource, there is by default competition. As the evolutionary biologist David Sloan Wilson (2015: 71) puts it: "Selfishness beats altruism within groups. Altruistic groups beat selfish groups. Everything else is commentary."

Yet, in accordance with the growth imperative of capitalism, the general tendency is that of improvement, which is easy to measure in the stopwatch-based sports, more difficult in team sports. Yet, it is exceedingly likely that the 2020–21 version of Manchester United, more than decent but trophyless, would have beaten the 1998–99 team, which won the triple of the Premier League, the FA Cup and the Champions' League in an unprecedented demonstration of power. Similarly, every participant in the 2021 speed skating World Championship would have won the 1965 edition of the same event.

Treadmill competition drives technology, training regimes, equipment, and selection pressures forward. Once upon a time, an exhilarated journalist exclaimed that 15.46.6 would be an unbeatable world record. That was the speed skater Knut Johannesen's finishing time at the 10,000 m race at the Winter Olympics in Squaw Valley back in 1960. He crushed the previous record with almost half a minute. 50 years later, Lee Seung-Hoon won the same distance with a time of 12.58.55. The best Norwegian, Håvard Bøkko, ended in fifth place with a time that would have beaten Johannesen with four or five rounds out of a total of 25. The current (2021) world record for the 10,000 m distance is 12.32.95 (held by the Swede Nils van der Poel). However, speed skating, a famous and important sport in a handful of countries a couple of generations ago, has disappeared nearly completely from the public eye. The niche has shrunk.

Competition becomes uninteresting for everyone if the gap between the best and the rest is too wide. In Norwegian football, this was the situation for years, owing to the fact that Rosenborg was far better than the competition. With a couple of exceptions, they had won the domestic league every year between 1992 and 2010. In a competitive setting like this, the superior team is likely to stagnate, while those immediately below improve through competing for second place, recalling Hegel's master–slave (actually lordship–bondage—*Herrschaft und Knechtschaft*) dialectic: The master has no incentive to improve, whereas the slave aims to improve in a bid to emulate the master. The best team is exposed to few reality checks revealing its incipient deterioration. And indeed, in the last decade, Rosenborg has struggled, whereas others have won the domestic league and enjoyed moderate success in Europe.

A comparable situation arose just as I completed the previous paragraph. Since cross-country skiing has been dominated by Norwegians for a number of years, competition is dwindling, and recruitment to the sport in other countries suffers. When, on 6 March 2021, a Norwegian woman once again won a race in the World Championship in Nordic skiing, the German coach remarked that the predictability of results took the fun out of the competition, going on to intimate that there was something unnatural about the extreme achievements of this particular Norwegian athlete. He added that there ought to be a

BMI limit for performers, noting that some of the Norwegians were uncannily skinny. Predictably, the Norwegians reacted with disbelief and outrage, but it is not irrelevant that the athlete in question (Therese Johaug) lost two seasons owing to a controversial, and contested, positive test for illegal substances. In international competitions, nationalism adds considerable fuel to the treadmill since athletes are depicted, by domestic media, as somehow representing the collective will of the entire nation.

TECHNOLOGICAL INNOVATIONS

As noted, technical innovations change the conditions for competition. The introduction of spikes made an enormous difference for track runners after their introduction by English athletes in the 1920s, the author and inveterate runner Coles (2016) detailing not only the invention of spikes, but also other shoe storeys with important consequences for sport, not least delving into the competitive relationship between the Dassler brothers Adolf (Adi) and Rudolf (Rudi), who would found Adidas and Puma, respectively. In cross-country skiing, the last major performer using wooden skis was Magne Myrmo, who won the 15 km race at the World Championship in Falun in 1974, narrowly beating Gerhard Grimmer, who was on fibreglass skis. Since then, nobody has won anything on wooden skis.

A decade later, the American Bill Koch initiated a new skiing revolution by introducing the skating technique (also known as freestyle). Seen in a broadly evolutionary, or perhaps capitalist, perspective, this innovation represented an improvement, which retrospectively appears almost as inevitable, since the tracks were now sufficiently broad and well-prepared for a new niche to be filled: Using the skating technique enabled faster racing than the classic style, since the tracks were by now not surrounded by loose snow. Although it was not banned, the technique was controversial. Similar to the situation when fibreglass skis appeared, there was lively discussion as to how to deal with this new technique. However, although puritans regarded the skating technique as ugly and inelegant, it was difficult to turn the clock back. Skating went through its own accelerated microevolution and was perfected, and in terms of speed, it was sufficiently superior for "classic" and "skating" to be separated in competitions. Naturally, from now on, skiers needed twice as many pairs of skis, poles and boots. Plus equipment for preparing the new skis.

Skating was contested, but a more toxic scandal erupted when the Swedish ski jumper Johan Boklöv introduced a new style, known as the "V style" or simply the "Boklöv style," of jumping. Instead of keeping the skis parallel during the gliding journey from ramp to bottom of slope, hitherto seen as indication of elegace, he held the skis diagonally in a 45 degree angle, in an aerodynamically superior shape that enabled longer jumps. Ski jumping is unusual in that it, like figure skating, involves style scoring, and in the beginning, Boklöv and his supporters may have lost a few style points, but they were compensated by superior length. This is no longer an issue, as the V style eventually became the norm.

With ski jumping, another form of treadmill competition is also at work, concerning the height of the ramps. The first ski jumping competition at Holmenkollen was held in 1892. Arne Ustvedt won the prize with a 21.5 m long jump. Since then, the hill has been rebuilt and expanded many times, and the record has been improved on more than 70 times, most recently by Robert Johansson, whose 2019 jump measured 144.5 m.

Ski flying is a sub-branch of ski jumping, where length is everything. There are just five ski flying venues, all in Europe. At the time of this writing, the world record is held by Stefan Kraft with 253.5 m. However, the hills are being upgraded, and when Vikersund (Norway) expands, that is a strong incentive for Planica (Slovenia) to do the same, even if it means that the Slovene state may have to relinquish some services for their elderly or schoolchildren, and even if the ultimate benefit is debatable. On the other hand, as sport executives and governments (their primary funders when it comes to infrastructure) are aware, unless ski jumpers can show progress, they are bound to lose attention and sponsor funding. In this particular case, there nevertheless seems to be a thermostat, or governor, limiting the otherwise perpetual growth. Above a certain limit, ski flying would become too dangerous. Wind is already an issue in normal ski jumping, leading competitions to be cancelled if the risk is deemed to high; with ski flying, even a mild breeze could be sufficiently hazardous to result in serious damage on a bad day.

It may be tempting to look at treadmill competition—standing still at an increasing speed—as a simple zero-sum game where the defining relationship remains constant because all the components of the system change roughly at the same time and speed. However, there is also a material side to treadmill competition. The upgrading of the Holmenkollen and Vikersund hills in the early 2010s was very expensive (in the region of €180 million and €10 million, respectively), and from an environmental point of view, none of this can be said to be healthy. Similar examples are easy to find. The now infamous football stadiums being built in Qatar, about which the tired word "spectacular" has probably been used millions of times, are meant to outshine stadiums in other countries in terms of functionality and aesthetic qualities. Stadiums have been upgraded, refurbished and even demolished elsewhere as well. As a child, I was taken to Highbury to watch Arsenal with my father and older brother. I still remember the faint smell of urine, the cigarette smoke, the having to stretch your neck to see any of the action since everybody was standing, and not least the reddish faces next to us screaming for penalties with such an intensity that we had to pull out our hankies to wipe off the moisture. It was a powerful and memorable experience, still lingering in my olfactory memory. A generation later, I took my son to Emirates to watch a very different (doubtless much better) Arsenal team; all surfaces were slick and clean, and as we slumped down in our comfortable seats, we noticed that the people next to us were sober and well-behaved. The event as I remember it was a tepid and boring experience (and that was not just because the Gunners failed to beat Chelsea).

AMBIVALENCE TO TECHNOLOGICAL INNOVATION

In the world of cross-country skiing, the *Fédération Internationale de Ski* (FIS) took a somewhat anxious and ambivalent attitude to the innovations which emerged at the exact same time that neoliberalism became the dominant global ideology, that is the 1980s. Eventually, they bowed to the market of sponsorship, lucrative television rights and public interest, not only accepting the Boklöv style and skating, but embracing every innovation that could raise greater public interest through more intensive, compressed events, shorter distances, simultaneous starting (in the past, there would be 30 s between each performer) and a more commercial feel in order to keep the place of the sport as such on the treadmill and not succumb to the same sad fate as the 10,000 m ice skating distance, which virtually disappeared as the acceleration of multi-channel entertainment began to take off (see Eriksen, 2001, 2016 about acceleration in general).

Treadmill competition leads not just to acceleration within each sport, but acceleration of sport as such. The archetypal cross-country skier a generation or two ago was a quiet man who had little to say when interviewed, and during speed skating championships, spectators had to suffer through a few uninteresting pairs (they race in twos), colloquially known as *buljongpar* ("broth pairs," meaning that you could in good conscience go and get a hot savoury drink when they ran), during the final and often decisive 10,000 m distance. These forms of slowness have been removed for the sake of speed, efficiency and progress, and owing to intensified competition for audience attention. There was nothing inherently superior about wooden skis with just one layer of purple wax and taciturn fellows who disappeared into the forest for an hour or two before emerging on the stadium, as opposed to the slick, efficient, finely tuned performers who now race in the continuous floodlight of cameras and electronic timing systems, but it may have been just as good. It may well be the case that audiences are no less enthusiastic today—regardless of which sport—but possibly not more either. Speed, dramatic highlights and entertainment value are forced to grow in an ecology of entertainment where the attention of the audience has become the scarcest resource. The net result is that both the athletes themselves, the support system engulfing them, the sponsors who own the athletes and the institutions framing the sports, have to run like hell just to keep their place.

I have spoken of cross-country skating, the V-style and fibreglass skis. Perhaps it speaks of the conservatism or relative insularity of Norwegian winter sports that Norwegians have never proposed any of these innovations, but indeed resisted them. This happened—for a fourth example—when the clap skate was introduced by Dutch ice skaters, also in the 1980s. Unlike traditional skates, the steel of the clap skate is attached to the boot through a hinge at the front, enabling more flexible and dynamic foot movement and greater overall speed. The Norwegians immediately wished to ban the clap skates because they made for unequal competition. And yet: After a few years, the Norwegian Ådne Søndrål won a world record on clap skates, and since then, nobody has looked back.

Several of my examples have shown how technological innovations change the conditions for competition, and when someone innovates, others are forced to follow. A typical argument against divestment from fossil fuels is that a single country cannot make a difference, and as long as others use and produce fossil fuels, it would be foolish—a self-imposed handicap—not to do it oneself. The typical argument in favour of frequent flying is that the plane takes off anyway, so my input makes little difference. This kind of argument shows how neoliberal thinking has become second nature: According to this world-view, societies do not exist, and changes can only be made to happen through consumer choices. There seems to be no instance at a higher scale which can regulate, slow down and scale down the subsystems of globalisation in order to make them more sustainable. In the world of competitive elite sport, ecological sustainability is barely on the agenda, and technical innovations, specialisation and intensified competition, as witnessed in ever more frequent international tournaments, is consistent with the treadmill principle, where the spiralling growth assumed to lead to progress (but which may *de facto* lead to everybody standing still at full speed) requires increased consumption, infrastructural developments, incessant travel (with a growing support system in tow) and sometimes direct environmental destruction, as when those 30 m tall spruce trees in the hills around Oslo are unceremoniously removed to make space for wide ski tracks enabling easy monitoring and not least filming for the benefit of TV viewers, whose habits have changed, in the space of just a few years of intense competition for their attention, such that live sport events, including war reporting from the frontline, are about the only forms of programming that make sense as linear television.

In some sports, technology is less important than technique. In football, the by far most popular sport in the world, clothing is of little significance (shorts lengths have followed fashion, not functionality; historically, the smallest shorts were those worn by the Argentine national team at the 1978 World Cup, and in the following years, the hem began to move down the thighs again, eventually reaching the 1970 length); football boots are admittedly of some significance, but the most important changes have concerned technique and strategy. When Pelé, in the 1950s, showed the bicycle kick to the rest of the world (in Norwegian it is till this day known as *brassespark*, "Brazilian kick"), stiffer players from the Protestant North began to practise shots on goal which required them to throw their body backward while kicking the ball across it and, with luck, into the GOOOOOL. Similarly, Johan Cruyff's success with "total football" at Ajax and later with Barcelona led other football coaches to experiment with a team structure where any outfield player could in principle swap positions with any other player.

NICHE PRODUCTION

Allow me to return to winter sport. The by far best speed skater in the late 1970s was the American Eric Heiden. In 1980 he won all five gold medals at the Winter Olympics, as the first and last skater to do so. Aware that there remained no

challenges for him in this—globally speaking—tiny sport, he quit ice skating and took on bicycle racing. This is a far larger sport where competition is tougher, and he never won anything more significant than an American championship. Yet it seems as if Heiden preferred to be a small fish in a large pond. Rosenborg and Heiden have something in common, but the former cannot switch to a larger and better league in the hope of improving (In the more porously bounded British nations, suggestions have been made to the effect that Celtic and Rangers join the English Football League).

Others move in the opposite direction, exploiting niches where competition is less fierce. In some of the highly competitive, quantitative, individual sports, margins are tiny. Take swimming, where there are rules regulating the nature of the swimsuit, but when, in the 1980s, some swimmers began to remove all body hair, others followed, even if the actual gain could be just a few hundredth of a second. As with the 100 m dash, the significance of a few centiseconds indicates a crowded field hard to squeeze into. Some might be well-advised to abandon swimming for orienteering or decathlon.

Not all ideas have yet been thought, and not all tunes have been performed. There are still niches to be filled, or perhaps more accurately to be carved out and created. In sport, new niches and their accompanying treadmills are continuously being introduced, leading not least to the increasing visibility of women in sports traditionally regarded as inherently masculine, such as boxing, football and ski jumping.

Sport differs from other competitive arenas. It is said that "all's fair in war and love," but in sport, this is not the case (There are rules regulating war too; poison gas is not tolerated, while massacres of civilians are). In the competitive arena of romantic love, on the other hand, anything goes; doping is fine, whether it appears in the shape of pills, whisky, botox, silicone, lovely clothes, dyed hair or makeup, or if declarations of love are conjuring tricks with the ultimate, but hidden aim of getting laid. In sport, there is a relatively well-defined boundary which forbids the use of performance-enhancing stimuli—but on the other hand, improvements within the realm of diet, gear and support systems, technique and technology are often permitted. There are rules limiting the freedom of technological developments, regulating anything from the fabric and fit of skijumpers suits to the studs on football boots. Sometimes, rules can be circumvented and sometimes they may be stretched, but there are real sanctions applied in the case of blatant violation. On the other hand, competition is often skewed in sports that rely on extensive gear, but this is difficult to change. Had it been easy, the powers that be would long ago have decided that all entrants in cross-country skiing competitions should have identical skis waxed in identical ways.

The next question is not whether treadmill competition is bad for the environment (which it is), but what it tells us about current and hegemonic views of progress. It is as if modernity has shifted into a higher gear (Eriksen, 2016) since the onset of global neoliberalism, prefigured in the historical persons of Margaret Thatcher and Ronald Reagan, and flourishing after the end of the Cold War around 1990. Ours is a world of high-speed modernity where the fact that things change no longer needs to be explained by social scientists; what comes across as extraordinary or puzzling are instead the patches of continuity we occasionally discover. Modernity in itself entails change, but for decades change was synonymous with progress, and the standard narrative about the recent past was one of improvement and development. Things seemed to be getting better, and history had a direction.

In the last few decades, the confidence of the believers in unilinear progress has been dampened. Modernity and enlightenment did not eradicate atavistic ideologies, sectarian violence and fanaticism. Wars continued to break out. Inequality and poverty did not go away. Recurrent crises with global repercussions forced economists to concede, reluctantly, at least when caught with their pants down (e.g., during the 2007–08 financial crisis), that theirs was not a precise science after all. Although many countries were democratic in name, a growing number of people felt that highly consequential changes were taking place in their lives and immediate surroundings without their having been consulted beforehand. And, most significantly, the forces of progress turned out to be a double-edged sword. What had been our salvation for 200 years, namely inexpensive and accessible energy, was about to become our damnation through environmental destruction and climate change.

This is the broader horizon on which we must see the treadmill syndromes and paradoxes of competitive sports. *Citius, altius, fortius* was a forward-looking and promising ideal at a time when there were <2 billion of us and the world was open, in the decades preceding the First World War, to utopian projects, be they liberal, socialist or anarchist. The first modern Olympic Games, in Athens, took place in 1896, when the total world population stood at 1.9 billion. Ours is a different world, where the free flow of the nearly empty highway has been replaced by a busy road on the verge of a traffic jam, where the shadows of environmental destruction, inequality and climate change dampen enthusiasm and indeed the belief in progress as such.

Let us, true to character (since the pandemic has taught us to live locally, even if we may still occasionally think globally), return to the nation-building Norwegian pastime and competitive sport of cross-country skiing. Today, people may chuckle at old images from ski races from around 1915, when strapping young fellows, none of them professional athletes, but holding day jobs, often as lumberjacks or farmhands, vanished into the forest on badly prepared tracks, in knickerbockers and woollens, on well-worn wooden skis. On the way, they would stop by a soup station and nod congenially to the supporters cheering them on along the track, before reapparing, leaden after 50 km of hard skiing, at the stadium where they would be rewarded by the sight of an ecstatic crowd. A century later, leading athletes would race through the same forest, but this time on a 10 m broad highway, professionally prepared with the aid of dedicated machinery including chainsaws, every gliding movement recorded by a camera, typically completing the race in a little over 2 h.

The anthropologist Odd Are Berkaak has characterised the ethos of competitive sport as "larger than large" (Berkaak, 1999). Not only the extreme physical achievements of the athletes themselves are worshipped, but also the growth ideology of

accelerated and accelerating modernity. Nobody would care to watch a cyclist or runner who is slower than last year's performer. A reduction in speed and efficiency would be deemed unacceptable. Recall that some of the major technological innovations in winter sports were introduced precisely at the time when neoliberalism was on its way to global hegemony, and were consolidated in the upbeat years following the end of the Cold War. It may well be asked whether this ethos will continue unscathed in the coming years, as the unsustainability of the growth economy has become widely known and acknowledged, and where degrowth economics (Hickel and Kallis, 2020) is becoming a force to be reckoned with. In sports, the physical limitations of humans may be a ceiling comparable to the carrying capacity of the planet. Perhaps genetic engineering will solve the problem, but it is worth pondering that the 100 m world records have been held by Usain Bolt since 2009 and by Florence Griffith-Joyner since 1988. Bob Beamon's sensational long jump in 1968 (8.90 m) remains, more than half a century later, the second-longest jump ever recorded. A ceiling may be approaching. It would have been the source of some relief if actors in the field of resource exploitation and economic planning saw theirs.

THE EVOLVING MEDIASCAPE

So far, I have concentrated on treadmill competition in the realms of technology and technique, strategy and infrastructure. However, the mediascape is also changing along related lines. Since commercial appeal is essential for the viability of any competitive sport, the ability to attract large audiences is subject to ever intensifying competition in a densely populated media world where channels and platforms proliferate. Even in the conservative world of cricket, where test matches typically last for 4 or 5 days, compressed one-day test matches have tentatively been attempted. Commentators, whether live at the venue or through a broadcasting channel, compete for attention by using dramatic effects. An early instance of this development was the legendary (in Norway) journalist Bjørge Lillelien, whose radio reporting from a 1981 football match where Norway beat England has entered the annals of national sport history. A sober and descriptive reporting style was now gradually giving way to high-pitched voices and ecstatic exclamations, and immediately following the final whistle, Lillelien extemporised a rallying cry invoking Lord Nelson, Anthony Eden and Winston Churchill, among others, switching briefly to English with the comment "Maggie Thatcher, can you hear me?" toward the end.

Both language and style have evolved toward hyperbole and overheating since then, the most striking example perhaps being that of Spanish-language football commentators when they cry "GOOOOOL!." The law of diminishing returns nevertheless kicks in as a result of this kind of escalating, frantic search for attention. The word "incredible" (or *increible*, *incroyable* or *utrolig*) no longer means incredible, but rather or quite (Usage also changes in other contexts related to sport. Nobody wants to be a jogger any more; they are runners, often possessing gear far beyond that which is necessary to stay reasonably fit).

The proliferation of platforms and channels mentioned above is an important causal factor in these changes. The parallel with the intensified treadmill competition operating both within and between sports is evident. For capitalism to thrive, it has to grow, either by conquering new markets or by intensifying consumption in existing ones. In the case of spectator sport broadcast in the media, both strategies are visible. If we look at football (soccer), the world's most popular sport measured both by player numbers and spectators, the availability of satellite television has led to its expansion into new markets. As a result, several African football leagues struggle to fill their stadiums now, since many fans prefer to stay at home and watch their favourite European teams instead, often with more than a sprinkling of African players. Regarding the competition between sports, football has led to a significant reduction in diversity (with the USA as an exception, see Foer, 2006), as smaller sports have successively lost audiences and performers in the last decades (Eriksen, 2007), mirroring the increasingly dominant market position of Amazon in books and other consumer goods and, referring back to an earlier period of free-market capitalism, confirming Marx's analysis of monopoly capitalism in the Victorian age.

In the evolution of ecosystems, species about to be outcompeted by stronger adversaries may develop specialised niches—they may become scavengers, diurnal hunters, thornbush feeders etc. As noted, this mechanism also applies to sport, where national or regional sports such as hurling (Ireland), Aussie Rules Football (Australia), and Nordic skiing (Scandinavia) remain able to defend their turf. Smaller-scale regional sports may on the whole be more ecologically sustainable than the global ones, since they are less economically important, entail less travelling, more sensible payments and a less expansive infrastructure. This is nevertheless not necessarily the case, as the example of Nordic skiing indicates. The magic of football lies in part in its democratic appeal and cheap entrance ticket. There are global megastars in this game who grew up kicking a rubber ball barefeet in back alleys.

WHAT OF SUSTAINABILITY?

I have showed that there are several forms of treadmill competition taking place in sport, some of them overlapping and mutually reinforcing, such as market economics and nationalism. Leaving recreational sports aside, which have their own treadmills (and other aspects as well, such as improved health), we have considered technological advances, the mediatised competition for attention, the scientific fine-tuning of athlete bodies, competition between sports and within sports for glory, other people's attention and money, infrastructure and tactics. What they all share is an implicit commitment to the principles of the capitalist economic system, notably enhanced efficiency, growth and progress. I have suggested that the entertainment value on the part of the spectators may be constant (although such qualia cannot be measured), yet as Alice learned from the Red Queen, you have to run as fast as you can to stay in the same place. Change is the only constant; change is necessary to

preserve continuity. Only three medals are awarded in individual sport, and only one performer or team wins the first prize.

Can escalating treadmill competition in sport be compatible with ecological sustainability? The question resembles the issue of green growth, or "decoupling" growth from environmental destruction.

The answer is that it depends on a number of factors (I would say that, now wouldn't I?). Some forms of treadmill competition have doubtless led to genuine progress and better lives. Think of the evolution of ordinary things, for example, such as the fork, the watch or the paper clip (Petroski, 1992). It is unlikely that they would have found their present, functional form through state planning. Other forms of treadmill competition are ecologically destructive, increase social inequality and have few net positive effects, such as the mammoth infrastructural project of building extraordinary football stadiums in the hot desert country of Qatar. Yet others are physically debilitating to individual competitors, and this is the case with various sports, whether they may lead to brain damage, anorexia or chronic pain. Athletes may, in a different argument, be likened to Roman gladiators, sacrificed by the mediatised, jaded and often nationalist public sphere, not to the gods or the Emperor, but to the spirit of modernity, losing their youth to ultimately futile and unhealthy exertion.

The simplest treadmill category is that in which two or several actors compete to take the lead relative to the others, typically when competing for a specific resource or niche, and where the costs and benefits generally are relevant just for those directly involved. Competition for a common, but renewable resource may fit here, and certain aspects of competition within and between sports fall into this category; audiences are renewable resources. However, in most cases, a third party will be affected, positively or negatively: The upgrading of football stadiums in the UK from the 1980s onwards reduced hooliganism, but tickets became too expensive for workers on modest salaries. The scramble for minerals, including hydrocarbons, has led to a phenomenal economic growth rate worldwide since the 1980s, at the expense of undermining the conditions for the civilisation created on the back of hydrocarbons. Besides, an initially positive outcome of a competitive race, such as cheaper commodities and services, may eventually lead to a reduction in diversity (standardisation, eonomies of scale) and of quality. An effect of cheap food is intensified exploitation of food producers, increased use of antibiotics, pesticides and chemical substances enabling the food to keep longer. A similar argument is often made with regards to garments. Treadmill competition, while increasing production and consumption, can thus turn into a race to the bottom.

What about sport? Many of the features of contemporary elite sport can easily be pinned down as accessories of global neoliberalism: the mediatised globalisation of events, leading to a growing gap between performers and audiences; the economic power wielded by the major actors; the infrastructural changes facilitating efficiency and maximal commercialisation; the technological and scientific races for superiority; and last, but not least, the commitment to growth and incremental improvement year by year. On the other hand, sports have always been competitive, and the young men (usually) who win prizes have always been celebrated as unique individuals, from Melanesian mock-fights to mediaeval jousting, from the Olympic games in ancient Greece to the fencing duel. Competitiveness is a product of evolution, as is its complementary quality, cooperation.

It would thus be a waste of time to attempt to create a socialist man once again, a human who has somehow evolved beyond competitive urges, vanity and one-upmanship. In addition, there is a demonstrably social element in spectatorship, as sociologists of sport have documented comprehensively (e.g., Dyck, 2000; Giulianotti, 2015). It could be said that football fandom has all the positive qualities of Fascism and few of the negative ones. As a true fan at the stadium, you worship the superhumans on the pitch and lose yourself as an individual in a mass of likeminded spirits waving scarves, chanting, cheering and booing. Yet after the match you feel no urge to go out and kill Jews or set fire to the houses where the fans of the opposing team live. With international competitions, the situation is more complicated, since the nationalism fanned via the medium of athletes wearing the national colours has severe negative consequences.

Having said this, it must be conceded that competitive sports are problematic at a time when it is necessary to change direction for the sake of future generations, other species and indeed all that makes it possible for diverse life on the planet to thrive. This is because the collectively shared mental template fuelling enthusiasm for sport is perfectly congruent with the mentality (or discourse, if you prefer) that makes the task of shifting gear so daunting. *Citius, altius, fortius* is exactly what the world needs less of. Now recall that the trees in the hills surrounding Oslo need to grow to 30 m in order to reproduce, although the energy needed to achieve that height is largely wasted. One might by rights ask why on earth those trees cannot just get together and decide that as from next year, no tree is allowed to reach more than 5 m. Those who violate the principle will be executed by chainsaw and exported to Trafalgar Square as Christmas trees.

The short response to this proposition is that as far as we know, trees are incapable of making this kind of collective decision; but we human beings definitely are. That is why this era is called the Anthropocene and not the Dendrocene. So: Why do we humans continue to grow to 30 m when we are perfectly aware that four or five would have been adequate?

Put differently, we humans have a choice, and here lie our privilege and our damnation, since self-consciousness and morality make us responsible for our actions. Perhaps, considering that treadmill competition will be with us forever, alternative niches for competing could be created or strengthened, which leave no ecological footprint and enable us to cool down, scale down and slow down. A shining example to be followed by others could be the annual Danish pipe-smoking competitions. The aim at these events is to keep two grammes of tobacco glowing for as long as possible. The slowest participant wins. A noble sport indeed.

But then again, it is also perfectly possible to settle for chess, which has become a surprisingly popular spectator sport in recent years. At least in Norway. There is reason to suspect that this has something to do with the fact that the Norwegian Magnus Carlsen does really well in international chess tournaments.

Nationalism has its own rewards and its own treacherous treadmills. But that is another storey.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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Greening Sport for Development and Peace: A Socio-Ecological Approach

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The global "sport for development and peace" (SDP) sector uses sport as a field of social activity to promote diverse types of non-sport social development. In this short perspective article, I critically examine and advocate the engagement of SDP with environmental issues. I argue for the adoption of a "socio-ecological" approach, to enable a greening of SDP that promotes both environmental and social justice. To that end, the article is organized into four main parts. First, I situate the discussion with respect to key literature on SDP and the environment. I then outline some of the main contextual factors that need to be considered on sport, development, and the environment. Third, I set out several core principles that should underpin the socio-ecological greening of SDP. Fourth, I examine how these principles may be implemented within SDP.

Keywords: sport, development, peace, environment, socio-ecological approach

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INTRODUCTION

The global "sport for development and peace" (SDP) sector uses sport as a field of social activity to promote diverse types of non-sport social development. Most SDP work is undertaken by non-governmental organizations (NGOs) and, to a lesser extent, sport clubs or other agencies, through intervention programs with socially disadvantaged or "at-risk" young people. SDP program objectives usually align closely with the United Nations' development agenda, as encapsulated by the Millennium Development Goals (from 2000 to 2015) and the Sustainable Development Goals (SDGs, from 2015 to 2030) (see Collison et al., 2018).

The SDGs feature 17 different development goals, at least 12 of which are salient to the environment. These include commitments to

- sustainable management of water and sanitation [SDG 6];
- sustainable and modern energy [7];
- urgently combatting climate change [13];
- protecting the oceans, seas, and marine resources [14]; and
- and protecting terrestrial ecosystems [15].

[United Nations (UN), 2015; Giulianotti et al., 2018].

In this short perspective article, I critically examine and advocate the engagement of SDP with environmental issues. I argue for the adoption of a "socio-ecological" approach, to enable a "greening" of SDP that promotes both environmental and social justice. To that end, the article is organized into four main parts. First, I situate the discussion with respect to key literature on SDP and the environment. I then outline some of the main contextual factors that need to be considered on sport, development, and the environment. Third, I set out several core principles that should underpin the socio-ecological greening of SDP. Fourth, I examine how these principles may be embedded within SDP.

SDP AND THE ENVIRONMENT: PRIOR LITERATURE

While there has been a relative lack of literature on SDP and the environment, growing interest in this area in recent years is noteworthy.[1] In the context of this short article, two key prior publications may be considered, both of which are underpinned by critical sociological and anthropological standpoints.

First, the earliest full article on SDP and the environment, by Giulianotti et al. (2018), highlights the centrality of green issues to the SDGs and the accordant need for the SDP sector to attend fully to this challenge. Drawing on research across five international locations, Giulianotti et al. find that diverse SDP stakeholders, such as non-governmental and intergovernmental organizations, have largely overlooked environmental issues. In response, the authors note *inter alia* the pressing requirement to address the social inequalities of climate change. They also advance two concepts that may be utilized in future SDP/environment studies. First, the concept of "ecological modernization" draws critical scrutiny toward policy assumptions that environmental degradation will be successfully tackled through future scientific advances (see also Millington and Wilson, 2013). Second, the authors' concept of "benign governmentality" points to the ways in which positive civic conduct, such as everyday care for the environment, may be cultivated among young people through their participation within SDP programs and initiatives.

Second, the edited collection by Millington and Darnell (2019) features diverse studies of sport, development, and environmental issues by social scientists based mainly in North America, particularly Canada. While most articles concentrate on "development of sport" themes (e.g., sport mega events, sport and urban development, golf courses, and environmental politics), the contribution by Paraschak and Heine (2019) is particularly valuable here. These scholars examine how SDP and related development programs may engage with the "land-focused" activities and broader traditional physical cultures of indigenous peoples in Canada and elsewhere. Such an approach, they indicate, would have a variety of environmental, social, and cultural benefits, such as deepening community "ties to the land," cultivating a "noncompetitive logic" in physical activity, culturally empowering indigenous peoples, and promoting a "long-term commitment to addressing all forms of environmental degradation" (Paraschak and Heine, 2019, p. 190–191).

With these contributions in mind—particularly, their calls for SDP to address environmental issues, social inequalities, community empowerment, and local and indigenous belief systems—I turn now to develop the case for the "greening" of SDP.

[1]See, for example, Darnell's (2018) overview.

SPORT, DEVELOPMENT, AND THE ENVIRONMENT: BROAD CONTEXTUAL ISSUES

To begin that task, we need to be *au fait* with the key issues and challenges that are faced by green SDP and global development agendas within the academic and policy fields. Three succinct points might be made here.

First, we appreciate that the SDGs and SDPs are not uncontested: many policymakers, academics, and publics hold deeply skeptical, even hostile, views on their value. Reflecting these diffuse, largely conservative approaches, the economist William Easterly (2015), writing in the influential periodical *Foreign Policy*, lampooned the SDGs as "senseless, dreamy, garbled" and mocked their message as: "Play sports! Be in harmony with nature! And end all preventable deaths! Only the U.N. could have come up with a document so worthless." Easterly continued:

> *[T]he SDGs are so encyclopedic that everything is top priority, which means nothing is a priority: "Sport is also an important enabler of sustainable development." "Recognize and value… domestic work… and the promotion of shared responsibility within the household." It's unclear how the U.N. is going to get more women to play soccer and more men to do the dishes.*

Such a standpoint on the SDGs, and on sport's role in promoting development, may be located within a spectrum of very diverse economic and policy approaches that are generally neoliberal or libertarian in nature. Such approaches tend to be intuitively hostile to environmentalism, multilateralism, and international institutions such as the UN and WHO and toward green or other social interventions that may restrict free-market agency or economic growth.

Second, from a broadly opposite position, an array of critical, radical, and progressive approaches highlight the need for deep power inequalities and pressing social justice issues to be central to a transformed global political–economic or development agenda. The more critical approaches posit, for example, that "sustainable development" is an oxymoron that carries inescapable, negative environmental impacts [Fletcher and Rammelt, 2017; Spaiser et al., 2017; cf. International Monetary Fund (IMF), 2020] and that the global development agenda is determined by the neoliberal, neocolonial, "WEIRD" interests of global capitalism (cf. Amin, 2006).[2] For some anthropologists, the SDGs are the latest installment in postcolonial development, which evades political choices, marshals a technocratic "audit culture," and redefines development failures as instructive successes (Ferguson, 1990; Scott, 1998; Strathern, 2000; Merry, 2016; Fukuda-Parr, 2017). Thus, for other analysts, development should focus less on SDG targets and more on "actual social struggles" concerning poverty and democracy (Bond, 2006).

Third, I recognize some diverse, positive signs and trends in global development, including on the environment. These

[2]Collier (2018, p. 12) introduced the acronym WEIRD, to refer to "Western, Educated, Industrial, Rich and Developed."

indicate some shifts away from policies that equate development with free markets and economic growth. Consider, for example, state economic interventions, backed by global institutions (IMF, World Bank, UN), during the COVID-19 (coronavirus disease 2019) pandemic, or even the claims from global business (albeit yet to be adequately tested) that "shareholder capitalism" is over and that "stakeholder capitalism" is the way forward, including recognition of the need to tackle climate change and to protect the environment.[3] In addition, the SDGs encapsulate how global institutions place a stronger premium on the non-economic, social, and environmental aspects of development (Macdonald and Ruckert, 2009; Peck et al., 2010; Elwood et al., 2017; Raworth, 2017; Hickel, 2020). Indicatively, the UN's *Human Development Report 2020*, entitled *The Next Frontier: Human Development and the Anthropocene*, focuses squarely on combatting ecological devastation through different forms of environmental justice. It includes calls to empower communities, deliver better education, "learn from locals," and engage with "indigenous and local knowledge systems and practices" (UN, 2020).

The "socio-ecological" approach that I advocate for SDP and wider development must be located within these three broad policy contexts. This approach is aligned with the critical, progressive standpoints on development outlined here and seeks to build on the positive signs and trends in this direction in recent times.

GREENING SDP: A SOCIO-ECOLOGICAL APPROACH

The socio-ecological approach to development combines environmental and social justice. It is "attentive to ways in which social and ecological systems are intertwined in ways that are currently driving ecological devastation and social inequality but which might be transformed along more sustainable and socially just lines" (Newell, 2020, p. 5). To pursue the greening of SDP, I argue that the socio-ecological approach should have four main pillars, relating to environmental protection, social equality, democracy, and social justice.

First, any development philosophy or strategy must be anchored in a fundamental commitment to genuinely sustainable development, which protects, preserves, and nurtures the natural environment. In line with earlier work (Millington and Wilson, 2013; Giulianotti et al., 2018), I posit that such development must eschew convenient, Micawberish modernization theories, which assume that future modern science will "turn up something" to reverse the ongoing environmental devastation of our planet.

Second, a socio-ecological approach tackles environmental and social inequalities and injustices (cf. Cole and Foster, 2001). The interdependencies of the environmental and the social are clear. As Chancel (2020) reminds us, the global poor are the most threatened by climate and other environmental changes (e.g., urban pollution, water shortages, land desertification, extreme weather), and they are the least responsible for these environmental changes. Yet, they are the most in need of economic development, to rise out of poverty, and they are the most threatened by green policies that cut jobs or growth. Thus, we must address SDGs that focus on the environment *and* on inequality; the latter include SDG10 (reduce inequality) and SDG5 (gender equality).

Social and environmental inequalities reflect systemic differences in wealth and power at local, national, regional, and transnational levels. Crucially, they also operate through deep "recognition gaps," which Lamont defines as "disparities in worth and cultural membership between groups in a society" (2018, p. 421–2). These social divisions shape the diverging, often opposing interests, between groups over social justice and environmental protection.

In the global development context, greatest focus is understandably placed on transnational inequalities, along global North/South lines. Yet, there are also deeply entrenched inequalities *within* low- and middle-income countries to consider. In the Indian megacity of Delhi, Baviskar (2011, 2021) argues that *bourgeois environmentalism*—that is, the environmental and socioeconomic interests of the middle and upper classes—directly threatens the shelter, livelihoods, and communities of millions of urban poor. Baviskar posits that bourgeois environmentalism features "the (mainly) middle-class pursuit of order, hygiene and safety, and ecological conservation"; "mobilize[s] the discourse of "public interest"; and "citizenship" to advance elite interests through the media, courts, and state; protects "luxury emissions" and "resource-intensive affluent lifestyles" (e.g., cars, consumerism); and harbors a deep "hostility to the poor in the pursuit of a 'clean and green' environment, where the very presence of the poor is equated with pollution" (Baviskar, 2011, 2021, p. 110, 159). Confronting their hypocrisy, Baviskar (2021, p. 217) asks:

> *Where are bourgeois environmentalists when air pollution peaks? What do they do when Delhi is hit by a heatwave? Well, they travel in air-conditioned cars from air-conditioned homes to air-conditioned offices, restaurants, and shops. They compare brands of masks and air purifiers. They complain on social media about farmers burning stubble in Punjab and how the ban on firecrackers is being flouted. When it gets too much, they retreat to the hills in time-honored colonial fashion. Meanwhile, the exhaust from their vehicles and appliances makes the air hotter and dirtier for everyone else.*

Thus, a socio-ecological approach must attend to the deep social divisions of wealth, power, and recognition that operate along local and national as well as transnational lines.

Third, the socio-ecological approach needs to be founded on intensified, multi-level, fully inclusive democratization. At grassroots level, an adapted version of the idea of "associative democracy," as initially advanced by Hirst (1993), should be pursued. The definitive principle of associative democracy is that "the freedom of individuals is best enabled by association—by working and engaging with others on a democratic and voluntary (freely entered into) basis" (Westall, 2011, p. 8). In the SDP or wider development context, associative democracy nurtures

[3]See https://opportunity.businessroundtable.org/ourcommitment/; https://www.weforum.org/agenda/2019/12/davos-manifesto-2020-the-universal-purpose-of-a-company-in-the-fourth-industrial-revolution/

empowering, resource-supported, community-level frameworks of decision-making that are conducive to locally impactful environment-related work. It repudiates models of hierarchical, vertical, or authoritarian developmentalism. It affords instead a potentially robust sociopolitical framework for facilitating community voice and decision-making on SDP, the environment, and development strategies. Thus, such democratization must privilege local communities, especially the most marginalized, in agenda-setting and decision-making. Additionally, it must encompass the full spectrum of organizational stakeholders, from established national and international governmental agencies, corporations and businesses, NGOs, and social enterprises, through to more "disruptive" campaign groups, community-based organizations, local associations, and social movements (Kaldor, 2005; Giulianotti, 2011).

Finally, a socio-ecological approach should be underpinned by an integration of the two standpoints on justice—the transcendental and the comparative—that are outlined by Sen (2009). The idealist, transcendental standpoint pictures how an unblemished, perfectly just society should look; the more practical, comparative standpoint lists and compares different types or instances of (in)justice (cf. Case and Deaton, 2020, p. 245). While Sen (2009) advocates the latter, comparative approach, I would argue that, at least in the case of green SDP and wider development activity, the two standpoints should be combined. Thus, an idealist standpoint is needed to inspire and to mobilize different stakeholders with a vision of environmental sustainability that they can work toward; meanwhile, the practical standpoint is needed to enable these stakeholders to prioritize issues and problems and to organize and to direct their activities in pragmatic, progressive fashion.

IMPLEMENTING A SOCIO-ECOLOGICAL APPROACH IN SDP

Based on these four pillars, I outline and illustrate seven ways in which this socio-ecological approach may be implemented to advance the greening of SDP.

Mainstreaming the Environment

SDP organizational stakeholders should position the environment consistently within their policies, programs, partnerships, and practices. This would replicate attempts to mainstream other critical development themes—such as on gender and disability—within SDP. There are many ways to do so. For example, all SDP programs should include some environmental components, such as community "cleanups," or educational activities on local environmental hazards and the impacts of climate change (see MYSA, 1992). SDP social enterprises may pursue ecofriendly commercial activities such as plastic recycling businesses that employ or support marginalized young people. More broadly, in establishing partnerships, NGOs and other organizations should ensure that at least some of their collective focus is on tackling critical community-level issues relating to climate change and environmental protection.

Democratization

Socio-ecological approaches in SDP should draw on the inclusive principles of associative democracy, devolving decision-making to community levels and fully engaging marginalized local voices. For example, the planning and implementation of SDP programs might be led by a forum of local people, including strong representation of women, young people, and lower-class/caste community members. This forum would be especially valuable in identifying key socio-ecological needs and issues within the community.

Social Inequalities—SDP as a "Recognition Space"

Socio-ecological SDP must be not only a "safe space" but also a "recognition space" for the full, active participation of the most marginalized social groups. Thus, for example, NGO officials, volunteers, and program participants should be drawn from different segments of the local community, but especially from lower-status groups. Lower-status officials and volunteers may be given prominent leadership and decision-making roles. Lower-status community members should be given particular recognition and voice within community forums in program planning. The NGO aims, objectives, and program activities should include strong commitments to, and educational messages on, the full recognition and equality of lower-status groups, especially in societies with very high levels of inequality.

Combining Comparative and Transcendental Approaches

Socio-ecological SDP should combine both approaches to justice, in ways that prioritize the needs and interests of the most disadvantaged social groups. In comparative, practical terms, these activities might include, for example, environmental education programs, local cleanup and recycling activities, and public campaigns that pursue particular outcomes (such as in lobbying municipalities for changes in local traffic systems). In transcendental terms, the NGO should work with local people to develop a socio-ecological vision of the community that may be worked toward, which might include, for example, new housing, sanitation, and transport systems, or transformed public spaces for sport, physical activity, and recreation.

Greening Programming

A socio-ecological approach is marked by flexible and holistic ways of planning, implementing, and assessing [i.e., monitoring, evaluating, learning (MEL)] programs, according to context. The specific socio-ecological conditions and needs of local people need to be carefully identified, to shape programs; for example, some communities may be badly affected by climate change and, for example, need better access to scarce water, or protection from flooding; others may be worse affected by waste and pollution and so may target cleanup initiatives, recycling schemes, or campaigns against polluting industries. NGOs should adapt delivery techniques to context, for example, in selecting sports or physical activities that will appeal to local young people. MEL should avoid "audit culture" approaches and instead utilize diverse, locally attuned methods and criteria

of success. For example, in communities with strong narrative traditions, "storytelling" methods for data gathering will be valuable. MEL should also ensure that local knowledge systems and cultural beliefs on the environment are embedded in program implementation (e.g., through education sessions) and evaluation.

The Sustainability of SDP and Sport

A socio-ecological approach requires all stakeholders to exercise critical reflexivity on the environmental sustainability of SDP and sport more broadly. Thus, for example, NGOs need to assess the environmental impacts or costs of key SDP activities, such as running intervention programs, the transportation of staff, volunteers and user groups to events and meetings, and the production of sport equipment or single-use materials utilized in programs.

The Positions and Roles of Social Researchers

Here, I follow Lamont (2018) in arguing that academics, alongside other "key social actors" (such as "knowledge workers," "cultural intermediaries," and "social movement actors and leaders"), can play vital roles in pursuing social (and socio-ecological) change. In SDP, for example, academics may be advisory partners or "critical friends" for environment-related programs and campaigns, such as in assisting with organization, delivery, and MEL. More broadly, academic partners may also work with other stakeholders to ensure that socio-ecological principles and practices are integral to SDP programs.

CONCLUDING COMMENTS

I have sought here to set out the case for a particular socio-ecological approach to policy and practice within SDP. This approach requires us to recognize the interdependence of environmental and social forms of (in)justice with respect to development; thus, we need to engage with SDGs that center on the environment, social inequality, and social exclusion. In preparing the ground for this approach, we need to be fully aware of critical contextual issues, challenges, and opportunities, including diverse skepticisms toward SDP and global development agendas. As highlighted, the socio-ecological approach has several strands and implementational aspects. These include, among other points, the needs to establish SDP as a "recognition space" that privileges marginalized groups, their social struggles, and environmental interests; to nurture "associative democracy" within local development contexts; and to pursue pragmatic and visionary approaches when establishing development aims, objectives, and priorities.

For academics in SDP, the socio-ecological approach offers rich opportunities for critical, participatory research that is socially and ecologically engaged. A final observation here concerns the need to pay attention to global scale. For social and environmental injustices to be tackled with maximum effect, actions and changes are needed at transnational levels. Similarly, for academics, if a green or socio-ecological approach is to have real consequence—whether in the academy or in the SDP and development field—then research dialogue and collaborations also need to proceed across a transnational terrain.

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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ORIGINAL RESEARCH
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Intentions of Environmentally Friendly Behavior Among Sports Club Members: An Empirical Test of the Theory of Planned Behavior Across Genders and Sports

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Environmentally friendly behavior has become increasingly important in recent years to reduce the speed of climate change and its negative impacts. Individual behavior, including environmentally friendly behavior, is largely formed by behavioral intentions. This study draws on the theory of planned behavior to examine the effects of attitudes toward the behavior, subjective norms, and perceived behavioral control on intentions of environmentally friendly behavior. It also investigates differences between genders and among sports. The study is based on data from a nationwide online survey of community sports club members in Germany in five team/racket sports (n = 3,036). Existing measures to operationalize the constructs were adapted to the present research context. The data were analyzed using structural equation modeling. The results show that the theoretical assumptions of the theory of planned behavior were largely supported by the data, implying that the antecedents of environmentally friendly behavioral intentions can be applied to club members. Furthermore, gender- and sports-specific differences in the antecedents–intention relationship were detected. This study is among the first to examine environmentally friendly behavioral intentions in community sports clubs. It adds to an increasing body of research investigating environmental sustainability in sports.

Keywords: behavioral intentions, environmental attitudes, sustainability, voluntary sports club, grassroots sports, climate change

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INTRODUCTION

The United Nations (UN) have developed 17 sustainable development goals which are indicative of the most pressing issues worldwide (UN, 2020b). Goal 13 suggests to "take urgent action to combat climate change and its impacts" (UN, 2020a, n.p.), recognizing that "2019 was the second warmest year on record and the end of the warmest decade (2010–2019) ever recorded" (UN, 2020a, n.p.). Climate change is globally relevant as not only does it affect all countries in terms of economic aspects, but it also influences people's lives as weather events tend to become more extreme (UN, 2020a). The Intergovernmental Panel on Climate Change (IPCC) has outlined that climate change poses risks to humans and natural systems (IPCC, 2018), indicating the need for combating the drivers behind climate change. Climate change is caused by global warming which, in turn, is caused to a large extent

by human activities, such as traveling and industrial production, that result in emissions. Hence, the IPCC (2018) strongly recommends undertaking efforts to avoid global warming of 1.5°C or higher compared to preindustrial levels and to engage in environmentally sustainable behaviors that reduce emissions. It has identified a number of synergies between Goal 13 and other sustainable development goals, such as responsible consumption and production as well as good health and well-being (IPCC, 2018).

Sports participation is one of the activities that contribute to individuals' health and well-being (e.g., Humphreys et al., 2014; Downward et al., 2016; Orlowski and Wicker, 2018; Wicker, 2020). However, practicing sports produces not only positive externalities like health and well-being but also negative externalities such as environmental impacts by deploying natural resources and producing emissions (e.g., Wicker, 2019; McCullough et al., 2020a,b). Accordingly, the review by Trendafilova and McCullough (2018) indicates that a number of studies have been conducted examining the environmental impacts of sports and environmentally sustainable behavior in sports. However, Carmichael (2020) stresses that the focus of previous research was on professional sports organizations and elite sports events, hence largely neglecting sports at the grassroots level.

The present study's research context is grassroots-level and voluntary sports clubs. Sports clubs represent the most important provider of organized sports in many European countries and are home to millions of members and participants (Breuer et al., 2015). Following the annual statistics of the German Olympic Sports Confederation (DOSB), about 88,000 sports clubs encompass 27.8 million memberships alone in Germany (DOSB, 2020), with most members actively practicing sports in their clubs. Thus, grassroots sports clubs represent an organizational context where pro-environmental behavior is relevant (McCullough et al., 2020b). However, organizations such as sports clubs also depend on their members' willingness to behave in environmentally friendly ways. Hence, it is critical to understand members' intentions of environmentally friendly behavior and what factors form these intentions.

The purpose of this study is to examine the antecedents of environmentally friendly behavioral intentions among community sports club members through the lens of the theory of planned behavior (TPB). This theory has been widely used to examine behavioral intentions in a number of contexts and is applied to the research context of grassroots sports clubs in this study. The empirical analysis is based on a cross-sectional survey of sports club members in five team/racket sports in Germany (i.e., football, basketball, handball, ice hockey, and tennis) which are typically characterized by possessing club houses and formal training facilities where all members have the opportunity to perform environmentally sustainable behavior or not (e.g., switching off lights, reducing water consumption in the shower, separating waste). This study advances the following two research questions: (1) to what extent can the antecedents of environmentally friendly behavioral intentions as suggested by the TPB be applied to sports club members? And (2) are there differences in the antecedents–intention relationship between both genders and among sports? Such an examination enhances our understanding of the drivers behind behavioral intentions in relation to environmentally sustainable behavior and the potential of grassroots sports clubs to contribute to the environmental sustainability of the sports sector. The study contributes to the increasing body of research on sports ecology.

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Sports Environmental Research

Sports environmental research emerged early in the 1980s, but until 2008, only a few occasional and qualitative studies examining the role of the natural environment in the sports context were published (for a review see Mallen et al., 2011). From 2008 onward, the growing public interest in environmental problems was accompanied by proportionally growing research in the field of sports environmental research (Dingle, 2017). While most studies in the early stage tried to answer questions about why and how environmental strategies are applied within sports (e.g., Trendafilova et al., 2013), studies of pro-environmental behavior of spectators and sports participants have attracted the interest of researchers (e.g., McCullough and Cunningham, 2011; Wicker, 2019). Most recently, a group of scholars has grouped the different environmental approaches in the existing literature under the subdiscipline of sports ecology (McCullough et al., 2020a). Previous research in the field of sports ecology was two-fold. The first and most often investigated perspective is the impact of sports on the environment (e.g., Wicker, 2018, 2019; McCullough et al., 2020b), while the second approach focused on the impact of environmental changes on sports (Orr and Inoue, 2019; Orr, 2020).

Investigating pro-environmental intentions and behavior in the sports context falls within the former perspective. Previous studies investigated the pro-environmental intentions and environmentally friendly behavior of sports spectators (e.g., McCullough and Cunningham, 2011; Inoue and Kent, 2012), athletic departments (Casper et al., 2014), sports students (Casper and Pfahl, 2012), sports tourists (Wicker, 2018), and active sports participants (Trail and McCullough, 2018; Wicker, 2019). In previous research, environmental values, beliefs, and personal norms positively determined pro-environmental intentions among college sports spectators not only at the sports event but also in their everyday life (Casper et al., 2014). More recently, personal values were shown to positively impacted personal and sports norms. However, only sports norms had a positive influence on the recycling intentions of collegiate basketball spectators in the form of higher perceived recycling benefits, higher perceived environmental efforts of the athletic department, and lower perception of recycling inconvenience (Casper et al., 2020). Moreover, environmental values positively influenced beliefs which in turn affect personal norms among undergraduate students. The students' personal norms finally influenced their pro-environmental behavior in the form of conservation in the personal and organizational sphere (Casper

and Pfahl, 2012), suggesting that environmental attitudes and subjective norms also affect actual behavior.

The Theory of Planned Behavior

The TPB, proposed by Ajzen (1991), has its origin in the field of social psychology. It emerged from the theory of reasoned action (Fishbein and Ajzen, 1977) and extended the latter to more specifically approach the origin of human behavior. In order to understand the applicability of the TPB for explaining pro-environmental behavior, it is crucial to first elucidate on the theory of reasoned action.

According to the theory of reasoned action, behavioral intentions are the immediate antecedent to behavior which is mostly under volitional control. The concept of behavioral intentions is defined as "motivational factors that influence a behavior; they are indications of how hard people are willing to try, of how much of an effort they are planning to exert, in order to perform the behavior" (Ajzen, 1991, p. 181). In the context of this study, intention is understood as the willingness of sports club members to perform pro-environmental behavior. Empirical results from multiple experiments confirmed the positive relationship between behavioral intentions and actual behavior (Webb and Sheeran, 2006). Behavioral intentions, in turn, are a function of salient beliefs which are divided into behavioral and normative beliefs (Madden et al., 1992). Behavioral beliefs can be seen as an underlying influence of an individual's attitude toward a behavior, whereas normative beliefs affect subjective norms. Consequently, behavioral intentions are determined by an individual's attitudes and subjective norms that serve as antecedents of intentions.

Attitudes can be seen as the expression of beliefs and values toward a specific area (Fishbein and Ajzen, 1977). They are linked to positive or negative outcomes or experiences of individuals with a certain behavior and describe the internal component of intentions (Fishbein and Ajzen, 1977). Applied to the present research context, positive experiences with regard to saving energy or recycling waste could lead to positive attitudes toward pro-environmental behavior and, therefore, increase the intention to behave in an environmentally friendly manner.

The external component of intentions is described as subjective norms which are influenced by the social pressure of friends, family, community members, or society as a whole (Fishbein and Ajzen, 1977; Kaiser et al., 2005). Subjective norms express the thoughts of individuals who are expected by their social networks to showcase specific behavior. Usually, individuals try to meet the expectations of important social ties. For example, if parents are strictly against smoking, the intention to smoke is rather low (Ajzen, 1991). Overall, the more positive an attitude individuals have toward a certain behavior and if they think others would be appreciative when they perform this particular behavior (subjective norms), the higher is the intention and the more likely is the individual to perform the respective behavior.

The strength of the relationship between intentions and behavior is limited by three conditions. First, the congruence between the specificity of the intention and the measurement of behavior influences the magnitude of the relationship. Second, the temporal stability of the intentions between measurement and actual behavior is important. Finally, the magnitude of volitional control the individual has to perform the behavior is relevant. The latter represents a decisive limitation of the theory of reasoned action, because it ignores the magnitude of volitional control which, however, reflects another important antecedent of intentions and behavior (Ajzen, 1991).

Tackling this limitation, the TPB extends the theory of reasoned action by the construct of perceived behavioral control which serves as a direct predictor of intentions, but also behavior (Ajzen, 1991). Perceived behavioral control reflects individuals' perceptions of their ability to actually perform a behavior. It consists of requisite resources and opportunities that are available to a person in a specific situation (e.g., time, money, opportunity to perform behavior, Whitehead and Wicker, 2018, 2019). Thus, perceived behavioral control also reflects the perceived difficulty to perform a specific behavior (Ajzen, 1991). The inclusion of perceived behavioral control also impacts the effect of attitudes and subjective norms on behavioral intentions. Even though attitudes and subjective norms toward pro-environmental behavior may be positive, the intention to behave environmentally friendly can be harmed by time or monetary restrictions (e.g., using public transport or riding a bike to the club is too time-consuming), which makes it impossible for the individual to perform the respective behavior.

Application of the Theory of Planned Behavior to Sports Environmental Research

The TPB has been largely applied to environmental research (e.g., Clement et al., 2014) and sports research (e.g., Whitehead and Wicker, 2018, 2019) separately, but has rarely been applied to sports environmental research (e.g., McCullough and Cunningham, 2011; McCullough, 2013).

Within environmental research, attitudes, subjective norms, and perceived behavioral control positively predicted the intentions for different types of energy conservation (Clement et al., 2014), environmental behavioral intentions in the workplace (Greaves et al., 2013), intentions to visit green hotels (Han et al., 2010), and the likelihood to purchase environmentally friendly products (Maichum et al., 2016). Furthermore, the positive relationship between intentions and actual behavior was confirmed for energy conservation (Macovei, 2015) and everyday pro-environmental behavior such as switching off lights (Levine and Strube, 2012). In sports research, the three constructs predicted the intention to attend sports events (e.g., Cunningham and Kwon, 2003), the intention to use doping substances (e.g., Ntoumanis et al., 2014), the intention to participate in recreational sports activities (e.g., Alexandris and Stodolska, 2004; Chuan et al., 2014), and the intention to recycle products (McCullough and Cunningham, 2011).

The TPB has been largely neglected in recent years to explain pro-environmental intentions or behavior in the sports context with two exceptions (McCullough and Cunningham, 2011; McCullough, 2013). Both studies used the theory to investigate

recycling intentions of sports spectators in college sports (McCullough, 2013) and in youth baseball (McCullough and Cunningham, 2011) with slightly different results. McCullough (2013) showed that college sports spectators' attitudes, subjective norms, and perceived behavioral control influenced their intention to recycle. The investigation of youth baseball spectators showed that previous behavior and subjective norms positively influenced their recycling intention. However, attitudes and perceived behavioral control had no significant association with recycling intentions (McCullough and Cunningham, 2011). This finding was explained by the scarce accessibility of recycling containers at the event location which was also the main obstacle to recycle for college sports spectators (McCullough, 2013). Even though Trail and McCullough (2018) did not explicitly rely on the TPB, they also showed that internal and external constraints such as the lack of interest of others, which is comparable to subjective norms in the TPB, influenced the sustainability intentions of running event participants.

Collectively, this overview suggests that the TPB has only been rarely applied to sports environmental research and mainly concentrated on recycling intentions. This study tests the applicability of the TPB beyond sports spectators' recycling intentions. It tries to enhance our understanding of the influence of attitudes, subjective norms, and perceived behavioral control on pro-environmental intentions of sports club members. Based on the TPB, positive effects of attitudes, subjective norms, and perceived behavioral control on pro-environmental intentions of sports club members are expected. Furthermore, gender differences and differences between sports with regard to the influence of attitudes, subjective norms, and perceived behavioral control are investigated.

The Role of Gender

The role of gender has been widely discussed in environmental research, with several theoretical explanations being advanced as to why women tend to act more environmentally friendly than men. According to the concept of ecofeminism, gender differences in environmental behavior occur due to different conceptualizations of the world (Sakellari and Skanavis, 2013). The psycho-cultural approach explains the closeness of women and nature through a common history of oppression by patriarchal institutions. Patriarchy characterizes men as dominant and controlling, while the female identity is described as emotional and caring. Additionally, environmental problems seem to affect women earlier and more directly than men (Estévez-Saá and Lorenzo-Modia, 2018). The close connection between women and nature results in stronger caring for environmental problems (Leach, 2007). Furthermore, higher awareness of environmental problems has led to stronger engagement of women in environmental politics, which influences the experiences of girls and women (Sakellari and Skanavis, 2013).

The social approach emerged from the social role theory and explains gender differences in environmental behavior through different social roles for women and men (Eagly and Wood, 1991; Wood and Eagly, 2012). Generally, these roles emerge from psychological and social processes starting from the division of labor, which is, in turn, affected and reproduced by various economic, cultural, and biological factors (Wood and Eagly, 2012). Accordingly, women are assigned to family roles, including activities such as child-rearing and domestic work that again lead to a stronger caring ethic, not only for other human beings but also for the natural environment (Eagly and Wood, 1991; Wood and Eagly, 2012). Several empirical studies confirmed these theoretical assumptions and showed stronger environmentally friendly intentions of women in different research contexts, including college sports (Israel and Levinson, 2004; Casper et al., 2017).

TABLE 1 | Number of respondents by sport and gender.

Sport	Gender		Total
	Women	Men	
Tennis	213	473	686
Ice hockey	71	393	464
Basketball	220	413	633
Handball	188	188	376
Football	297	580	877
Total	989	2,047	3,036

METHODS

Data Collection

Data were collected via a nationwide online survey among non-profit sports club members from five different sports in Germany, namely, football, basketball, handball, ice hockey, and tennis. The online survey was programmed on the platform SoSci Survey which can be used free of charge for scientific purposes. Various distribution channels were used to reach as many sports club members as possible, including distribution through social media like Facebook and Instagram, newsletters to club officials, and online newspapers. In the absence of a registry of sports club members from which a random sample could be drawn, convenience sampling was employed—similar to previous sports environmental research (e.g., Casper and Pfahl, 2012).

The online survey was finished by 3,329 sports club members across sports. However, it was not possible to calculate a response rate because an undefined number of clubs were approached. During the data cleaning process, 293 observations had to be excluded from the sample. The reasons for exclusion covered the same answers to multiple consecutive questions, speeding, and failed plausibility as well as internal validity checks. The final sample for the empirical analysis is $n = 3{,}036$ sports club members.

Sample Characteristics

Table 1 gives an overview of the sample characteristics by sports and gender. Altogether, 67% of respondents are male. In the full sample, average age was 32.16 years (SD = 14.61). Female respondents ($M_{age} = 29.33$; SD = 13.07) are slightly younger than their male counterparts ($M_{age} = 33.57$; SD = 15.11).

TABLE 2 | Overview of variables.

Variable	Description	Mean	SD
Attitudes toward the behavior: Generally I believe that environmentally-friendly behavior in my SPORT club is …			
att1	(1 = harmful; 5 = beneficial)	4.16	0.864
att2	(1 = unpleasant; 5 = pleasant)	3.76	1.138
att3	(1 = bad; 5 = good)	3.89	1.200
att4	(1 = worthless; 5 = valuable)	4.15	0.886
att5	(1 = unenjoyable; 5 = enjoyable)	3.56	1.094
Subjective norms (1 = totally disagree; 5 = totally agree)			
sn1	Most people who are important to me think believe I should act environmentally friendly	3.50	0.983
sn2	Presumably my fellow club members expect me to act environmentally friendly	3.05	1.099
sn3	In my SPORT club, it is appreciated when I act environmentally friendly	3.16	1.077
sn4	In my SPORT club, people often act environmentally friendly	3.06	0.922
Perceived behavioral control (1 = totally disagree; 5 = totally agree)			
pbc1	I am convinced that I can act environmentally friendly in my SPORT club when I want to	3.82	0.942
pbc2	It is in my hands whether or not I act environmentally friendly in my club	3.80	1.068
pbc3	Environmentally friendly behavior is easily possible in my club	3.44	1.030
Behavioral intentions (1 = totally disagree; 5 = totally agree)			
int1	I would like to take every opportunity to act environmentally friendly in the next 2 weeks	3.70	0.959
int2	It is my goal to take every opportunity to act environmentally friendly in the next 2 weeks	3.46	0.919
int3	I will definitely try to take every opportunity to act environmentally friendly in the next 2 weeks	3.55	1.060

SPORT was replaced by the corresponding type of sports in the sports-specific surveys.

Measures and Variables

Table 2 displays the variables and their descriptions. To measure the TPB components, three to five items for each construct were developed based on Ajzen (2002) suggestions for developing direct measures of the TPB constructs. Items for direct measures have a clear focus on the target behavior. Unlike indirect (belief-based) measures, they do not require qualitative pilot work for eliciting respondents' beliefs (Ajzen, 2002, 2019). We adapted the concrete items suggested by Ajzen (2002) to the target behavior of acting environmentally friendly within the context of community sports clubs. The items were worded in a way that they were applicable across various team/racket sports and sports clubs to ensure that the survey is considered relevant across the country. On the contrary, adapting the items to specific environmentally friendly actions of particular sports clubs would have limited the reach of the survey, the number of potential respondents, and the generalizability of the findings, respectively.

In this study, environmentally friendly behavior was understood as "behavior that consciously seeks to minimize the negative impact of one's actions on the natural and built world" (Kollmuss and Agyeman, 2002, p. 240). The literature distinguishes different dimensions of environmentally friendly behavior, including recycling, sustainable consumption, energy saving, and transportation (Preisendörfer, 1999). The survey included these aspects, and respondents were provided with an explanation of environmentally friendly behavior. Specifically, the introduction to the questions for the TPB part of the survey included the following description: "In this context environmentally-friendly behavior are actions such as waste separation, ecological consumption (e.g., using reusable bottles), saving energy (e.g., energy and water saving), as well as the use of environmentally friendly transportation (e.g., carpooling)." Hence, respondents were informed about what was considered environmentally friendly behavior in the survey.

Turning to the concrete measures in the survey, attitudes toward environmentally friendly behavior in the sports club were assessed using five five-point semantic differential items (Ajzen, 2002). Semantic differentials are a common method to measure attitudes (Fishbein and Ajzen, 2010). Respondents rate an attitude object (here, environmentally friendly behavior) on a set of bipolar evaluative adjective scales. According to Fishbein and Ajzen (2010), semantic differentials generally include instrumental (e.g., *bad–good*) and experiential (e.g., *unpleasant–pleasant*) items but can measure attitude as a unidimensional construct. Therefore, the items of a semantic differential are meant to correlate and load on a single factor in a confirmatory factor analysis (CFA) for valid and consistent measurement of attitude as a latent construct. Items that do not load on the latent attitude factor should be removed as they do not represent the latent construct (Fishbein and Ajzen, 2010). The initial scale of the survey consisted of three instrumental and two experiential items. A CFA for assessing the suitability of the scale as a measurement model for the subsequent structural equation model (SEM) yielded poor model fit. Two items (att1 and att4) correlated moderately with each other ($r = 0.63$; $p < 0.001$), but low with the other items ($r = 0.30$ to 0.36; $p < 0.001$). The corrected item-total correlations were moderate (0.48 and 0.50) (Hinkle et al., 2003). Accordingly, the factor loadings of the two items (att1 and att4) were small and not significant (0.045 and 0.052). Therefore, the two items were removed. The resulting scale consisted of two experiential and one instrumental item, hence both attitudinal dimensions were covered and, therefore, content validity could be assumed (Fishbein and Ajzen, 2010). The two experiential items (att2 and att5) were moderately

correlated ($r = 0.68$, $p < 0.001$). The instrumental item (att3) was highly correlated with one (att2; $r = 0.76$, $p < 0.001$) and moderately correlated with the other experiential item (att5; $r = 0.63$, $p < 0.001$). As the experiential items were only moderately correlated and the instrumental item measured an additional part of the attitude, the items represent attitudes as a latent construct without being redundant. Since there were only three indicators left, no global or incremental model fit could be investigated, but the local model fit (significant and high factor loadings; Heene et al., 2012) and the internal consistency ($\alpha = 0.871$) of the scale were good (Nunnally and Bernstein, 1994).

Subjective norms related to environmentally friendly behavior in the sports clubs were measured with four items using five-point Likert scales. The first three items measured the injunctive and the last item the descriptive aspects of subjective norms (Fishbein and Ajzen, 2010). A CFA for assessing the suitability of the scale as measurement model for the SEM yielded poor model fit. According to the factor loadings, one item for the injunctive aspect (sn1) was removed. In contrast to the other items, this item did not refer directly to the sports club as social context. The internal consistency of the scale was acceptable ($\alpha = 0.756$), and the local model fit was good (Nunnally and Bernstein, 1994).

PBC was measured with three items using five-point Likert scales. Each item consisted of a positive statement about having control over acting environmentally friendly in the sports club. The internal consistency of the scale was acceptable ($\alpha = 0.753$), and the local model fit was good (Nunnally and Bernstein, 1994).

Behavioral intentions to act environmentally friendly were captured with three items using five-point Likert scales. Each item consisted of a positive statement about the intention to act environmentally friendly in the sports club in the next 2 weeks. The internal consistency ($\alpha = 0.856$) and the local model fit of the scale were good (Nunnally and Bernstein, 1994).

Statistical Analysis

The data were prepared, and descriptive statistics were calculated in SPSS 26 (IBM Corp., 2019). The statistical analyses were conducted using Mplus 7.4 (Muthén and Muthén, 2017). The latent analyses were based on a maximum likelihood (ML) estimator with standard errors and a mean- and variance-adjusted chi-square test statistic that are robust to non-normality (MLMV; Muthén and Muthén, 2017). Currently, the MLMV seems to be the most effective ML estimator (Maydeu-Olivares, 2017). The data set was complete; hence, no missing values had to be dealt with.

In a first step of the analysis, the measurement invariance of the TPB constructs was investigated in order to determine if the scales measure the same constructs in all subsamples. Otherwise, meaningful comparisons of means and regression coefficients across different groups cannot be made (Chen, 2008). Multigroup confirmatory factor analyses (MG-CFA) were employed to test for measurement invariance. Successively, configural invariance (equal factor structure), metric invariance (equal factor loadings), and scalar invariance (equal intercepts) were examined. At least, scalar invariance is needed to compare means and coefficients. The criterion of change in fit indices between the different model restrictions was used: $\Delta CFI \geq 0.01$ supplemented by $\Delta RMSEA \geq 0.015$ or $\Delta SRMR \geq 0.030$ indicates non-invariance of the metric model, and $\Delta CFI \geq 0.01$ supplemented by $\Delta RMSEA \geq 0.015$ or $\Delta SRMR \geq 0.010$ indicates non-invariance of the scalar model (Chen, 2007). The MG-CFAs were also used to compare the latent factor means of the TPB constructs across the subsamples, if (partial) scalar invariance held. In comparison to latent means with MG-CFAs, one group is set as reference group with a latent factor mean constrained to 0. The other groups are tested against the reference group at a 5% significance level. Hedge's g was calculated as effect size to respect the different sample sizes (Hedges, 1981).

In a second step, a SEM was estimated in each subsample. The hypothesized paths of the SEM were in accordance with the predictions of the TPB. The SEMs were evaluated according to common conventions: RMSEA ≤ 0.05 or ≤ 0.08 and SRMR ≤ 0.05 or ≤ 0.010 for a good or acceptable model fit, CFI and TLI ≥ 0.95 or ≥ 0.90 for a good or acceptable model fit, a lower limit of RMSEA confidence interval close to 0 and an upper limit of ≤ 0.08 for a good model fit, and a non-significant test for the closeness of fit (Schermelleh-Engel et al., 2003; Hooper et al., 2008).

RESULTS

Measurement Invariance (Multi-Group SEM/CFA)

Given the adequacy of the measurement models in the full sample, multigroup CFAs were conducted to determine whether the measurement models for the TPB variables were invariant across sports and gender. The measurement models for attitude, subjective norms, and PBC were tested simultaneously, and the inter-factor correlations were estimated freely, since they were also used in the later SEM in that way. **Table 3** shows the corresponding results.

The measurement models yielded good model fits for both subsamples under all conditions for invariance. Relating to the invariance across gender, the deterioration of the fit indices was small and under the cutoff values for non-invariance. Concerning the invariance across sports, the decrease of the CFI from the metric to the scalar model was very slightly below the cutoff value. Since the other limits were clearly not exceeded, invariance can be assumed here as well. In summary, the measurement models for attitude, subjective norms, and PBC were scalar invariant across genders and sports.

The invariance of the measurement model for behavioral intentions was examined separately. Since the measurement model had only three indicators and therefore no degrees of freedom in the configural model, the model fit for this model was perfect. Therefore, the criterion of change in fit indices could not be applied here and only the fit indices of the scalar models could be investigated. For gender, the very good model fit of the scalar model (CFI = 1.000; RMSEA = 0.002; SRMR = 0.011) indicated invariance across genders. Regarding sports, the poor model fit of the scalar model (CFI = 0.770; RMSEA = 0.326; SRMR = 0.183) indicated non-invariance across sports.

TABLE 3 | Goodness-of-fit statistics and model comparisons for the multigroup confirmatory factor analyses.

Model	CFI	Δ CFI	RMSEA	Δ RMSEA	SRMR	Δ SRMR
Gender						
Configurial	0.972		0.058		0.034	
Metric	0.971	−0.001	0.055	−0.003	0.036	−0.002
Scalar	0.968	−0.003	0.055	0.000	0.038	−0.002
Sport						
Configurial	0.968		0.056		0.040	
Metric	0.962	−0.006	0.056	0.000	0.046	−0.006
Scalar	0.952	−0.010	0.058	−0.002	0.051	−0.005

CFI, comparative fit index; RMSEA, root mean square error of approximation; SRMS, standardized root mean square residual.

TABLE 4 | Latent mean differences (factor means) between sports.

	Attitude	Subjective norm	PBC	Intention
Gender				
Female	0.000	0.000	0.000	0.000
Male	0.084*	−0.126**	0.120**	−0.263***
Sport				
Tennis	0.000^{bcde}	0.000^{bcde}	0.000^{bcde}	0.000^{bcde}
Ice hockey	-0.531^{acde}	-0.695^{ac}	-0.420^{a}	-0.306^{ac}
Basketball	-0.102^{abde}	-0.445^{abde}	-0.349^{a}	-0.116^{abde}
Handball	-0.392^{abce}	-0.709^{ac}	-0.424^{a}	-0.428^{ac}
Football	-1.243^{abcd}	-0.654^{ac}	-0.347^{a}	-0.373^{ac}

$^{*}p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$; [a]significantly ($p < 0.05$) different from tennis; [b]significantly different from ice hockey; [c]significantly different from basketball; [d]significantly different from handball; [e]significantly different from football.

Latent Mean Comparisons

For the comparisons of the latent means between women and men as well as between the different sports, the MG-CFAs for evaluating the measurement invariance were used. More precisely, the scalar model provided latent means and additional statistics for a comparison with a reference group.

The latent mean differences between genders and sports are shown in **Table 4**. In the gender-specific comparison of latent means, women were set as the reference group. The men had a significantly more positive attitudes toward environmentally friendly behavior in sports clubs ($M = 0.084$; $p = 0.048$; $g_{Hedges} = 0.054$) as well as a significantly higher PBC over acting environmentally friendly in sports clubs ($M = 0.120$; $p = 0.005$; $g_{Hedges} = 0.075$). The subjective norms related to acting environmentally friendly in sports clubs were perceived significantly weaker by men ($M = -0.126$; $p = 0.003$; $g_{Hedges} = 0.079$). Men also had significantly weaker intentions to act environmentally friendly in sports clubs in the next 2 weeks ($M = -0.263$; $p < 0.001$; $g_{Hedges} = 0.173$).

In the latent mean differences between sports, the MG-CFAs for the evaluation of the measurement invariance could only be used for the comparisons with the tennis sample, as this group was the reference group in these analyses. For the other comparisons, further MG-CFAs with other reference groups were conducted. As scalar invariance did not hold for the intentions scale, the means of intentions were compared using the alignment method (Asparouhov and Muthén, 2014). This method allowed valid comparison of the latent factor means even if there was no scalar invariance, and it could identify non-invariant parameters as well (Marsh et al., 2018).

All differences in attitudes between sports were statistically significant. Tennis club members had the most positive and football club members the most negative attitudes toward acting environmentally friendly in their sports club. Tennis club members also perceived the significantly strongest norms to act environmentally friendly in their club compared to all other sports. Additionally, basketball club members perceived significantly stronger norms than ice hockey, handball, and football club members. Ice hockey, handball, and football club members did not differ regarding subjective norms. Tennis club members had the significantly strongest PBC over acting environmentally friendly in their club compared to all other sports. The other sports did not differ among each other. For behavioral intentions, the results were the same as for subjective norms: tennis club members had the significantly strongest intentions to act environmentally friendly in their sports club compared to all other sports. Basketball club members had significantly stronger intentions than ice hockey, handball, and football club members. Ice hockey, handball, and football club members did not differ regarding their intentions. Hedge's g was small (<0.2) for all differences.

TABLE 5 | Fit indexes of the estimated structural equation models.

Model	CFI	TLI	RMSEA	RMSEA 90% CI	pclose	SRMR	χ^2	df	*p*
Full sample	0.971	0.960	0.050	0.045; 0.054	0.527	0.035	408.661	48	< 0.001
Women	0.962	0.948	0.056	0.048; 0.065	0.094	0.040	198.784	48	< 0.001
Men	0.975	0.966	0.044	0.039; 0.050	0.948	0.034	241.954	48	< 0.001
Tennis	0.966	0.953	0.046	0.036; 0.057	0.723	0.040	117.560	48	< 0.001
Ice hockey	0.975	0.965	0.045	0.031; 0.059	0.710	0.041	93.199	48	< 0.001
Basketball	0.976	0.967	0.037	0.025; 0.049	0.966	0.042	89.741	48	< 0.001
Handball	0.971	0.960	0.042	0.025; 0.058	0.789	0.047	79.481	48	0.003
Football	0.981	0.974	0.043	0.034; 0.052	0.887	0.033	126.175	48	< 0.001

CFI, comparative fit index; TLI, Tucker–Lewis Index; RMSEA, root mean square error of approximation; CI, confidence interval; pclose, probability of close fit; SRMR, standardized root mean square residual; df, degrees of freedom.

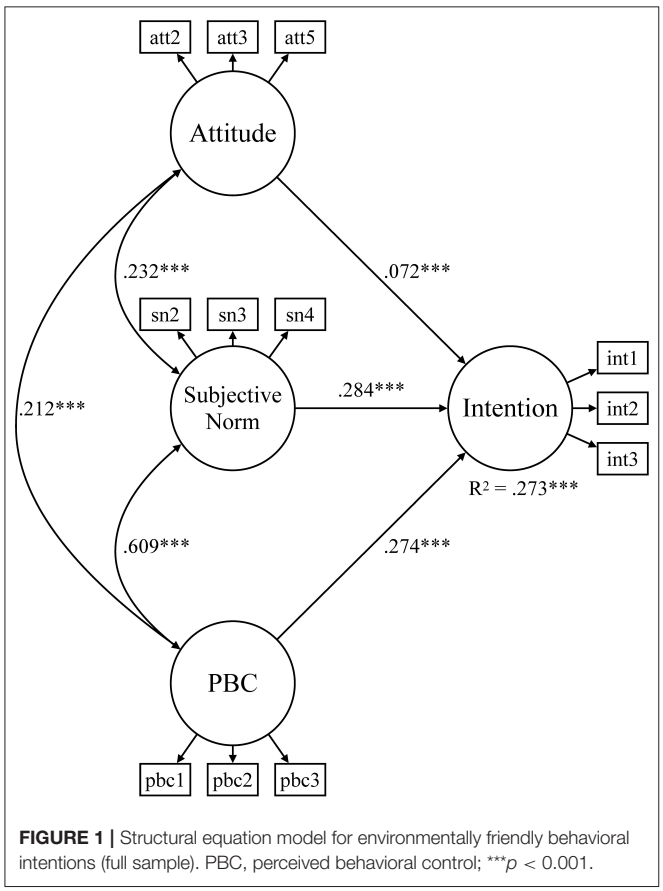

FIGURE 1 | Structural equation model for environmentally friendly behavioral intentions (full sample). PBC, perceived behavioral control; ***$p < 0.001$.

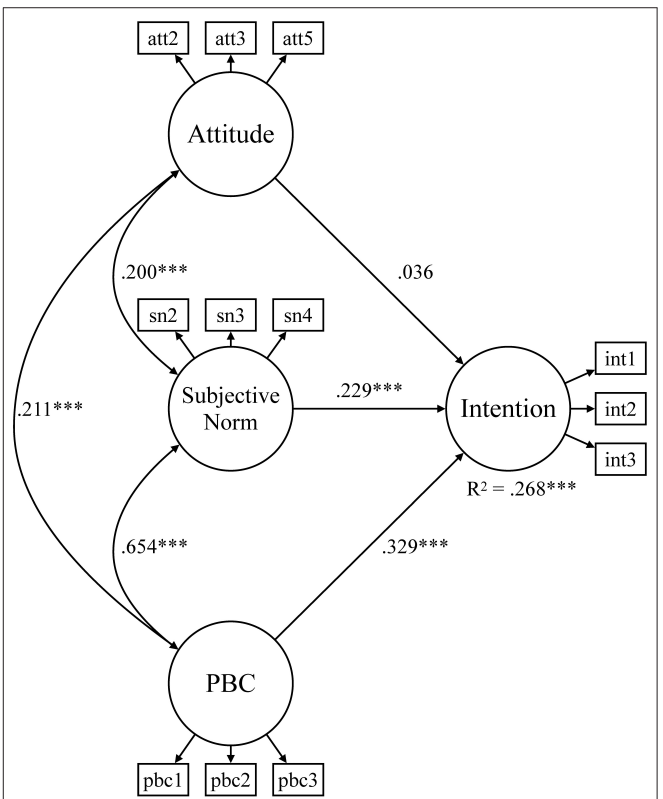

FIGURE 2 | Structural equation model for environmentally friendly behavioral intentions of females. PBC, perceived behavioral control; ***$p < 0.001$.

Structural Equation Models

According to the predictions of the TPB, a structural equation model was estimated for the full sample and the gender- and sport-specific subsamples. The intention to act environmentally friendly in the sports club was set to be predicted by attitudes, subjective norms, and PBC, which were free to correlate. **Table 5** summarizes the goodness-of-fit indices for each model. The fit indices indicated a good model fit in the full sample and in each subsample. **Figure 1** shows the SEM for the full sample. All relationships are positive and statistically significant. Attitudes, subjective norms, and PBC explain 27.3% of the variation in behavioral intentions. Thus, the theoretical assumptions of the TPB were supported by the data.

A few gender- and sports-specific differences emerged in certain subsamples and parameters which are presented next. In the gender-specific subsamples (**Figures 2**, **3**), 26.8 and 28.2% of the variation in behavioral intentions are explained by attitudes, subjective norms, and PBC, respectively. In the male subsample, all paths were significant, whereas the effect of attitudes on behavioral intentions was not significant in the women's sample.

Table 6 summarizes the results of the SEM for the sports-specific subsamples. It reveals that all correlation coefficients

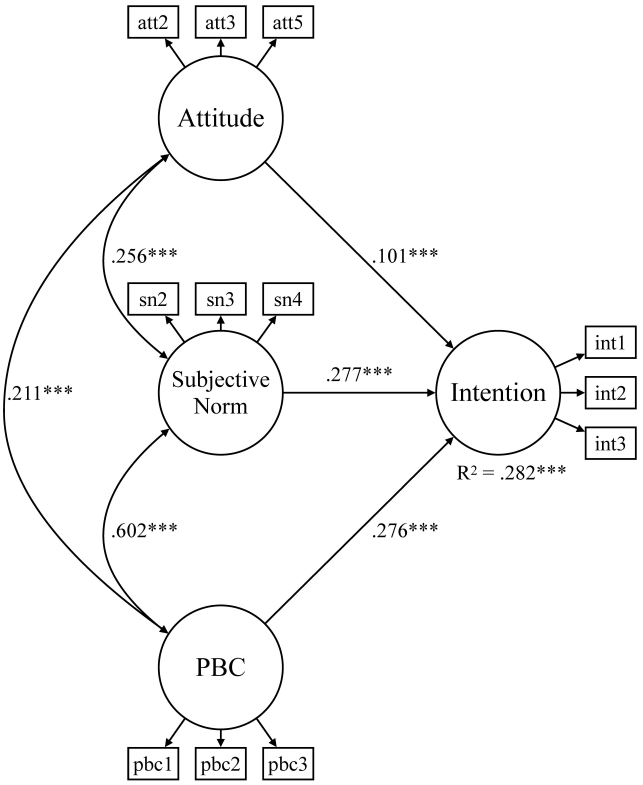

FIGURE 3 | Structural equation model for environmentally friendly behavioral intentions of males. PBC, perceived behavioral control; ***$p < 0.001$.

were statistically significant in subsamples for tennis and ice hockey. Accordingly, with 38.6%, the share of explained variance is higher in these sports than in the other three sports where it is between 20 and 25%. Insignificant effects are observed in handball, basketball, and football. In the handball subsample, all correlations are positive and significant with the exception of the effect of PBC on behavioral intentions. In the SEM for handball, all relationships are statistically significant and positive except for the effects of attitudes and subjective norms on behavioral intentions. As an illustrative example, the SEM for football is displayed in **Figure 4**. In this model, attitudes did not correlate significantly with subjective norms and PBC. Additionally, the effect of attitudes behavioral intentions was insignificant.

DISCUSSION

The purpose of this study was to enhance the knowledge about drivers behind behavioral intentions in relation to environmentally sustainable behavior and the resulting potential of grassroots sports clubs to contribute to the environmental sustainability of the sports sector. While previous studies focused on recycling intentions of sports spectators (e.g., McCullough and Cunningham, 2011) and intentions of pro-environmental behavior at home (Casper et al., 2020), this study advances our understanding of environmentally friendly behavioral intentions beyond recycling by also including sustainable consumption, energy saving, and transportation. Compared to other studies investigating antecedents of behavioral intentions in a sports setting (e.g., McCullough and Cunningham, 2011; Casper et al., 2020), the present sample can be considered large. Similar to other studies within this research context, males and younger people with higher education are better represented in sports and sports clubs compared to the German population (Federal Statistical Office, 2019; Wicker, 2019).

The first research question asked to what extent the antecedents of environmentally friendly behavioral intentions, as suggested by the TPB, can be applied to sports club members. Generally speaking, the TPB suggests that behavioral intentions are predicted by attitudes toward the behavior, subjective norms, and PBC. Overall, the SEM of the full sample (**Figure 1**) shows that these three antecedents significantly and positively predict the behavioral intentions of sports club members to act environmentally friendly within the next 2 weeks. This finding suggests that the TPB can be applied to sports club members and the grassroots sports context, respectively. Among the three antecedents, subjective norms were the strongest predictor of behavioral intentions. This finding echoes previous applications of the TPB in environmental research (Greaves et al., 2013) and sports research (Cunningham and Kwon, 2003; Chuan et al., 2014).

The second research question investigated gender-specific and sports-specific differences in the antecedents–intention relationship. While the male subsample showed significant paths for all three antecedents, the effect of attitudes on behavioral intentions was not significant in the female subsample. Recall that attitudes are linked to positive or negative experiences of individuals with a certain behavior and describe the internal component of intentions (Fishbein and Ajzen, 1977). One potential explanation for this finding is that within women, the higher caring ethic for the natural environment in the context of increasing environmental problems, especially regarding climate change, may lead to more depressive feelings and lower attitudes (Sakellari and Skanavis, 2013). It is possible that women's greater concern for the natural environment (e.g., Zelezny et al., 2000; Schultz, 2001), as also outlined in the concept of ecofeminism (Eagly and Wood, 1991; Ling, 2014), in addition with the negative experiences from the impacts of climate change could have led to resignation and, therefore, to the slightly lower attitudes of women club members. It is also possible that the context of sports clubs and the male environment plays a role. In the five-team and racket sports of the present study, men represent a substantially higher share among club memberships than women. For example, in Germany, the share of male club memberships is 60.0% in tennis and 62.1% in handball, 74.3% in basketball, and as much as 84.3% in football and 89.9% in ice hockey (DOSB, 2020). Hence, the present women club members are likely influenced by a male club environment which might have shaped their attitudes toward environmentally friendly behavior. In an effort to adjust to this male club environment, it is possible that women club members have overreacted by adjusting their attitudes toward

TABLE 6 | Standardized regression coefficients, correlation coefficients, and explained variance for the structural equation models by type of sport.

Parameter	Tennis	Ice hockey	Basketball	Handball	Football
Attitude → Intention	0.098*	0.135*	0.194***	0.024	−0.005
Subjective norm → Intention	0.147*	0.308***	0.369***	0.142	0.262***
PBC → Intention	0.469***	0.305***	0.072	0.335***	0.272***
Attitude ↔ Subjective norm	0.439***	0.349***	0.227***	0.357***	−0.064
Attitude ↔ PBC	0.324***	0.374***	0.271***	0.374***	0.018
Subjective norm ↔ PBC	0.668***	0.638***	0.531***	0.661***	0.514***
R^2 (Intention)	0.386***	0.386***	0.247***	0.204***	0.216***

*PBC, perceived behavioral control; *$p < 0.05$; ***$p < 0.001$.*

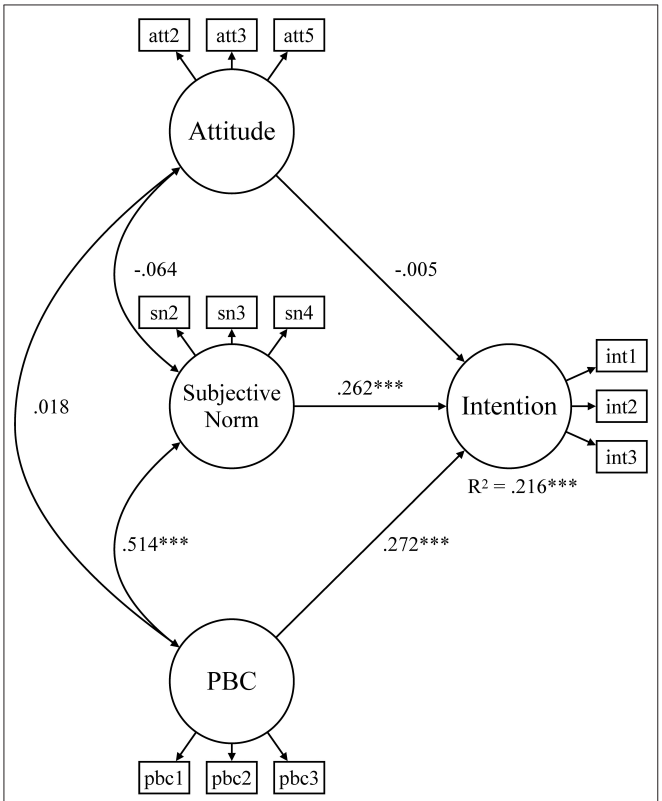

FIGURE 4 | Structural equation model for environmentally friendly behavioral intentions of football club members. PBC, perceived behavioral control; ***$p < 0.001$.

environmentally friendly behavior even more downward than the male level.

Subjective norms were found to be higher for women than for men in the latent mean comparison. This difference can be explained by social role theory, holding that women and men are assigned specific roles that they are expected to fulfill and, therefore, also influence their social surrounding (Eagly and Wood, 1991; Wood and Eagly, 2012). Therefore, women could face stronger expectations and norms to act environmentally friendly (Economou and Halkos, 2020). Hence, we echo recent environmental research that also drew on social role theory to explain gender differences (Xiao and McCright, 2015; Milfont and Sibley, 2016; Economou and Halkos, 2020). One important aspect of social role theory is shared beliefs about gender in a society which emerge to gender roles. The attributes associated with gender roles "tend to be viewed as desirable and admirable for each sex, thereby adding prescriptiveness to gender roles" (Wood and Eagly, 2012, p. 70). Thus, the theory assumes that there are shared gender beliefs and, especially, a gender dichotomy. The latter was the basis for our statistical analyses. From certain perspectives of ecofeminism and social construction gender theory, this dichotomy and related gender beliefs should be deconstructed or at least be differentiated (Sturgeon, 2016; Estévez-Saá and Lorenzo-Modia, 2018). However, the present study was unable to take this aspect into account as the gender measure was binary in nature.

Another possible theoretical explanation relates to emotional empathy and social contexts. For instance, Milfont and Sibley (2016), as well as Arnocky and Stroink (2010), have shown that women tend to have higher emotional empathy than men do. In addition, Arnocky and Stroink (2010) also documented that emotional empathy predicts altruistic environmental concerns. This means that women are more concerned about environmental problems because of the consequences for others (Dietz et al., 2002). This relationship indicates that women tend to have a stronger orientation to the social contexts in the case of environmental issues. Since the subjective norm is based on the perception of the social environment, both higher emotional empathy and stronger altruistic environmental concerns of women could lead to higher subjective norms among women to act environmentally friendly.

Men showed higher PBC to act environmentally friendly. Recall that PBC is a self-assessment of being able to perform a behavior and not the behavior itself. Specifically, PBC can be defined as people's perceptions of the degree to which they are capable of performing a certain behavior and can also be seen as self-efficacy (Fishbein and Ajzen, 2010). Therefore, social role theory is one possible explanation for the higher PBC by men, since men are characterized as competitive, dominant, and masterful, which is related to higher self-confidence and self-efficacy of men (Eagly and Wood, 1991; Meyers-Levy and Loken, 2015). For example, Milfont and Sibley (2016) revealed that men tend to have a higher social dominance orientation than women. Consequently, in the present study, the higher PBC of men might suggest that they would be more likely than women to assume

that it is under their control to act environmentally friendly in the context of the sports club and that they can do so whenever they want, regardless of other factors such as the social context. Therefore, social dominance orientation, as a stereotypical men-trait (Wood and Eagly, 2012), could be an explanation for the higher PBC of men.

The gender-specific latent mean comparison also revealed that women had higher intentions to act environmentally friendly in the foreseen future within their sports club. Based on the concept of ecofeminism, previous literature in environmental research suggests gender differences in environmental intentions due to different conceptualizations of the world, with the resulting closeness to nature leading to stronger caring for the natural environment (Leach, 2007; Sakellari and Skanavis, 2013). Hence, women's higher behavioral intentions to act environmentally friendly support the tenets of ecofeminism (Meinzen-Dick et al., 2014; Estévez-Saá and Lorenzo-Modia, 2018). Other perspectives of ecofeminism and feminist political ecology can also be advanced as explanations as they go beyond the closeness to nature and the focus on sustainability. According to Meinzen-Dick et al. (2014), the right to resources, the means and opportunity to exploit resources, and the adaption of sustainable practices are also relevant categories of ecofeminism and feminist political ecology. From these viewpoints, it is possible that women might have fewer resources to use in the first place. However, women are less likely to waste resources, indicating gender differences in the adoption of environmentally friendly behavior from a different perspective.

The evident gender difference in intentions of environmentally friendly behavior can also be interpreted through the lenses of social role theory and pro-social behavior. Environmentally friendly behavior qualifies as pro-social behavior (Schmitt et al., 2018). The latter is characterized by altruism, generosity, and helping others, including the natural environment. Likewise, and following social role theory, women are more likely to show these traits and are therefore more likely to demonstrate pro-social behavior and helping behavior, respectively (Fyall and Gazley, 2015). While the latter study was about volunteering (as another type of pro-social behavior), the present research suggests that the provided theoretical explanations apply to environmentally friendly behavior as well.

The results also showed differences in the antecedents–intention relationships among the five sports. While all three antecedents predicted behavioral intentions in tennis and ice hockey, PBC was insignificant for basketball and attitudes for handball and football. In handball, only PBC significantly predicted the intentions to act environmentally friendly in the next 2 weeks. These findings can be explained by Ajzen (1991) who proposed that the strength of the effect of the respective antecedent is situational and context dependent. Evidently, handball and football clubs represent a social context where attitudes toward a specific behavior do not translate into corresponding behavioral intentions. Moreover, subjective norms do not drive behavioral intentions in handball clubs and PBC does not affect behavioral intentions in basketball clubs.

The findings yield implications for policymakers and club managers. First, they suggest that not all genders and sports can be treated equally. Regarding gender, there is a need to recognize that women's behavioral intentions can only be increased by increasing PBC and subjective norms, not attitudes. The evident sport-specific differences can be used to develop specific initiatives to increase environmentally friendly behavioral intentions within specific sports. The strong effect of subjective norms on intentions of environmentally friendly behavior can be especially interesting for club managers across sports (except handball). Since grassroots sports clubs are characterized by strong social cohesion of members, a general awareness of club members for the importance of environmental topics can contribute to increasing environmentally friendly intentions of all members. Since club members are part of each other's social network, spillover effects can occur. Furthermore, handball and football club managers should give their club members enough opportunities to perform environmentally friendly behavior. Such opportunities might yield to higher PBC which has a positive effect on intentions and, later on, also on actual behavior (Webb and Sheeran, 2006). Collectively, sports policymakers should acknowledge that grassroots sports clubs can be considered an important context for increasing the environmental sustainability of the sports sector and the corresponding sustainable development goal.

CONCLUSION

This study examined community sports club members' antecedents of environmentally friendly behavioral intentions as suggested by the TPB. Recognizing that sports clubs represent the most important provider of organized sports in many European countries, including Germany, their potential contribution to the environmental sustainability of the sports sector is acknowledged. Hence, it is critical to understand members' intentions of environmentally friendly behavior. The results of this study can guide policymakers and club managers to develop environmental measures that help achieve the 13th sustainable development goal by the UN and take urgent action to combat climate change and its impact.

The present work contributes to the increasing body of sports ecology research as well as TPB studies. This study was among the first to apply the TPB to sports environmental research. Furthermore, the largely neglected context of grassroots sports clubs within sports ecology was examined. Regarding the applicability of the TPB, the study made several contributions. On the one hand, the three antecedents successfully predicted the behavioral intentions of sports club members to act environmentally friendly, concluding that the TPB can be fully applied to sports club members and to the grassroots sports context. On the other hand, the study showed that there are sports-specific differences in the antecedents–intention relationship which can be used to increase the potential of grassroots sports clubs to contribute to the environmental sustainability of the sports sector.

This research comes with some limitations that could lead to future research avenues. While gender-specific differences could be explained by existing theories and concepts from gender and feminist literature, sports literature lacks theories

outlining differences between sports. Hence, specific theoretical explanations for the differences that were evident between some sports are not available, indicating that the underlying reasons should be explored in future (qualitative) studies. Second, the study only investigates environmentally friendly intentions, not actual behavior. This limitation comes with the nature of the survey, which was anonymous. Thus, it is not possible to collect further data about actual behaviors and link these data with the existing dataset to examine how behavioral intentions have affected actual behavior a few weeks later. Future research wishing to compromise respondents' anonymity should investigate the intention–behavior relationship of community sports club members. Third, the study only investigated the antecedents–intention relationship based on the TPB and its constructs. Other context-specific variables, such as awareness of environmental issues, should be investigated in future studies.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required for this study in accordance with the national legislation and the institutional requirements.

AUTHOR CONTRIBUTIONS

MB drafted parts of the methods, conducted the data analysis, designed the graphical representation of the findings, and wrote parts of the results. TT drafted the theoretical framework and literature review, as well as parts of the methods, the discussion, and the conclusion. PW oversaw the data collection process and conducted parts of the data cleaning, drafted the introduction and parts of the results, discussion, conclusion, checked the overall manuscript for coherence, consistency, and format. All the authors contributed to the conception and design of the work, drafted it, revised it critically for important intellectual content, approved the final version of the manuscript, and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Toward More-Than-Human Understandings of Sport and the Environment: A New Materialist Analysis of Everyday Fitness Practices

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Sport and fitness have long been linked with healthy lifestyles, yet most sporting events and consumption practices are highly detrimental to the environment. While academics have examined the harmful effects of sporting mega-events and the production and consumption of sport equipment and clothing, there has been less engagement with the "mundane," everyday activities of consuming, laundering, and recycling of fitness objects. In this paper, we explore the potential in feminist new materialisms for rethinking the complex relationships between sport, fitness, and the environment. In particular, we explain how our engagement with Karen Barad's theory of agential realism led us to rethink women's habitual fitness practices as connected to environmental degradation. Working with Barad's concept of entanglement, we came to notice new human-clothing-environment relationships, focusing on how athleisure clothing itself is an active, vital force that intra-acts with other non-human (and human) matter within the environment. Adopting a diffractive methodology that included reading interviews with women about their activewear practices, our own experiences, new materialist theory, and environmental literature through each other, we focus on two examples that emerged through this process: laundering and disposal practices. Through these examples, we demonstrate the ways in which new materialisms encouraged us to move toward non-anthropocentric understandings of the sport-environment relationship and toward new ethical practices in our everyday fitness lifestyles.

Keywords: entanglement, feminist new materialisms, environment, activewear, Karen Barad, agential realism, fitness

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INTRODUCTION

The world is facing a massive environmental crisis with rapid rates of deforestation, increased production of greenhouse gases, rising global temperatures and sea levels, and extensive loss of biodiversity as the Sixth Great Extinction looms (Carrington, 2017). While there are a variety of factors that have led to this alarming state, there is little doubt that human actions and anthropocentric thinking—where human experiences and needs are valued above the non-human—have been major contributors (World Wildlife Fund, n.d.). Recognizing human roles and

responsibilities in these processes, many scholars have begun turning toward different ontological and epistemological approaches that view the world through a more connected and relational lens. One such framework is new materialisms, an umbrella term for a range of theories and concepts that are premised on a relational ontology where human and non-human matter are seen as constantly intra-acting and where matter is recognized as lively and agentic. Herein we explore the potential in new materialisms for rethinking the complex relationships between sport, fitness, and the environment.

Many scholars within sport sociology and other leisure and fitness fields have explored the connection between the environment and sport. In particular, there has been a large body of literature interested in the environmental impact of mega-sporting events, as well as scholarship analyzing and critiquing many sporting organizations' sustainability efforts and practices. While this literature is important and necessary, it is often underpinned by assumptions that the environment and non-human matter are passive, acted upon by humans, rather than viewing the environment and non-human matter as active and *entangled* with humans. This literature also tends to focus on larger, macro-scale impacts (mega events, organizations, teams), often ignoring the micro-impacts of sporting and leisure practices. In this paper, we share findings from a larger project using new materialisms, specifically Karen Barad's theory of agential realism, to think about the activewear[1] phenomenon and women's experiences of fitness. Through agential realism's emphasis on materiality and human-material relationships, during this project, we came to new noticings and understandings of the complex relationship between the everyday wearing of activewear and environmental degradation. Exploring the impact of activewear on the environment was never the main purpose of the research project. Instead these ideas emerged through the agential realist approach to the research process and ways of knowing, thus highlighting the value of more-than-human approaches for prompting us to go beyond anthropocentric understandings of the sport-environment relationship.

Here, we speak to some of these new noticings, primarily drawing upon Barad's concept of entanglement to explore how women's habitual fitness practices and the activewear phenomenon (clothes worn for physical activity) are intimately connected to environmental degradation. In so doing, we reimagine human-clothing-environment relationships, focusing on how athleisure clothing itself is an active force that intra-acts with other non-human (and human) matter within the environment. To accomplish this, we draw upon a range of different qualitative and creative methods (interviews, focus groups, arts-based methods) in addition to our own experiences of consuming, washing and disposing of activewear, alongside an ongoing engagement with environmental research.

This paper begins with a brief section introducing the reader to activewear and research on this growing phenomenon. We then conduct a review of some of the expansive literature around sport and the environment, followed by more specific literature on sporting objects, activewear, and the environment. After reviewing key literature, we introduce new materialist theory, and specifically, Karen Barad's theory of agential realism, as well as review some of the scholars who are drawing upon new materialist theory to explore the connections between sporting culture and the environment. We next provide an overview of our diffractive methodology and analytical approach before exploring two examples to rethink the fitness-sport-environment relationship; (i) laundering of activewear, and (ii) disposal of activewear. Through these examples, we demonstrate the ways in which new materialisms encouraged new noticings in our data and a move toward non-anthropocentric understandings of the sport-environment relationship.

FEMINIST READINGS OF ACTIVEWEAR

Activewear is casual clothing designed for physical activity and often refers to, but is not limited to, stretchy yoga pants/leggings, sweat-wicking synthetic tops, and tight-fitting crop tops. While there is activewear designed specifically for men, it is the women's industry that has grown exponentially over the past 10 years, and therefore, activewear often refers to clothing worn by women (Lipson et al., 2020). While figures vary, one report estimated the global activewear market to be valued at over USD$350 billion (Driver, 2020). Whereas, many other industries have suffered as a result of COVID-19, the athleisure industry continues to grow. In fact, the online sales of many activewear companies, such as ASOS and lululemon, increased between 2019 and 2020, and overall sales of activewear in the UK grew by 17% during this period (Bain, 2020). Part of the reason for activewear's increasing sales over the past decade has been its transition from something worn only in the gym, to clothing acceptable in other social spaces—cafes, grocery stores, schools. Athleisure is now highly visible, including on social media, celebrity culture, advertising, and TV/film.

Recognizing the growing popularity of activewear, many international mainstream apparel retailers—The GAP, American Eagle Outfitters, Primark, Kohls, the Warehouse—have developed their own lines of activewear with other sportswear companies expanding upon their women's lines to include maternity and period-proof activewear. Popular brands such as Adidas, Nike, and Under Armor have all drastically increased the size of their women's apparel lines and spent millions to develop women-centered advertising and marketing campaigns. In 2015, Adidas' head of women's products, Nicole Vollebregt, stated that "Women are the biggest growth opportunity for Adidas," adding that "our women's business is currently growing faster than men's" (Chitrakorn, 2017).

In response to its prevalence in popular culture, in the past 5 years various scholars have begun to conduct critical analyses of the activewear phenomenon (Lavrence and Lozanski, 2014; Hauff, 2016; Horton et al., 2016; Nash, 2016; Haaksluoto, 2020; Lipson et al., 2020; Brice and Thorpe, 2021a,b). Much

[1]There are a variety of monikers for activewear: sportswear, athleisure, fitness wear. In this paper, we use activewear and athleisure interchangeably, although recognize that there has been debate about their synonymy.

of this literature has critiqued the neoliberal, healthism[2] ideologies within activewear companies' marketing, showing how companies have used concepts of empowerment, independence, self-care, discipline, and bodywork to sell their products (Lavrence and Lozanski, 2014; Horton et al., 2016; Nash, 2016). In a similar vein, but more interested in women's experiences of activewear, some studies have conducted qualitative research to look at the impact of activewear on women's physical activity practices, body confidence, and identity formation (Hauff, 2016; Lipson et al., 2020). A small, but growing body of research is interested in women of color's experiences of activewear and the fitness industry, an industry often critiqued for its whiteness (Azzarito, 2019), as well as how activewear and sportswear are taken up in non-Western countries (Kiuchi, 2021; Saied and Creedon, 2021).

Related research has explored the production of sportswear, examining companies' policies on and practices of labor and human rights. Much of this research was in response to the anti-sweatshop movement of the 1990s—a social movement created to address the exploitation of workers in poorer countries by wealthier countries (Cushman, 1998; Bartley and Child, 2014; Mezzadri, 2016; Williams, 2016). During this time, Nike was a major target of anti-sweatshop campaigns resulting in many scholars conducting analyses of the sportswear company and their human rights policies (Knight and Greenberg, 2002; Greenberg and Knight, 2004; Johnson, 2016). Taking a feminist approach to Nike and their polices, Dworkin and Messner (2002) show how Nike (and other companies) capitalize upon feminist notions of empowerment and independence in their advertising, yet simultaneously are complicit in international systems of gender oppression exploiting a largely poor, female-based workforce to produce their clothing. Importantly, research on activewear often focuses primarily on the wearer of the clothing and/or the social discourses prevalent in the activewear industry, ignoring the large workforce of women in developing countries that are most often responsible for the production of the clothing. Dworkin and Messner (2002) remind scholars of the moving body that "it is not just muscular, or athletic, or 'fit' bodies that must be considered in women's liberation—it is also laboring bodies" (pp. 22).

In part due to the anti-sweatshop movement popularized in the 1990s, many activewear companies use their websites to publicly discuss their "ethical code of conduct" and efforts made to ensure their production sector is treating employees "fairly." For example, on Sweaty Betty's website, customers can access their "Modern Slavery Statement" and read about their efforts to ensure "everyone who works for us or who produces goods under the Sweaty Betty brand is treated well and chose said employment freely." (Sweaty Betty London Modern Slavery Statement, 2019) Similarly, Nike customers can read about their "Human Rights and Labor Compliance Standards" which describe the various steps undertaken by Nike to treat their workers fairly (Nike, 2021). By emphasizing their ethical principles, companies have attempted to prevent the consumer backlash that erupted in the 1990s.

Currently, consumers, and particularly women consumers, have become more concerned with the issues of environmentalism and sustainability. Research has shown that women, more than men, value the environment and are more likely to engage in environmentally friendly behavior (Arora-Jonsson, 2011; Baier et al., 2020). Other research has emphasized the growing popularity of sustainability in consumers' choices when buying activewear. One study looked at customer's willingness to pay for "green goods" by examining Patagonia's (high-end outdoor wear company) switch from conventionally grown cotton to using organically grown cotton. They found that customers are willing to pay premium price for items they perceive to be environmentally friendly even if there is no direct benefit to the consumer (Masanell-Casadesus et al., 2009). One report from 2020, showed that google searches for terms such as "sustainable activewear" increased by 151% percent with larger companies such as Adidas, Nike, and lululemon now featuring their environmental agendas and sustainability initiatives on their websites (Petter, 2020). There has also been an increase in smaller, more boutique activewear brands (such as Girlfriend Collective, Tala) which sell items made exclusively from recycled materials (i.e., plastic water bottles, bags) (Moon, 2017; Petter, 2020). While there is a growing environmental awareness within the activewear industry, much of this is concerned with the production and purchasing of clothing with little focus on the everyday practices of those who consume and use these products.

LITERATURE REVIEW: SPORT, FITNESS, AND THE ENVIRONMENT

Since the late 1990s, scholars have increasingly explored the overlap between sport and the environment (Lenskyj, 1998; Wheeler and Nauright, 2006; Karamichas, 2013; McCullough and Kellison, 2017; Bunds and Casper, 2018; Wilson and Millington, 2020). In their review of sporting literature and the environment, Wilson and Millington (2017) divide this research into three broad themes; (a) sport management and environmental issues, (b) sport, modernization, and globalization, and (c) sport, neoliberalism and environmental policy. More recently, King and Weedon (2021) describe research focused on sport and the environment as emphasizing "the contradictions between sustainability rhetoric and capitalist growth," with building critique of "'ecological modernization' as an environmental strategy in the hosting of sport events" (pp. 1).

In line with Wilson and Millington (2017) and King and Weedon (2021), we acknowledge a large body of work interested in exploring the environmental effects of mega-sporting events and analyzing the sustainability policies of sporting organizing and leagues (McCullough and Kellison, 2017; Wilson and Millington, 2017). Scholarship has analyzed how mega sporting events negatively impact the environment because of increased tourism (i.e., more waste and transportation needs), an enormous carbon footprint, and long lasting negative environmental effects

[2]Healthism, as a concept, is most often attributed to Crawford (1980). In response to the various movements of self-care and holistic care in the 1970s, combined with neoliberalism in the 1980s, health became understood and situated at the level of the individual.

(i.e., infrastructure issues) (Collins et al., 2009; Ahmed and Pretorius, 2010; Hayes and Karamichas, 2012; Karamichas, 2013). Other scholars have been interested in sporting policy looking at the ways various sporting organizations (i.e., International Olympic Committee Agenda 2020 and Sustainability Strategy; United Nations Sports for Climate Change initiative) have developed (and often failed) to implement environmental sustainability policies (Trendafilova et al., 2013; Casper and Pfahl, 2015; Boykoff and Mascarenhas, 2016; Geeraert and Gauthier, 2018). While not focusing on large organization's sporting policies specifically, Mansfield (2009) explores the political ecology of the fitness industry's environmentalist agenda (encouraging outdoor exercise, emphasis on being one with nature, focus on sustainability and "clean living"). She illustrates how "fitness cultures are dominated by an environmental approach that tends to lead to green consumerism" (pp. 359) and in so doing, continues to prioritize human needs over environmental protection.

Another important thread in the sport and environment literature is the focus on action, lifestyle and outdoor sports, and participant relationships with the natural environment. Various scholars have explained how these often outdoor activities (i.e., surfing, climbing, skiing) facilitate intimate relationships with the natural environment (i.e., waves, mountains, rivers), which (in some cases) can lead to heightened "ecological sensibilities" (Olive, 2016) or "ecocentricity" (Brymer and Gray, 2010) [also see (Hill and Abbott, 2009; Humberstone, 2011; Stoddart, 2012; Wheaton, 2020)]. Some are extending such research by prioritizing Indigenous relationships with oceans, mountains, and other natural environments, and, at times, critiquing the longstanding and ongoing damage caused by settler colonialism and contemporary Western-derived recreation and tourism practices (Henhawk and Norman, 2019; Olive, 2019; Waiti and Awatere, 2019; Wheaton et al., 2019; Laurendeau, 2020; van Luijk et al., 2020). For example, Wheaton et al. (2019) look toward more Indigenous ways of understanding people's connections with "blue spaces" (oceans, lakes, coasts). Working with Māori ways of knowing well-being, they describe how an Indigenous viewpoint "affords alternative directions for research and reminds us that Eurocentric notions of what people do in oceans, rivers, lakes and on the shorelines are simply symptomatic of a particular world view and not of others." (pp. 92). Continuing, they argue that it is time to anchor discussions around the environment and people to "different and more diverse 'worlds' where research to date has been lacking" (pp. 92).

Similarly to Wheaton et al. (2019), Norman et al. (2020) suggest that one strategy to move beyond anthropocentricism and towards more-than-human ethics, especially regarding environmental change and environmental justice, is to look towards Indigenous ways of knowing that, although varied and diverse, "are holistic and inclusive of interconnective relations with more-than human worlds" (pp. 90). Through their research conducting sharing circles with elder members of the Fisher River Cree Nation (Canada), Norman et al. (2020) show how the elders' stories emphasized a deep, embodied connection with Land. These stories and ways of knowing "open up alternative ways of envisioning balanced and less anthropocentric relations between the planet, humans, sport, and physical activity" which have the "potential to foster a preferred environment and socially sustainable future" (pp. 98).

Research on sport and the environment is growing quickly, with scholars drawing from an array of fields (cultural studies, geography, political science, and urban studies) and exploring more diverse ways of knowing human relations with the environment. Various scholars have drawn upon Stuart Hall's "circuit of culture" and used a political ecological approach to trace the environmental impact and power inequalities created during the life-cycle of objects such as Nike's Air Jordans (Petrina, 2001) and surfboards and surfparks (Hill and Abbott, 2009). Other research has focused primarily on the development of sporting goods and the opportunities and challenges the sporting goods industry will face as they attempt more sustainable practices (Subic and Paterson, 2006; Subic et al., 2009, 2012; Subic, 2010). Subic and Paterson (2006) explain that as the sporting goods industry has adopted new materials and development processes to produce more advanced sports equipment, it has resulted in increased global environmental degradation. Therefore, Subic and Paterson (2006) argue that one way to address degradation is to develop more environmentally sound designs of sports equipment before production and to pay greater attention to the life cycle of products when developing them. Also, many environmental organizations have conducted research about the damaging effects of the production of textile and sporting goods (Dirty Laundry, 2011; Cobbing and Brodde, 2014). For example, in 2014, Greenpeace published a report about the environmentally harmful chemicals used in the production and dispersal of apparel and sporting goods from the 2014 FIFA World Cup (Men's Soccer) from major brands such as Adidas, Puma, and Nike (Cobbing and Brodde, 2014).

Regarding activewear more specifically, there has been limited scholarly engagement around the harmful effects of the production of activewear clothing on the environment. However, there has been research into the negative effects of the fast fashion industry and laundering practices of clothing that will be discussed throughout this paper (Anguelov, 2015). Importantly, there is a small body of literature that has explored the sustainability practices and policies of larger activewear and outdoor clothing companies (Horan, 2011; Ráthonyi and Ráthonyi-Odor, 2015; Erdnüß, 2016; Wang and Shen, 2017; Wu and Li, 2019). For example, Erdnüß (2016) explores Swedish outdoor clothing company, Haglöfs', sustainability initiatives showing that the brand's main motivation for sustainability is increased profit as the company believes there will be demand for environmentally consciously produced products in the near future. Similar to Erdnüß's (2016) findings, other scholars have been looking more closely at consumer behavior and the impact that a company's environmental sustainability policies and practices have on consumers' purchasing choices (Zheng and Chi, 2015; Nam et al., 2017; Ganak et al., 2019).

As mentioned earlier, many activewear companies are recognizing the important value consumers are placing on sustainability and environmentalism. In response, many have developed more initiatives and tactics to curb their environmental impact in addition to marketing strategies and campaigns to promote their environmental values (Petter, 2020). For example, the website of activewear juggernaut, lululemon,

features a "sustainability and social impact" section outlining how their "products and actions avoid environmental harm and contribute to restoring a healthy planet" (LuLuLemon, 2018). Here they describe their sustainability efforts such as using renewable energy electricity in their facilities and using paper-based packaging rather than plastic, their use of more sustainable fabrics, and efforts to reduce waste. Other companies brand themselves as environmentally conscious and "eco-friendly" often using this "eco-identity" within their advertising and promotional strategies. For example, Patagonia, widely known for its environmental efforts, has a mission statement that reads, "We're in business to save our planet" (Patagonia.com, 2020). Patagonia and other companies also often emphasize the sustainability of the fabric (i.e., 100% recycled nylon, organic cotton, biodegradable merino wool) in their advertisements and clothing/product descriptions.

While many companies are trying to promote their ecological sensibilities, there have been a series of popular press articles, blogs, and websites that discuss the negative environmental impact of activewear (Dalton, 2017; Kay, 2017; Matera, 2019; Weekendbee, 2019). In a recent article in *Shape* fitness magazine, Falk (2020) outlines the devastating effect the apparel and activewear industry is having on the environment—i.e., use of non-renewable resources, production of greenhouse gases, production of carbon dioxide—and provides readers with tips as to how to purchase activewear sustainably. Similarly, there are many environmental groups (i.e., Greenpeace, World Wildlife Fund, Sierra Club) that have encouraged the public to understand how their daily actions (buying, washing, recycling) do have an impact on the environment. One popular organization is *The Story of Stuff Project,* inspired by Annie Leonard's popular animated short documentary of the same title, where she follows the lifecycle of material goods and works to expose the "the connections between a huge number of environmental and social issues, and calls us together to create an increasingly sustainable and just world" (The Story of Stuff Project, 2020). Larger environmental organizations also frequently post articles about the actions the public can take on a daily basis, which they argue can help slow environmental degradation. While there are many popular press sources that emphasize the "fine details" of everyday actions, there has yet to be any academic exploration into everyday usages of activewear and the connection between women's habitual fitness practices and the environment. In this paper we explain how our engagement with feminist new materialisms prompted us to rethink women's everyday practices, and to explore the sport-environment relationship as more-than-human phenomenon.

THEORETICAL FRAMEWORK: NEW MATERIALISMS AND AGENTIAL REALISM

Referred to variously as the ontological or posthuman turn, vitalist theories, and "more-than-human" approaches, the new materialisms refer to an evolving scholarly tradition that challenges the anthropocentrism and logocentrism that has become dominate among the social sciences by having a concerted focus on the vitality of non-human matter (Coole and Frost, 2010; Dolphijn and van der Tuin, 2012; Fox and Alldred, 2018; Thorpe et al., 2020). In many new materialist approaches, matter is envisioned as "something more than 'mere' matter: an excess, force, vitality, relationality or difference that renders matter active, self-creative, productive, unpredictable" (Coole and Frost, 2010, pp. 9). However, the focus is not only on matter, but the ways the human and non-human relate and are connected. There is a concerted effort to "situate citizens, ideas and values (as well as theorists themselves) within the fields of material forces and power relations that produce and circumscribe their existence and co-existence" (Coole and Frost, 2010, pp. 28). This emerging body of knowledge is informed by an eclectic array of disciplinary foundations and draws upon the work of contemporary thinkers such as Karen Barad, Rosi Braidotti, Jane Bennett, Gilles Deleuze (with Felix Guattari), Donna Haraway, Bruno Latour, and Brian Massumi, among others. Over the past decade, a series of comprehensive volumes espousing the promise of new materialist thought have chronicled its emergence, contributions, and underlying tenets (see Alaimo and Hekman, 2008; Fox and Alldred, 2018; Thorpe et al., 2020).

Importantly, many have noted the similarities between new materialist thought and Indigenous knowledges, cautioning new materialist scholars against "failing to acknowledge and seriously engage the Indigenous scholars already working with parallel concepts" which risks "practices of erasure of Indigenous cultures and thought" (Dolphijn and van der Tuin, 2012 pp. 2; Watts, 2013; Todd, 2016; Ravenscroft, 2018; Clary-Lemon, 2019; Rosiek et al., 2019). Whereas some reject new materialisms outright for these failings, others encourage a more collaborative and diffractive approach between new materialist literature and Indigenous ways of knowing where these bodies of literature "inform one another, extend their respective influence, and bring what benefits are latent within them to local and global communities" (Rosiek et al., 2019, pp. 2). Addressing these critiques and the possibilities of collaboration, there is small but growing number of scholars who are working at this intersection of Indigenous knowledges and new materialisms to think about environmental concerns in the 21st century (Thomas, 2015; Yates et al., 2017; Celermajer et al., 2020). Working in the context of Aotearoa New Zealand, Thomas (2015) advocates for Indigenous more-than-human (MTH) approaches that examine the "considerable synergies" between more-than-human theorists and Indigenous understandings of non-human agency and kinship. She examines how Ngai Tahu (a Māori tribe) advocated for the Hurunui River as lively and agentic, thus successfully expanding their catchment to include the river. In her observations of this process, she concludes that "there are generative possibilities for MTH theorists to work alongside Indigenous communities and carve political space for more people to advocate for a relational ethics" (Thomas, 2015, pp. 974).

Recently there has been an array of scholars exploring the possibilities of using new materialisms and post-humanist or more-than-human theoretical approaches to build upon and

extend previous ways of knowing the environmen (Alaimo, 2010, 2016; Pierides and Woodman, 2012; Schmidt, 2013; Gough, 2016; Neimanis, 2016; Bastian et al., 2017; Fox and Alldred, 2020a,b). One notable piece is from Hird (2012) who uses feminist science studies (FSS), and engages with new materialist scholars (Haraway, Barad), to study waste as a means of contributing to discussions and literature on feminist epistemological concerns around the inhuman. She describes the ephemerality of knowing waste and how waste (socially, materially, ideologically) evades definition through current humanist lenses. For example, she describes how within many contemporary societies, "waste" is an "ambitious linguistic signifier" (pp. 454) where anything and everything can be understood as waste depending on context and the perceiver. Boundaries around "waste" are indefinable. Within engineering and waste management control, the indeterminacy and liveliness of the landfill assemblage (the various unique intra-actions that occur in individual landfills of bacteria, waste, sunlight, temperature) means containment of waste ultimately fails. Hird argues that these attempts to contain waste fail because in these attempts, waste is viewed through an anthropocentric lens, seen as an inert, passive entity acted upon by humans. Therefore, she conceptualizes issues with waste as a "problem of inhuman knowing," and in so doing, "brings to the fore the inherent indeterminacy of the world rendered determinate, by human and inhuman alike" (pp. 465).

Increasingly, some sporting scholars have begun to engage with new materialist and posthumanist thinking to (re)envision the relationship between physical culture and the environment (Millington and Wilson, 2017; Evers, 2019a; Thorpe et al., 2020, 2021). Building upon and extending the strong theme in sport and environment literature, some scholars have used new materialist theory to rethink mega-sporting events. For example, McDonald and Sterling (2020) apply a new materialist, Baradian lens to rethink the ideas around athletes, the environment, and the polluted, "troubled" waterways (beaches, lagoons, bays) of the 2016 Rio de Janeiro Olympic games in Brazil. Rather than focusing on the impact of polluted waterways on athletes and the games, McDonald and Sterling (2020) explore the polluted waters of the games as "an ongoing, interconnected, ethical, and onto-epistemological process," within which "human bodies are entangled with multiple non- and more-than human bodies" (pp. 296–297). In a similar vein to Millington and Wilson (2017), McDonald and Sterling (2020) discuss the development of the Trump Golf Course in Scotland with a focus on sand dunes. Challenging the anthropocentrism of sporting practices and much critical sport scholarship, they ask readers to consider sand dunes as active players alongside people such as Donald Trump and sporting organizations.

Other sporting scholars have explored action sports and the environment using a posthumanist, new materialist lens. Through films, art exhibitions, journal articles, book chapters, and online blogs, Evers (2019a,b) has written about the connection between surfing, the environment, and new materialisms. He emphasizes the need to take a post-humanist, material-social approach to recognize how humans intra-act with more-than-human worlds—pollution, capitalism, and environmental crises. Similarly, Booth (2020) uses the case study of Bondi Beach to explore the agentic qualities of beach and environmental matter regarding sunbathing and surfing. In so doing, he shows how "geomatter acts directly on, and inscribes itself in, corporeal matter to produce effects and sensations" (pp. 250). A recent special issue on blue spaces, sport, and well-being featuring papers on ocean swimming, surfing, sailing/yachting and *waka ama* paddling, offers another important contribution in exploring the human and more-than-human relationships to seas and oceans (see also Olive and Wheaton, 2021).

Also within the sporting scholarship, scholars have focused on non-human matter as a way to think differently about the impact of sporting participation and consumption practices on animals (Atkinson, 2014; King, 2020). In so doing, some sport scholars are engaging with inter- and multi-species approaches to explore human-animal relationships in sport, including horses (Dashper, 2019) and canines (Merchant, 2020). A particularly noteworthy example is King's (2020) new materialist, post-humanist exploration into the environmental impact of the increased whey protein powder consumption by fitness enthusiasts (see also King and Weedon, 2020). Beginning with an understanding of the animal protein as a "dynamic and lively material-discursive subject" (pp. 202), King (2020) became increasingly interested in what it "does to humans and other life forms as it circulates in and through diffuse assemblage of bodies and environments." (pp. 202) Building from this research, King and Weedon (2021) recently introduced the concept of "ecological embodiment" as a way to think about body-environment relations in less dualistic terms. They argue that "ecological embodiment" can be understood as a "fluid bodily state of becoming" (pp. 2) and as a "sensibility for thinking about the intra-active (Barad, 2007) relations among humans embodied practices and the rest of what gets called 'nature'" (pp. 2). Taking inspiration from King (2020), King and Weedon (2020), and other scholars, here we explore the everyday, "mundane," and the often overlooked, body-environment intra-actions that are part of (women's) habitual fitness practices. In so doing, we engage specifically with Karen Barad's theory of agential realism.

Agential Realism

In this paper, we explain how our engagement with feminist new materialist scholar Karen Barad's theory of agential realism prompted us to rethink the more-than-human relations with fitness practices, moving bodies, clothing, and the environment. Barad's work is featured across various new materialist scholarship and has been described as "one of the most influential and important representatives of contemporary materialist scholarship" (Lemke, 2014, pp. 5). A unique element of Barad (2007) theorizing is her ability to bring quantum physics and the social sciences into dialogue, often drawing upon physics principles to articulate her central onto-epistemological concerns. Her seminal theory of agential realism is inspired by the work of physicist Niels Bohr who questioned the belief in the existence of independent autonomous entities and emphasized the impactful role of the measuring apparatus.

Bohr argued that there is no independent reality with well-defined properties that can be measured, and instead showed that the properties realized in an experiment are dependent on the measuring apparatus (Pinch, 2011). Therefore, for both Bohr and Barad, the primary ontological unit is not an independent object, but a phenomenon defined as "the ontological inseparability of agentially intra-acting components" (Barad, 2003, pp. 815). Extending Bohr's understandings, however, Barad brings quantum physics into conversation with ideas from critical social theory (i.e., Foucault) and particularly feminist post-structuralism.

Importantly, Barad's concept of intra-action is ontologically distinct from "interaction" which assumes two distinct boundary-ridden entities relating to each other. In contrast, intra-action insists upon the inseparability of those entities. Højgaard and Søndergaard (2011) elaborate on this by explaining: "The concept of intra-action demands a thorough co-constitutional thinking … It is the co-constitution—the intra-action of subject and object—that forms the subject matter (so to speak) of the analysis" (pp. 347). Within phenomena, there are many intra-actions that occur resulting in an entanglement of various entities/things/objects. For Barad, to be entangled "is not simply to be intertwined with another, as in the joining of separate entities, but to lack an independent, self-contained existence" (Barad, 2007 pp. ix).

Central to Barad's theory is the understanding that these intra-actions and entanglements are productive, performative, and agentic in the world's becoming. Within agential realism, Barad stresses that agency is not something that can be possessed or correlated with intentionality. Believing that a person or object can exert agency "pulls us back into the same old humanist orbits over and over again" (Barad in interview with Dolphijn and van der Tuin, 2012, pp. 54) which new materialisms and agential realism strive to move away from. Instead, Barad (2003) defines agency as "'doing'/'being' in its intra-activity. Agency is the enactment of iterative changes to particular practices through the dynamics of intra-activity" (pp. 827). Thus, for Barad, agency is about dynamism, it is an ongoing relational process that focuses on the energy and vitality created through material-discursive intra-actions.

This understanding of agency moves the focus away from exploring only human or non-human actions, and reorients thinking toward the way humans and non-humans (i.e., waste, clothing, water, dirt) are always entangled, and how such entanglements are productive in that they "do" something. Humans do not act in isolation, but are always intra-acting with non-human matter and therefore, scholars must "take matter seriously" (Hein, 2016). When thinking about sport and the environment, a Baradian approach encourages a movement away from the anthropocentric lens that focuses primarily on human activities, and instead recognizes "ecologies as socio-natural lifeworlds through which bodies are materially co-constituted, and bodies as ecologies composed through dynamic, uneven, multispecies, and multiorganismic entanglements" (King and Weedon, 2021, pp. 6).

METHODOLOGY AND ANALYSIS: TOWARD MORE-THAN-HUMAN UNDERSTANDINGS OF ATHLEISURE

As discussed above, broadly, new materialisms and agential realism seek to de-center the human and acknowledge the distribution of agency among material and discursive forces. This ontological approach has resulted in some scholars identifying a dissonance between new materialisms and the familiar qualitative methodologies that emerged through the interpretivist and constructivist paradigms with roots strongly in humanism. In response, some have suggested that humanist qualitative research in which data collection, analysis, and representation typically rely heavily on language and human experience, "need to be reequipped with different tools" (Markula, 2019, pp. 6) resulting in various scholars proposing methodologies and methods that are more in line with new materialisms' ontology (St. Pierre, 2011; Fox and Alldred, 2015; Koro-Ljungberg, 2015; Nordstrom, 2018; Markula, 2019). One such approach is Karen Barad's theory-method concept of diffraction.

Diffraction

In an interview with Juelskjær and Schwennesen (2012), Barad discusses that her theorizing was developed by reading "all different kinds of things from different fields at once; physics, philosophy, science studies, feminist and queer theories" (pp. 11). Within agential realism, she brought together the philosophy of physics of Niels Bohr with writings from feminist and queer scholars, in particular drawing upon Donna Haraway, Judith Butler and Michel Foucault. Throughout agential realism, Barad emphasizes the need to bring ideas from different disciplines together and to read insights from varying fields together and through each other. She describes this practice as diffraction, an approach which places "understandings that are generated from different (inter)disciplinary practices in conversation with one another" (Barad, 2007, pp. 92–93).

Diffraction, as a form of methodology and analysis, uses the physics concept as metaphor. Within physics, diffraction is defined as the "way waves combine when they overlap and the apparent bending and spreading out of waves when they encounter an obstruction" (Barad, 2007, pp. 28). McKnight (2016) poetically links the physics phenomenon to methodology, describing how diffraction encourages a "reading [of] approaches through each other, as waves pass through the narrows of a rocky outlet, and are transformed, heading in different directions, making new patterns" (pp. 197). Barad emphasizes that diffraction encourages reading different approaches through each other, such that scholars must be attentive to the "fine details," the everyday practices and intra-actions that are often overlooked and taken-for-granted. However, it is not simply approaches and ideas from different disciplines that can be "read together," but also different "forms of data." In her new materialist inspired research on the intersex phenomenon, Linghede (2018) understands diffraction as a "process of 'reading-the-data-while-thinking-the-theory'" that works to "disrupt thought as we plug in multiple texts and concept into data and read them through

one another" (pp. 574). For our project, diffraction resulted in bringing together interview data, with our own experiences with activewear, with data from the larger project, reading these together and through a range of literature from environmental studies and with new materialist theory.

Within the broader project from which this paper derives, we used a variety of qualitative methods (i.e., interviews, focus groups) with more experimental, creative methods (i.e., moving methods, digital diaries, art-based methods working with the materials of athleisure). Interviews and focus groups were conducted with women aged 18–65 living in Aotearoa New Zealand who owned at least five pieces of activewear clothing (defined on recruitment materials as casual clothing designed for physical activity). In total, there were five focus groups consisting of between 5 and 10 participants each, totaling 35 participants. The focus groups were designed to contextualize understandings of activewear in Aotearoa New Zealand, as well as have participants become familiar with the project. After the focus groups, participants were invited to complete a 2 week photo diary taking pictures of either themselves in activewear or the activewear itself in the various places it "lives" (i.e., gym bags, drawers, bedroom floors, washing lines). The women who completed the photo diary then participated in a semi-structured interview lasting between 45 minutes and an hour and a half. In total, 22 women from the focus groups completed a photo diary and interview.

We are aware that some post-humanist scholars have critiqued the use of interviews (and other humanist-based methods) as ontologically incongruent with new materialisms (St. Pierre, 2011), and we have recognized these tensions and debates elsewhere (Brice et al., 2020; Thorpe et al., 2020). The first author conducted semi-structured interviews with an interview guide created and developed using new materialist and agential realism concepts, using questions that focused more on human-activewear entanglements and intra-actions than human experience and emotions alone. As discussed earlier, the broader research project was not developed with the explicit aim to explore the environmental impact of activewear or fitness practices, but was rather about the possibilities of using new materialisms, and agential realism more specifically, to explore the activewear phenomenon. Therefore, the interview questions were not primarily based around women's environmental practices, but activewear more broadly (i.e., why they bought certain clothes, their relationship with clothing). Within these interviews, a small sub-section of questions focused on women's washing practices and their consumption behavior. In addition to the interviews, we conducted various creative methods such as having participants come in for another focus group where they cut apart old activewear and then used the materials to create something anew. Simultaneously, we embarked on our own year long collaborative experimental project where we "lived with the sports bra" (Brice et al., 2020). While these are the "methods" we used, it was the diffractive process—reading insights from the data, through our own experiences, and always with the theory—that prompted us to new noticings in the human-environment intra-actions in the activewear phenomenon.

Diffraction is a process of knowing, an entangled engagement "as part of the world in its differential becoming" (Barad, 2007, pp. 88). It is not an autonomous human researcher looking at data collected from various research methods, but rather the process is understood as comprised of unfolding, performative, intra-actions involving humans, non-humans, discourses, time, and space. Barad (2007) writes that "knowing does not come from standing at a distance and representing but rather a direct material engagement with the world" (pp. 49). Therefore, the researcher is understood as entangled with the research process. It was our own entangled experiences of wearing and living with activewear while engaging with Baradian theory, and reading such experiences diffractively through interview data, that we first came to new noticings about the relationship between activewear and the environment. According to MacLure (2013a,b), there are occasions in the research process when something (phrases in an interview, fragments of field notes, an object) begin to "glow," such that it "seems to reach out from the inert corpus (corpse) of the data, to grasp us…they exert a kind of fascination, and have capacity to animate further thought." (MacLure, 2013b, pp. 228). As we read through the various data, the laundering and the environmental entanglements of activewear started to "glow." From here, we engaged more deeply with new materialist theory and environmental literature to pay more attention to the complex human and more-than-human relations involved in the athleisure-environment phenomenon. In this way, our analysis did not involve coding as would be typical of a more conventional qualitative analysis. Instead, working within new materialisms, we understand analysis as being a diffractive process occurring throughout the entire research process itself. This process led to a range of new understandings and ideas regarding the relationship between activewear, society, and the environment (for examples, see Brice et al., 2020; Brice and Thorpe, 2021b).

ACTIVEWEAR-ENVIRONMENTAL ENTANGLEMENTS

In the remainder of this paper we focus on two activewear-environmental entanglements to reveal some of the many activewear and fitness intra-actions with the environment. The first explores the connection between sweaty activewear and the production of microplastics that end up in the ocean. The following looks at secondhand activewear and the increase of waste in landfills. Both of these examples begin by describing some of the anthropocentric discourses around sweaty activewear and "old" clothing, followed by a discussion of how these discourses materialize through various intra-actions of activewear with other non-human elements.

"I Do the Sniff Test … and Know They Really Need to Be Washed": Laundering Activewear

In Atkinson (2017) ethnographic research on the sensuality of sweat, he writes that "there can be no doubt that in most cultural contexts, sweat is a stigma. Sweat smells are unpleasant; sweat uncomfortably sticks skin to clothing, and leaves a bacteriological

trace" (pp. 64). This "sweat stigma" was discussed in many of our interviews with participants. The women often talked about the efforts they take to reduce, what Hannah[3] (50 year old, active exerciser) described as, the "sour smell" of activewear clothing because they wanted to avoid being embarrassed at the gym by their body odor. One of the common tactics to avoid such stigma was to wash activewear immediately after wearing:

> Years ago I used to do that—let it dry out a little bit and wear it again— but then it gets that sour smell. I've been besides someone on the treadmill with a sour smell and it's really not nice. I know what it is now but back then I didn't realize it was a sour smell until I smelled it and said "oh my goodness, it's dry sweat. That's *disgusting*" (Hannah, emphasis added).

This social stigma around sweaty smelling activewear resulted in her washing her clothes everyday: "Now everyday they are washed … I soak them in water because of the sweat." Similarly, Kae (52 year old, highly active exerciser) discussed her routine for her sweaty clothes, saying: "After [workout], I actually get undressed in the shower and rinse them right away and then put it in a towel. As soon as I get home, I empty the bag into the washing machine and do that load." Once in a while, Kae would let her sports bra air dry and then, according to her, "I usually do the sniff test and know, 'Oh, I've worn those a few times, they really need to be washed'".

The desire to wash activewear after every (or every other) use was not related to the functionality of the clothing or health factors, but was primarily because of the fear of the sour smell, or rather the fear of social stigma associated with this smell in public places. According to various dermatologists, there is no serious health risk to re-wearing unwashed activewear after one or two uses. Some doctors have noted that unwashed activewear has a higher concentration of bacteria than clean activewear which can lead to acne and skin irritation (at worst, yeast infections) for some people, but it is not very common (Malacoff, 2017; McCoy, 2019). Instead, dermatologists and popular press articles point more toward the body odor smell that will occur when re-wearing activewear. As our interviews revealed, many exercising women have come to recognize the smell of sweaty activewear as unpleasant and therefore, wash their clothes on a daily basis to avoid the negative social consequence of being the "smelly one."

While there is not a serious health risk when rewearing unwashed activewear, being the "smelly, sweaty one" does stand in contrast to socially acceptable notions of "fit femininity." Scholars have described how, in many cultures, feminine respectability "consists in conforming to norms that repress sexuality, bodily functions [i.e., visible sweat], and emotional expression" (Waitt and Stanes, 2015, pp. 136). Having a sweat free, non-smelly, "clean" and controlled body becomes a key element of respectable femininity and moral cleanliness (Young, 1990; Shove, 2003). Classen et al. (1994) elaborate that in Western conventions, "while men are allowed to smell sweaty and unpleasant without losing any of their masculine identity, women who don't smell sweet are traitors to the ideal of femininity and objects of disgust" (pp. 164). Women wash their clothing not only because of broad social discourses around odor, but also in response to the gendered politics of smell and acceptable femininity. Through our "living with" the sports bra experiment (Brice et al., 2020), we came to question such gendered norms and their environmental impact, as seen in the following comments: "Today I grabbed my sports bra from the dirty pile on the floor in my bathroom and wore it to my workout. It really wasn't the end of the world to wear a slightly damp (not too stinky) sports bra in public," "A sweaty sports bra will be the least of our worries when our children are witnessing the tragedies of environmental devastation," and "Hey, maybe there is a feminist environmental politics in this: wear your sports bra more than once before washing and help save the world, one less wash at a time. The politics of sweat-smell in spaces of fitness!" (**Figures 1A,B**).

Barad's (2007) agential realism encourages scholars to explore how these discourses around body odor and "fit femininity" "are always already material" (pp. 152), and how the "material and discursive are mutually implicated in the dynamics of intra-activity" (pp. 152). Therefore, there is an emphasis on how these discursively produced ideas materialize and are entangled with non-human matter and ecologies. When laundered, activewear (and its particles) is intra-acting with other non-human matter (e.g., water, detergents, waterways), becoming part of new entanglements that are agentic and powerful, negatively impacting the environment. Every time activewear is washed, it intra-acts with laundry detergent and water molecules that then get released into water processing plants. Activewear clothing is made from a range of different materials often comprising of a mix between synthetic (human made) and organic depending on the support needed, sweat-wicking properties, and breathability (ÖzdIl and Anand, 2014; Josephson, 2015). Research has shown that the synthetic materials within activewear (and other synthetic/mixed material clothing) shed microfibers (a type of microplastic) into the laundry water every time they are washed (O'Loughlin, 2018; Ross, 2019; Herweyers et al., 2020; Yan et al., 2020). Once laundered, the activewear microplastic-water is treated at wastewater treatment plants (WWTP). Advanced WWTPs can remove up to 90% of microplastics from soiled water. However, many WWTPs across developed countries have less efficient technologies and thus can only remove an average of 50%, while many developing countries do not have the capability to treat wastewater at all (Herweyers et al., 2020). After moving through WWTPs, the activewear-microplastics then travel to aquatic features across the world (streams, oceans, lakes, rivers). One study suggested that on average, 34% of all microfibers from laundering end up in the ocean (Mishra and Rath, 2019). According to non-profit organization Ocean Clean Wash, plastic particles washed from synthetic clothing contribute up to 35% of the plastics in the world's oceans (Ocean Clean Wash, 2019). Interestingly, a recent study shows that activewear clothing does not release a greater amount of microfibers than other forms of clothing, but due to the greater frequency of washing, it does have a greater overall impact on the increased prevalence of microplastics in the environment (O'Loughlin, 2018).

Unlike larger pieces of plastic (straws, fishing nets, bottles) that may be more readily detectable and have been part of

[3]All participant names are pseudonyms.

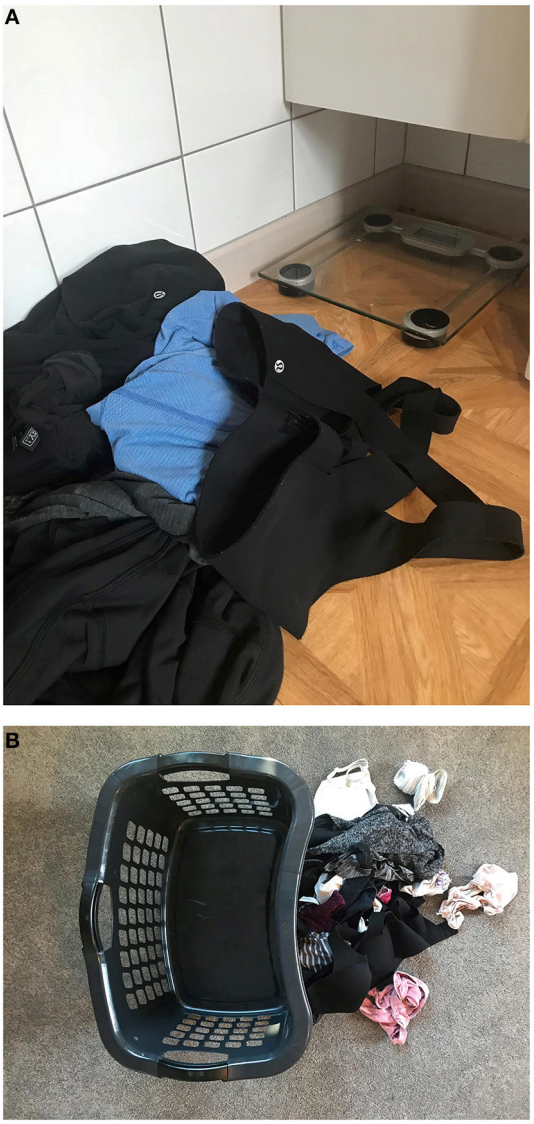

FIGURE 1 | (A,B) Images of activewear in laundry piles collected during our "living with the sports bra" experiment.

numerous environmental campaigns (cleaning up the beach day, reducing plastic straw usage), microplastics are so small they are not visible to the human naked eye and are therefore harder to remove from the ocean. This has resulted in microplastics being found in the bellies of baby fish, shellfish, crabs, and even found in tap water, beer, and sea salt samples as water is taken from the ocean and treated for human consumption (Kosuth et al., 2018; Ross, 2019). One sample in Brazil found that 83% of all fish caught contained microfibers, with another study suggesting that 1.4 trillion microfiber particles are present in oceans, which has serious consequences for marine life such as starvation and reproductive issues in fish (Mishra and Rath, 2019). The microplastics scholarship is a relatively new field, and therefore, the research into the effect of microplastic consumption on human's health is an emerging and developing topic. However, recent scholarship has suggested microplastics in the human body will have negative effects on human health and can result in chronic inflammation that increases the risk of cancer and increased risk of neoplasia (uncontrolled growth of cells resulting in tumors or mass lesions) (Wright and Kelly, 2017; De-la-Torre, 2020; Prata et al., 2020).

While the washing and laundering practices of activewear are often far removed from these broader ecological systems, agential realism encourages a recognition of the ways both humans and non-human matter become part of, and are connected to, many other entanglements. Often concerns regarding sweaty activewear are only viewed in relation to the harm it may cause humans (social stigma, skin irritation). Such anthropocentric ways of thinking can lead to excessive laundering of activewear and an oversight of the ways sweaty activewear is entangled with many other ecological forces and entities. However, Baradian theory encourages a recognition of matter as an "active participant in the world's becoming, in its ongoing 'intra-activity'," such that such that we must better "understand how matter matters" (Barad, 2012, pp. 803). When washed, activewear *does* something, it intra-acts with the water, the microfibers breaking down, and in so doing, is impactful. Sweaty activewear "matters" not only in its relation to humans, but in its connectivity with the environment and other non-human entities.

Various environmentalists, environmental groups, and popular press articles have emphasized the negative impact of washing practices on the environment (Brian, 2019; Ocean Clean Wash, 2019; Petter, 2020). For example, in an article in *The Guardian* discussing the carbon footprint of laundry, the authors write, "no one wants to go around smelly, but it's worth at least asking the question: does stuff go into the wash unnecessarily often?" (Berners-Lee and Clark, 2010). With growing awareness of the impact of laundering practices, such discussions often emphasize the connectivity of humans with nature and the importance of small actions to help reduce environmental degradation. Yet, this approach is rarely applied within sport sociology literature to explore how the micro-actions and non-human matter within sporting cultures are entangled with the environment. A new materialist, Baradian approach, however, begins from an onto-epistemology of relationality where humans are fundamentally seen as inseparable from their environments, therefore providing different perspectives and ways of studying sporting cultures and the environment.

What It Really Means to "Biff It Out": Activewear and Landfills

Throughout this project, the ethics of when and how to discard activewear continued to emerge. Bringing together the interviews, photos, our experiences, and data from other methods, it became even more evident that the large amounts of activewear being consumed and discarded by millions of women around the world are having a significant environmental impact. Speaking with participants, many of the women discussed their concern for the environment and efforts they take to reduce

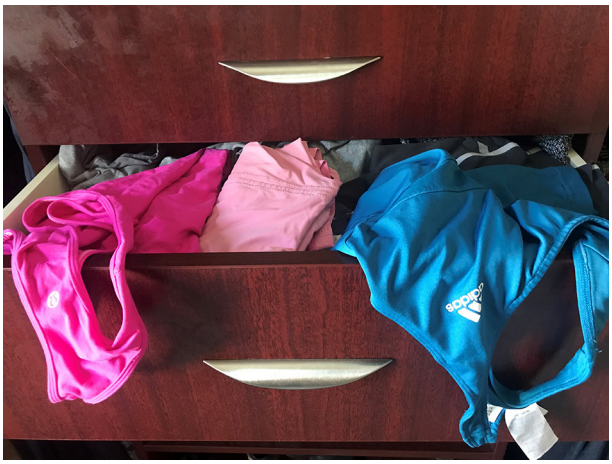

FIGURE 2 | An image of an overflowing activewear drawer.

their environmental footprint. For example, Janice (a 25 year old Crossfit exerciser) discussed how she often upcycled her old activewear clothing turning them into pillows or dog beds. Sherry (a 24 year old yoga participant) described how she bought secondhand activewear primarily because she wanted to reduce waste. She discussed buying secondhand lululemon leggings from an internet auction site (Trademe) because "I could get the quality, the sustainability, plus it fit my values more, again, that I wasn't buying it from the shop, I wasn't making the shop produce more. I was buying it secondhand so saving it from being wasted."

While many of the participants did discuss the efforts they take to recycle their clothing and to minimize their purchasing of activewear, in Aotearoa New Zealand (as in many Western cultures) there is a culture of fast fashion and conspicuous consumerism. In part because of neoliberalism and capitalism, many cultures have shifted to consumption practices where one's happiness, identity formation, and status in society is linked with material possessions (Hamilton, 2010). As Dittmar (2011) describes, "having the "right" material goods has become vital to many, not so much because of these goods themselves, but because of hoped-for psychological benefits, such as moving closer to an ideal identity, creating a desired social image, and achieving positive emotional states" (pp. 745–746). Within the 21st century, where wellness and health are often prioritized as a result of neoliberal and healthism discourses, purchasing and wearing the latest activewear designs is one way that women can present themselves as conforming neoliberal citizens (Brice and Thorpe, 2021a). In other words, by wearing activewear in public spaces, women are (subconsciously) performing an "intent" to exercise (whether they do or not is much less relevant) and thus may be read as "good" neoliberal citizens, proactively managing their own health through an active lifestyle. Activewear also becomes linked to femininity as it has become "a visual image of fashionable female modernity" that works to intensify the "symbolic value of an active body" (Horton et al., 2016, pp. 191). Through an entanglement of consumer culture, neoliberalism, capitalism, and healthism, the buying of activewear becomes a (not unproblematic) part of the "fit femininity" phenomena (**Figure 2**).

The continuous purchasing of activewear meant that many of our participants found themselves with dressers overflowing with activewear. Such revelations prompted us to ask them about the "retiring of their activewear" (i.e., "When do you "retire" your activewear? Where does it go?"). Many women responded that they "get rid of them" (Georgia, a 55 year old recreational exerciser) or "biff them out" (Caroline, a 31 year old amateur boxer) with little consideration for the environmental impact of such conspicuous consumption and disposal practices. Others gave more thought to the after-life of their activewear garments, opting instead to donate their used items to family members, friends, or to opportunity shops. These decisions to "retire" the clothing were based primarily around the importance of the activewear to the human; it no longer supported the body, the color had faded or gone out of fashion, there were holes in the fabric. While these are all common and acceptable excuses in modern Westerns societies, they do come from an anthropocentric view where human interests are prioritized over the non-human. Once activewear leaves the human ("biffed out"), it is no longer given any thought; where it goes, what it does, who/what it interacts with along the way, are of very little importance (**Figures 3A,B**).

In her political ecological analysis of "waste," Hird (2012) describes how waste is an "ironic testimonial to a desire to forget" (pp. 455). Once garbage is placed into a receptacle, it is quickly forgotten and rarely talked or thought about. In this way, she writes, "landfills make their appearance on and in the landscape as a material enactment of forgetting" (pp. 455). In our research, even for those participants who were environmentally conscious and did not want to contribute to growing landfills, their primary concern was for activewear immediately after it left them with less concern about what happens once in the landfill. There was less acknowledgment of the way activewear becomes part of other non-human entanglements and part of agential intra-actions that are impactful. Much like the waste in Hird's study, once the object of activewear leaves the human owner, it is forgotten about. However, an agential realist account encourages a move beyond anthropocentric "forgetting," instead giving "matter its dues as an active participant in the world's becoming" (King, 2020, pp. 136). Therefore, similar to the laundering practices, when engaging with Baradian theory we were encouraged to look more carefully at how the activewear continues to "live on" long after it leaves the human "owner" of the fitness objects.

During one of the creative methods where we cut apart activewear clothing, the participants talked about how actually cutting apart the clothing brought into realization the negative environmental impact of their consumption and disposing practices: "I think the other thing that is bad is … clothing is one of the worst things, manufacturing of clothing is one of the worst things for the environment," "I didn't feel guilty … then I realized this was a really good item and should have given it to an op[portunity] shop or something cause someone could've used it," and "[Holding up an old item of activewear] this is going to landfill. That has suddenly made me feel really bad ... That's been a big moment for me." By engaging with the materiality of the

FIGURE 3 | (A,B) Images of discarded activewear with holes, faded colors, and pulls.

clothing itself and thinking about its various human and more-than-human entanglements, there began to be a more conscious awareness of the way clothing will continue to be affective after it leaves the women.

Research indicates that because of the very nature of activewear (used for physical activity, supports the body, high rate of laundering), it has a shorter product life and high disposal rates (Subic et al., 2012). Therefore, much of the activewear purchased becomes part of the landfill system. In recent years, the amount of textile waste in landfills has been drastically increasing. One study suggests that 75% of the textiles manufactured each year is sent to landfills by consumers (Textiles Timaru, 2015). In 2015, over 10 million pounds of textiles entered landfill in the United States, while only 2 million were recycled (made into post-consumer goods) (United States Environmental Protection Agency, 2017; Dohms, 2019). Although not at the same scale as the United States, in Aotearoa New Zealand textiles are becoming the fastest growing source of waste in landfills. Many scholars credit the increase in fast fashion, the short lifespan of much contemporary clothing (including activewear), and the materialistic consumption culture of many Western countries, for the high rates of textile disposal and waste in landfills (Subic et al., 2012; Woolf, 2019). The activewear discarded by fitness consumers becomes part of this landfill entanglement, an intertwining of materiality, waste, Western human cultural practices of consumption, the desire for new and "clean" activewear, and government protocols around disposal.

Once in a landfill, the object of activewear (i.e., lycra pants, sports bra) intra-acts with other waste, heat, moisture, weather, and microbes. Together, these entities are mutually constituted within an entanglement that is agentic, contributing to the production and accumulation of greenhouse gases. Karanjekar et al. (2015) describe how waste degradation and waste composition changes dramatically within landfills based upon the waste contents, moisture, ambient temperature, pH, and rainfall, all of which affect the amount of methane gas that is produced and released from the landfill. While methane gas can be collected for energy production, it is also released into the atmosphere contributing to a rising global temperature and climate change. One popular press article cited that every kilogram of clothing in landfills creates 3.5 kilos of greenhouses gases resulting in the fashion industry creating roughly 10% of the global carbon dioxide emissions (more than aviation and shipping combined) (Woolf, 2019). Although, the discarded object of activewear is no longer directly intra-acting with the human owner of the object, it is still a powerful entity, becoming part of other entanglements, and through these entanglements, activewear "does" something that few consumers consider in their purchasing and disposal decisions. In this case, it is the increased production of greenhouse gases that contributes to climate change and environmental degradation.

Climate change in itself is entangled with systems of oppression and gender. As feminist environmental justice scholars reiterate, it is women from poorer countries who will be (and are being) most negatively affected by the changing environmental landscape (Denton, 2002; Arora-Jonsson, 2011; Norgaard, 2012). The reasons for this are many, but one report by the Global Citizen organization discusses how women are more at risk because they tend to live in higher poverty than men (70% of the world's poverty population are women), they have less access to human rights to be able to move freely and acquire land, and face systemic and structural violence (McCarthy, 2020). These vulnerabilities to climate change are a result of "a history of colonization, global capitalism, and regional geophysical determinants [that] direct flows of power and maintain important differences between communities while difference of age, gender, race and ability/mobility are similarly salient" (Neimanis et al., 2015, pp. 486). Thus, through a Baradian lens, we are prompted to see Western consumption practices and the continuing waste of activewear as another contributing factor to climate change and environmental injustices. While the cause-and-effect relationships may be hard-to-see in such complex entanglements, the feminist politics in Western women gaining strength and pride through their fitness (consumption) practices is negatively impacting the health and well-being of women in developing countries.

Recognizing the vitality of non-human matter is integral to environmental justice and necessary when looking for

solutions that attend to the complexity of these most pressing issues. Barad describes that "what is entailed in matters of justice is paying careful attention to the ghosts in all their materiality—that is, all the labor, the really hard work, of tracing entanglements and being responsible to the liveliness of the world" (Barad in interview with Juelskjær and Schwennesen, 2012, pp. 22). Looking at the vitality of matter, at the "life" of activewear after it leaves the human helps to bring to light the impactful (and often unnoticed) role activewear clothing and women's consumption practices are having on the production of greenhouse gases.

CONCLUSION

Baradian theory holds great potential for those interested in exploring the connection between sport and the environment. It was with agential realism and a diffractive research process that we came to think differently about women's embodied fitness and consumption practices. Reading different data sets and environmental and theoretical knowledge through each other, we were prompted to attend to the vitality of activewear clothing and its various environmental entanglements. Using a Baradian approach, we offered two examples of activewear-environment entanglements. The first revealed the ways the fear of sweaty smelling activewear and discourses around "fit femininity" are entangled with the increased accumulation of microplastics in the ocean that are harming aquatic ecosystems and human and more-than-human health. In the second example, we explored how the disposal and "retiring of activewear," even when being donated to secondhand clothing stores and friends, is an active component contributing to the increased production of carbon dioxide emissions. Through these examples, we emphasized the vitality of activewear, revealing how the "fine details" of fitness practices are entangled with the environment, as well as broader social structures such as late capitalism, and discourses of "fit femininity," neoliberalism, and conspicuous consumption.

Importantly, being open to the vitality of matter creates possibilities for more just and equitable ways of knowing and living. Barad (2007) describes how "learning how to intra-act responsibly as part of the world means understanding that 'we' are not the only active beings—though this is never justification for deflecting our responsibility onto others" (pp. 391). Rather than focusing primarily on human desires and future generations of humans, care needs to be taken to appreciate non-human matter—oceans, animals, trees—and how some non-human matter (i.e., clothing, sporting, and fitness objects) is part of many (damaging) environmental entanglements. Within women's fitness practices, this means focusing on human experience *and* objects of fitness (i.e., clothing); what happens when we (knowingly and unknowingly) buy into cultures of conspicuous consumption (even when these purchases are aiding in the production of "healthier" neoliberal citizens)? What are the many human and non-human entanglements of activewear involved in the production process, before it "meets" its wearer? What are the more-than-human ethical considerations we should embark upon before consuming a new pair of leggings or sports bra? What are the broader effects of our compulsive desires to wash activewear after each usage (to meet feminine norms and avoid the fear of being the "stinky one")? Where do our clothes go when we get "rid" of them? What form did this fabric take before it was made into a sports bra or a pair of leggings, and what is the process of its decomposition? While a number of sports scholars have embarked on political ecological and feminist environmental examinations of sport production, consumption, and participation practices, we argue that a Baradian approach is also valuable in that it encourages us to ask different sets of questions, to embark on theory-method experiments in tracing entanglements of non-human matter in physical cultural phenomena—stadiums, shoes, water, protein, grass, sand—and how these non-human objects are critically situated in larger ecologies and systems.

As Indigenous and feminist environmental scholars have long argued, and new materialist approaches are increasingly recognizing, acknowledging the entangled nature of the world has great potential for developing new policies that can provide different solutions for tackling some of the world's major issues, including environmental degradation. Currently, politics and policies targeting environmental degradation often emphasize the role of individuals or of humankind, more broadly, with greater emphasis on the production and manufacturing of consumer objects (i.e., clothing). While there are certainly human actions that can be done to minimize environmental impact and many changes required in the processes of manufacturing, such humanist approaches fail to recognize "a whole array of very complex material practices that contribute to a kind of epidemic [or catastrophe] that is not attributable either to the organisms [and non-human matter] themselves or to the kinds of things that people do" (Barad in interview with Juelskjær and Schwennesen, 2012, pp. 56). Instead, a mindset shift is needed—an ontological reorientation—toward the multiple ways that objects, humans, non-humans are connected. From our experiences of working with Barad's agential realism, we see much value and potential in ontological reorientations that encourage scholars to recognize these connections and complexities where the "fine details" of everyday practices come to *matter*.

In the context of women's fitness consumption practices, a Baradian onto-epistemology encourages new ways of understanding activewear as an active participant in the world's becoming (or unbecoming) and part of multiple entanglements that are agentic, that *do* something. Rethinking the activewear phenomenon as more-than-human phenomenon might encourage women to reconsider their consumption practices, as well as their laundering, disposal, and recycling of such luxury items. The small act of washing smelly activewear is entangled with broader discourses of "fit femininity," neoliberalism and healthism, whilst also entangled with increase of dangerous microplastics in the ocean and various human and non-human bodies. As Indigenous and feminist environmental scholars have argued for many years, Western consumption practices are never isolated from the environment and climate change, with systems of gender, race and class oppression intimately tied to

colonialism, capitalism, and issues of environmental justice. As this paper has shown, women's everyday fitness consumption practices are complicit in such processes.

Policies, politics, and solutions to environmental degradation need to be revised to better address the complexities of these more-than-human entanglements. This is no easy task and we concur with King and Weedon (2021) who describe how they have been "stretched and confounded in [their] efforts to recognize how complex histories of injustice and resilience are infused in biological matter, bodies, and multispecies traffic" (pp. 4). It is difficult, both ontologically and empirically, to think through new materialist implications and the very many entanglements of sport, the environment, and our own and others moving bodies. However, the struggle is worth it as we believe new materialisms (with other monistic ontologies), hold great potential for encouraging different ways of thinking about one of the most urgent global crises affecting all us (Braidotti, 2019). Through encouraging theory-method experiments toward knowing the entangled nature of *all* intra-actions—including our much loved sporting and fitness practices—agential realism offers alternative possibilities for doing research, and ways of knowing and doing differently, such that we can "use our ability to respond," and it is thus "our responsibility, to help awaken, to breathe life into new possibilities for living justly." (Barad, 2007, pp. x).

DATA AVAILABILITY STATEMENT

The datasets presented in this article are not readily available because the dataset includes confidential transcripts of interviews conducted with women in Aotearoa New Zealand. Requests to access the datasets should be directed to Julie E. Brice, jubrice@gmail.com.

ETHICS STATEMENT

As this study involved human participants, it was reviewed and approved by the University of Waikato, Human Research Ethics Committee. The participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

This paper was produced using research from JB's doctoral dissertation. JB was responsible for collecting and analyzing data, in addition to leading the writing of this paper. HT provided guidance and support during data collection and was instrumental in outlining and developing this paper. HT provided extensive editing during the writing phase. Both authors contributed to the article and approved the submitted version.

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Sustainability Comes to Life. Nature-Based Adventure Tourism in Norway

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This paper investigates how tourists and guides perform sustainability during adventure tourism trips in natural environments. The paper draws on empirical data from an ethnographic study of five different multi-day trips in Norway, each of which used skiing, hiking, or biking as the mode of travel. In our analysis, we focus on how the different actors understood, operationalized and practiced elements of sustainability in their everyday lives while on the trips. The paper applies a micro-sociological perspective to the nature-based adventure tourism scene where the interplay between tourists, guides, adventure activities and nature is understood as multiple dialectic performances co-produced by the different actors. Goffman's dramaturgical metaphors, and concepts of frames, appearance, and manner saturate recent research on tourism and nature guiding. This paper builds on the "performance turn" as a theoretical point of departure for understanding sustainability in nature-based adventure tourism experiences. In participant observations and post-trip interviews with Norwegian and international tourists and their guides, we found that sustainability performances were not a major aspect of the trips. We did find some performances of mainly "light" sustainability and, among them, elements of ambivalence and ambiguity. Our data indicate that some guides tread a fine line between enhancing and deepening tourists' experiences of nature and sustainability or negatively impacting the perceived enjoyment imperative of the trip. International tourists expressed deeper sustainability overall. We reflect on the relative explanatory strengths of Goffman's "frames" and interaction order, and Persson's "framing," for understanding the interplay between guide and tourist sustainability performances and conclude with pointers for teasing out the complexities we identify.

Keywords: sustainability, adventure tourism, nature, environment, ethnography, dramaturgy, performance

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INTRODUCTION

Tourism is one of the world's fastest growing industries and in recent years. Norway has experienced a marked increase in domestic and international tourism (Ministry of Trade, 2017). Norway's international reputation for being "sustainable" and environmentally conscious (Ministry of Trade, 2017) arguably creates certain expectations of the country as a destination. This paper investigates how tourists and guides perform sustainability during adventure tourism trips in natural environments. This is not a study of sustainable tourism, but of sustainability as expressed – or not – in tourism experience.

Background

Tourism research is often characterized as multi- and inter-disciplinary as well as a fragmented in its scope (Benckendorff and Zehrer, 2013). In this paper, we draw from the literatures of nature-based tourism and adventure tourism. Nature-based tourism is often believed to "influence tourists' environmentally friendly attitudes, knowledge, and ultimately their behavior" (Ardoin et al., 2015, p. 838), however, in their review of the research, these authors found that "few studies have empirically documented these outcomes, and those that do are inconsistent in the variables measured and the time frame analyzed" (p. 838). Previous research on nature-based adventure tourism has typically surveyed guides, tourists, or both (Pereira and Mykletun, 2012; Ardoin et al., 2015), but few have gone into the field looking for how concepts of sustainability can 'come to life in various ways' during a guided nature-based adventure tour.

Guides function as narrators, social organizers and instructors, and are central to transforming an ordinary tourist experience into an extraordinary or spectacular and unique experience (Hansen and Mossberg, 2017). The extent to which, and ways in which, guides influence tourist understandings, knowledge, and behaviors of sustainability has been the focus of some international research (Powell and Ham, 2008; Randall and Rollins, 2009; Weiler and Kim, 2011; Pereira and Mykletun, 2012), without conclusive results, and to date the Norwegian context has not been studied.

Some of the international research has paid attention to tour guides as potential agents of change (see Zillinger et al., 2012; Jonasson et al., 2013; Rokenes et al., 2015; Vold, 2015; Weiler and Black, 2015; Jonasson and Smith, 2017) and there is evidence of a growing research focus on "the relationship between face-to-face interpretation/tour guiding and sustainability" (Weiler and Black, 2015, p. 76), at least in wildlife tourism (see Zeppel and Muloin, 2008; Ballantyne et al., 2009).

Tourists' expectations about what they will experience on a tour arise partly from the information provided by tour companies (Collado et al., 2009; Skinner and Theodossopoulos, 2011). If tourist expectations are not met, the companies risk reputational damage and subsequent financial impacts (Collado et al., 2009), so it is in each company's interests to prescribe to at least some extent the activities of their guides. Tour guides, then, "may thus feel relatively powerless to make a difference in contributing to the sustainability of a particular activity, tour, business, community, industry or environment" (Weiler and Black, 2015 p. 73–74). Our study includes a focus on guides' understandings of sustainability on tour and how those understandings impact their performances of sustainability.

The contemporary Norwegian context provides further impetus for this study. According to the most recent government white paper on tourism, nature is "still the most important reason the tourists choose Norway as a tourist destination" (Ministry of Trade, 2017, p. 31). Experience tourism is the fastest growing tourism sector (Fredman and Haukeland, 2017; Ministry of Trade, 2017) and tourism businesses that are based on nature-, food- or culture experiences represent the core of the Norwegian tourism product (Fredman and Tyrväinen, 2010; Ministry of Trade, 2017). From the government's perspective, it is "authentic" and "meaningful" experiences that should be the basis for tourism value creation, as it is in such experiences that travel motivation and willingness to pay lie. How sustainability can or should be operationalized while tourists are experiencing authenticity and meaningfulness in nature, however, is not discussed (Ministry of Trade, 2017).

A relatively united Norwegian travel industry supported the principles of the white paper with a "roadmap" titled "Toward a sustainable tourism industry." In it, 'high yield – low impact" nature-based tourism takes center-stage (NHO, 2017, p. 5) with physically active nature and cultural experiences based on the Norwegian tradition of outdoor life (friluftsliv). Friluftsliv – translated as "free-air-life" – is a Scandinavian practice of spending time in nature. Norwegian friluftsliv, in particular, emphasizes traditional modes of travel such as cross-country ski touring, hiking and biking, and "low" technologies, such as camping or staying in simple cabins and cooking on open fires (Odden, 2008). Friluftsliv is considered to be an important part of the (imagined) Norwegian national identity (Witoszek, 1998; Pedersen Gurholt, 2008; Gurholt, 2014).

The road map stresses that with a stronger global focus on intact nature, climate change and environmental quality, an increasing number of tourists seek destinations offering cleanliness, healthiness, and effective protection of culture and nature. By 2050, when eight out of 10 people worldwide will live in cities, an increasing number of tourists will avoid destinations characterized by hustle and bustle, noise and litter, and instead choose a journey that promotes the environment (NHO, 2017, p. 8).

Given the focus on sustainability, broadly interpreted, in both documents, we argue that it is relevant and timely to investigate what is going on in terms of sustainability at the micro-level of tourism experience in Norway. It could be argued that when guides choose to work in nature-based adventure tourism and when tourists choose to purchase a nature-based adventure tour, they are already performing sustainability, however that is not our focus in this paper. Our focus is entirely on what happens once the tour begins through to when it ends. We investigate the experiences of guides and tourists of an industry-leading Norwegian tour-operator for the purpose of discovering how they understand, operationalize and practice elements of sustainability in their everyday lives while on nature-based tours in Norway.

Sustainability

Much of the literature on nature-based adventure tourism, nature-based tourism and ecotourism refers to sustainability without providing an operational definition of it. We consider that contemporary conceptions of sustainability will enhance the reliability of our study and so we adopt Force et al. (2018) distinction between sustainable tourism and tourism sustainability. According to these authors, the former concerns the socioeconomics of tourism, especially at the local level. This is the main focus of the United Nation's Sustainable Development Goals for sustainable tourism. Member nations

are expected to foster tourism in ways that create jobs, support local culture and new product development as well as in ways that protect environment values such as biodiversity, ecosystem health and more (United Nations (n.d.)). Tourism sustainability, in contrast, concerns "the design of tourism activities in ways that contribute to sustainability transitions globally" (p. 431). Our focus is on tourism sustainability. Sustainability transitions are "personal change[s] in tourists' identities" that lead to such things as active "commitment to environmental and cultural protection … nature-relatedness … [and tourists'] awareness of their relationship to the global collective" (p. 433). Our understanding of the term sustainability is also informed by Salas-Zapata and Ortiz-Muñoz' (2019) clarification of its use by researchers. We adopt the meaning "[s]ustainability as a set of guiding criteria for human action" rather than "sustainability as a goal of humankind" (p. 155), "sustainability as an object," or "[s]ustainability as an approach of study" (p. 157). Criteria for guiding human action include, but are not limited to, such things as utilizing renewable resources, enhancing human well-being, avoiding ecosystem degradation, and generating social and cultural benefits. In this article, then, sustainability means a set of guiding criteria for personal change in tourists and guides toward deeper nature-relatedness, more active environmental and cultural protection, and stronger positive relationships to the global collective.

Nature-relatedness is defined as a degree of "connectedness to the natural world" and "comprises the cognitive, affective, and physical connection we have with nature" (Nisbet, 2021). Nisbet et al's (2009) nature-relatedness scale considers deep nature-relatedness to be expressed as a lot of time spent in natural spaces, preference for isolation in wilderness, self-identification as part of nature, awareness of environmental issues, and lifestyle changes in response to knowledge of, or feelings toward, nature. A light nature-relatedness is the opposite of these factors. Thus, sustainability might be expressed by nature-based adventure tour guides and tourists in one or more of the ways described on a continuum.

The Organization for Economic Co-operation and Development (OECD) defines environmental protection in terms of maintaining or restoring the quality of an environment (OECD, 2003). Environmental protection actions could include cleaning plastic pollution from rivers and lakes, protecting populations of threatened species, or donating money to environmental causes, among many other things. Cultural protection refers to protecting the material resources of cultural groups (Durie, 2008) such as artifacts, structures, monuments, language, intellectual knowledge and "places associated with historical events, beliefs, and traditions" (Cultural Heritage Act, 1978, § 2). Deep sustainability performances during nature-based adventure tourism trips might include much active interest in, or active participation in, these types of environmental and cultural protection. Light sustainability might include a few, or incidental, expressions of interest in these things.

Finally, a positive relationship to the global collective refers to attitudes of support for worldwide action on shared international problems such as climate change, large-scale pollution, disease, international aid, terrorism, and biodiversity loss (Sandler, 2010). Guides and tourists on nature-based adventure tourism trips might express strong positive relationships as part of their performances of sustainability. Others might express weak positive, or even negative, relationships as part of their light sustainability performances.

We used the concepts of nature-relatedness, action toward environmental and cultural protection, and positive relationships toward the global collective as guides for understanding the types of sustainability found in our data. In the Methods section, we describe how being "guided" by the concepts differs from being "driven" by them. Next, we define our study in relation to the existing literature on sustainability in nature-based tourism.

Nature-Based Adventure Tourism

Nature-based tourism, as a socio-cultural phenomenon (Sandell, 2003), has been defined in many, sometimes overlapping ways (Fredman et al., 2009, 2014; Fredman and Tyrväinen, 2010), such as adventure tourism, environmental tourism, ecotourism, and ecological tourism. At its most basic, nature-based tourism is related to places and objects that are not human-made, and visits and activities that occur beyond a person's familiar environments (Fredman et al., 2009). Hence, we adopt the widely accepted Scandinavian definition of nature-based tourism: "human activities occurring when visiting in nature areas outside the person's ordinary neighborhood" (Fredman et al., 2009, p. 24–25).

Our focus is on nature-based adventure tourism (Buckley, 2006, 2010; Mihalic, 2006; Rokenes et al., 2015; Beams et al., 2019) to foreground the sustainability aspects of commercialized nature tourist experiences that "often involve[e] perceived risk or controlled danger associated with personal challenges" (Mihalic, 2006, p. 114). Adventure tourism and nature-based tourism are closely related with some overlap in practice. However, "whilst nature-based tourism products focus on seeing … adventure tourism products focus on doing" (Buckley, 2010, p. 4). Thus, nature-based adventure tourism can be considered tourism products in nature that focus on both seeing and doing. In the Norwegian context, adventure tourism experiences commonly center on hiking and biking journeys in nature, skiing through forest or mountain environments, sea-kayaking, and mountaineering. What counts as "perceived risk," "controlled danger," and "personal challenges" is highly individualistic, however, "[f]rom the perspective of the individual tourist, anything which they personally consider adventurous can be counted as adventure tourism" (Buckley, 2010, p. 7). For our purposes, we accept the types of physical activities mentioned above, when conducted in guided tours in natural environments, to constitute nature-based adventure tourism.

"What Are We Doing"

Experiences of sustainability in tourism are, arguably, important for several reasons of which the most pertinent to this study is that tourism experiences can have educational effects which can contribute to wider public understandings and motivations toward sustainability (Ballantyne et al., 2010; Force et al., 2018; Winter et al., 2020). Understanding "what is it that's going on" (Goffman, 1974, p. 8) regarding sustainability in nature-based

adventure tourism allows researchers, policymakers, tourism operators, guides and tourists to respond in ways that further their respective ambitions of sustainability at national, industry, professional, and personal levels, respectively. We take a Goffmanian approach to investigating if and how different actors – the tourists and the guides – understand, operationalize, practice and embody nature-relatedness, active environmentally friendly behavior, and positive relationships to the global collective. As we next explain, taking an ethnographic approach allowed us to focus directly on "performances" of sustainability, a novel approach to the topic in nature-based adventure tourism.

Theoretical Framework

The "performance turn" (Edensor, 1998, 2000, 2001; Haldrup and Larsen, 2010; Larsen, 2010; Urry and Larsen, 2011; Larsen and Meged, 2013) in tourism research, however, and despite some criticism (Saldaña, 2006), has re-imagined the guided tour as "created by a relational praxis that builds on and involves bodily and verbal negotiations, fluid power relations and interactions between tourists and guides and between tourists" (Larsen and Meged, 2013, p. 100). It can be traced back to new ways of investigating, analyzing and understanding tourism, starting in the late 1990s (Edensor, 1998, 2001; Larsen, 2010; Urry and Larsen, 2011; Cohen and Cohen, 2012; Jonasson and Scherle, 2012; Larsen and Meged, 2013). Although performances can be considered to be, in part, *pre*formed, they are not absolutely fixed. The performance turn emphasizes "creativity, detours and productive practices" (Larsen and Meged, 2013, p. 89), and "relates to the theatrical perspective and invokes **enactment** by performers or actors of a role or scripts, as well as display for an audience. Performances involve pretense" (Harwood and El-Manstrly, 2012, p. 15, bold in original). More recent research on guided tours has shown how tourists contribute to the co-creation of guided tours both alongside the guide, as well as in opposing and contradictory ways. Larsen (2010) and Urry and Larsen (2011) claim that the performance turn has "challenged representational and textual readings of tourism … by making "ethnographies" of what humans and institutions do – enact and stage – in order to make tourism and performances happen" (Larsen, 2010, p. 323). Consequently, the performance turn represents a move to ethnographic research in tourism. The aim of ethnographic approaches is to "go beyond the abstract models and frameworks of attitude-behavior connection … [and] to explore in greater detail how practices are performed and negotiated *in situ*" (Hargreaves, 2016, p. 57).

According to Vold (2015), nature guides choose which aspects of nature to focus on and by doing so they greatly influence how tourists understand and experience nature and tourism. However, nature-based tourism guides might also be constrained in their choices of focus because they are employed by tour companies that have certain obligations to their clientele (Prakash et al., 2011).

In this paper, we investigate tourists' and guides' understandings and experiences of sustainability in nature-based adventure tourism through their performances. This work contributes to a new perspective to understanding sustainability in tourism, and especially in face-to-face relations in "real (tourism) life." Recent tourism research has drawn on Goffmanian concepts (Edensor, 1998, 2000, 2001; Larsen, 2010; Urry and Larsen, 2011; Jonasson and Scherle, 2012; Larsen and Meged, 2013; Williams, 2013) to understand the face-to-face interactions between tourists and between tourists and guides. The idea that tourists and guides manage the impressions they make on others in social situations emanates from Goffman's (1959) theory of social interaction, in particular the ideas of "frontstage" and "backstage" performances, frames, lines, face, and the interaction order. In all social situations, Goffman (1959) argues, people want to present themselves so that the "audience" perceives them to be as they wish to be perceived. Performances are designed to make a particular impression on the other people present through "patterns of verbal and non-verbal acts" that Goffman (1967, p. 5) called "lines." The "frontstage" concerns how people present themselves within the immediate social surroundings and how they are perceived by others in the same immediate environment.

Self-presentation, or "face" may be defined as "the positive social value a person effectively claims for himself by the line others assume he has taken during a particular contact" (Goffman, 1967, p. 5). The "face" adopted by any one person depends on who the "audience" is and what the situational norms are (Goffman, 1959; Jacobsen and Kristiansen, 2015). In the "backstage," people relax and take off their "face-masks" of social performance (Goffman, 1959; Jacobsen and Kristiansen, 2015). From this perspective, guided tours can be viewed as dialectical, as shaped by the interplay of performances by the guides and the guided (Urry and Larsen, 2011).

The interplay of "lines" and performances operates through individual "frames" (Goffman, 1974). Frames are operable within social situations, or "social frameworks" in Goffman's (1974) typology. As Persson (2019, p. 49) explains, Goffman saw social life as social situations shared by individuals, none of whom have "fully reliable knowledge" about one another and so each individual must interact with others at the same time as seeking information about how best to interact. Individuals therefore need to quickly define the situation they are in and this definition is what Goffman called a "frame." A frame is an "organization of experience" (Goffman, 1974, p. 11) and "a different scheme of interpretation for the meaning of an act" (Goffman, 1974, p. 231). This concept of *frames* "emphasized its simultaneously cognitive, social interactive, and situational aspects" (Persson, 2019, p. 49). By asking Goffman's question – "what is it that's going on here?" – it becomes apparent that the answer needs to be "seen in the light of its context" (Persson, 2019, p. 49) and so also asks the question of "what [social rule or norm] applies here?" Persson (2019, p. 65).

Goffman's (1959, 1967, 1974, 1983) research centers on what he termed the "interaction order" and the "expressive order" both of which are essential for understanding social interaction. Our collective understanding of these terms is that they are closely related but distinguished by scale. At a larger scale of social interaction, the interaction order aligns roughly with social norms but with a focus on interpersonal interaction rather than social structures or power. It is the shared understandings individuals have of acceptable behavior in particular settings,

allowing them to respond to the questions "what is it OK to do here?" and "what possibilities for behavior does this setting open for me?." Examples of behaviors in the interaction order include maintaining culturally appropriate personal space, keeping right (or left) on footpaths, sitting and quietly watching a movie in a movie theater, dancing and singing aloud in the arena of a rock concert. In these examples, individuals are in face-to-face contact but not necessarily directly interacting with one another. Our collective understanding of the expressive order, on the other hand, aligns more with manners, or the smaller scale, more detailed level of social interactions. These include the shared understandings of acceptable verbal and non-verbal communication between persons in direct face-to-face situations. The "expressive order" is "an order that regulates the flow of events, large or small, so that anything that appears to be expressed by [a person] will be consistent with his face (sic)" (Goffman, 1967, p. 9). As we understand it, the expressive order allows individuals to respond to the questions "how is it OK to respond to the other person/s here?" and "what possibilities for response are open to me here?." An example of the expressive order related to our research topic would be tourists paying attention when guide is explaining the how to prepare for the day ahead (e.g., by facing the guide, making eye contact if culturally appropriate, acknowledging them by uttering "mm" or nodding one's head).

Finally, and importantly, Goffman theorized that if someone challenges or breaches the interaction order or the expressive order, intentionally or not, a corrective process begins to either re-establish the original order or negotiate a new order from the "cognitive presuppositions" shared with the others in the setting (Goffman, 1983, p. 5). The corrective will be one or more "face-saving" practices (Goffman, 1967).

In this paper, we interpret nature-based adventure tourism as a social framework within which guides and tourists understand and respond to the interaction order and the expressive order during their encounters with one another. We approached the empirical study from a theoretical viewpoint that an individual's "cognitive presuppositions" shape their "frame" and inform their performances of sustainability while on nature-based adventure tourism trips. We continue by describing our applied methodology and our research and analytical methods, before reporting our findings.

METHODOLOGY

For this study an ethnographic approach was deemed appropriate because it "allows one to gain information on tourist action and the embodied, tacit dimensions of nature-based tourism" (Rantala, 2011, p. 151) and "simultaneously allow[s] the observation of social and situated practices and participation in them" (Rantala, 2011, p. 153). An ethnographic approach is appropriate when the aim is to capture the micro-sociology, the information "given" and "given off" (Goffman, 1959; Rantala, 2011; Persson, 2019), the embodied as well as tacit practices, and the multitude of different performances that are enacted in and through social situations in nature-based adventure tourism. Our ethnographic fieldwork paid attention to how people talked, words and phrases they used, how they interacted with each other and with the environments they traveled through, where they gazed, how they embodied the landscape, what the guides emphasized or not. Rather than look for specific pre-determined verbal or non-verbal expressions, our aim was to remain open to whatever practices occurred in the field and then consider them in light of the concepts of sustainability discussed above and in the light of the national and industry sustainability focus.

In order to find out "what is it that's going on here," we focused on tourist participants, tour guides, and the interactions between them. To do this we drew data from multiple, diverse trips offered by a nation-wide, industry-leading tourism operator. In the absence of an agreed definition of what constitutes "industry leading," we selected one of the oldest nature-based adventure tour operators in Norway that has one of the most extensive tour catalogs. The selected operator offers trips throughout and beyond Norway and has been involved in sustainability discussions at a national level and in sustainability projects internationally. However, their website and brochures (checked during research design phase fall 2017 and immediately pre-fieldwork summer 2018) show that they do not actively market their trips as having a sustainable focus or credentials. Further, this operator could provide the best opportunities for participant observation, including as an apprentice-guide-researcher.

In this embedded single-case design (Yin, 2014, p. 50), guides and tourists make up the different embedded units of analysis and "the circumstances and conditions of an everyday situation" (p. 52) are those that occur on the guided nature-based adventure tours. Our decision to select a single tour company was informed by Flyvbjerg's (2001, p. 77) conception of "critical cases" for enhancing validity. Critical cases are those that are "either "most likely" or "least likely" … to confirm or irrefutably to falsify propositions and hypotheses" (Flyvbjerg, 2001, p. 78). An "extreme" critical case, such as the industry-leading tour operator in this study, enabled us to "achieve the greatest possible amount of information" (Flyvbjerg, 2001, p. 77) on our topic, which a representative case or random selection cannot do with as much certainty.

Five different tours make up the ethnographic material. All the tours took place in Norway between summer of 2017 and spring of 2018, and in different geographical locations: one in a mountainous part of central Norway (A); one along the coast of northern Norway (B); and three in the arctic high-mountain plateau of the northernmost part of Norway (C–E). Tour A took place late summer with only international tourists. Tour B took place early autumn, also with international tourists. Tours C, D, and E took place in the winter months with mainly Norwegian and some other Scandinavian tourists (from Denmark, Sweden, and Iceland). The tours varied in duration. Tour A, C, D, and E were 4 days each, while tour B spanned 8 days. In total 24 days were spent in the field. A total of 62 tourists and six guides were part of the study.

The study was approved by and conducted according to, the ethical guidelines of the Norwegian Center for Research Data (NSD) and The National Committee for Research Ethics in the Social Sciences and the Humanities (NESH). All participation

in the study was voluntary, on the basis of anonymity, with the option of withdrawing at any time up to acceptance for publication. Participants were informed prior to, and written consent to observe all aspects of the trips, including social chats, and for post-trip interviews was obtained on the 1st day of each trip. Data was gathered through participant observation and interviews, as detailed below.

A general rule of participatory observation is that the researcher participates in the social interactions of the research context while at the same time striving not to influence those interactions significantly (Fangen, 2010, p. 80; Zahle, 2012, p. 54). However, participant observers cannot totally decide their field roles in advance. Roles and the degree of participation are usually in continuous (re)negotiation throughout the fieldwork (Spradley, 1980; Fangen, 2010; Wadel, 2014). Importantly, Wadel (2014) points out that roles open and close for different possibilities and associated data, and thus recommends that participant observers take on different roles so that they can study the field from a variety of perspectives.

Throughout the five tours in this study, the first author utilized various degrees of participation, involvement and observation to gather data, primarily participant observer and partially participant observer (Bryman, 2016, pp. 433–436; see also Spradley, 1980; Fangen, 2010; Wadel, 2014). In addition, on trips C and D, he was an apprentice-guide. This role gave him affordable access to the trip and the benefit of closeness to the guides' perspectives. It also provided "backstage" access to tourists' "backstage" spaces that would have been inappropriate otherwise. One of the guides' responsibilities on these trips was to check on each participant each evening to find out how well they were coping with the physical and other demands of the trip. Often, guides would be invited in to the tourists' accommodation (or invite themselves) and engage in social chat or be questioned about aspects of the trips. In this way, the field researcher gained additional access to tourists' "frames." While working as an apprentice-guide, the first author aligned his professional frame with the lead-guide's apparent frame and reflected on this alignment in the reflective journal. The first author's opportunity to take on this dual role as both apprentice-guide and researcher gave him valuable first-hand experiences and helped deepen his understanding of the field.

The first author can be considered an insider in the field of nature-based adventure tourism through both his educational and work background. To obtain and maintain analytical distance (Spradley, 1980; Fangen, 2010) in the various roles adopted in the field, the researcher kept a reflective journal (Spradley, 1980; Saldaña, 2016) and used a field diary and voice recorder for field observations. He wrote the reflective journal throughout the fieldwork phase in order to become aware of any preconceptions and to increase introspectiveness (Spradley, 1980). Detailed observations were recorded throughout each day and were assisted by pre-prepared descriptive questions, such as "how do tourists talk about themselves, nature, and their experiences?" "what do the guides focus on/give emphasis?," "how do tourists behave while on tour?," "how do guides behave while on tour?." These questions were also condensed into laminated, pocket-sized field cards that helped the researcher stay on-task throughout the fieldwork.

Twenty-nine participants and five guides were interviewed by the field researcher between 3 and 12-months post-trip (mid 2018 to mid 2019), using a semi-structured interview guide. The average duration of interviews was 1 h and 15 min, and the interview questions began very broadly (e.g., "tell me about the trip") and became more focused as the interview progressed. If the interviewees had not mentioned sustainability themselves, the topic was brought up by the interviewer late in the interview. Twelve of the post-trip interviews were done face-to-face, while the majority, for logistical reasons, were conducted by digital videoconference or phone. The limitations of physical distance to qualitative interviewing (Bryman, 2016) were arguably offset by the fact that rapport had already been established between the interviewee and the interviewed, as they had spent many days living closely together while on tour.

Analytical Approach

Interviews were transcribed verbatim using the Computer-Assisted Qualitative Data-Analysis Software (CAQDAS) MAXQDA. We used AI-transcription software with manual checking to transcribe eight interviews. All fieldnotes were transcribed and imported to MAXQDA. MAXQDA was used to code interview transcripts and fieldnotes. The use of CAQDAS has been criticized by some for influencing and enforcing a specific method to the analytical process (Kuckartz and Rädiker, 2019). However, we used CAQDAS as a "method-neutral toolbox" (Kuckartz and Rädiker, 2019, p. 9) that aided data organization for analysis (Ribbs, 2014).

The first author performed all interviews, transcribed all interviews and fieldnotes, and coded the transcribed material. All interviews were conducted in English or Norwegian, as the interviewee preferred. All authors are fluent in English; the first and third author are native speakers of Norwegian and the second author has a working knowledge of the language. The first author coded the data in both Norwegian and English and manually translated the excerpts quoted in this paper. To avoid known pitfalls of solo-coding (Saldaña, 2016; Braun and Clarke, 2019) and to strengthen coding validity, any coding uncertainties were discussed with the second and third author. The second and third author also read some of the interviews. The coding process started during the process of transcription with "preliminary jottings" (Saldaña, 2016, p. 21) and continued with an initially inductive, data driven, coding approach, through which themes were generated. Braun and Clarke (2019, p. 592) define themes as "stories about particular patterns of shared meaning across the dataset" and "underpinned by a central organizing concept" (p. 589). For this study the "central organizing concept" was that of "sustainability performances." Once themes were generated, the data corpus (Braun and Clarke, 2006) was read iteratively with definitions of sustainability. In this way, Force et al. (2018) distinction between sustainable tourism and tourism sustainability, and Salas-Zapata and Ortiz-Muñoz (2019) clarification of sustainability as "a set of guiding criteria for human action" (p. 155) guided rather than drove the analysis, in that they became an analytical framework for organizing the

different performances of sustainability identified in the data analysis. In this sense the analytical process could be considered that of a combination of "inductive" and "theoretical thematic analysis" (Braun and Clarke, 2006, p. 83–84).

RESULTS – "WHAT IS IT THAT'S GOING ON HERE?"

In our data, we identified 11 types of sustainability performances. These are: noticing nature, desiring isolation in nature, responding to global issues, reducing pollution, supporting others' sustainability performances, minimizing environmental degradation, reflection on human/nature, connecting with nature, modeling sustainability performance, choosing tour operator, and learning about nature and culture. We also found performances not related to sustainability. While at first these results seem clear cut, they point to ambivalence and ambiguity in guides' and tourists' performances of sustainability in nature-based adventure tourism. We identify as ambivalence the low level of deliberate focus on sustainability during the trips generally and apparent randomness with which it occurs when it does. The ambiguities are one challenge and one conflict. The challenge is between sustainability performance and enjoyment, and the conflict is between sustainability performance and logistics. These are all detailed below and subsequently discussed in relation to the claims and criticisms of performativity and frames (see also **Table 1**).

Noticing Nature

Throughout each trip the tourists noticed and regularly commented on the scenery, the wildlife, the vistas, the local culture, the "lack of other people," the quietness, the fresh air, the experience of journeying through a landscape. Nature took center stage regardless of the travel mode in the different tours. Photography was another dimension of noticing nature. The tourists photographed the landscapes they traveled through, elements of those landscapes, and nature, and themselves or others in nature. Both international and Norwegian tourists stated in their interviews that the act of taking photos, and sometimes even *thinking* about taking photos, made them notice nature more.

Desiring Isolation in Nature

Many of the Norwegian participants enjoyed being given time and place to just be "alone" together outside, to think about everything and nothing, to listen to their own breathing, find their own rhythm, feel and listen to the wind. Our summary of the tourist's perspective is that they want to get what they paid for: the experiences (hard earned), vistas and the solitude in nature as promised by the images in the company's brochure. On field trip A, for example, as the group traveled from the high-mountain and down to the coast, they encountered more and more people along the way until they reached a small coastal town. For one of the participants this town "was overly crowded with tourists" which they later stated was quite a shock and a negative experience for them. One of the main reasons this international tourist had come to Norway and do this particular trip was because they expected few other people there and they were disappointed to have come from the solitude of the high mountains and suddenly find themselves in a crowded tourist trap.

Reducing Pollution

When guides addressed concepts of sustainability it was related to "leave no trace" (https://lnt.org). How this topic was addressed varied from guide to guide. Some gave an introductory talk the first day, emphasizing that if a person needed to use a toilet while out hiking, biking, or skiing, they should do so but dispose of the toilet paper in the doggy-bags made available by the guides. All but one of the guides highlighted the importance of not leaving any trash behind, using the doggy-bags for one's own garbage as well as that of others' found along the way. They talked about what would happen if the group did not do so, typically referring to how the landscape would turn into a garbage pile if everyone visiting left even only one or two things behind.

The observation of guides addressing concepts of sustainability mainly through their focus on "leave no trace" and "take only pictures, leave nothing but footprints" is corroborated by their reflections in the post-trip interviews. Although the degree to which they themselves claim to focus on leave no trace varies between the guides, it comes across as their main way of addressing concepts of sustainability in their guiding practices. For some of the guides, the first briefing is the only time that they mention "leave no trace" and they do not enforce it rigorously during the trip.

When tourists were asked if and how they felt that their guides highlighted concepts of sustainability or environmental issues, those who could be specific mentioned the way guides emphasized "leave no trace" throughout the trip, as well as the introduction and use of "doggie-bags." For both international and Norwegian tourists, concepts of sustainability became a matter of "leave no trace," an experience in nature that is run in a way so that future generations can have the same experience in the same environment, and recycling.

Modeling Sustainability Performance

Some of the guides emphasized that they deliberately try to "model environmental behaviour"; that is, during briefings they would stress the need to make sure not to leave any trash behind, but they would not mention the possibility of tourists picking up trash found along the way. Instead, they would do that themselves and through that, model a behavior that made picking up trash and cleaning up nature "second nature," something one just did. A few of the tourists mentioned how they felt that the guides "modeled behavior" through staying on the path, not littering, and picking up other people's litter along the path.

All of the guides believed they could, to some extent, influence tourists' environmental attitudes and behaviors. They acknowledged that their influence might not be lasting nor necessarily very profound, but nevertheless positive. Four of the guides believed their influence stems from modeling behavior and also from "modelling appreciation" for nature, such as by enthusiastically emphasizing the beauty of the surroundings, the taste of blueberries picked, the smell of the mountain moss.

TABLE 1 | Sustainability themes/performances.

Sustainability performances	Representative quotes from tourists	Representative quotes from guides
Noticing nature	"The views, oh, I mean, hiking on a glacier and the beautiful … the blue of the ravines, you know, the crevasses and everything. Oh yeah. The vistas were amazing." (International Tourist#7, trip 1) "We're just totally immersed in it … So I don't know, you see it. You smell it. You feel it. You don't just look at it. In a car you just look at it. The way we did it is totally immersed in it. So, it's like the difference between in a car. It's like looking at an aquarium and the way we did it. It's like jumping in the ocean. It's … everywhere around you, it's part of you, and in you. Both the good and the bad weather and everything else you feel and smell and hear, you really feel like you're part of it … I really felt how … I don't know. I have a different feel for nature and the landscape. And, you know, it doesn't, it just doesn't feel as isolated when you're like that with it." (International Tourist#10, trip 1) "While on tour, I've become better at using my camera, 'oh, I must take a picture of this, and this, and this'." (Norwegian Tourist#10, trip 4)*	"It is, kind of, many of the reasons for why people fall behind the group is (1) they might not be physically fit, but also because they take an extreme amount of pictures, and want to absorb what they see." (Guide#1, trip 1)* "It is mostly on the [bike trip] where we have tried to think about getting an early start so that we do not have too much, because it is busy there, you know, that we get moving before there's a lot of other people there, passing us, or, yes." (Guide#1, trip 1)*
Desiring isolation in nature	"It's much more pleasurable to not be where there's a ton of people. I don't mind seeing a few people on the trail or seeing others, but if it's crowded it just takes away the experience, if it's too crowded." (International Tourist#7, trip 1) "I feel in a way that my thoughts aren't as accessible, if I keep meeting other people all the time, aren't able to relax as much outside … I sort of feel that nature is so much stronger when there aren't … that many people around or other types of, eh, sort of social impressions, kind of." (Norwegian Tourist#5, trip 3)* "A lot of people, is disturbing, or sort of, it becomes overwhelming ... You know, I'm there seeking nature, first of all. Not other people." (Norwegian Tourist#15, Trip 4)*	"It is, there are some that sort of, maybe react on, so, if there are too many people there…It appears that people are more concerned with. That it might ruin the nature experience, or the experience as a whole." (Guide#1, trip 3)*
Reducing pollution	"No, I cannot remember that it [sustainability] was a theme at all … No, I didn't perceive that it was a theme, neither among the participants nor from the guides." (Norwegian Tourist#5, trip 5)* "The … guides ... emphasized and, and they, that we needed to, you know, bring back whatever we've take, you know … You know, we're going to bring back everything that we ... even the trash and stuff like, we don't leave it there." (International Tourist#3, trip 1)	"Trash. I'm very concerned with that. And I feel that everyone is very respectful of…that. Because, and it is, and [I] take out the doggie-bags, you know, actual doggie-bags to put toilet paper in. Nobody(!) says anything. Not a bad word. So, there I'm very straight forward. This is our toilet, but you won't leave anything behind. And that is totally okay." (Guide#1, trip 4)*
Modeling sustainability performances	"I know we have a good talk at, even at the very beginning, about to leave no trace principles and that we were going to follow that. And then again, even things as simple as taking, the guides always had trash bags so that, you know, there wasn't going to be a problem of being able to clean up after ourselves and take care of what we need to take care of." (International Tourist#10, trip 1) "And then it was this here that we should not leave anything behind us … that it should not seem that we had been there … And … this with, yes, [the guides] didn't state directly that we should not litter, but we understood that with the doggie-bag when we … if we were going to the bathroom, to put paper in, and so on." (Norwegian Tourist#7, trip 4)*	"Yes, it's a bit about just showing that you pick up trash without saying anything. I do not need to talk about trash. I can just pick it up … and then I experience sometimes, then they start to pick themselves." (Guide#2, trip 1)* "I basically think that … being on a trip, in principle, is maybe … well, one of the most important things about it, because then they see … see the surroundings and the possible effect on … nature, where one is. But especially to be outside and fall in love with it [nature], like [skiing up north] and you've never been there before and then seeing it, then you might become more aware, or you see plastic in the ocean … it becomes a bit more real then. And I think that is an important part of it too." (Guide#1, trip 3)*
Thinking about sustainability	"I don't think it [sustainability] was a topic of discussion as much as just clearly understood." (International Tourist#11, trip 1)	"I experience a bit, you know, that people go on holiday to [laughs lightly] forget unpleasant things … So, I do not know how much, how much focus on … if it [sustainability] should somehow have a bigger part, that is sort of, not just a natural part that one talks about, but a thing that you are in a way forced upon. I'm, yes, a little unsure about that." (Guide#1, trip 3)* "It sort of, yes, some really do not care at all, and some are, very concerned about it [sustainability]. And I think, I also think a lot of people think like "Yeah, but" [laughs], if you know what I mean? And it's maybe most of them." (Guide#2, trip 5)*

(Continued)

TABLE 1 | Continued

Sustainability performances	Representative quotes from tourists	Representative quotes from guides
Supporting others' sustainability performances	"Weren't we very good at taking everything with us? At least I saw that people ran after and "oh-oh-oh-lost something", and. So, it seemed as if they were concerned that there should be nothing left behind." (Norwegian Tourist#10, trip 4)*	
Minimizing environmental degradation	"I sort of remember some things that were said about the way in which we would do, you know, we would walk or, do certain things … that would make it … that we would be careful on any path we were on … I sort of remember you know, being steered toward staying in one particular area and not, not treading on plants that if we stepped on would be, you know, take many years to recover." (International Tourist#6, trip 1)	"Most people are very concerned about it, and if very many ask like, can we go off the beaten path? Will it be damaged then? And I generally think, by and large, a lot of respect for, and that goes for both international and Norwegians, but Norwegians do not ask that many questions, because they're used to it." (Guide#2, trip 1)*
Reflection on human/nature	"That's exactly what I like to do. I think it's important to sit … and just absorb it, because we rush around so much … The thing I love about that outdoor-stuff, is eat, sleep, exercise and move on. You know, I spend most of my day thinking or … being mentally active. I feel I find, I need that balance of exercise, being outside, that connection, because it's … I don't get it in my work-life. And so … It is the quintessential stopping to smell the roses moment" (International Tourist#4, trip 2) "I like it … because I, I mean, I do yoga, where we're left to sort of meditate occasionally, so, so, and reflect. So that's quite, quite nice. And particularly if you're in a new scene, you know, in a new country, a new place … you can take in the environment and just think. Yes, it's really good." (International Tourist#6, trip 2)	
Choosing tour operator	"… an agency … that shows that they've got good values in terms of the environment. And you can sense that quite often with the advertising and even speaking to the people. I often found out prior to booking, I'll have a chat with the staff … And I also, often the advertising says that they are environmentally sensitive from the point of view of a litter, take litter home. You know, they work on certain procedures in terms of being careful where to walk and be sensitive to the locals. So, a lot of it is, it comes through the text as well. It's reading between the lines, I think." (International Tourist#6 Trip 2) "I cannot say that it … well, it's a little difficult to calculate if [the tour operator], if they do it in a way like this. But I think that's an important part, definitely. Absolutely. But I cannot say that it was, it was not a reason or, it was not like I felt that, they do it this way, and therefore I choose them." (Norwegian Tourist#12, trip 3)*	
Learning about nature and culture	"I wanted to be able to … extricate myself from the group sometimes, just to be able to learn more about Norway and its people. So the easiest way to do that was to talk to our guides a lot … So my expectations for myself was to be very intentional about learning about Norway, the people, culture." (International Tourist#9, trip 1) "But it's interesting when you travel because I'm looking at landscapes and I'm looking at, you know, birds and wildlife … I'm interested in the wildlife … I like meeting people and seeing how people live and see the differences in how people live, and also see places and, you know, hiking and getting into nature shows you things that, you know, are quite unique to an area. Sometimes it's fauna and sometimes it's flora or sometimes it's just landscape." (International Tourist#4, trip 2) "It's kind of the experience that is … mostly for me, should I be completely honest. Yes, just being there … That is more important to me, kind of, than to stand looking out over the landscape … For me it is more important to do that trip, rather than to go and look at the surroundings, really." (Norwegian Tourist#7, trip 5)*	"And I also think, foreigners then, for example, are often very attentive to the other, the new, or the other that they visit. So it is, they are not only interested in Norwegian nature, but they also appreciate being involved in Norwegian myths, folklore and history. And I think it also enriches their experience of being here, to a large part." (Guide#2, trip 5)*

(Continued)

TABLE 1 | Continued

Sustainability performances	Representative quotes from tourists	Representative quotes from guides
Responding to global issues	"I mean, it's … it's difficult, particularly if you want to … visit places, particularly, you know, outside your own country. I mean, you're adding to the carbon footprint by flying there (laughs)." (International Tourist#11, trip1) "I think, well, yes, a bit, not much, but I've become more and more aware, what sort of choices I make … And how I behave. That I should not disturb nature when it is at its most vulnerable." (Norwegian Tourist#7, trip 4)* "It's not sustainable that I should drive hundreds of miles up and … just to go skiing, it's not really, you know … But it's fantastically delightful … But sustainable? [laughs]." (Norwegian Tourist#10, trip 3)*	"Yes, I think they are interested in it … And that, yes, they wonder a bit how we do things, things here, in terms of energy and, yes … but they have still chosen to travel, they have chosen to travel far." (Guide#1, trip 1)* "When we're out on that glacier and it's melting away. Then there is quite a lot of focus on how far, how far it has retreated, how much it retreats during a year. How much do you notice global warming here? Those are questions I get, pretty much every time." (Guide#2, trip 1)* "It seems that very many of the guests I have had are relatively aware of it, especially flying, and, and things like that, and have brought up things by themselves, and of course, have a bad conscience for it, but do it anyway." (Guide#1, trip 3)*

**Quotes translated from Norwegian to English.*

One guide, however, believed that taking part in nature-based adventure tourism trips itself is sufficient for strengthening tourists' sustainability and environmentally-friendly behaviors and attitudes. This guide favored "seeing and being" in nature as the primary influence, not what guides do or don't do. In this guide's view, "seeing and being" gives tourists a deeper appreciation of the natural world which, in turn, could lead them practice sustainability more in their everyday lives.

Thinking About Sustainability

When asked whether they felt sustainability and related themes were topics for discussion during the trip, most of the tourists gave ambiguous responses. While most did not discuss sustainability, many of them (particularly internationals) felt that sustainability was omnipresent on the trip, mainly in the form of "leave no trace." At the same time, most of the tourists claimed to be environmentally conscious and that issues related to sustainability and environmental topics both concerned and, in many cases, affected them in their daily life. When asked to exemplify, most of them mentioned a general concern about issues such as over-use of landscape and that they "do their part – I/we recycle."

The international tourists were more specific about how their understanding of sustainability influenced their everyday life (e.g., they engaged in the public discourse on sustainability in their local communities) and how it influenced them as tourists (e.g., by paying a carbon tax for air travel).

Supporting Others' Sustainability Performances

Not leaving any trash behind had some consequences for the guides. More than once on the skiing trips one or more of the tourists lost paper-wrappings in the wind. Each time, someone in the group would yell and make everyone aware of what was happening, and a guide would sprint off to catch the trash. When successful they were greeted with applause and loud compliments by some tourists. Other tourists' gestures – shrugged shoulders and facial experiences – and muttering indicated that they thought those applauding was making a big deal out of something unimportant.

Minimizing Environmental Degradation

During late summer and fall hiking trips, the guides emphasized the need to stay 'on-trail'. They explained that if everyone walked outside the path they would contribute to erosion and possibly to establishing new, unnecessary paths that contribute to environmental degradation.

Reflection on Human/Nature

At one point during a trip, while on a scenic saddle overlooking a large, deserted beach with cliff-faces towering several hundred metres into the air, one of the guides instructed the tourists to sit down in solitude and take in the vista, the landscape, the smells, and the sounds. He encouraged them to do so for ∼5 min without engaging with the others. All of the tourists except one complied with guide's instructions; one person walked around taking photos instead. The guide later said that he believed facilitating "sit-downs" and solitude reflections potentially could enhance the nature-experience for the participants and that taking in the beauty of the scenery could have a positive impact in terms of valuing the preciousness of the landscape and consequently its need to be preserved. He linked this "sit-down" with a talk he had planned later that same day addressing the issue of plastic pollution in the ocean and in general. This was the only time during the five different fieldtrips that the field researcher observed any of the guides deliberately facilitating such activities. After the "sit-down," the guide invited the tourists to find their own path down to the beach below and to meet up by the shore at a given time for lunch. This gave the tourists opportunities to connect with nature on their own terms.

Choosing Tour Operator

Most of the tourists acknowledged that sustainability is not of major importance when they choose a tour operator and destination. It was important for a few of the international tourists. For these people, sustainability was understood broadly, encompassing environmental, social and economic aspects.

Learning About Nature and Culture

Compared to the Norwegian tourists, the international tourists were keen to learn as much as they could about the country and landscape. These tourists depend on the guides' local knowledge in order to get the experience they expect. The guides notice this difference between types of tourists. One informant, an apprentice guide fresh from training, observed that most international tourists are about "seeing it," while some are also into "being there" which he thought was a deeper and better way of experiencing a landscape or destination. By contrast, this guide felt that Norwegian tourists on the same trips are more about "being" on the trip, or in a Norwegian sensibility, "doing" friluftsliv: doing, seeing and experiencing things together with friends.

The more experienced guides echoed this view and added that as guides they have to deal with the two groups differently. Some of the guides were explicit that it was much "easier" to work with international tourists because they are generally more enthusiastic about the planned trip and related activities, including learning about new culture, nature, landscape, and traditions. The guides felt international tourists generally asked more questions. However, the guides offered relatively few opportunities for tourists to learn about the local environment and culture. There was occasional storytelling by the guides, but storying the landscape in terms of history, geography, geology, biology, or culture was not a central part of the guides performances. Rather, their focus was on gazing upon the landscape and traveling through it for enjoyment.

What became evident in interviews with the tourists was that their acceptance of the guides' focus varied greatly among them. Some would not mind more emphasis on history, culture and landscape and some were quite happy with the status quo. A third group wanted as little input from the guides as possible, because they preferred to see the landscape for themselves and experience the trip as described by the tour company.

Responding to Global Issues

As stated above, when sustainability was brought up in discussion, it was mostly by one or other of the international tourists. Often, it would be as a specific question of the guide or researcher, such as "how is Norway affected by climate change?," or "do Norwegians think about their carbon-footprint?"

Global issues relating to climate change concerned several of the international tourists who acknowledged the dilemma of wanting to travel to pristine destinations while knowing that doing so would leave a significant carbon footprint. Some of these people stated that they had recently put planned travel on hold because they did not feel comfortable about the carbon-footprint required to get to the desired destination. In a similar way, some of the international tourists expressed concern about travel that they thought would contribute to (over)populating the chosen destinations; this concern had led, in a few cases, to decisions to drop their plans all together due to the number of other tourists expected to be at the same destination.

The Norwegian tourists, too, were conscious of the carbon-footprint of flying to destinations, but as a group they were less clear about how they understood sustainability and most of them acknowledged that it was not a major factor in their decisions and practices.

Not Sustainability

While we did find performances of sustainability in our data, sustainability was not a major focus for the tourists. What does appear to be in the foreground for both the international and the Norwegian tourists are the experiences they are taking part in at the moment, the experiences that are to come in the near future (later that day, or the next day), and how these experiences are felt. After a long day out hiking, biking or skiing, the tourists' focus was on re-living the day's experiences and sharing feelings and thoughts about them. In these discussions, only sometimes initiated and led by the guides, the vantagepoint of experience was "the self."

We found the same low attention to sustainability among the guides. In the main, they do not emphasize it as a topic of interest or concern in their briefings, nor during the more leisurely talks and discussions with their tourists. Overall, the guides' main focus seemed to be on practical information regarding the immediate needs for the day's journey. In particular, when briefing and talking with international tourists, the guides focused on providing detailed information about technicalities of the forthcoming activities, such as the quality of the path (gravel, loose rock etc.), altitude gain/loss, distance to be covered, safety concerns and how to deal with them, expected pace, when and where to eat the bagged lunch, how to dress, what to have in the backpack in terms of spare clothing and other accessories, what they could expect to see during the day, and why this experience would be worthwhile. When engaging with Nordic tourists, the guides provided the same type of information but with less detail, as if they expected the Nordic tourists to be more familiar with the weather, equipment and environment.

Although the five different trips took place in different landscapes, at different times of the year, using different adventure activities, the way the tour days were organized was very similar. Each day began with a shared breakfast usually followed by a short and practically-oriented briefing about what was ahead, then some time to pack personal gear, and meet at a designated location at about 9 a.m. The activity of the day usually lasted around 8–10 hours and ended with supper at around 7 p.m. Each day's journey had a similar pattern: hiking, biking, or skiing for 50 minutes, usually in single file, before a 10-minutes break. This routine would continue throughout the day, until the group reached the planned destination, and it created a conflict for the guides. Addressing the group as a whole while hiking, biking, or skiing was a demanding and difficult exercise for the guides because they were left with 10 in every 50 minutes as their "window of operation." In this time, they had to monitor the group and individual well-being, attend to issues such as broken equipment, adjusting backpacks or skis, taping up blisters, and make sure that they engaged in at least one conversation with each participant each day. Several of the guides emphasized in their interview that they were reluctant to overtly interrupt the breaks with information about landscape, culture, history, or sustainability, because they wanted to allow individual participants to make use of the break as each saw fit.

Further, the guides felt challenged to tread a fine line between enhancing the tourist experience while at the same time not appearing to "have an agenda" or creating a "situation" that the tourists had not signed up and paid for. Many of the respondents also said that an outspoken sustainability and environmental focus from the guides could easily be interpreted as moralizing, which they were neither interested in nor positive toward. Several of the guides stated in various ways, both during the trip and in post-trip interviews, that their primary task was to make sure the tourists had a good time on their vacation. In fact, the guides stressed the view that the tourists were on vacation, implying that being on vacation imposed some guidelines in terms of a guide's behavior.

DISCUSSION

We set out to investigate if and how tourists and guides understand, operationalize, practice, and embody deeper nature-relatedness, active environmental and cultural protection, and relationship to the global collective. We found that performances of sustainability are not a major component of guides' and tourists' performances while on tour. Of the sustainability performances that we did find, the guides and tourists practiced and embodied nature-relatedness at both shallow (everyone noticing nature) and deeper (some tourists seeking isolation and reflecting on human/nature) levels. They expressed a limited range of environmental protection actions (reducing pollution by picking up garbage, minimizing environmental degradation by staying on tracks) and international tourists expressed interest in local culture which is one aspect of motivation for cultural protection (Calver and Page, 2013; Richards, 2018). Further, we found that international tourists and, to a lesser extent Norwegian tourist, expressed interest in global issues (mainly carbon footprint), which is arguably a signal of positive relationship to the global collective. In addition to these types of sustainability, a few tourists chose the tour operator with sustainability in mind, however our data does not indicate which aspects of sustainability informed those choices. Finally, tourists and guides expressed an over-arching thoughtfulness on sustainability: they all thought about it, some guides modeled it, and tourists supported the guides' modeling. However, these mainly cognitive actions did not apparently lead to additional expressions of sustainability by the tourists.

We understand the variability in expressions of sustainability through a Goffmanian lens of four **distinct clusters of frames:** one cluster is made up from the Norwegian tourists; another from the international tourists; a third from most of the guides; and the fourth from one particular guide. Goffman's ideas of "going about" normal life and "being alert" to threats and changes are useful for describing these frames. In the Norwegian tourist frame, going about nature-based adventure tourism means performing friluftsliv while being guided, connecting with nature individually, and not being disturbed (threatened) by issues beyond the immediate enjoyment of activity and environment. By contrast, the international tourist frame seeks out the challenge of difference (e.g., curiosity about Norwegian culture and history) and environmental threat (e.g., climate change) while also enjoying the immediate activity and environment. Most of the guides shared a frame that fits/matches that of the Norwegian tourists: a "normal" guide allows tourists to go about their tourism without being alarmed by the intrusion of overt sustainability performances by the guides. The fourth evident frame was that of a single guide who considered nature-based adventure tourism to normally involve challenging tourists' perceptions of sustainability. Clearly, these four frames are not all, always, compatible, which suggests that the guides and tourists reached a common expressive order for the trips. This consensus revolved around enjoyment, as we now discuss.

Sustainability Performances vs. Enjoyment

Through both interviews and comments made during the different tours, it is evident that a primary aspect of the guides' frame is prioritizing tourist enjoyment within the scope of the planned trip. Enjoyment is central to the interaction order of these situations. The guides express a high degree of awareness of the fact that the tourists have paid to get a certain product. The product is defined in terms of sites to see, places to visit, adventure activities to do, and more generally when, what and how the different aspects of the trip are supposed to take place. These details are stated in the written "contract" - detailed information about the content of the given tour - on the tour operator's website that tourists access before the trip. This "contract," then, is the tour company's frame for the particular trip: it provides the "social information" (Goffman, 1967) that helps tourists and guides to understand "what sort of situation [this is]" and, consequently, what sort of performances are expected of them. The "contract" tells tourists what they can expect to happen and to experience. It tells guides what they have to deliver. Through both interviews and field conversations it is clear that the guides see their work as contractual and that they feel obliged to deliver a "product" as close to the "contract" as possible. In Goffman's (1959) terms, they conform to the "interaction order" and in doing so they prioritize enjoyment over sustainability. Their emphasis is on facilitating a relaxed, friendly and positive social atmosphere within the group and making sure that the tourists have a good time and enjoy themselves. It is only if and when tourists express enjoyment of deeper sustainability that the guides respond. Thus, it is the tourists who must first challenge the interaction order; the guides follow tourists in opening up for deeper sustainability. Larsen and Meged (2013, p. 101) argue that it is tourist's "participatory and attentive tactics" that turn guided tours into co-created performances. Larsen and Meged (2013, p. 101) also found that "guides rely on the energy from interactions and participants which is why the guiding is equally affected when the tourists log off." A possible explanation to why the "interaction order" seems to stay fairly fixed on enjoyment in the tours we observed, could be that the guides are sensitive to tourist "logging off" if addressing or emphasizing deeper sustainability performances when not initiated by the tourists themselves.

As noted in the results, we did identify one performance by one guide that might have challenged the tourist's perceptions of sustainability and thus also the "interaction order." This was

the invitation to sit and reflect, then to find one's own way to the beach and take some time there. As this episode took place on a trip with international tourists, it is pertinent to ask whether guides use different frames depending on what type of tourist groups they guide, whether international tourists tend to challenge the interaction order more, and if so, how these challenges are resolved. These questions will be the focus of a future article.

A primary focus on enjoyment, however, does not preclude other foci, less central to the frame. For some guides, a focus on sustainability was possible as long as it didn't interfere with enjoyment. In the next section we discuss susceptibilities that produce potential for more, or deeper, sustainability.

Susceptibility to Sustainability

Some of the guides expressed that their understanding (or frame) of the trip and, therefore, their potential scope of action, differed based on the type and length of the trip they were guiding. One guide mentioned that trips longer than 2 weeks provided more opportunities to address a broader range of topics because there is more time to interact with individual tourists. While no such trips were the subject of this study, the guide's comments throw light on a way that guides can manage social interaction for particular effects. This guide explained that:

"... in the end you deliver a product that someone has paid for... so you need to know your group … Some are very susceptible for discussions and new ways of thinking, others find it annoying … So I don't push [sustainability issues/practices] so much, but do more sort of systematic brainwashing [laughs out loud] ... because you spend quite a lot of time with the tourists, and then you can lead them, in the direction that you would like to see them end up … And that is not something you do the first day. It takes time."

Following Goffman (1974), one explanation for this guide's comments is that guides can have multiple backstage topics that they intend to emphasize throughout the trip and which, through planned performances, can gradually become front-staged, possibly without the tourists noticing the shift. In other words, sustainability could be an aspect of the guide's frame for the trip from the outset, but he or she keeps it "backstage" (Goffman, 1959) until they feel that the tourists are ready ("susceptible") for it. By back-staging sustainability, this guide managed the impression of himself so that his "front-stage" (Goffman, 1959) performance matched his perception of tourist interest in sustainability, and this saved the tourists' "face" rather than creating an uncomfortable or embarrassing situation. However, this explanation fails to address how tourists become more interested in the guide's prepared topics. If this static view of frames is adopted, the question of how tourist frames can be made more susceptible to sustainability remains open. It also calls into question how the guides ascertain tourist susceptibility.

Taking into consideration the guides' educational backgrounds, it could be that this guide did actually have a deliberate educational program in mind in his "backstaging-to-frontstaging" of sustainability. In fact, five out of the six guides in this study have attended nature guide-related educational programs at university level in Norway. Andersen and Rolland (2018) argue that nature guides educated in friluftsliv (as is the norm in nature-based higher education courses in Norway) can "add value by enhancing participant's experiences and adding more learning to the experience. The learning relates to skills and techniques … and connecting the participants more closely with nature" (p. 1). However, Weiler and Kim (2011) argue that because tour guides, in general, have limited exposure to or experience with "theory, tools, and techniques for optimizing the visitor experience and visitor-environment interaction within a sustainability framework" they might not be "fully realizing their potential to communicate and role-model sustainability in their tour content and practice" (p. 113). In our view, there is merit in asking if the guide education programs in Norway do provide the necessary "theory, tools, and techniques" required for framing sustainability in their professional roles.

Goffman (1967) highlights the importance of the communication process in "the nature of the ritual order" (p. 42). It is the communication process that takes place between the guides and the tourists that is important for explaining "what it is that's going on" and according to Goffman this is largely due to feelings. Feelings are "vulnerable not to facts and things but to communications" and "[c]ommunications … can be by-passed, withdrawn from, disbelieved, conveniently misunderstood, and tactfully conveyed" (Goffman, 1967, p. 43). The trust that the guides build through their individual way of communicating with the tourists creates the potential scope for action to discuss sustainability. If the communication between the parties involved is not open and trusting, the possibility of maintaining an expressive order is made more difficult. The longer a trip lasts, the better everyone gets to know each other, which then gives room to expand the repertoire of what it is acceptable to talk about.

In our study, most tourists framed the trips in non-sustainability ways, as did most guides. However, occasionally guides were prompted by tourists to focus on a deeper sustainability at least with regard to learning about environment and culture, or when they received positive feedback from the tourists such as when they were applauded for retrieving trash. At those times, the guides at least attempted to respond in a deeper sustainability way themselves. Conversely, when the tourists were invited to deepen their relationship with nature by taking a "sit-down and reflect," their framing of the trip might have shifted or widened to encompass a (slightly) deeper focus on sustainability. None of them reported that it did, however. One possible reason could be that, as all the tourists on this particular trip were non-Nordic and well-experienced in nature-based adventure tourism, they might have already reached a deep-enough level of sustainability practice that such reflection is normal and not note-worthy. If so, this particular trip could be considered similar to many eco-tourism trips which have been challenged for "preaching to the converted" rather than increasing the public's exposure to deeper sustainability experiences (Beaumont, 1991).

Several of the guides found Norwegian tourists in Norway to be less interested in learning from the tour and more critical toward the guide. This difference apparently has an

effect on both how the guides perform their guiding, and the guides scope of action. With Norwegian tourists, the guides often felt the need to prove their competence while at the same time sensing that many of the Norwegian tourists felt they did not actually need a guide. Also, working with the less enthusiastic (Norwegian) tourists affected how the guides behaved and their guiding style. It seems that working with a group with the same cultural background poses some challenges for the guides in terms of what to focus on in their guiding practice. This possibility is worth further investigation for its impact on the sustainability potential of domestic nature-based adventure tourism.

The Complication of Tour-Logistics

We turn now to consider guides' framing and its relationship to the tour company. Weiler and Black's (2015) observation that tour companies can leave guides little power to perform sustainability on any given tour is pertinent to this discussion. In our study, the way the tours were organized left little time for performing sustainability that was not already framed by company.

The tour logistics emphasized: (1) the adventure activity itself (hiking, biking, skiing), (2) gazing (Urry, 1990) upon the landscape, and (3) journeying through the landscape. The tour logistics, in our interpretation, are framed as getting the tourists from point A to point B. Performing nature-based adventure tourism seems to mean giving the tourists what they had paid for. The different sustainability performances we did observe mostly took place during the adventure activities, not as planned nor *pre*formed performances linked to the company's programme, but rather as spontaneous performances that took place *in situ*. Only on a few occasions did we observe the guides choosing to facilitate sustainability. In our study, then, sustainability was inspired mainly by the responses of tourists and guides to their immediate experiences of the adventure activities, within particular settings. Sustainability actions and practices were not emphasized strongly in the orchestration of tour logistics.

The tour company involved in this study did not "frame" sustainability as part of the experience of the trips. That we found sustainability performances in our data suggests that tourists are "ready" for "light" sustainability at least. Arguably, this company and others would not damage their reputations by promoting the level of sustainability that tourists will happily accept. By framing sustainability into the experiences, tour companies would also be opening up possibilities for guides to frame their work for deeper sustainability.

CONCLUSIONS

This study has shown that sustainability, as we understand it, did occur at the micro-level of the nature-based adventure tourism experiences we studied in Norway, albeit as a minor theme in guides' and tourists' framing of trips. The sustainability performances we found mainly sprang from spontaneous responses by tourists and guides to experiences of adventure activities in particular natural settings. We have shown that sustainability performances can be ambiguous, complex and contingent upon the interplay of guides' and tourists' frames.

Nature-based adventure tourism companies appear to be key agents in the framing of trips by both guides and tourists. There appears to be potential for deeper sustainability to be expressed on guided trips if companies allow it. The implications for promotional messaging and expectation-setting through pre-trip interactions with tourists are worthy of further investigation. Similarly, there are implications for guide training and for the knowledge and skills demanded by nature-based adventure tourism companies of their guides.

Deeper sustainability might be found more readily in situations of "foreignness" or difference, such as among international tourists. This possibility needs further exploration. If susceptibility to sustainability is greater in "foreign" contexts, how can the tourism industry respond? This question seems especially pertinent in the current relatively closed global context and in the prospect of international travel in the foreseeable future being limited by cost and pandemic controls.

While not generalizable to other settings, our findings demonstrate that sustainability in tourism can be empirically studied by taking a performative ethnographic approach in field work. Further studies in a wider variety of settings, and especially longer trips, could potentially tease out some of the ambiguities and complexities we have noted. Study designs that access tour operators', guides' and tourists' perceptions of one another's frames would shed additional light on the ways in which these actors influence one another's sustainability understandings and actions. Finally, studies that access guides' and tourists' longer-term reflections on trips might also bring to light important aspects of trip dynamics on sustainability in their everyday lives.

This paper presents a study of how sustainability is operationalized in a nature-based adventure tourism setting. The study is novel in its method, empirical data, and Norwegian setting. The results are relevant to the national as well as the international tourism industry.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

AUTHOR CONTRIBUTIONS

ARo, PL, and ARa contributed to the research idea and design of the study. ARo conducted the fieldwork and data analysis under supervision of the other authors. ARo wrote the first draft of the manuscript. All authors contributed to manuscript revision and approved the submitted version.

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Development of Cultural and Environmental Awareness Through Sámi Outdoor Life at Sámi/Indigenous Festivals

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The indigenous people Sámi are an ethnic minority living in Finland, Norway, Russia, and Sweden. Throughout history, Sámis have been living close to nature. Working with reindeer husbandry, fishing-farming, hunting, herding, and harvesting for food supplies, has traditionally been an integral part of their lives. Currently, only 2,500 of the ∼65,000 Sámis in Norway are operating reindeer husbandry (2019). Most Sámis today work in mainstream jobs, and the fishing-farming culture gradually become more like the mainstream societies where Sámis live. Fieldwork with participant observation and semi-structured interviews carried out at Riddu Riđđu Festivala in the period 2009–2018. In addition, the governing bodies of seven other Sámi festivals have been interviewed. All together 46 in-depth interviews and participant observations conducted, in addition to document analysis of the festivals. The aim was to study how physical and outdoor activities included in the festivals create indigenous people's identities and cultural understanding and how the activities at the festivals might develop climate and environmental awareness. Indigenous festivals and their governing bodies offer many different forms of physical and cultural activities from Sámis and different indigenous peoples to the youth and children taking part. Further, the study shows that important aims for the organizers are to spread the knowledge about Sámis (i.e., local coastal Sámis and regional reindeer/Inland Sámis) and other indigenous peoples, and making environment-friendly festivals. They are trying to educate the children and youth in the cultural practices of their forefathers and foremothers. The manifold of activities offered at the festivals seem to create sustainable ties between persons, which equip the participants with social and cultural capital in addition to networks across festivals organizations internationally. The participants further express that taking part in the festival activities create symbolic capital, due to that they might express their indigeneity at the festivals both for people living in the region and for a greater audience. According to the participants, the festivals have equipped the participants with cultural awareness, as well as the children and youth taught an appreciation of nature so they can enjoy and respect nature and develop climate and environmental awareness.

Keywords: Sami festivals, outdoor activities, sustainability, cultural capital, indigenous festivals

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INTRODUCTION

The article concerns how education through physical and outdoor activities offered to children and youth at Sámi/indigenous festivals in Norway might influence the participating children and youth. Viken and Jaeger (2012), Tjora, 2013, and Jæger (2019) argue that there is a lack of studies on festivals in Norway in general and on Sámi festivals in particular. Studies show that Sámi festivals in Norway create Sámi people's identities (Pedersen and Viken, 2009; Skogvang, 2013; Jæger, 2019). Other studies underline that the festivals are and have been crucial in the revitalization of the Sámi cultures and that they are important for development of places (Hansen, 2007; Viken, 2011; Viken and Jaeger, 2012). Jæger (2019) studied different kinds of festivals in Northern Norway, and she underlined the importance of the festivals as meeting places, as crucial in the development of tourism, as well as that festivals in Northern Norway are a benefit for local communities in the North. Although some studies are carried out, there are few studies on children and youth, and therefore, the aim of the overall study was to increase the knowledge about outdoor life and physical activities among children and youth taking part in Sámi festivals in Norway. How participation in Sámi/indigenous festivals in Norway might influence development of cultural and environmental awareness among young people is highlighted in this article. The governing bodies and participants at the international indigenous *Riddu Riđđu Festivala* and seven other Sámi festivals in Norway state that to participate at indigenous festivals creates indigenous peoples' identities, increases their cultural and environmental understanding and extends their knowledge in both Sámi and the culture of other indigenous peoples. *Friluftsliv* or outdoor life in Norway is a tradition with rituals that have been passed from generation to generation as "a lifelong communal process" (Dahle, 2007, pp. 23–24). In the four Sámi languages, there is no word for what Norwegians call *friluftsliv*, which might be translated to outdoor life. Instead, the Sámi languages use active words about doing, creating, and making things in nature. For example, to put up a "*lávvu*" (the Sámi tent) includes to erect the *lavvu*, furnish it and all other activities you are making in and around the *lavvu*, and it is called "*lávostallat*" /"*lavvu*-ing" in Northern Sámi. "*Doallastat*" or "bonfire-ing" includes to collect wood, birch-bark, and make a bonfire, as well as all the activities around the fire. Despite the long tradition of outdoor life in the circumpolar area, there are few studies carried out about outdoor life from "insiders" with a Sámi perspective. When focusing on sustainability, a broad perspective is used. In line with United Nations' (2015) sustainable goals, where some of the UN goals are connected to culture and climate awareness, i.e., climate action, life on land and water, sustainable communities, education, strong institutions, and reduced inequalities, they are relevant for the festivals presented in this article.

How identity is articulated through outdoor activities and how indigenous peoples have used sports or physical activities to oppose mainstream society and engage in nation building are shown in international studies (Bale and Cronin, 2003; Mangan and Ritchie, 2004; Hallinan and Judd, 2013). Tan (2012) and Trollvik (2014) have studied indigenous traditions and gatherings in Taiwan. Both studies stress that a key factor for survival of a specific culture is the embodiment of cultural practices. For instance, through learning the Amis aboriginal song (Tan, 2012) or through taking part in indigenous festivals (Trollvik, 2014), the youth are taught traditional and practical knowledge, which build their self-esteem. Participation in indigenous cultural festivals in Australia is experienced as empowering as well as crucial for the community and for indigenous peoples' health and well-being (Phipps and Slater, 2010). Other comparable international events to the Sámi festivals in Norway, where indigenous peoples use these games in the revitalization process of indigenous peoples, are the *North American Indigenous Games* and the *World Indigenous Nation games* (Paraschak, 1997; Forsyth and Wamsley, 2006; King, 2006; Hallinan and Judd, 2013). The *Arctic Winter Games* (2021) celebrate sports, social exchange, and cultures; and in the postponed games (due to COVID-19) in 2023, the event celebrates its 50th anniversary. "*The Wood Buffalo 2023 Arctic Winter Games*" includes athletes from the Northwest Territories, Yukon, Nunavut, Alaska, Greenland, Russia (Yamal), Nunavik (Northern Quebec), Northern Alberta and the Sámis of Norway, Sweden, and Finland (Arctic Winter Games, 2021). Since 2004, several Sámi youth have participated and competed in the *Arctic Winter Games* with successful results especially in cross-country skiing (men and women) and indoor soccer/futsal (women).

Indigenous peoples in North America have similar experiences as Sámis about discrimination and assimilation (Paraschak, 1997; Forsyth and Wamsley, 2006). Paraschak (1997) analyzed how race relations in indigenous games in Canada are shaped and reshaped by "practical consciousness" of native peoples, and Forsyth and Wamsley (2006) emphasized how the world Indigenous Nations' games and the North America indigenous games are used as cultural resistance. The indigenous leaders in Canada have managed to reverse the disempowerment that occurred during the early years of the events and have instead managed to use these games to empower indigenous peoples of Canada. Similar to the Arctic Winter Games, these games aim to establish an international network of indigenous peoples within sports, and they have succeeded (Forsyth and Wamsley, 2006). Heine and Scott (1994) studied how traditional games of the Dene (Athapascan Native Americans) of Northern Canada were played in a similar format as the modern Olympic Games. They conclude that these festivals have provided the Dene with an opportunity to actualize the cultural importance of their old games within the context of contemporary Euro-Canadian culture. Tan (2012) showed how indigenous festivals on Taiwan, i.e., harvest festivals, are important sources of local pride in most indigenous communities, as they gather former residents, big families, friends, and tourists, all for a great celebration of the particular indigenous traditions. The author focuses on how the festivals on Taiwan are strengthening the communal relationships, and they also give possibilities of reconnecting to the indigenous part of the participants' identity, a connection that they often do not express very explicitly because they are living in the city (Tan, 2012). Does knowledge learned through Sámi/indigenous festivals in Norway

create sustainable societies and cultures, equip the participants with valued symbolic capital and develop environmental and cultural awareness?

Firstly, I briefly present the context, the history and the participation of indigenous peoples of the festivals studied. Then, I give a brief presentation of the theoretical perspectives. I adapt Bourdieu's theory of social space, capital, and habitus as tools when I analyze the data. Thirdly, methods are presented, consisting of a fieldwork (participant observation and semi-structured interviews) at the Riddu Riđđu festival, interviews with the governing bodies of seven other Sámi festivals in Norway and document analysis of the same festivals. In addition, I reflect upon the ethical considerations and my position as a coastal Sámi writing from an insider/outsider Sámi perspective. Fourth, some of the results are introduced and discussed in four sections;

- symbolic capital through Sámi (*doallastat*, *lávostallat*, *stallu*, and *goatsuballu*) and indigenous outdoor activities;
- Sámi/indigenous festivals—making indigeneity stronger;
- "*The Northern people of the year*" at Riddu Riđđu—creating cultural awareness; and
- environmental awareness through "Miljøfyrtårn" and the "*Indigenous Climate Camp*."

Finally, I conclude that taking part in Sámi/indigenous festivals in Norway is empowering and imparts participating indigenous and non-indigenous peoples with knowledge and skills of both minorities and the major populations, creates networks and sustainable ties between persons and institutions, and inspires children and youth through learning skills in nature, to enjoy the life in nature, care about the environments and respect both nature and other peoples' cultures.

The Context: Sámi in Four Countries—Who Are We?

The indigenous peoples *Sámi* are an ethnic minority living in Finland, Norway, Russia, and Sweden, with their own history, culture, language, and settlement areas (Hætta, 2007), but today, Sámis live in both rural and urban areas of their countries. Sámis have lived in the Nordic Peninsula as far back as can be traced and long before the nation states were established (Solbakk, 2006). Through history, Sámis have been living close to nature, and their work have been reindeer husbandry, fishing–farming, and hunting, herding, and harvesting for food supplies, which traditionally have been a crucial part of their cultures. Today, Sámis work in both traditional and mainstream jobs and live all over in the four countries, but most of them in the Northern parts. The Sámi peoples are accepted as indigenous peoples in all four countries. Finland, Norway, and Sweden have a *Sámi Parliament; Sámediggi/Sametinget*. Despite the similarities, there are substantial differences (Skogvang, 2017). The Sámi Parliament in Norway (established in 1989) has the collective right in acting as an advisory body to the Norwegian Parliament, *Stortinget*, and might participate in any governmental Sámi projects and plans. In 1990, Norway was the first country to ratify the "*ILO Convention 169 concerning Indigenous and Tribal Peoples in Independent Countries*" (International Labour Organization, 1989). By Article 32, Sámi rights are secured because Norway is bound to cooperate across states and borders. Due to that, the convention is not ratified in the three other countries; Sámis in Norway have stronger collective rights (Skogvang, 2017, pp. 40–41).

In Norway, Section § 2–6 of "*The Sámi Act*" (Government, 1987) defines Sámis as "All persons who make a declaration to the effect that they consider themselves to be Sámi, and who either (a) have Sámi as their domestic language, or (b) have or have had a parent, grandparent or great-grandparent with Sámi as his or her domestic language, or (c) operating reindeer husbandry." The estimates of the Sami population vary in accordance with criteria used like genetic heritage, mother tongue, and the personal sense of ethnicity (Broderstad, 2008). Today, there are a total of between 81,000 and 111,000 Sámis, with roughly 50,000–65,000 living in Norway (Skogvang, 2017). Of Norway's 5.3 million inhabitants, 18,103 are enrolled in Norway's Sámi electoral register (Sàmediggi/Sametinget, 2019). However, only 2,500 of the ∼65,000 Sámis in Norway are operating reindeer husbandry (2019), which means that most of the Sámi today work in similar jobs as the majority population (Regjeringen, 2018–2019). The assimilation through the "*Norwegianization process*" from the 1850s until recent time has been a menace to Sámi cultures inclusive of the Sámi languages, and due to the pressure of assimilation, not all Sámis want to show their ethnic identity (Skogvang, 2019). The four resisting Sámi languages are vulnerable, with the Northern Sámi as the largest and the Southern Sámi as the most vulnerable. According to the Sámi Language Council, there are only 25,000 Sámi language users left in Norway, due to the fact that the language has been forbidden to be used for a long time, which resulted in the Sámi no longer being the everyday language in many families (Sàmediggi/Sametinget, 2019).

To take part in festivals gives free spaces to live out enjoyment and recreation, where tradition, customs, myths, beliefs, and freedom are celebrated (Falassi, 1987). These celebrations are identity markers (Quinn, 2005; Jæger, 2019) and social institutions that started in ancient times (Hegnes, 2006; Hætta, 2007; Tjora, 2013). The Sámi gatherings in Norway have similar long traditions (Hætta, 2007) but were defined as festivals in recent times. The oldest one, the Easter festival in Guovdageadnu/Kautokeino, which also includes the Sámi song contest "Melody Grand Prix," celebrates its 50th anniversary in 2021. Easter celebrations have been crucial for Sámis much longer than that, when the reindeer herding Sámi families came back to their villages for celebrations and reunions with their relatives and families as well as cultural and trading exchanges with the local coastal Sámi families (Hætta, 2007). Several of the festivals are still organized during Easter or during summer holidays or in connection with the Sámi National Day every February 6. The *Riddu Riđđu Festivala* (Riddu Riđđu, 2019a) is another large Sámi festival in Norway, which was started by young coastal Sámis around a fireplace in Olmáivággi/Manndalen (Sápmi/Norway) in 1991, with the aim of taking back their lost coastal Sámi culture (Hansen, 2007). Riddu Riđđu means "a little storm along the coast" (Hansen, 2007), and the festival celebrates its 30th anniversary in 2021.

Earlier studies of Riddu Riđđu show the importance for the revitalization of Sámi culture as well as development of places, i.e., economic development in the region and the municipalities where the festivals are situated (Hansen, 2007; Viken and Jaeger, 2012). The festivals studied are situated in the northernmost part of Norway, where the majority population are Sámi (between 60 and 80%). In the municipality Gaivuotna/Kåfjord, where the Riddu Riđđu festival is held, 60% (of 2,074) and in the festival village, Olmáivággi/Manndalen (Sápmi/Norway), 80% (of 850) are Sámi (Statistisk Sentralbyrå, 2019). In Eriksen (2002) terms, this is an area of "cultural complexity" due to many peoples living in the region. Hovland (1999) elaborated that it is crucial to understand the many different ethnic groups in the region and the influence of the assimilation policy, which have led to shame and low self-esteem among young people in the area where the festivals are situated. On June 12, 1987, the Sámi Act came into force in Norway. In spite of that, recent studies show that Sámis still struggle with experiences of inferiority, harassment, and discrimination in Norway (Eythórsson, 2003; Hansen, 2011, 2015; Hansen and Skaar, 2021).

Theory

How knowledge learned through Sámi/indigenous festivals in Norway might create sustainable societies and cultures and educate children in Sámi cultures, language, and outdoor life as well as environmental and cultural awareness is studied by applying Bourdieu's theories of *social space*, *symbolic capital*, and *habitus*. Social space refers to the overall society where actors stand in positions relative to each other and where the positions structure the actors' preferences and access to particular fields (Bourdieu and Wacquant, 1992; Bourdieu, 1993). The Sámi/indigenous festivals are autonomous and independent of other fields while simultaneously being dependent of the surroundings and other parts of the society around in the implementing of the festivals, i.e., local authorities in the region and the municipality, Sámi language centers, schools, universities, museums, libraries, media, handcraft organizations, sports clubs, and outdoor life organizations.

One of the central concepts in Bourdieu's theory is *capital*, and he puts forward different types of capital; economic, cultural, social, symbolic, and field-specific capital. A field is composed of actors struggling for the types of capital recognized in the field, which creates positions (of power) in the field. The structure of a field is defined by the distribution (amount of composition) of capital, which is based on the result of previous struggles and which directs future struggles (Bourdieu and Wacquant, 1992; Bourdieu, 1993). Bourdieu defines a field as:

> "… positions, including those of power, which have developed during history and which create structures between the positions of actors struggling for the field-specific capital and the fields' hegemony and the right to define its rules of function and change; and the habitus of the agents, their systems of dispositions which are based on objective material and social conditions as well as subjective preferences." (Bourdieu and Wacquant, 1992, pp. 104–105)

Bourdieu (1996) applied *symbolic capital* to analyze that some people or institutions, exams or titles, piece of art or scientific work get huge trust and reputation and are recognized as valuable and superior to others. "Symbolic capital is any kind of characteristic (any kind of capital; physical, economic, cultural, or social) which are perceived of social actors, with perception categories as is possible to recognize it and value it" (Bourdieu, 1996, p. 61). In other words, symbolic capital is what social groups are identified with, appreciated as valuable and creditable or worthy. One dimension of symbolic capital is ethnic identity, which function as a positive or negative symbolic capital (Bourdieu, 1996, p. 90). Furthermore, Bourdieu (1996) more specifically explained that cultural capital exists in three forms: the embodied knowledge (system of dispositions or habitus), the objective compositions (i.e., art, paintings, library, books, and tools) and the institutionalized compositions (i.e., exams, education titles and work titles). Symbolic capital is a key concept by Bourdieu (1993, 1996), which is useful in analyzing how some humans or institutions, exams or titles, art or scientific work gain huge trust, reputation and prestige and are appreciated as honorable, truthful, and superior to others.

Values and resources constitute an individuals' capital and the objective part of the structures, and *habitus* is a socially constructed system which that acquired knowledge through praxis and is constantly oriented toward practical functions (Bourdieu and Wacquant, 1995). Bourdieu (1995, p. 219) defined habitus as an individuals' "embodied, social structures" where the actors in their daily practice are subjects constructing the social world. Habitus might not explain behavior without relating to the context, and because individuals steadily have to respond to new contexts, changes in habitus occur (Bourdieu and Wacquant, 1995). The majority populations' dominant role in society is based on symbolic power and is taken for granted (doxa). Hovland (1999) studied young peoples' habitus in the circumpolar area of Norway and their experience of their own identity. He concluded that young peoples' identities in the region are marked by the "Norwegianization process," with the assimilation and discrimination of Sámis and other ethnic minorities during the strong assimilation from the Norwegian government. He underlines that the young people and their cultural habituses are characterized by the discriminating history from the mainstream society.

Today, Norway is founded on the territory of two peoples: Sámis and Norwegians (Skogvang, 2019). But through the "*Norwegianization process*" with assimilation and discrimination, Sámis in Norway have been suffering from oppression from the majority cultures for a long time (Skogvang, 2017). Skogvang (2019) presented how the governing bodies in Norway forced the Sámis to become Norwegians through assimilation during more than 100 years from circa 1850. These experiences have created the indigenous peoples of Norway's habituses for ages, which are similar to indigenous peoples' experiences worldwide. Hovland (1999) found that experiences of discrimination and experiences of painful assimilation are deeply rooted in and fundamental to the habitus (Bourdieu and Wacquant, 1995) of the young Sámi in the region. Studies of indigenous peoples at other continents highlight similar experiences (Paraschak, 1997; Forsyth and

Wamsley, 2006; King, 2006; Hallinan and Judd, 2013). Through learning skills and competences at the festivals studied, Sámi children and youth might turn a painful history to proudness during revitalized habituses, where their ethnicity is given value both on and off the festival stages. To be taught such Sámi and/or indigenous cultural capital, as well as capital sourced to dominant social spaces from non-indigenous activities, assists individuals in realizing their cumulative advantage and may be associated with improved educational outcomes, i.e., knowledge and skills in Sámi culture and language, skills in nature, knowledge of minority and majority cultures, climate competence, and self-esteem.

METHODOLOGY

Data Collection Through Fieldwork and Semi-Structured Interviews

Fieldwork was carried out yearly in the period 2009–2018 during the festival week in July at Riddu Riđđu. Data collection was conducted by participant observation and in-depth interviews at this festival, along with similar interviews with the governing bodies of seven other Sámi festivals in Norway. In addition, a document analysis is conducted of the festival's strategy documents, reports, and websites for Riddu Riđđu and seven other Sami festivals in Norway. Observation at Riddu Riđđu focused on activities at the Children's Festival *Mánáidfestivála* (for 3- to 13-year-olds) and *Nourat* (for 13- to 18-year-olds). The participant observation was fulfilled during daytime, when the children's activities were held with field notes written in pauses, during lunchtime or after the daily activities. A semi-structured interview guide with open-ended questions based on the topics of the research questions was used to explore the informants' experiences and views on the festival. Topics addressed in the interviews are types of outdoor activities offered at the festival, aims of the activities, experiences of the activities and the activities' meaning for the participants, including the participants' experiences of the meaning for creation of identities, cultural and environmental awareness. The comprehensive data collection consists of 46 in-depth interviews, field notes from participant observations and document analysis; and they were carried out to contemplate how outdoor activities included in the festival create identity and awareness of nature and culture among Sámis and other indigenous and non-indigenous peoples participating at the festivals.

Sample

A strategic selection (Patton, 2015) of informants is carried out through recruitment of participants who could describe their experiences relevant for the research questions asked about the Sami/indigenous festivals. The largest data material is from the Riddu Riđđu festival, where 39 in-depth interviews were carried out with 21 women/girls and 18 men/boys. Some of these informants are interviewed several times. In addition, seven in-depth interviews were carried out with the governing bodies (three men and four women) of other Sami festivals in Norway (see **Table 2**). Parents/guardians and children and youth below 18 years who took part in Riddu Riđđu are interviewed together. In addition, some adults (including some parents/guardians) are interviewed alone. The length of the interviews is from 45 to 120 min. The longitudinal design of the study of Riddu Riđđu gave thick descriptions. The comprehensive data collection enabled the researcher to study trends in the development of the activity provision as well as following up and interviewing four families at several Riddu Riđđu festivals. The adult interviewees are many and various from governing bodies, staff members, volunteers, performers, artists, non-indigenous participants, yearly indigenous guest peoples ("Northern People of the year") and persons from the region with critical views on the festival. I conducted most of the interviews in Norwegian. When interviewing the "Northern People of the year," I interviewed in English. When it was necessary, I used the limited Sámi words I know when I was speaking with Sámi children and youth, for instance, from Finland and Russia.

Positioning and Reflexivity

Indigenous researchers such as the Sámi researcher Jelena Porsanger has contributed with an alternative to the Western paradigms. Porsanger (2004, p. 105) argued that we might "… contribute to the body of knowledge of indigenous peoples about themselves and for themselves, and for their own needs as peoples, rather than as objects of investigation." In "*Decolonizing Methods*," Maori Linda Tuhiwai Smith draws attention to "… centring our concepts and worldviews and then coming to know and understand theory and research from our own perspectives" (Smith, 1999, p. 91). Other indigenous researchers underline that collectivism and to think about nature and society as a whole built on collaboration and partnership are of large importance in indigenous peoples' societies and in the power between generations, nature and genders (Kuokkanen, 2000; Jaimes Guerrero, 2003). Rigney (1999, p. 119) stressed that "the interests, knowledge and experiences of indigenous peoples must be at the center of research methodologies and construction of knowledge about indigenous peoples." Olsen (2016) underlined the need for research on indigenous peoples' premises, supporting indigenous peoples' interests as well as using indigenous peoples' own language as much as possible and pinpointing ideals such as respect, mutuality, humbleness and a relational approach.

The described "*Norwegianization process*" (Hovland, 1999; Skogvang, 2019) and experiences from the past have resulted in a skeptical view on researchers from the outside, which are comparable with experiences from other indigenous peoples, i.e., Maori and Aborigine (Smith, 1999). As a result of the "Norwegianization process," I do not speak my parents' language Northern Sámi fluently, but I have an extended knowledge of the region where the festivals are situated. For instance, when I contacted the festival organizers, they were having doubt about giving me access to study the festival and said: "… several researchers and studies of the Sámis have been without understanding of our background and our lived experiences in the past, so we are sometimes skeptical to researchers from outside." Anyway, due to that I am a Sámi myself, the answer at last was: "… you belong to our people, and therefore we trust you." However, the Sámi cultures are numerous from Inland

Sámis with reindeer husbandry to Sámis living in the forest, in the mountains, along the long coastline of Norway, as mentioned in urban areas with similar work as the mainstream population. I am a coastal Sámi and carried out fieldwork in the rural area where I lived the first 16 years of my life and where my father still lives, but I am not an insider among the reindeer husbandry Sámis, due to that I grew up in a Sámi fishing–farming family.

Insider–Outsider

In this study, the experiences, interests and knowledge of Sámis and other indigenous peoples who attend the festivals are focused on. However, as a researcher, I shifted between having an insider and having an outsider perspective. I am a coastal Sámi, educated in the Norwegian school system and have not learned to speak my parents' language/my mother tongue Northern Sámi fluently. It means that I was an outsider when I interviewed Sámi speakers and indigenous guest peoples, and the dialogue had to be carried out in Norwegian or English. At the same time, I was an insider with cultural knowledge of the region and broad competence about the coastal Sámis, as well as I have lived experienced about the diversity of Sámi people and other peoples living in the region. I grew up in the same village as the *Riddu Riđđu Festivala* is organized and know the festival and the cultural complexity (Eriksen, 2002) in the area very well. An advantage was my knowledge about the past in the region with the festivals used as tools in the revitalizing process of Sámi cultures (Hovland, 1999; Viken, 2011). This might have contributed to more intuitive understanding of the studied phenomenon, and being equipped with "insider" knowledge has given me the necessary trustworthiness among the informants and was an advantage in the access process. This also made it possible to ask the right questions and to avoid some pitfalls when I interviewed the participants.

One example where I could use my exclusive insider knowledge about the challenging past was when the old woman said to me: "I am sorry for that I am crying, but for me this is challenging to speak about. When you write about this in the "school world," will you then speak about me and my lack of education, or will you speak on behalf of me? And, what is in it for me, will you send me the book, when it is finished?" The response from me was holding the crying old woman, and later on, I read the written text to her, and when we met for the second interview 2 years later, I gave her a book with a chapter published in Norwegian, which her grandchildren could read for her. This means that this is a bottom-up study where the researcher has to show awareness in presenting the voices of people who has been marginalized in the past (Olsen, 2016). On the other hand, the objectivity in the interpretation of the data material could be impaired. In line with Wadel and Fuglestad (2014), I did fieldwork in my own culture, which means challenges and possible pitfalls. Through "field knowledge" (Malterud, 2017), an immediate understanding of the phenomenon occurs that outsiders might not sense. Simultaneously, there is a danger of "field blindness" (Malterud, 2017) when searching for observations, which confirm one's own experiences and preconceptions. Therefore, crucial or alternative interpretations and conclusions might be overlooked, which might reduce the trustworthiness of the knowledge.

My lenses are defined by my knowledge, and as an insider, I have access to some knowledge, and when I am an outsider, I have access to other knowledge. Truth is multiple and subjective, and as a researcher, to be integrated in the research process with my family's lived experiences gave an advantage with access both to the empowered peoples and to the marginalized voices. There is no question about what is "right" or "wrong," "true" or "not true," but only what kind of knowledge is produced in different contexts. A systematic alternation between closeness, consideration, and critical reflection has therefore been crucial in the analytic process (Malterud, 2017; Thagaard, 2018).

Ethical Considerations

The study proposal was guided by the Norwegian Center for Research Data (NSD), and the project followed the ethical guidelines by The Norwegian National Research Ethics Committees (2019) and NESH (2019), and an ethical approval is given from the university's ethics committee. Data analysis has been carried out in accordance with the criteria of trustworthiness and of credibility, transferability, dependability, and confirmability (Henderson, 1991, pp. 134–138). Information letter and application to carry out the study was sent to the festival organizers, and the organizers answered with a written consent. All the interviewees have read the information letter and gave their informed consent. To participate in the study was voluntary, and the participants were informed that they could withdraw from the project at any stage without consequences and get the data from their interviews deleted. For instance, both before and during the interviews, a free dialogue between the children and their parents/guardians is created to address credibility. To meet the same families several years is a strength to increase the trustworthiness, and I provided rich descriptions of the festival context to emphasize transferability. A key principle for research in national and institutional ethics in research is to keep the participants anonymous, and the participants were guaranteed confidentiality and anonymity. To ensure confidentiality, numbers and codes are used, and to protect their anonymity, the informants have been given fictive names, date and the year have been withheld and their exact roles in the festival are concealed. All potential information that may identify individuals is left out, deleted or categorized into codes and sub-codes and concealed in the text. The adult participants have read the quotations and parts of the transcribed interviews, and parents/guardians and children together have accepted the quotations used for publications. Nobody except the researcher has had the access to the interviews and list of participants, and names and numbers were kept separate and in accordance with the ethical guidelines.

Data Analysis

The field notes and the transcribed interviews are analyzed in an interpreting and hermeneutic perspective based on the supposition that knowledge must be understood in relation to

TABLE 1 | Examples of the analysis process.

Meaningful unit	Code	Sub-themes	Main themes
"I love to hammer dry-fish to make it eatable, Heikas' grandpa taught us how to make a stallu mask."	Type of outdoor activity offered to children and youth	Sámi outdoor life	Physical activities and outdoor life
"We speak and look differently, but we learned to make a bonfire both for winter and summer, we put up the lavvu together, and we grilled meat together at the same bonfire."		Indigenous outdoor life	
"To be outdoors every day is fun, and I like to be in the nature and learn skills and Sámi names of the places in the valley."		Learning of skills	
"We learned to build a Sámi goathi, and we always put up and furnish the traditional lavvu at Riddu."			
"… when we offer activities from the guest peoples we shape and teach 'indigenous hearts' to children and youth."	Aims and meaning of activities offered to children and youth	Education and knowledge across generations	Indigeneity, cultural understanding and community
"To bring indigenous guest peoples or 'the Northern people of the year' to Manndalen is crucial. They teach the children their activities, and the children increase skills and knowledge, which extend their Sámi and indigenous heart through participating in the outdoor activities at the Children's festival."		Togetherness and friendship across cultures	"*The Northern people of the year*"
"I am proud of being a Sámi, and I love to throw lasso with the Inuits as well as to take part in the Inuit Games."		Environmental awareness	
"The Native games from Russia was really tough and funny, and all the materials we used were from the nature."			
"We moved, played in nature and learned to take care of new friends and the nature, and we recycled everything."			

the personal and cultural contexts. Thematic analysis is used in identifying and reporting patterns in main themes and sub-themes and in analyzing the transcribed text from the interviews and observations (Braun et al., 2014). **Table 1** shows examples in how the meaningful units were coded and how they were sorted in sub-themes and main themes during the analyzing process.

Through the process of the thematic analysis, four overarching themes were identified. The following headlines are presented from the findings at the festivals:

(1) *symbolic capital through Sámi (doallastat, lávostallat, stallu, and goatsuballu) and indigenous outdoor activities;*
(2) *Sámi and indigenous festivals—making indigeneity stronger;*
(3) *"The Northern people of the year" —creating cultural awareness; and*
(4) *environmental awareness through "Miljøfyrtårn" and the "Indigenous Climate Camp."*

Findings and Discussion

Here, I will present and discuss the findings from the study in the four parts mentioned above. The following eight Sámi festivals in Norway are studied: *Easter festival in Kautokeino* (includes the Sámi Melody Song Contest), *Easter festival in Karasjok*, *Riddu Riđđu festival*, *Márkomeannu*, *South Sámi Culture Festival*, *Sámi Week in Tromsø*, *Alta Sámi Festival*, and *Julesàme vahkko/Lule Sámi Week*. The *Riddu Riđđu festivala* will be presented and discussed more in detail, because at this festival, interviews, and observations were carried out with children and youth, which are the focus in this manuscript.

Symbolic Capital Through Sámi (*doallastat*, *lávostallat*, *stallu*, and *goatsuballu*) and Indigenous Outdoor Activities

The activities offered to children and youth are numerous, and *doudji*/handcraft, sports, outdoor life, and outdoor physical activities are the main activities for children and youth at the indigenous events studied through the fieldwork. As **Table 2** shows, some of the activities are similar to the work in reindeer husbandry, fishing, small scale farming, herding, harvesting, or hunting, i.e., lasso throwing, making of tools, dry-fish hammering, reindeer sledge race, or rowing the Nordland boats. Others are modern sports (i.e., football, skiing, orienteering, snow mobile races, and reindeer races), and others again are old Sámi or indigenous activities. Examples of the last types are the old Sámi ball game *goatsuballu*, making of the *stallu* (the Sámi troll) masks, preparing for the last days mask parade, several activities around the fire, *doallastat* (Sámi), or participating in reindeer sledge race. Outdoor activities are crucial in the Sámi cultures independent of if you grew up inland, in the forest or along the coast (Solbakk, 2006). In summary, outdoor activities independent of weather with close connection to nature are included in all the studied festivals. For instance, at Riddu Riđđu,

TABLE 2 | Activities offered to children and youth at eight Sámi festivals in Norway.

Festival name	Examples of activities offered to children and youth
Riddu Riđđu Mánáidfestivála	"*Lávostallat*" /Lavvo-ing and *doallastat*/" Bonfire-ing", playing *goatsuballu* (old Sámi ball game) Outdoor cooking and outdoor activities for food supply Knowledge and skills in making different tents (*lavvu*, tipi and yurt) and traditional Sámi cabins (*goathi*, *beallegoathi*, and traditional *lavvu*) in traditional and environment-friendly ways with local wood *Duodji* (Sámi handcraft), making of tools for outdoor activities Hanging of grass, fishing, dry-fish hammering, horse-riding of local horse breed, and rowing of Nordland boats Hiking and learning Sámi names of places in the valley Making of New Year's Eve *Stallu* (Sámi trolls) masks and walking in the *stallu* mask parade on the last festival day Different outdoor activities from "the Northern people of the year" Courses in Sámi language, *yoik* (the Sámi song form) courses, animals, plants, and herbs in the North
Easter festival in Kautokeino Easter festival in Karasjok	Lasso throwing at the visor of a reindeer Reindeer race and reindeer sledge race Snow mobile races Skiing—cross-country skiing *Doudji*, making tools for outdoor life ≪*Gávvilis rieban*≫ (The smart fox) Different outdoor physical activities Course in yoiking (the Sámi song form)
Márkomeannu South Sámi Culture Festival Sámi Week in Tromsø Alta Sámi Festival	Lasso throwing at the visor of a reindeer Course in Sámi language and culture Course in yoiking and harvesting from nature Sámi authors, seminars, and exhibitions Different forms of physical outdoor activities like ≪Vætna≫ ≪*Lávvotek*≫ = discotheque in a *lavvu* *Doudji* and Sámi handcraft traditions Rievvarnieida Reindeer race and reindeer sledge race Sámi mode photo course
Julesàme vahkko/Lule Sámi Week	≪Nature as playground≫ along the coast in ebb-tide Orienteering in nature *Doudji*, making tools for outdoor life Football *Lávvo*-evening

children stay outdoors all day long, except from at some shows and activities carried out in the school's sports hall, in the Nis'ga Longhouse (a gift from the Nis'ga people from Canada in 2009, when they were "the Northern people of the year"), or in the different indigenous tents (*lavvu*, tipi or yurt).

Together with the volunteers and staff members, great-grandparents, grandparents, parents, museum employees, local sports clubs or handcraft/*doudji* institutions (husflidslag), who have the competence and still know the skills, teach the children and youth. In similar ways, indigenous peoples from other countries contribute *via* "*the Northern people of the year*" projects, when they present their play and games and involve the children at Riddu Riđđu. Each year, a new group of indigenous peoples are guest peoples at Riddu Riđđu as "*the Northern people of the year*," which is elaborated further later on.

A recent study about youth activities in Northern Norway shows that Sámi-speaking youth are more active outdoors than their Norwegian-speaking counterparts, and they keep alive the harvest and gathering traditions, and especially hunting and fishing are popular outdoor activities among the Sámis (Rafoss and Hines, 2016). However, the festival leaders state that the grandparent generation's role is of great importance in transferring Sámi outdoor skills and knowledge or cultural capital (Bourdieu, 1996) to the children and youth. Nowadays, most Sámis work in ordinary jobs, and a lot of skills and knowledge outdoors and in nature are lost, i.e., the thousands of Sámi words for snow, reindeer husbandry skills, reading of and preparing for different kinds of weather, different kinds of birch-wood for use in building of *lavvu*, *beallegoathi*, and *goahti*, and fishing and hunting skills. Therefore, the organizers said that "elderly people act as 'pathfinders' or teachers" at all the studied festivals. Through the teaching of outdoor life, the cultural knowledge is transferred from elders to newer generations, which might enrich children and youth in form of embodied knowledge and develop their cultural habitus.

The children at the festivals have variable knowledge about and skills in the festival activities, dependent on being indigenous or not, if they are from inland, coast, forest or urban areas, and dependent on family upbringing. A diversity of activities are taught, i.e., drying of meat or fish as is common food preservation in all Sámi cultures; lasso throwing at the visor of a reindeer, which is used in reindeer husbandry; coastal Sámi traditions like hammering of dry fish to make the dried fish eatable (*tørrfiskbanking*); *stallu* mask making for a parade, which still is going on in Olmáivággi/Manndalen on New Year's Eve; and *goatsuballu*, a traditional ball game with sticks and ball.

Children and youth enjoy both traditional and newer activities and comment especially about the enjoyment of the traditional Sámi activities:

> I love to hammer dry-fish to make it eatable, Heikas' grandpa taught us how to make a stallu mask. ("Jotta," 8)
> I am afraid of stallu, but I like to hammer dry fish and eat it afterwards. ("Janna," 5)
> To be outdoors is fun and I like to be in the nature and learn skills. We learned to build a Sámi goathi, and we always put up and furnish the traditional lavvu. ("Laura," 10)

In addition to dry-fish hammering, *stallu* mask parade and learning to make Sámi *goathi* or traditional *lavvu*, some children enjoy the rowing of Nordland boats, and for other children, the most fun activity is "to ride the Lyngen horse along in the forest and along the river" ("Milda," 5). As mentioned, the children stay outdoors during three full days at *Mánáidfestivála*, because "Sámi children shall learn how to stay outdoors independent of weather" (Mother), in line with the traditions in the North. The children also reflect upon being outside the whole day, and "doing exciting things in nature," and most children enjoy moving around outdoors instead of "play computer games at home" ("Jotta," 8).

As mentioned in the *Introduction*, all Sámi languages use active words about doing things in nature. Two examples of such language knowledge or cultural capital (Bourdieu, 1996) are "*lavostallat*" about activities connected to the Sámi tent, including furnishing the *lavvu* and doing activities inside and outside the *lavvu*. Another example is the use of the fireplace, which is of great importance for Sámis and other indigenous peoples. To make a bonfire in Northern Sámi is "*doallastat*" ("bonfire-ing"), which includes to make a bonfire as well as working or making other activities around the fire, such as cooking or preserving food, making coffee, making "*duodji*" (Sámi handcraft), keeping predators or mosquitos away, lightening up the area in the dark time, or just relaxing and talking. When the children were taught "*dollastat*," "*lavvostallat*," and "*doudji*" to make tools, i.e., wooden sticks, some children use a big knife for the first time. Several of the skills in nature previously were common in all households, but today, the festivals seem to be crucial tradition bearers. This is embodied knowledge for the Sámi elders and new cultural capital for children and youth at the festivals. The old Sámi view on nature is that nature is "not human-made," and the culture is "human-made," and several Sámi gods and goddesses in the old Sámi religion were crucial in the meeting between nature and culture and still are for many Sámis. For instance, at the festivals, stories were told to the children about the Sámi goddess *Sáráhkká*, who had her abode at the field and was sitting at the end of the fireplace, and she always got a part of the food.

To respect nature is crucial in Sámi/indigenous culture, and a part of it is to save nature for future generations. The Sámi elders involved with teaching of the children at *Mánáidfestivála* underline the importance of transferring cultural capital as outdoor life and the harvesting culture to the children. The combination of care for nature and use of nature for harvesting and food-supply is elaborated by the elders. "Petra" stated that "Sámi do not go for 'hiking only' in the nature, due to that the activities outdoors in nature must be useful for the household." Examples that came up in the interviews are that walking in nature is a combination of, i.e., searching for cloudberries; herding of reindeers; collecting sheep; bringing of food, water, and salt stones to the animals; hunting; and fishing, which also have similarities with activities of other people in Norway living in the rural areas.

Many places in the village Olmáivággi/Manndalen do only have names in Sámi. During the hiking in the valley, the children were taught the Northern Sámi language and shown several holy places in nature from the old Sámi religion, for instance, a mountain (i.e., Manndalshodet, Storhaugen, and Kjerringdalsfjellet) or a stone (i.e., Storsteinen and Offersteinen), and one of the Sámi elder involved with the children's activities said:

> The children shall be taught traditional knowledge and experiences and learn skills as our forefathers and foremothers used in everyday life, like doallastat, lavostallat, making of goathi and beallegoathi, learn to use the material from the local forest and be environment-friendly and learn to show respect for the nature. They have to learn it here at the festival, because the Sámi knowledge is not taught in schools and in modern families.

Children and youth are introduced to such skills outdoors and in nature at the Sámi festivals, including knowledge of the fauna and flora in the North, the Sámi words of nature and places, the knowledge about the traditional *lavvu* and how to survive outside and in nature the Sámi way. The Sámi tent, *lavvu*, is similar to the tipi, and the *lavvu* is crucial in Sámi outdoor life. Today, the use of light-weighted *lavvu*s are common in outdoor life all over Scandinavia. Other kinds of Sámi cabins are the *goathi* and the *beallegoathi*, which only might be taught by those with knowledge about the handcraft, including which type of strong birch-wood to use and which tools are useful for making these cabins. "You cannot learn about this in books, you must get out in the nature and learn it by making it," as "Biret" said. Here, the governing bodies of the festivals focused at the aims to "give unique Riddu Riđđu-experiences with doudji and teaching of Sámi handcraft which is useful both indoors and outdoors" (interview, festival leader). The local museum Nord-Troms Museum and the handcraft organization "Husflidslaget" in Manndalen were involved in the teaching. Festival staff underline the importance of teaching Sámi and indigenous skills and ways of living to the children, and especially the lost coastal Sámi knowledge and skills are elaborated on:

> We have to teach the youth Sámi and indigenous skills and ways of living, because most knowledge is taught by word-of-mouth from generation to generation, and else the knowledge is lost forever. Coastal Sámi knowledge and skills are especial essential here in this coastal area, where the assimilation has been strong. (Interview, festival staff)

The festival activities offered to children and youth might be defined as crucial symbolic capital, and cultural capital in all three forms (Bourdieu, 1996): firstly, they are shared through the embodied knowledge of Sáminess taught by the elderly Sámis.

Secondly, they are objective compositions as knowledge of type of birch-wood and type of tools to make *goahti*s, *doudji* and Sámi/indigenous art and skills used in nature. Thirdly, they are more institutionalized compositions as Sámi work titles and different Sámi languages as well as the Sámi song form *yoik*. In addition, they are field-specific capital with a here and now festival experience together with other indigenous and non-indigenous peoples.

Sámi and Indigenous Festivals—Making Indigeneity Stronger

The findings show that all eight festivals studied have for a long time exhibited and worked to strengthen pride in Sámi culture. Musical, cultural, and outdoor activities and performances are held at all festivals. In 2021, *Riddu Riđđu festivala* (Riddu Riđđu, 2021) has 133 volunteers, 120 voluntary staff members, four full-time employees, and one working on a project to develop the festival. As an example, Riddu Riđđu organize a 5-day programme with 80–90 arrangements during the festival week every year. This festival has a year-round programme, and in addition to the programme during the festival week in July, 20 single arrangements (concerts, performances, courses, seminars, paper presentations, and lectures) are organized during the year locally, regionally, nationally, and internationally. For adults, the offers of activities are many with concerts by a numerous Sámi and indigenous artists, films, several workshops, Sámi language courses, yoiking courses, exhibitions, and seminars with presentation of recent research in collaboration with universities, presenting theater and dance performances, art, "*doudji*" /handicrafts, and physical and outdoor activities.

All the eight events are collaborating with other national and local institutions in programming and implementing of the festival. Examples are local authorities in the region and the governing bodies in the respective municipality, schools, universities, i.e., UIT-The Norway Arctic University and Nord University, museums; music, art, and handcraft organizations; Sámi language centers; and sports clubs. There is also collaboration with other events like Buktafestivalen (Tromsø), the Sámi Melody Song Contest (Kautokeino), the Midnight Sun Marathon (Tromsø), Naturvernforbundet at Riddu Riđđu (Manndalen), and the Sámi Fashion Week (Alta). Viken (2013) stated that the development of Riddu Riđđu has made this festival one of the most significant international indigenous festivals in Europe. My findings are also in line with those of Jæger (2019), who underlined the importance of the festivals as meeting places, and the benefit for local communities in Northern Norway. The growth and clear focus at revitalization of Sámi culture and identity have led to visibility and media interest across borders. As examples, international media from Russia, the USA, Canada, Australia, New Zealand/Aotearoa, and Taiwan have broadcasted in TV, social media, and written press from the festivals.

Riddu Riđđu organizes *Nourat* for young people below 18 years old, where Sámis and other indigenous and non-indigenous peoples meet and develop a performance together, which is shown at the main stage during the festival week (Riddu Riđđu, 2019a). Some statements from the participants at Nourat might show the path in the answers from the youth:

> I came out as Sámi thanks to this festival, before I took part in the Nourat with Sámis and indigenous youth from many parts of the world, I never dared to show my Sáminess in public. (Male, 17)
> I was ashamed of being a Sámi before, when I was younger, and our identity was a kind of family secret, which we did not talk about neither at home nor outside home. Today, after being involved in Riddu Riđđu, I always wear any kind of Sámi symbol, for example the scarf, jewelry with Sámi symbols, the luhkka (a Sámi poncho) or doudji (Sámi handcraft) products. Take a look at my ear rings with the "*riebangardi*" (Riddu Riđđu symbol), she said when smiling proudly. (Female, 15)
> It was at Riddu Riđđu I saw other youngsters from Manndalen was wearing the Sámi dress with pride. This helped me to get self-esteem enough to ask my family to buy one for my confirmation celebration, and now I wear my beautiful "Lyngenkofta" (coastal Sámi dress) at any celebrating occasions. (Female, 16)

A 3-day-long festival for children between 3 and 13 years old called *Mánáidfestivála* is organized yearly at Riddu Riđđu since 2001. The programme takes place outdoors and includes a maximum of 120 children each year. Children of below school age are required to be accompanied by an adult to assist them in the activities. Skogvang and Trollvik (2018, p. 46) emphasized the importance of the festivals for indigenous peoples globally, as the festival might result in that "… prouder youth with their heads held high can proclaim that they have a Sámi background." Skogvang (2020, p. 10) showed that Riddu Riđđu in Olmáivággi has become "… an annual meeting place for relatives who live in different parts of the country and in other countries." The children underline the importance of *Mánáidfestivála* at Riddu Riđđu for them like this:

> I am proud of being a Sámi and I love to throw lasso with the Inuits as well as to take part in the Inuit Games. (Jussi, 8)
> Mother helped me with the knife when I was making the wooden stick for grilling of meat and sausages, and we learned Sámi language and yoiking inside the lavvu both this year and last year. (Nelle, 4)
> When you take part in *Mánáidfestivála* you don't have to be a Sámi, but you learn a lot about Sámis and other peoples. This year I learned circle-dancing from Suming and his gang from Taiwan. (Jenny, 7)
> At home I am often sitting and gaming on the computer, but here we are doing a lot of funny things like ATV driving 3 years ago, horse-riding at the friendly Lyngen horse last year, make bonfire every year, dry-fish-hammering, and the Native Games with people from Russia was really tough and funny, and all the materials we used were from the nature. (Isak, 11)

As the data show, the children and youth are equipped with knowledge and skills of their own culture, which strengthen their indigeneity and equip them with symbolic capital (Bourdieu, 1996). Examples of how cultural capital strengthen their "Sáminess" or cultural habitus are the teaching of knowledge about and skills in the Sámi languages and Sámi yoiking, and

the participants feel safer in expressing their identity through wearing the Sámi dress and other Sámi symbols.

The findings are in line with earlier research about festivals in general, which shows that festivals are important identity markers (Quinn, 2005; Jæger, 2019), and they also support earlier research about the region where the young Sámi habituses are marked by the marginalized past (Hovland, 1999), as well as the festival's importance for the revitalization of the Sámi cultures and importance for development of places (Hansen, 2007; Viken, 2011; Viken and Jaeger, 2012). In an international context, the opposition to mainstream society and engagement in nation building are shown by several researchers (Bale and Cronin, 2003; Mangan and Ritchie, 2004; Hallinan and Judd, 2013), and this study shows similarities to their findings. In the same ways as international events as *North American Indigenous Games* and the *World Indigenous Nation games* (Paraschak, 1997; Forsyth and Wamsley, 2006; King, 2006; Hallinan and Judd, 2013) are used in revitalization processes, this study show how the meetings at the studied Sámi/indigenous festivals are used in the participants' Sámi revitalization processes with creating stronger cultural habituses through experiences of empowerment instead of focusing on the marginalized past.

"The Northern People of the Year" —Creating Cultural Awareness

Since 2000, Riddu Riđđu has brought the international meetings among indigenous peoples further, calling attention to various indigenous peoples at the festival as "*the Northern people of the year* (Riddu Riđđu, 2011)." Each year, a new group of indigenous peoples are guest peoples at the festival, and they present their culture through activities, performances, concerts, art, handcraft, food-tasting, etc. They come from different continents and perform at the adult festival as well as have workshops for and together with the children and youth at Riddu Riđđu. Examples are the *Veps*, a Finnish-Ugrian people living in Karelen in Russia (2010); *Ami*, *Atayal*, and *Paiwan* from Taiwan (2016); and Eastern Sámis living in Russia (2018). The festival directors describe the aim of the visiting peoples like this:

> An important aim with the "Northern People of the Year" program is to let our audience learn from the delegation. Through their workshops for children and youth, they give our youngest participants an understanding and appreciation of indigenous peoples' knowledge and cultural practices. (Festival director, female)
>
> Our guest peoples brings the international world to this little village Manndalen, and through the meetings between Sámi children and youth and indigenous peoples from for instance, Canada, USA, or Russia they get knowledge of other indigenous peoples with similar background as ourselves. (Festival director, male)
>
> My wish is that the children will extend their Sámi and "indigenous heart" and knowledge and skills from different peoples through taking part in *Mánáidfestivála*. We want them to be tolerant and inclusive. (Festival director, female)

Different forms of outdoor activities and sports have increased during the sharing from other indigenous guest peoples, and in Bourdieu's (1996) terms, these exchanges with visiting peoples create both social and cultural capital. The visiting delegations are financed from Riddu Riđđu and governing bodies in Norway, coordinated from both Norway and the visiting countries, and the indigenous artists themselves curate the programmes and workshops. Some examples of activities from "Northern People of the Year" are the "Hoop dance" workshop with James Jones in 2014, dances with Six Nations from Canada in 2015, "Alaska Native Games" in 2017, "East Sámi Games" in 2018 or "Inuit Games" from Nunavut in 2019. Another example is from 2016 when Riddu Riđđu invited a delegation of indigenous artists, cultural bearers and youth from Taiwan to participate and perform at the festival as the "Northern people of the year."

The festival organizers chose to focus on the three largest groups of indigenous peoples from Taiwan: the *Atayal*, *Paiwan*, and *Amis*. *Sakinu Ahronglong* is Paiwan and leads the Youth groups and the organization called *Hunter School*. The Hunter School was established in 2004 and is centered in the village referred to as "*Lalauran*" in Paiwan language, in the South–East County of Taitung. The Hunter School was established as an alternative for girls who were interested in socializing and gaining traditional knowledge in a similar manner as how the Paiwan Youth groups for boys function. The basic explanation given is that it functions as a gathering point for young people who seek knowledge on how to interact with and in nature, guided through the Paiwan ethos. Sakinu especially was invited to Riddu Riđđu to talk about how he educates practical knowledge of hunting, aiming to empower young people on their abilities in nature and in that way strengthen their self-worth. Sakinu also brought a group of Hunter School members, who volunteered at the festival. The participating children and youth enjoyed circle-dancing with Suming, and the young boy "Jotta" said that "The Hunter-school activities last year was one of my favorites."

In Bourdieu's terms, symbolic capital (1996) from other indigenous peoples might strengthen Sámis' habitus (Bourdieu and Wacquant, 1992); due to that, participation at Riddu Riđđu is experienced as empowering. Both Sámis and other indigenous peoples experience empowerment when they are performing separately or together at the safe environments at the festival stage in Northern Norway. Their knowledge and skills and their ethnicities are identified as valuable cultural capital. At these events, social capital is identified *via* establishing networks between indigenous peoples, as well as the shared cultural capital is strengthening the peoples' self-esteem and their indigeneity. A quote from an artist from Greenland shows how the sharing of activities during the festival allows them to develop cultural capital and empower their habitus:

> This place and this festival create pride, love and understanding among people from the whole world. From what happens during an indigenous week in this valley, we go home to our countries and our hearts and souls are stronger, and we have much more knowledge about other people. (…) Why? Because we get the power from different indigenous cultures, which we can use positively in many settings. We understand diversity and can handle this better in a changing society. (Woman, 2014)

Riddu Riđđu is said to give power to peoples from different indigenous cultures, and a man and father from Northern

America underlined how one get advantages of taking part in Sámi festivals:

> The festival activities in the nature make our own "indigeneity" stronger when we go back home to our country of living, and at the same time we are Americans. We are both in many ways. (Man, 2014)

As shown, the indigenous youth at Riddu Riđđu tell that "the festival makes our own indigeneity stronger when we go back to our country of living." This is comparable with the experiences from indigenous peoples from Taiwan, who visited Riddu Riđđu in 2016 as the "Northern people of the year:"

> After a week at Riddu Riđđu, I feel empowered when I come home to my island, because the common sad history, the connection to the nature, outdoor life and the performances from our people at this festival make us visible in our home country. (Woman, 2016)

The visiting peoples from Taiwan who traveled far North to Olmáivággi/Manndalen in 2016 got extraordinary attention, because the media coverage was huge. They were followed closely from media through the Riddu Riđđu festival week and broadcasted live daily back to Taiwan on the main TV channel, as described by one man:

> For us it was like freedom to be who we are, and a principal TV channel followed us during Riddu Riđđu, broadcasted the activities to a broader audience in Taiwan (…) and made me proud of my ethnicity.

Ethnic identity was presented as positive symbolic capital (Bourdieu, 1996) for many of indigenous peoples from Taiwan both at the festival in Norway and in TV on Taiwan. Because their indigenous identities were highlighted and celebrated at this festival, their diversity in indigenous identities was identified, appreciated as valuable and creditable or worthy, or defined as positive symbolic capital (Bourdieu, 1996, p. 90). Tan's study (2012) shows that indigenous festivals on Taiwan are crucial sources of local pride and great celebration of the particular indigenous traditions, which have similarities to the Sámi festivals in strengthening the communal relationships and reconnection to the indigenous identity. In line with other researchers (Quinn, 2005; Jæger, 2019), old identities are preserved and strengthened and new identities are constructed during meetings between the participants and the visiting peoples, and several forms of games might provide Sámis, indigenous, and non-indigenous participants with knowledge and skills which that similar to the Dene peoples' experiences (Heine and Scott, 1994). To put forward old traditions in new contexts as the presented festivals gives cultural importance of their old games within the context of contemporary Norwegian, Western, or European cultures.

Both staff and festival governing bodies underline the importance of the indigenous guest peoples, for instance, one festival staff said: "…, the guest people is crucial for us to create the future society." The leaders refer to the wish to create "*indigenous hearts*" or cultural capital and that they want to create acceptance and diversity and "teach people to be proud of being indigenous" ("Janna") for changing their habitus (Bourdieu and Wacquant, 1992) from being marginalized to experiencing empowerment. The governing bodies furthermore want to shape experiences of community and give a knowledge and understanding of different cultures and, as "Ravra-Hans" said, "… create the society of the future."

As a participant at Riddu Riđđu, you meet different indigenous peoples, Norwegians and other non-indigenous peoples from the mainstream culture. "*The Northern people of the year*" brings both adults, youth and children to the festival; and the artists perform for and together with children at the *Mánáidfestivála* and youth at *Nourat*. The informants underline that to take part in indigenous festivals in Norway together with other people with similar backgrounds is empowering and imparts them with knowledge and skills of both minorities' and major populations' handcraft, physical and outdoor activities. The activities represent different indigenous sports and outdoor activities and seem to create sustainable ties between persons, networks, and organizations and to build identities and bridges between participants (social capital).

> We speak and look differently, but we learned to make a bonfire both for winter and summer, we put up the lavvu together, and we grilled meat together at the same bonfire. ("Isak," 9 years old)
> We enjoyed the Inuit Games, and they are proud peoples in the same way as I am proud of being a Sámi. It was super-funny to teach our traditions with eating dry fish and teach them how to make dry-fish eatable with a hammer. ("Peder," 12 years old)

Through offers of activities and workshops for youth at *Nourat* and children at *Mánáidfestivála*, Sámis, non-indigenous peoples and the visiting indigenous peoples give the youngest participants an understanding and appreciation of indigenous peoples' knowledge and cultural practice (cultural capital), which might change the embodied knowledge (Bourdieu, 1995) that resulted from the "Norwegianization process." To express Sáminess and other indigenous identities is pinpointed as being vital by children, youth, and also their parents/guardians who take part in the festivals. Several indigenous games and plays are offered to the participants at the Sámi festivals, i.e., lasso throwing competitions, snow mobile competitions, reindeer races (Sámi Games) or games from other indigenous peoples at the Sámi festivals: the Inuit Games, Native Games from Russia or the Kildin Sámi or Eastern Sámi Games. In line with Heine and Scott (1994), these games at the Sámi festivals are shown the cultural importance similar to the Denes' old games within the context of contemporary Western culture.

Environmental Awareness Through "Miljøfyrtårn" and the "Indigenous Climate Camp"

During the last 15 years, all festivals have put focus on increased environmental awareness, and this is especially noticeable at the Riddu Riđđu festival. Riddu Riđđu has for a long time put focus at developing an environment-friendly festival and was one of the first festivals in Norway that in 2004 were certified

as "*Miljøfyrtårn*" or "green/environment-friendly" event (Riddu Riđđu, 2011). The festival was re-certified in 2019, and each year, the festival "wants to take steps to reduce environmental foot prints" (festival leader). The governing bodies express a clear policy in promoting environmental sustainability for the festival:

> Riddu Riđđu Festivala AS has an objective to become a sustainable festival organization with good resource utilization and a minimum of negative influence on human beings, nature and milieu. (Riddu Riđđu, 2011, 2019b)

The oldest environmental and nature protection organization in Norway is Naturvernforbundet/Friends of the Earth Norway (2021). This organization's aims are

> … to strive to protect nature and the environment in such a way that human activity does not exceed the carrying capacity of nature, and work for a society where people live in harmony with nature. (…) This is a society where the basis and diversity of life is secured for future generations, and where the nature's own values are the foundation of the work to increase man's respect for, and love of, life and landscape.

In 2019, same year as Riddu Riđđu was re-certified as a green festival or "Miljøfyrtårn," the festival asked Naturvernforbundet to participate at the festival and to control how environmental-friendly Riddu Riđđu had become. At the same time, Naturvernforbundet was asked to give advice on how the festival could improve even more. The conclusion was that:

> The festival has done a great effort to increase the environmental-friendliness and to inspire people to live in harmony with nature, following natures' values and increase the human beings respect for the nature. Examples especially mentioned were public transport with buses to/from the festival area and environment-parking fee for cars and vans, increased recycling and increased use of environment-friendly equipment, use of locally produced food and products, re-useable milieu-friendly brand products like t-shirts, hoodies, cups etc., increased recycling of plastic, paper, cans, glass and other materials.

Despite all the positive factors and the re-certification, the study by Naturvernforbundet recommended the festival to improve the following factors (Riddu Riđđu, 2019b):

> Even better recycling of plastic, more coordinated transport of artists to/from the festival, milieu/climate-hosts and climate information-lavvu are recommended at the festival area.

In observation of the activities at *Mánáidfestivála* and *Nourat*, the effort for environment-friendly festival is visible in several ways. Children and youth are served food and drinks in cups and plates that are recyclable or recycled, and they are encouraged themselves to practice recycling. There are several dust bins available that are clearly marked for plastic, paper, food waste and general waste. The volunteers and staff teach the children recycling at the same time as they explain what to do and why they have to do it. Children and youth explain their experiences about skills in recycling and climate-friendly activities, as follows:

> I and my friends have learned to survive outdoors in traditional climate-friendly ways.
> My sister and I have told mam and dad to recycle more and to drive less car. Here we walk to and from the festival area from the family camping organized by the festival.

Other citations focus at the closeness to nature in both Sámi and other indigenous cultures and that they have been taught skills in how to survive outdoors in traditional ways and how to build old Sámi homes and houses, i.e., the traditional *lavvu*, *beallegoathi*, and *goathi*:

> We cook, make food, eat dry-fish and do not need all the waste that we do in everyday life. Last year we learned how to build a beallegoahti and yearly we have put up and furnished one traditional lavvu. In addition, we have been walking in the valley learning Sámi names of the places, and how grandma lived. To stay close to nature gives good feelings, so I will try to continue with this, and we will come back to the festival.
> We should have lived more as the old Sámis did or as the San people from Africa do, who lives closer to the nature.
> We have learned to survive outdoors during all 3 days.

As the citations show, the children appreciate staying outdoors, be in nature and learn skills in nature, including climate-friendly activities.

The Sámi youth highlight that a global network with other indigenous peoples is established after meeting each other at the Riddu Riđđu festival. The social gatherings have resulted in addressing climate challenges at the festival seminars as well as outside the festival. Creation of sustainable societies is of great importance for indigenous peoples across the globe, and one example that got large media attention is the fight and the protests against the Dakota Access pipeline in Standing Rock in the USA. The collaboration between the Riddu Riđđu employees, *Nourat* and other Sámi youth organizations has resulted in planning of a global *Indigenous Climate Camp* (Riddu Riđđu, 2020). The objectives for the event are to put environmental issues on the agenda from Sámi youth perspectives and gather Sámi and indigenous youth at the festival in a climate workshop. At the workshop, the plan is to create a climate manifest and communicate this *via* social media, video, and films and collaborate with indigenous peoples from other continents, i.e., the USA and Canada. The programme is financed by the Riddu Riđđu festival and should have been held in 2020 at the festival area, but it was postponed to 2021 due to the COVID-19 pandemic. The festival documents tells that when the society opens up again "indigenous youth from all over the world will meet at the festival in Olmáivággi to share their experiences and increase their environmental awareness and gain knowledge and skills to both care for human-beings and nature in the future." In the planned programme, it is stated to be locally planned at the same time as it brings the Sámi youth perspective on climate to the global stand.

As mentioned, symbolic capital (Bourdieu, 1996) is what social groups recognized as valuable. In relation to the studied festivals, the established networks between indigenous peoples in Norway and worldwide in collaboration on environmental

issues might be defined as social capital. To learn skills and gain knowledge about Sámi outdoor activities, which also are closely connected to nature and outdoor life and learn about Sámi/indigenous cultures at the festival, equip the youth with cultural knowledge and skills or cultural capital, including how to protect nature for future generations. That people take part in joint activities, for instance, outdoor activities in nature, at the same time as they are extra receptive of different kinds of perception, might make the elements in the activities more embodied. Through presence in time and place with strong thematic focus, as at the Riddu Riđđu festival and the other Sámi festivals are, opens for a strong feeling of community among the participants through tasks and experiences (social and cultural capital). That the participants steadily have to conduct themselves to new contexts might lead to changes in their habitus (Bourdieu, 1995; Bourdieu and Wacquant, 1995), which gives space for new thoughts, creativity, and multiple identities. The new thoughts might be exemplified with the planned *Indigenous Climate Camp*, where the young indigenous peoples who met at the Riddu Riđđu festival have invited indigenous youth from several parts of the world to gather and develop a climate manifest.

In summary, these findings show that to a certain extent the festival participants, performers, and organizers have developed their environmental awareness through being involved in the festival. Cultural awareness has been in focus through all festivals, but the last 15 years more focus is put on creating a sustainable society and climate for future generations. The governing bodies are not satisfied with being a "Miljøfyrtårn" only, which means that they are doing well in increasing environmental awareness. They want to increase the effort, and the future will show how the networks between indigenous youth around the globe might succeed with the objectives that Riddu Riđđu has outlined for the Indigenous Climate Camp.

CONCLUSION

The indigenous festivals have a crucial role in filling the gap in knowledge about Sámis and other indigenous peoples. The experiences of the discrimination through the "Norwegianization process" (Skogvang, 2019) are an "embodied knowledge" (Bourdieu, 1995) in Sámis of today in line with Hovland (1999), who stated that young peoples' cultural habituses are characterized by the discriminating history from the mainstream society. Experiences of discrimination and experiences of painful assimilation are deeply rooted in and fundamental to the habitus (Bourdieu and Wacquant, 1995) of the young Sámis in the region (Hovland, 1999) as it is for indigenous peoples at other continents (Paraschak, 1997; Forsyth and Wamsley, 2006; King, 2006; Hallinan and Judd, 2013). Nevertheless, in line with international research (Bale and Cronin, 2003; Mangan and Ritchie, 2004; Quinn, 2005; King, 2006; Hallinan and Judd, 2013; Jæger, 2019), the study shows that the festivals studied have qualities, which might contribute in shaping Sámi and indigenous identities and cultural lifts in the local communities (Phipps and Slater, 2010; Tan, 2012). This study supports earlier research about Sámi festivals in Norway where the festivals are leading spaces of innovation in creating a sustainable, secure, and mature national culture (Jæger, 2019), vital for local peoples' revitalization process (Pedersen and Viken, 2009) and gives cross-cultural recognition, respect, exchange, and creativity (Viken and Jaeger, 2012; Viken, 2013).

The informants highlight that to take part in indigenous festivals in Norway together with other people with similar backgrounds is empowering and imparts them with knowledge and skills of both minorities and the major populations' cultural and outdoor activities. Participating at the festivals equips youth, children, and their parents/guardians with several forms of symbolic capital (Bourdieu, 1996). Through the different indigenous activities, ties between indigenous peoples worldwide established provide participants with social capital, and they give indigenous artists worldwide a safe arena to perform at and gain economic capital when performing at the festival stand. In addition to the international networks (social capital) and visibility, the festivals influence the economic development in the region and municipalities they are situated in Viken and Jaeger (2012), Skogvang (2013, 2016), Viken (2013), and Jæger (2019). The involvement might create what some informants describe as "*indigenous hearts*." This is an aspect that can create social change and an alternative future for indigenous peoples and increased understanding from non-indigenous peoples taking part in the festivals. To meet different indigenous peoples, outdoor activities in nature together in new and safe contexts might lead to habitus transformation (Bourdieu and Wacquant, 1995), from painful history to increased self-esteem and empowerment among indigenous peoples.

In addition, the activities represent different indigenous physical, cultural, and outdoor activities (cultural capital) and seem to create sustainable ties between persons and between institutions, which is a valuable social capital given the sustainability for the future. One example of extended social capital is the networks established between organizations, artists and governing bodies, which have formed the "Indigenous Climate Camp." Due to the experiences of the participants in this study, I conclude that to participate at Sámi/indigenous festivals is empowering and adds knowledge and skills about Sámi and indigenous culture and societal life, which might create environment-friendly and sustainable societies and cultures. The festivals add cultural knowledge and skills lacking in other institutions, and the environment-friendly outdoor activities might be continued through such knowledge and skills. This is not a field-specific capital and a happening here and now only, because of the huge collaboration across institutions and because the knowledge and skills learned at the Sámi festivals are transferred to other institutions at language centers, schools, and international youth organizations, and the information is spread internationally *via* TV, radio, social, and other media.

The participants are equipped with cultural awareness through the festivals as a space for meetings between different indigenous and non-indigenous peoples, and the children and youth are inspired to enjoy the life in nature, caring about the environments and respecting nature. The planned Indigenous Climate Camp with focus on climate from a Sámi

youth perspective is locally situated at the same time as it is programmed to move to a global stand with creating a climate manifest inspired by knowledge from indigenous peoples from other parts of the world. Anyway, more research is needed to study how the children and youth have increased their cultural and environmental awareness during taking part in the Sámi festivals, which also is outlined as crucial capital for the future in United Nations' sustainable goals.

DATA AVAILABILITY STATEMENT

The data analyzed in this study is subject to the following licenses/restrictions: The Norwegian Center for Research Data (NSD) evaluates research institutions to ensure ethical consent in research. The study proposal guided by the NSD, where the informants were guaranteed confidentiality and anonymity when they gave their informed consent. Because of ethical matters and due to privacy restrictions the data is not possible to share. This is in accordance with NSD acceptance of the project. The informants are guaranteed confidentiality and anonymity. Children below school age are interviewed together with their parents who gave informed consent. The informants given fictive names, the date and year of the interviews been withheld, and so has their exact roles at the festival, to protect anonymity. Requests to access these datasets should be directed to bente.skogvang@inn.no.

ETHICS STATEMENT

The study proposal was guided by the Norwegian Centre for Research Data (NSD) and the project followed the ethical guidelines by The Norwegian National Research Ethics Committees (2019) and NESH (2019), which is in line with UK Research Integrity Office – Association of Research Managers and Administrators, and an ethical approval is given from the university's Ethics Committee. Data analysis has been carried out in accordance with the criteria of trustworthiness and of credibility, transferability, dependability, and confirmability (Henderson, 1991, pp. 134–138). Information letter and application to carry out the study sent to the festival organizers, and the organizers answered with a written consent. All the interviewees has read the information letter and gave their informed consent. To participate in the study was voluntary, and the participants were informed that they could withdraw from the project at any stage without consequences and get the data deleted.

AUTHOR CONTRIBUTIONS

BS was the chair of the project Sami festivals and has carried out the research from start until the published material.

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Reusing Stadiums for a Greener Future: The Circular Design Potential of Football Architecture

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Since the turn of the new Millennium, there has been an increase in efforts to build environmental-friendly sports arenas around the world. Fuelled by large sporting events like the 2000 Sydney Olympics, the 'Green Games,' and the 2006 FIFA World Cup in Germany, stadium architecture has become a vehicle for this trend. So far, the emphasis has primarily been on new arenas, in line with the widespread belief in international architecture of the 2000s that older buildings are less energy-efficient by default. In addition to that comes a conviction that newness is needed to attract sponsors, investors, and larger audiences—a position powered by commercial interest and the idea of the stadium as an 'urban generator.' While new stadiums may have a significant potential when it comes to green performability, that does not necessarily mean that older stadiums are surplus to requirements, even from a climate perspective. In this paper, we look critically at the well-established strategy of replacing old stadiums with new ones by questioning the climate impact of new arenas and investigating the reuse potential of existing ones. We carry out in-depth analysis of two existing stadiums, Tynecastle Park in Edinburgh and Stadio Flaminio in Rome. One of them has already gone through renovation to remain in use while the other is vacant but currently under way to be renovated. We bring in fresh perspectives from sports science, preservation, architecture, and circular design theory to explain why older stadiums become obsolete and to challenge the premise of that destiny. The aim is not only to scrutinize the general lack of reuse but also to highlight green strategies which could give existing stadiums a longer life.

Keywords: sustainable architecture, circular heritage, historic stadiums, reuse & recycling of materials, football culture, maintenance

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INTRODUCTION

'If the twentieth century can be characterized by growth or expansion, the greatest issue for the world in the twenty-first century is shrinkage' (Hidetoshi, 2009, p. 79). According to the Japanese architect Ohno Hidetoshi, the world no longer has the capacity to absorb everything we build, produce and consume. He does not stand alone in this call for downscaling. 'Enough: The Architecture of Degrowth' was the heading of the 2019 Oslo Architecture Triennale. The 2021 recipients of the Pritzker Architecture Prize, one of the highest honors in the profession, were Lacaton and Vassall, the French duo whose motto is 'Never demolish, never replace.'

Similar agendas are currently being voiced by a number of architects and planners inspired by the principles of circular economy, which is an economic system where all forms of waste are minimized through continuous use of resources (Lacy et al., 2020). This is now translating into architecture, design and heritage management as an anti-dote to overspending and waste accumulation in the building industry (Mercader-Moyano, 2017; Charter, 2018). The situation is urgent. Fresh statistics from the EU indicate that the building industry accounts for about 50% of all extracted materials in Europe and that the construction sector is responsible for over 35% of the EU's total waste generation (European Commission, 2020, p. 3.6).

The main problem, argues the architect Duncan Baker-Brown, is the *saturation* of production density, consumer goods and building mass of today's society (2017: xiv). We have been building unsustainably for so long that overspending and wastefulness has become the norm. This applies to the world of elite sports, where bigger arenas, higher standards and larger revenue has been the name of the game. Increasingly more spectacular, expensive and complex sport venues stand as symbols of what Kimberley S. Schimmel has called 'the problematic growth model' of sports (Schimmel, 1995, p. 145), rooted in dreams about boosterism, trickle-down economic benefits, sector expansion and capital investment.

Paradoxically, in light of these excessive tendencies, there is also much talk about sustainability in sport. But if this is supposed to become more than a rhetoric trick to land bids for sporting mega-events (Kowalska, 2017, p. 1–10), many aspects must change. The main question we are raising in this article is whether or not there is a potential within the world of sports to embrace circular thinking as an alternative form of governance. In this context we limit our attention to football architecture. What would it take, within this field of obsessive growth-orientation, to embrace degrowth as a principle for future development?

In order to discuss this we draw on three contemporary architectural preservation concepts: Adaptive reuse, maintenance architecture and circular heritage (Sample, 2016; Baker-Brown, 2017; Charter, 2018; Plevoets and van Cleempoel, 2019). Adaptive reuse and maintenance are of particular relevance to our study of two historical stadiums—Tynecastle Park (**Figure 1**) in Edinburgh and Stadio Flaminio (**Figure 2**) in Rome—and the quest of keeping them in use. Tynecastle Park was chosen as it represents an example of a socially sustainable solution and an exception to the tendency of professional football clubs moving out from inner city locations to more suburban locations, thus disrupting both social and environmental dimensions of stadium (re)construction. Stadio Flaminio is chosen due to its inner-city location and the ongoing effort to restore it under the guidance of a multi-disciplinary team of preservation experts. This process is an unusual example of a full technical and functional restoration of an historic football stadium, with the aim of re-opening it after a decade of inactivity. There is also an element of pragmatism involved in the selection. The corona pandemic has prevented us from conducting new field work, which meant that we had to rely on our previous studies. It should be noted, however, that there is not an abundance of alternatives, given the low degree of football stadium reuse in Europe.

As for key concepts, 'Heritage' refers to the historical values at hand, architecturally, socially and sporting-wise, while 'circular' comes from the aforementioned field of circular economy. The essence of circular heritage is to take an extended lifecycle perspective that focuses on maximizing value in economic, social, and cultural terms for the longest time possible (Charter, 2018). It is a protest against the urge for new things, an encouragement to reuse, repair, refurbish, remanufacture, and repurpose existing things, and a quest to recycle and recover all buildings that fall into disrepair (Foster, 2020). Our aim is to use this as a platform to cover the technical aspects of football stadium reuse alongside the issue of social sustainability—a much-neglected aspect of recent stadium design, as we argue below.

We blend these architectural preservation perspectives with critical studies of sports mega-events (Müller, 2015; Kowalska, 2017; Dendura, 2019) and studies of how the cultural practices inside and outside football stadia have been affected by globalization in the age of 'hypercommodification' (Giulianotti, 2002). Studies of match-day routines and other forms of supporter engagement with the stadium surroundings are of particular use in this regard (Brown, 2010; Edensor and Millington, 2010). We also draw on pioneering contributions like John Bale's 'Playing at home' (1991) and subsequent variations over the socio-geographical vocabulary he helped establish in the early 1990s (Bale, 1993a,b; Bale and Moen, 1995). The article backdrop also includes a selection of previous publications by the two authors of this article within these fields of knowledge (Hognestad, 2012a,b, 2017; Wergeland, 2012a,b, 2017).

METHODOLOGICAL CONSIDERATIONS

From a methodological point of view, the article depends primarily on critical literature studies and the exchange of theoretical perspectives from several disciplines. We also base our study on several field trips to Edinburgh and Rome, conducted separately, which has provided us with field notes, photographs, and other forms of on-site documentation of the two historical stadiums in question. An important part of the data on Tynecastle Park in Edinburgh stems from an 8 months field-study of identity and meaning among supporters of Heart of Midlothian Football Club back in 1992–93, when the club eventually decided to redevelop the historic inner-city stadium rather than build a new stadium outside Edinburgh, following considerable environmental and fan activism. Data from this case study has also been drawn from several shorter field studies in more recent times, notably in 2017 and 2018 when Tynecastle Park underwent its latest redevelopments. The data on Stadio Flaminio have been collected during two field trips to Rome in the autumns of 2017 and 2018. These trips have included site visits at the stadium accompanied by professor Francesco Romeo from Sapienza Universitá di Roma. Romeo is the project leader of the ongoing process of restoring the Flaminio. He is also the director of the Nervi Virtual Lab, which carries out in-depth studies of Pier Luigi Nervi's structural systems (PLN Project, 2021). In

FIGURE 1 | Hearts fans enjoying the sun in the new main stand at Tynecastle Park, shortly after it was opened in October 2018 (Credit: Hans K. Hognestad).

FIGURE 2 | Closed and abandoned: Outside the gates of Stadio Flaminio in September 2017 (Credit: Even Smith Wergeland).

addition to on-site guidance, Romeo lectured on the restoration project on two separate occasions at the Norwegian Institute in Rome.

The data gathered through field work, interviews, and meetings with local expertise have been balanced against additional data gained through archival research and document

studies. While the ongoing pandemic stopped us from conducting further field visits, we have coordinated the substantial material we have from earlier field studies from both of these case studies, in order to write this article. We combine this thorough analysis of historical stadiums with a brief discussion of a limited selection of new stadiums, aimed at critically assessing their alleged qualities as sustainable facilities. While this evaluation remains on the surface of many complex issues and raises, perhaps, more questions, and initial objections than substantial answers, we nevertheless find it useful in providing a broader context for our analysis of the historical stadiums.

SUPER-SIZE ME

'The new European stadia embody a historical transformation of profound significance,' writes King (2010, p. 34). This shift involves radical reconfigurations of older stadiums, like Old Trafford in Manchester, a re-location from historical venues and locations to new, and a much closer alliance between corporate money and sports. Impressive roofs and fancy glass façades are the new signature features of football architecture, an appearance that 'transgresses conventional notions of boundaries and space' (Ibid: 31). King could have added overblown proportions to the list of transgressive tendencies. European football architecture in the 2000s is generally characterized by growth: grandness of scale, grandness of ambition, grandness through expansion. Audience capacities have tended to increase along with the total volume of the stadium. More functions—cinemas, restaurants, conference venues—have been added to the design in the hope of increased profitability (Wergeland, 2012a).

Expansion has seemed like the only way forwards for football clubs with a desire for success. Writing on the strategic need for iconic football stadiums a trio of engineers put it like this: 'Due to the constraints of existing facilities and location of their current grounds, a number of clubs have been forced to consider the complete development of a new stadium' (Aritua et al., 2008, p. 1). In order to build stadiums that are sufficiently iconic from a marketing point of view, clubs simply *had to* leave their historical facilities. This kind of development, argues sociologist Ramón Llopis-Goig, has altered the configuration of football culture: 'During the past 20 years, European football has witnessed an intense change process that has radically transformed some of its main structural characteristics' (Llopis-Goig, 2015, p. 104). This has led to hyper-consumption on one side and detraditionalization on the other, symbolized by the widespread urge to replace old stadiums with new.

In football architecture, size obviously matters. But instead of finding the right size, from a long-term perspective, much effort and money had been used on building as large as possible to appear attractive and impressive from the day they open. Up until recently, this approach found support in several publications on sustainable architectural design, most notably *Big & Green* (Gissen, 2003), an anthology on large-scale green architecture. While large buildings such as skyscrapers, shopping centers and apartment complexes are the worst when it comes to energy consumption and waste management, they can become more environmental-friendly if the appropriate construction systems and design strategies are employed (Gissen, 2003, p. 10–11). The advantage of large sports venues in this regard is that they can yield substantial results in terms of energy use and environmental impact. Large façades mean vast spaces for solar panels. Large roofs mean more surface for rain harvesting. If successful, it could have a huge impact on the environmental credibility of sports architecture.

On the other hand, however, size can be a significant problem. As admitted in *Big & Green*, 'the construction of buildings is consuming some *three billion tons* of raw material every year [..]. This gargantuan appetite for raw materials results in some of the same problems associated with the production and consumption of consumer goods' (Braungart, 2003, p. 115). The larger one builds, the bigger the problem, especially when the building is designed to host vast audiences. Sport stadiums attract more people, generate more transport, add more pressure on a piece of land and cause more consumption compared to most other buildings. As the scale goes up, more energy is needed to make the stadium operational.

The big scale also comes with a sizeable time-pressure. Huge stadiums are built to look smashing and function perfectly from their inauguration day. However, as previous studies have shown (Matheson, 2008; Wergeland, 2012b), many icons crumble in post-championship mode. Mega-event flagships mean mega-challenges, argues Deng and Poon (2017), who list overstated image building, volatile organization and pricy forgetfulness as the major reasons behind post-event dilemmas. Müller (2015) adds a few more in his dissection of the mega-event syndrome, as he calls it. One should also put maintenance issues on the list, especially in cases where the architectural design is large and complex. This adds further pressure on the daily care, which typically is a subject of neglect in large architectural projects (Sample, 2016).

Another important element is the social dimension. Football stadiums worldwide have for more than a century carried iconic significances in many communities, with stands designed to accommodate both the active and passionate fans and the more neutral spectators (Frank and Steets, 2010, p. 1–16). With an urban infrastructure providing both transport to and from the stadium and social meeting points in the shape of pubs, cafes and social clubs, football has since the turn of the last century provided its *aficionados* with rich opportunities for an extended sociality with friends and foes also before and after games. Until the more radical transformation of stadium architecture from the early 1990's stadia were generally designed to accommodate both active fans in standing terraced areas, to which it was usually cheaper to buy a ticket, along with more comfortable seated sections. Due to several incidents of 'symbolic hatred' evolving into violent clashes between rivaling fans during the 1970's and 80's, clubs and authorities introduced CCTV surveillance cameras and also started to 'pen in' sections of the stadium, meant to stop fans from both pitch invasions and clashes with rivaling fans (Armstrong, 1998). This meant that fans, once inside a stadium, would

find themselves surrounded by barbed wire perimeter fences from which there were no obvious escape route in emergency situations. Some of the most serious incidents of crowd disasters in the history of the game have been caused by derelict facilities, crowd congestion and poor policing, such as in the case of the stadium disasters at Heysel in 1985, Bradford in 1985, and Hillsborough in 1989 (Darby et al., 2005). These accidents also happened as a result of dense crowds participating in the often intense social dramas unfolding during football matches. The subsequent investigations, especially the one from the disaster at Hillsborough stadium in Sheffield in 1989, lead to the so-called 'Taylor report' which provided a series of new guidelines regarding safety and security at football stadiums (Hillsborough Stadium Disaster Final Report, 2000). Among the more dramatic turns was the new requirement for all-seated stadiums, which meant that clubs either had to refurbish their existing stadiums with a lower crowd capacity, or choose to find land and get permission from local authorities to build a new stadium. The latter alternative meant that most clubs would have to move out of the city to a suburban or green-belt area with a weaker or non-existent social infrastructure and environmentally unsustainable modes of transport.

These planning dilemmas were of course combined with a commercial approach in which leading clubs and football authorities started to focus less on a one-sided concern for social control and more on the comfort of spectators, and thus threatening to uproot the often passionate social identities attached to a football stadium as a *topophilic* landscape, analyzed so elegantly by Bale (1991, 1993a) in the early days of these transformations. The rise of independent fanzines in Britain and elsewhere from the late 1980's and the establishment of independent supporters clubs from around 1990, should be seen as cultural grassroots responses and, in some cases, resistances, to these new ways of thinking about stadium architecture and the development of football as a spectator sport and a business (Haynes, 1995). In some cases, the concerns of fan groups have been of an existential concern as clubs started to ponder various options, with stadium relocation, sometimes with a merger with neighboring clubs, by many seen as real threats to the sociality and passions of football as they knew it.

In the three decades since 1990, most stadiums have been refurbished on the same site as the old ones were located. However, a significant number of football clubs have also opted to construct new stadiums elsewhere, usually in suburban, green-belt areas outside city centers. The provision of nothing but an open-air brick wall for urinating inside Scottish football grounds, experienced by one of the authors here in the early 1990's, is now a fading memory, with somewhat limited nostalgic potentials. However, the compact social infrastructure of that era has in many cases given way for socially more limited practices around games as suburban stadiums with greater comfort and inflated ticket prices have significantly altered the access and nature of stadium landscapes.

As Olof Moen has ascertained (1995), there is a long-standing tradition in football for the inner-city neighborhood scale, simply because most football grounds developed from open and available spaces adjacent to homes, shops and factories. This meant that the structure was relatively dense and that there were close ties between the local social life and the sports architecture. On the plus side, this led to an intertwined relationship between sports and the neighborhood, forging geographical and emotional bonds between club and community. On the minus side, it became increasingly difficult to redevelop the stadium in accordance with growing expectations with regards to capacity, comfort and logistics. This tension, argues Moen, has been the source of much debate among football fans and inner-city residents. If the scale goes up and the stadium moves to a different location, it is never just a practical operation—it signifies a change in values and ideas (ibid: 208-209). Such changes imply an infringement of existing social contracts between the stadium, its audience and its immediate neighbors.

Lack of social engagement—the super-size me approach—is also about super 'hyper—commodification' (Giulianotti, 2002). The emphasis on flow, comfort and efficiency has little care for crooked old streets and narrow neighborhood structures. Inner city areas have been replaced with suburban hinterland. This relates to a long-standing trend in urban sports infrastructure investment, which has primarily been aimed at tourists instead of local communities (Gratton and Henry, 2001).

THE GREENING OF FOOTBALL ARCHITECTURE

Despite the obvious problems, contemporary football architecture nevertheless prides itself with green rhetoric. A typical example is Eco Park, a new stadium project for Forest Green Rovers in Gloucestershire, England, which was granted planning permission by the Stroud District Council in late 2019. Designed by the renowned Zaha Hadid Architects, it is marketed as 'the world's first timber stadium.' While this marketing strategy ignores the fact that timber was the main material in the football stadiums of the late 19th and early 20th century, the Eco Park project is influenced by the technology-driven optimism of the sustainable architecture discourse of the early 2000s. This approach puts existing buildings under pressure in the name of green development. After the tragic disasters of the 1980's, mentioned above, football architecture rejected its heritage. Some of the early examples of demolition and replacement, such as Bolton Wanderer's move from Burnden Park to Reebok Stadium in 1997, did not necessarily involve eco-ambitions. But it quickly became apparent that green impulses were seeping into sports architecture. The Sidney Olympics in 2000, the so-called 'Green Games,' was a pivotal moment, diverting much attention to the environmental cause (Waitt, 1999; Davidson and McNeill, 2011). The 2006 FIFA World Cup in Germany sparked much of the same hype and interest in the field of football architecture (Helzel and Felix, 2006; Eick, 2011).

One reason for this optimism on behalf of sustainable technology is that the governing bodies of sports always chase the next tournament and the next building project, rather than critically assessing what they just left behind. 'After each Olympics

and the disappointing economic outcomes, the IOC puts its well-oiled propaganda machine to work,' as Zimbalist (2017, p. 2) puts it. He could have added disappointing ecological outcomes to his critical verdict. This forward-driven approach has pushed football architecture in a direction where environmental-friendly features like water harvesting, solar panels and automatic waste management have become mandatory, often paired with planning schemes inspired by green urbanism (Radovic, 2009; Haas, 2012). The basic idea is to boost the climate capacity of a building by wrapping an eco-urbanity around it; an urban ecosystem in which buildings merge with the natural environment. The masterplan for the 2016 Rio Olympics is an example of this. Marketed as 'A masterplan serving today and tomorrow' with ambitions of 'leaving a lasting legacy,' the overriding goal was to 'deliver sustainable Games in the very broadest sense, so the host city derives ongoing economic, social and environmental benefits' AECOM (2012).

The challenge embedded in such visions, regardless of how eco-aware and people-friendly they may be in theory, is that the 'green' signaling power of mega-events fades away after the end of the tournament (Preuss, 2013). When reality hits, the legacy suffers. Therefore, 'legacy' must not be confused with 'sustainability'. Legacy can also cover historical heritage but it is much broader and loosely defined as a term, and therefore 'easily manipulated to suit different ideologies and, in the case of the Olympics, to fit into different meta-narratives of urban development.' (Gold and Gold, 2013, p. 3527–3528). Typically, mega-events cause more physical and economic change than conservation of existing natural, cultural and social values. As Renata Sanchez and Stephen Essex put it: 'Although world-acclaimed architectural offices were involved in the design of Rio's Olympics works, the projects seem to neglect their users. The legacy of the built environment created by the Rio Olympics appears to be counter to the creation of a sustainable, mixed-use community, and the area is poorly connected and integrated with the rest of the city.' (Sanchez and Essex, 2017, p. 101). Contrary to good intentions, Rio 2016 did not improve the city's natural and social environment according to expectations. From a circular design point of view, events like London 2012 and Rio 2016 are doomed to fail because of the inherit mega-ness of the whole operation. Despite pre-existing plans of reduction, recycling and downscaling, it is notoriously difficult to shrink, adapt and reuse in a discourse where grandness and spectacle lies at the core.

What, then, about new and so-called 'eco-friendly' stadiums—are they better than the disappointing standards of Olympics and FIFA World Cups with regards to sustainability? The hype has certainly been on, especially since the 2006 World Cup in Germany, when many stadiums were either built anew or refurbished with environmental concerns in mind. One example is the Mercedes-Benz Arena in Stuttgart, an existing venue that got refurbished ahead of the World Cup. Still, the eco-boosting solutions were primarily new elements pasted onto the existing structure, like the roof, which can harvest rain water and make it reusable. If a more holistic approach had been in place, the Mercedes-Benz Arena could have qualified as an example of circular design.

The lack of a holistic approach is precisely the problem with many new stadiums. As argued by Schimmel (1995), stadium construction has been dominated by micro-perspectives: the internal factors—economy, security, logistics etc.—of the stadium design. When considered in isolation from the larger urban context, sustainable performativity is obviously much easier to achieve. The problem is, however, that stadiums must be measured against the total impact they have on the larger urban terrain in order to assess their carbon footprint and other environmental impact parameters. This means that most of the positive examples we have seen over the past years also carry problems. Some projects, like Allianz Stadium in Turin, have tackled the question of size well—Juventus have downscaled the crowd capacity compared to their previous home, the Stadio Communale—and the entire stadium façade is clad with solar panels. On the macro level, there are however at least two highly significant factors that undermine the focus on renewable energy and downscaling: Firstly, the stadium combines a massive car park with no substantial solution for public transit, which means that the stadium generates private car use as the major mode of transport. Secondly, the stadium is situated in a desolate area of the city. This kind of location is typical for the suburbanization trend of the 1990s (Bale, 1993b; Horak, 1995), which saw football clubs all over Europe moving from the city center to the urban fringe. This form of development is completely at odds with the compact city model commonly associated with sustainable urbanism today (De Roo and Miller, 2019). Allianz Stadium has already been criticized for its failure to comply with this principle (Lekakis, 2018).

The relocation strategy also carries negative social consequences, as further detailed in our study of Tynecastle Park in Edinburgh below. New stadiums are often portrayed as a gift to the local community but they repeatedly fail to deliver genuine local qualities. This is particularly evident in the aftermath of mega-events (Jennings and Lodge, 2011; Kowalska, 2017; Zimbalist, 2017; Dendura, 2019). While the geographical catchment area of football has increased dramatically over the past decades, the significance of the inner city and a central location has never faded in the minds of local stakeholders (Bale, 2003, p. 84–107). A football supporter community engages with its team, the local context, and the network of local actors in multiple ways. Their passion, excitement, and involvement plays a crucial role in the production of cultural and economic values in and around the club; an intricate process of co-creation which is often overlooked by owners and investors who are keen to relocate (Zagnoli and Radicchi, 2013). The rational reasons for moving must therefore be carefully considered against a dominant desire to stay if football clubs wish to also remain socially sustainable. Even in cases when big clubs remain in the same area, exemplified by Arsenal's love from Highbury to Emirates Stadium, there may be unresolved issues from a sustainable heritage point of view. Very little of the building mass of old Highbury exists today, and the social culture in the new stadium is completely different due to sky-rocketing ticket prices and other factors which exclude traditional local supporters.

With all these obstacles in mind, it seems almost impossible to imagine that football architecture will become more sustainable

in the foreseeable future. On the plus side, there have never been more theoretical and practical solutions at hand. If we look to the avant-garde of contemporary preservation and architecture, two concepts immediately emerge as the frontrunners, inspired by circular thinking: Adaptive reuse and maintenance architecture. Adaptive reuse is essentially aimed at combining preservation techniques with alteration and modernization. This can be based on a variety of different traditions, from careful restoration to progressive transformation (Plevoets and van Cleempoel, 2019, p. 7–27). It is a diverse theoretical term that offers a range of practical solutions and intervention strategies (ibid: 28–51). It can be applied to all sorts of buildings, ancient and modern, small and large.

Maintenance architecture mainly comes from the book of that title (Sample, 2016), but the concept is now spreading across the field of architecture through the use of words like 'repair' (Baracco and Louise, 2018) and 'fixing' (Livas, 2019) in book titles. 'Maintenance plays a crucial role in the production of architecture, yet by and large architects have treated it with indifference', claims Sample (2016, p. 1), with reference to how the modern architectural discourse has created a cult of worship around buildings that are new or appear to be new. This has created 'falsely constrained endpoints—conception and realization' (ibid: 7), which means that architecture is often judged as eternally new-born monuments—an impossible condition for any building as decay inevitably sets in. Architecture, she argues, must begin to appreciate the professions that secure permanence, endurance, and preservation of buildings. The building industry needs more input from caretakers and janitors. Sample refers to the massive job of cleaning Beijing's National Aquatic Center, built for the 2008 Olympics, as a lesson to learn from (ibid: 155). If you erect large sports venues in a highly polluted city, you have to tackle the consequences.

CASE STUDIES

In this section we outline the key findings and perspectives from our recurrent field work and research on Tynecastle Park and Stadio Flaminio in light of the principles for reuse, maintenance and circular heritage presented above. Each study provides an overview of the history of each stadium, emphasizing major events and turning points, and an assessment of their current standing. Our study of Tynecastle park deals mostly with the issue of social sustainability in light of the stepwise transformation of an historical football arena. Our study of Stadia Flaminio is primarily concerned with the technical aspects of sustainability and the challenge of re-opening an abandoned venue.

Tynecastle Park

'Fans' route to the stadium involves a bodily involvement with the materiality of the environs, producing placed experiences of heartbeat and breath, the particular movement of limbs and the sensing of textures underfoot, the press of bodies, the assailing of the nostrils by familiar smells, and the sonic melding of one's own footsteps with those of a thousand others' (Edensor and Millington, 2010, p. 155).

Tynecastle Park is the home of the Scottish professional football club Heart of Midlothian. It is located in Gorgie, a short walk west of the Edinburgh city center. Tynecastle Park (**Figure 3**) may be described as an archetypical British football ground due to its urban location. Since the early 1900's the stadium has been surrounded by a school, a whiskey distillery, a church and tenements. While required substantial refurbishments have taken place in recent times, the club have had their home in Gorgie since 1881 and the original construction was part of a wider urban development of the area at the time. A new main stand, designed by the famous stadium architect Archibald Leitch (Inglis, 2005), was built in 1914 while the rest of the stadium was refurbished and gradually expanded in subsequent decades to hold crowds of up to 50.000 (the record attendance of 53,396 from 1932 still stands). After World War II old wooden terracings were replaced by concrete steps, making Tynecastle the first all-concrete stadium in Scotland in 1954. Perimeter fences were put up in the 1970's as a crowd control measurement, while a previous standing area along one of the sides was made into a seated area, cutting the capacity to 29.000 by 1981. Six years later the stadium author Simon Inglis viewed Tynecastle Park in the following way: 'Many British football grounds are hidden in cramped inner-city locations, but none, surely are as penned in as Tynecastle. Tenements and a sootcoloured distillery watch over the ground like cell-blocks over a prison yard, while the stands are clothed in a brooding, dark maroon; the maroon of old British railway stations and also of Edinburgh buses. Hearts-fans must once have felt very much at home on their travels... It all adds up to an inner-city *melange* which however inconvenient or outdated, few would wish to change one little bit. Just as tourists delight in the ramparts and dungeons of Edinburgh castle, so too do lovers of Scottish football delight in the cloistered intricacies of Tynecastle' (Inglis, 1987, p. 338–9). However, change was indeed looming by the early 1990's.

In order to meet the recommendations outlined in the Taylor report after the Hillsborough disaster in 1989 (Hillsborough Stadium Disaster Final Report, 2000), the club was faced with a few soul-searching decisions which led the chairman of the Hearts at the time, Wallace Mercer, to come up with proposals which generated substantial resistance and indeed fan activism. Mercer announced in May 1990 that he had entered an agreement with David Murray, a well-known Scottish business-entrepreneur and owner of Rangers Football Club at that time, to develop a new 25.000 all-seater stadium as an element of a huge business-project Murray was planning at Millerhill, a green belt site located east of Edinburgh's city center. The idea was to incorporate other facilities like greyhound tracks, a diversity of community-facilities and make the stadium into a potential venue for pop concerts (Moorhouse, 1991, p. 216). The club was hoping to have their new, 'multi-purpose' stadium ready by the 1993/94 season. This proposal gave the uprise to heated debates in various media by anyone who had strong feelings connected to the club and its location in Gorgie. The makers of a fanzine called *Dead Ball,* expressed their views on the re-location plans and a move away from 'Tynie' (a local nickname for Tynecastle Park)

FIGURE 3 | Old meets new–view from the old main stand at Tynecastle Park, built in 1914 and demolished in 2017. The Gorgie Road end and Wheatfield stand, erected in 1996, are visible in the background (Credit: Hans K. Hognestad).

FIGURE 4 | Detail from the wooden railing at the old main stand at Tynecastle Park (Credit: Hans K. Hognestad).

like this: 'Any move from Tynecastle to a custom-built stadium is not just a change of location for a football team. It is also in a real sense a violent act. To destroy a central part of many people's lives, whilst it may be progress of sorts, is to put imagination after money. Tynie is not just a football ground; it is part of me, part of us all. It is a concrete representation of the club's history. It wasn't built just with bricks, mortar and wood, it also took dreams, hope and (mostly) despair. It represents the soul of Hearts. The memories of past greats still inhabit the place. It is a connection to Walker, Mackay, Bauld, Conn, Waurdaugh and Ford [former players at the club]... It almost doesn't matter that Tynecastle is a dump' (*Dead Ball*, no 1) (**Figure 4**).

Both of these views present the link between the club, its location and its fans as an insoluble unity. And the very existence of the club is, according to these views, tied to the ground of Gorgie, West-Edinburgh. Even though most fans had a strong feeling for the place, there were few people who were against change as such, in the way Inglis' romantic description, quoted earlier, seems to suggest. As the last ironic comment in this quote from *Dead Ball*, indicates, there was also little sentimentalism attached to the technical standard of the ground in the early 1990's. They opposed any move away from Tynecastle and Gorgie, but desired a functional and more modern stadium that could meet the necessary requirements as the home of one of Scotland's elite football clubs. At the time, football spectators tended to see the ground as both outdated and decaying, which seemed to alienate visiting supporters in particular, as this fan of Dundee Utd wrote in 1993: 'Consider, also, the dilapidated Gorgie Road entrance which, set back from the road, makes visiting fans feel as though they are entering some Dickensian establishment and, once inside, the high perimeter fences which, when the ground is filled with humanity, give the place the look of a POW camp. Added to all this there is the pungent and nauseating smell of brewing that hangs over this part of Edinburgh to add to the overall ambience. I will not dwell on the toilets, no-one should!' (McIlroy, 1993, p. 120).

A new all-seated stadium would bring an end to the much beloved intimacy of the standing terraces, but were generally preferred to an alternative multipurpose-stadium out of the city. The belief that Tynecastle Park, Gorgie, is the home of Hearts, was prevalent and represented fans' identification with the club in a concrete way. This must be linked to the ways in which 'the people' have filled a place provided by an industry with commercial interests, with its own meanings: 'The landlord provides the building within which we dwell, the department store our means of furnishing it... But in dwelling in the landlord's place, we make it into our space; the practices of dwelling are ours, not his.' (Fiske, 1989, p. 33). What is peculiar here, is the fact that the whole construction of what Zukin calls the 'vernacular space' (Zukin, 1992, p. 224) was literally threatened by removal. For a lot of fans this meant a threat to the very existence of the community which had grown into the walls and terraces of Tynecastle Park. The proposed move away from Tynecastle would have included more than a relocation of a football-ground. The urban infrastructure around Tynecastle Park, in the shape of numerous pubs and social clubs easily accessible by bus or foot, were equally important to the total football experience for a lot of fans: 'I mean we love Gorgie and Tynecastle. It's a great area. The problem with new all-seated stadia outside the city or town is that you've got no pubs to go to before the game. You go to Perth and their new stadium is great, but you cannot go for a pint before the game, apart from one which is absolutely mobbed. At Tynecastle you've got maybe 20 to 30 pubs within a 5 min walk from the ground, so you've got a choice and each pub has got its own character, its own history as well' (Peter, 38, personal interview March 1993). The significance of the historical social stability on match days provided by the many pubs and social clubs in the Gorgie area should not be underestimated. One of the authors here were once shown a booklet with fixtures for Hearts games for the 1895–96 season by a collector of football memorabilia. At the end of this booklet there were several advertisements, one of them for 'The Midlothian Arms,' which was the old name for Tynecastle Arms, a pub still located right next to the stadium, on the corner of McLeod Street and Gorgie Road. The advertisement read: 'Before and after games, enjoy our fine selection of wines, spirits and ales.' With the proposal to move away from its historical home, it was generally feared that this century-old sociality of football would be displaced and limited to the act of taking your car to watch games in Suburbia.

Jim Clydesdale, a director at Hearts F.C. at the time and also an architect, presented the club's vision of a new multipurpose-stadium at Millerhill in a more detailed way, at a seminar held by the Scottish Sports Council inMarch, 1991. The following quotation is taken from the fanzine *Always the Bridesmaid* (1991), who put their own heading above the reprinted abstract of Clydesdale's paper: 'Cloud Cuckoo Land,' meant to illustrate the lack of touch with 'the ordinary supporter' that this vision demonstrated. The outline was clealry aimed toward facilitating the tastes of a middle-class family with more money to spend, an attempt perhaps to invite spectators more akin to the *flaneur* category outlined in Richard Giulianotti's football spectator taxonomy a decade later (Giulianotti, 2002). *Dead Ball*, the fanzine quoted earlier, described this multi-purpose concept as a 'post-modern nightmare,' referring to the multitude of 'leisure-activities' this stadium plan would hold (personal interview, October 1992). However, Hearts-supporters were joined by environmental activists who protested against further exploitation of greenbelt land outside the city center, while members of the Lothian Regional Council also objected against the proposal (Moorhouse, 1991:216). In the end too many voices were raised against an approval of these development-plans, and the Lothian Regional Council turned the proposition down in August, 1992. Hearts F.C. had to come up with other solutions. After looking at a few other locations, the club finally announced in December 1992 that they were in fact planning to redevelop Tynecastle into a smaller all-seated stadium. However, it wasn't until a year later that concrete plans were made for redeveloping Tynecastle Park. A proposal from the Lothian Regional Council that Hearts could share a new ground with local rivals Hibernian Football Club, who had received permission for building a new stadium at Straiton, 20 km south of the city center, was rejected by Hearts in October 1993, following considerable activism from both sets of supporters. In the end even Hibernian decided to redevelop their old

ground, Easter Road in the Leith area, just east of the Edinburgh city center.

Three of the stands at Tynecastle Park were demolished and replaced by new concrete stands between 1994 and 1997. The new all-seated stadium capacity was now reduced to 17,500, which was nevertheless generally seen as preferable to a new and bigger stadium in a greenbelt area outside the city. Eventually the last remaining main stand from 1914, was demolished in 2017. The new main stand, opened in late 2017, increasing the capacity again to almost 20,000. The stands built in the 1990's and the one in 2017 were all designed by the same architect, Jim Clydesdale, quoted above with a totally different stadium vision. Yet, during the 20 years between 1997 and 2017 there were further attempts made by the board at Hearts F. C. to leave Tynecastle Park, in favor of a bigger venue. In 2004 the then chairman of the club, Chris Robinson, had announced that the club was ready to sell Tynecastle Park for other purposes and rent the neighboring national rugby stadium, Murrayfield, with a capacity of 67,000 instead. But once again, it was the chairman who had to leave instead, as supporters were heavily in favor of remaining at Tynecastle. The story about Tynecastle Park shows the strength and sentiments which may be attached to the location and the area, perhaps even more than to the quality of the stadium itself. While Bale (1991) has highlighted the symbolic significance of football stadiums as concrete symbolic representations of communities, a lot of such qualities are tied to the fact that the stadium is part of an urban landscape with plenty of social meeting points and easy access by foot, bike or public transport.

FIGURE 5 | Faded elegance: Pier Luigi Nervi's concrete design in a state of advanced decay, September 2017 (Credit: Even Smith Wergeland).

Stadio Flaminio

The origins of Stadio Flaminio were not particularly promising from a circular heritage point of view. It was built on the same piece of land as Stadio Nazionale stood from 1911 until it got demolished in 1957, when it was deemed 'unfit for use due to the ravages of time' (The Organizing Committee, 1960, p. 58) ahead of the 1960 Rome Olympics. It therefore had to be replaced 'by an ultramodern stadium' (ibid), according to the organizing committee. We can here clearly recognize the rhetoric from today's Olympic extravaganza as well as Stadio Flaminio's own destiny in the 2010s. It's predecessor, Stadio Nazionale, was used during the 1934 FIFA World Cup and had a strong connection to the Mussolini regime, the main political force behind the development of what would eventually become Rome's Olympic Village in 1960. The political connotations may have furthered the demolition cause (**Figure 5**).

Stadio Flaminio is situated in Rome's Parioli district, north of the city center. The stadium is located along the Via Flaminia close to the left bank of the Tiber in close proximity to other Olympic facilities from 1960, like Palazzetto dello Sport and Villaggio Olimpico (the athlete's village). Just across the river, northwest of the athlete's village, lies Foro Italico, the main hub for sports facilities in Rome, including the majestic Stadio Olimpico. It is no exaggeration to say that this part of the eternal city is characterized by sports heritage.

The task of building a modern stadium on a historical spot was handed to Pier Luigi Nervi, the Italian engineer best known for his pioneering use of reinforced concrete as a structural and decorative material in the post-war period (Iori and Poretti, 2019, p. 3). His son, Antonio Nervi, was also assigned to the project as the lead architect. Construction went on from 1957 to 1958 and the stadium was inaugurated in 1959, a good year ahead of the Olympics, without exceeding the estimated cost. For such a large venue that is a commendable feat. Upon completion, the city of Rome had gained a 42.000 capacity arena with a number of design innovations. All sectors of the stadium were provided with bars and other services. The most striking feature from a visual point of view was the hovering roof canopy that kept about 8.000 seats under cover while it was still in use.

Although the stadium was purpose-built for football, which it hosted during the Olympics, it also featured four gymnasiums, a fencing hall, a covered and heated swimming pool, changing rooms and a first aid station. This kind of functional and spatial diversity was unusual compared to the expected standard in the post-war period. From a structural engineering perspective, the stadium was top notch. The building system, based on a complex combination of *in-situ* concrete and prefab concrete, was unique for this particular stadium. While concrete architecture is often associated with fixed modular systems and standard construction schemes, very little of the kind was used here. Instead, father

and son Nervi devised a concept in which every building part—the grandstands, the structural frames, the roof canopies—had its own signature, construction-wise and aesthetically. There are similar stadiums from this period but if you study the details, the individuality of Flaminio is striking, down to the smallest nuts and bolts. This made it stand out in its prime time. It also means that the building is uniquely difficult to manage today, when entrepreneurial construction normally depends on defined standards (Sample, 2016). The brief of renovating it is therefore a bit of a challenge, which we shall explore soon.

The Flaminio was regarded a success during the Olympics and it had, for quite a long while, a purposeful afterlife. Since the Olympics, it has been used as a concert venue (both Pink Floyd, Bruce Springsteen and Michael Jackson performed there in the late 1980s), the Italian Rugby Union used it to host the Six Nations Tournament (2000–2011) and the two major football clubs of the city, AS Roma and SS Lazio, used it as a temporary venue during the renovation of Stadio Olimpico before the FIFA World Cup in 1990. It was also a home ground for Atletico Roma FC, who played in the Italian Serie C from 2005 to 2011, when the club dissolved. This event turned out to be a twist of fate for the Flaminio too, since the stadium now became vacant as a consequence and has been abandoned as a venue for sporting and cultural activities ever since.

The stadium has not been left entirely to its devices, however. A multi-disciplinary team of preservation experts, led by the Department of Structural and Geotechnical Engineering at the Sapienza University of Rome, joined forces with the Pier Luigi Nervi Project and Docomomo Italy to apply for funding within the Getty Foundation's *Keeping it Modern* programme. This application was successful and the project officially obtained the support of the Getty Foundation in June 2017 (Stadio Flaminio, 2021) to develop a four-step conservation plan under the leadership of the aforementioned Romeo. The Getty grant was awarded the same year to the Japan Sport Council in support of the renovation of Yoyogi National Gymnasium in Tokyo, built by the Japanese architect Kenzo Tange ahead of the 1964 Olympics. Suddenly, there were two sports arenas under the Getty Foundation's 'Keeping it modern' umbrella. Someone must have envisioned a future for old arenas. In July 2018 the Flaminio got listed as a cultural heritage site by the city of Rome, which means that it now has legal protection and formal status as culturally significant.

Even with funding and listing in place, the challenge is still pretty immense for Romeo and his team. 'The stadium is now in an advanced state of decay' (Stadio Flaminio, 2021) as they had to admit before work commenced. One of the biggest issues to solve is Nervi's strong dependence on concrete—a building material that still dominates in today's sports architecture. During the post-war period, Nervi's heydays, concrete became the most widely used material in the construction industry. It was cheap, efficient, accessible and flexible. It also turned out to be one of the most toxic and wasteful materials on the planet. For every ton of cement produced, approximately one ton of CO^2 is released (Mehta and Monteiro, 2014). It devours raw materials like few other substances in the building industry. Its relation to water alone is highly problematic: concrete consumes water like a swamp, thus 'stealing' it from living creatures. Clearly, the hegemony of concrete in sports architecture has to be challenged in the name of sustainability. The problem is, however, that demolition of concrete architecture is also an environmental threat. The process is time-consuming, money-consuming and adds to the already negative pollution and waste account. To tear down large concrete buildings therefore makes little sense from a circular perspective. They ought to stay in use for as long as possible.

On the plus side, the technical, structural and material quality of the original work is very high compared to other concrete buildings from the same period (Romeo et al., 2021). This makes the rehabilitation all the more worthwhile. Much like the contemporary team who is now trying to fix it, Nervi surrounded himself with the best available expertise of the day during the construction of the Flaminio. Another positive aspect is the size, which makes it possible to imagine that it could work as a contemporary arena from a capacity point of view. For security reasons and the all-seating principle, it can probably only house about 30.000 spectators within the existing regulations—but that is still fairly large. If a more adaptive approach had been possible the stadium could probably reach an audience of around 40,000. This points to a crucial dilemma at sports governance level—the difficulty of operating outside the so-called 'technical manuals' (Dunne, 2007) of IOC, FIFA and other transnational sporting bodies. These guidelines, which must be followed in order to get international approval, can be a real obstacle for innovative preservation and adaption to local needs. This is probably going to be one of the toughest hurdles to pass for the Flaminio conservation team.

This means that a lot of effort must be placed on the fourth step of the conservation plan, which deals with guidelines for recovery and reuse. Romeo's team is undoubtedly well equipped to tackle that which lies before—the historical study, the structural analysis, the physical changes and transformations—but they have to come up with something truly remarkable in order to breed new sporting life into Stadio Flaminio. This is particularly tricky since AS Roma are already planning a stadium elsewhere in Rome and SS Lazio dream of doing the same—they have certainly been reluctant to consider a return to Stadio Flaminio (Stadium Business, 2019). What could become an option is to turn it into the official home for Italian rugby. Plans are currently under way for a three-step renovation of the entire Villaggio Olimpico. The third phase of this process is supposed to allow the stadium to return to its former glory as a major rugby venue—'to give new life to an architectural jewel that has been left to itself' (Stadium Business, 2018) according to Daniele Frongia, the City of Rome's Councilor for Sports. The vision has allegedly been backed by a full-bodied proposal from CONI (the Italian Olympic Committee) and FIR (the Italian Rugby Federation). Only the future will reveal whether this 'Casa del Rugby' (Wanted in Rome, 2018) will actually materialize but the idea seems to be well-supported by the those who matter:

the city administration, the politicians of Rome and the national sports associations.

THE RISE OF THE REUSED STADIUM?

In conclusion, let us return to our opening questions in light of the two cases. Is there a future for historical stadiums? Does football architecture have a circular design potential? The most accurate answer we can give at this point is: it depends. From an overarching perspective, the following conditions are most important: Firstly, the world of sports must become willing to take better care of its architectural legacy. This will necessitate a major change of attitude, involving more reverie for the quality of historical venues, more investment in maintenance and more concern for local stakeholders. Secondly, there is dire need for legislative changes to make it easier to sustain existing sports venues as part of a local sporting culture. This means that guidelines for capacity, security and logistics must be adapted to the buildings and neighborhoods in question, not the other way around. If the current guidelines continue to apply, regardless of context, reuse will remain very difficult. Thirdly, there is need for further research and investment in pilot projects like the Stadio Flaminio restoration. Presently, there are more examples of stadiums surviving against the odds—they are typically set for demolition, but the process has been stalled for various reasons—than stadiums that survive because they are actively maintained and developed. If we get to a stage where more existing stadiums are properly financed and managed, there would be more lessons to learn from and—hopefully—positive experiences. This could become a counterweight to the prevailing approach of demolition and construction.

Based on the insights gained from Tynecastle Park and Stadio Flaminio, we would argue that there is a potential for reuse and, as a radical extension of that, circular management of football architecture. Obviously, our cases are not entirely comparable, since they represent different historical origins, different sporting contexts, different local communities, different stages of restoration, and different degrees of current usability. They nevertheless offer a number of cues for future development which could serve as a starting point for a more universal and transferable strategy for reuse of historical stadiums. From Tynecastle, there is the vital social culture, local stakeholder engagement and continuous use of the same urban property to build upon. From Flaminio, there is the technically advanced restoration, the multi-disciplinary approach, the funding and the overall plans for new use to draw inspiration from. While none of these examples can aspire to be called circular heritage in the strictest meaning of the term—too much building mass has been removed from both locations over the years without any kind of recycling—there are aspects of both that could be 'Frankensteined' into a fully circular model.

One thing is certain: If international sports federations and clubs want to commit themselves more to green values and withstand the test of circular principles, the journey is going to be hard, difficult and frustrating. The replacement of 'new, large and spectacular' with 'durable, modest and simple' is going to demand a U-turn of unforeseen magnitude and, probably, a new generation of sports leadership. The uplifting thing, as we have shown, is that there are theories, principles and expertise ready to aid such development. Anything can be repaired these days. If Hillary Sample is right, the architecture of the future will be less about conception and realization and more about durability: 'An expanded building cycle that incorporates maintenance has the potential to affect the future of architecture contributing to the cycle of creation, building, occupancy, the representation of architecture, and image circulation, which in turn will impact invention.' (Sample, 2016, p. 9). Through this surprising turn of events, the old school of preservationists has re-emerged as the avant-garde. The unlikely rise of the reuse stadium represents a similar chance of re-branding football culture.

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Cultural Dissonance: Surfers' Environmental Attitudes and Actions

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Surfers often see themselves as "green". In this study we examine Norwegian surfers' attitudes and actions towards the environment. The article is based on a questionnaire ($n = 251$) and six qualitative interviews. The results show that most surfers see themselves as environmentally conscious. Oppositely, the data also show that they also buy a lot of surf-related apparel and equipment and travel a lot, and thereby contribute with a lot of CO_2-emissions. In the article we investigate the apparent attitude-action gap amongst surfers. Does the gap give rise to emotional conflicts? And, if so, to what degree and how do they cope with it. In the article we start out by analysing such potential conflicts by using the concept cognitive dissonance. Further, we analyse the phenomena from a cultural, Bourdieusian perspective where values within the surf-field is highlighted. On the one hand, surf culture highly values connexion to nature and "green" thinking, on the other hand it also values and gives recognition to surfers that travels to and explore exotic destinations. Hence, values within surf culture leads surfers to conflicting actions. We end the article by discussing if these conflicts could be framed as cultural dissonance.

Keywords: surfing, sustainability, cognitive dissonance, cultural dissonance, attitude-action gap

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INTRODUCTION

In surf magazines, surf movies, social media and surf literature, surfing is often portrayed as an activity that creates a profound, unique relation with nature—a relation so deep that it almost per se makes surfers environmental stewards (Kampion, 2003; Warshaw, 2003; Ford and Brown, 2006; Hill and Abbott, 2009a; Laderman, 2015). Surfers are depicted as environmentally conscious, and surfing is perceived as a nature-friendly lifestyle. The surfscape is often thought of as an escape from culture into nature (Fiske, 1989; Kampion, 2003). The most influential surfer of all time, Kelly Slater, says that protecting the natural environment is central to surfers' identity (Kampion, 2003, p. 165). Seemingly, being "green" is deeply entrenched in surf culture. At the same time, surfers' quest for perfect waves in tropical paradises and consumption of surf goods, such as surfboards, and wetsuits are also firmly rooted in the surf culture. Wheaton (2020, p. 173) states that "… it seems apparent that debates about surfers as model environmental citizens need reframing". Latourrette (2005) argues that most surfers remain uncritical of travel and the consumption of surf related products. There is a seeming discrepancy between the surfers self-identification as environmental wardens and their actual environmental behaviour. In a study on surfers in Florida, Hill and Abbott (2009b, p. 157) find that

(. . .) *surfers generally self-identify as ecologically aware and socially active for environmental protection, reflecting the popular representations of the surfing community. In contrast, analysis of respondents' activities reveals lifestyles often incongruent with environmentally progressive ideologies and practise.*

Surfers' lifestyle, understood through their lust for travel and consumption of surf products, seems to be at odds with their self-acclaimed "ecological" lifestyle. As commonly known, travel, especially a long-haul flight, comes with a huge carbon footprint. The manufacturing of surfboards and wetsuits also involves using a lot of non-biodegradable chemicals (Gibson and Warren, 2014). As Hill and Abbott (2009a, p. 287) state, when the required resources are considered, it is difficult to maintain that surfing has little ecological impact. The question then is how surfers come to terms with the discrepancies between the narratives of surfers as environmentally responsible and their own behaviour? In this article, we explore such tensions in Norwegian surf culture(s). We set out by asking if surfers in Norway consider themselves environmentally conscious—to what degree do they demonstrate environmentally (in the meaning eco friendly) inclined attitudes? Second, we investigate the extent to which surfers' environmental attitudes are translated into environmental actions. The results show a gap between surfers' attitudes and actions. Hence, our third and most important research question is to examine how surfers relate to the attitude–action gap. We discuss this research question through two lenses. First, we explore the gap from a social-psychological standpoint that highlights individual feelings towards the mismatch between attitudes and actions. To analyse this mismatch and the surfers' ambivalence towards it, we build on the concept of cognitive dissonance (Festinger, 1957) and the research by environmental psychologist Stoknes (2015). Second, we analyse the attitude–action gap by using sociologist Pierre Bourdieu's understanding of recognition to understand how different sets of values within surf cultures inform both attitudes that are "green" and actions that are not environmentally sustainable. Building on Bourdieu's framework, we use the concept of *cultural dissonance* to make sense of the attitude–action gap.

Background

Surfing as a pastime has a history that spans centuries, starting in the Polynesian islands. The Polynesian roots of surfing are often romanticised in surf mythology and in surfers' writings about their own histories (e.g., Young, 1994; Kampion and Brown, 2003). However, the most important influence on the surf culture as it is known today, often overlooked in surf mythology, comprises two elements: surfing was connected to the tourist industry and travel at the end of the nineteenth century and the beginning of the twentieth century to popularise Hawaii as a travel destination, and surfing became part of the rising youth culture in the 1950s and the counterculture of the 1960s (Warshaw, 2010). Of course, other significant discursive elements substantially influence present-day surf cultures, but these two components are important in understanding the environmental attitude–action gap. On one hand, surfing is deeply connected to emission-heavy travel and exploration; on the other hand, it holds the environmental attitudes from the 1960s' counterculture.

In Norway, surfing started to gain a foothold in the early 1980s, but it was not until the mid-1990s that a proper surf culture with a certain number of surfers developed (Langseth, 2012). Currently, certain surf spots are regularly surfed all along the Norwegian coast, many of them heavily crowded every time there is a decent swell. As the number of surfers in Norway has increased, so has the attention to issues concerning surfing and the environment. Founded by surfers in 2013, the Nordic Ocean Watch (NOW) can be regarded as the Norwegian equivalent to activist surf organisations, such as the international Surfrider Foundation and the British Surfers Against Sewage. In a study of Surfers Against Sewage, Wheaton (2007, 2008) found that surfers should not merely be viewed as individualistic hedonists, but that such organisations can be seen as New Social Movements that are often apathetic to traditional politics but still environmentally aware. In these movements, political protests often take creative forms. Further, Wheaton (2008) states that surfers often claim to have a privileged relationship with the water. This privileged relationship is often thought of as an impetus to environmental awareness. On its website, NOW states, "We believe that you take care of what you love" (https://nordicoceanwatch.no/en/who-are-we/). However, in an interview published in *Infinitum* magazine (October 2014), NOW founder Simen Knudsen reveals a bit more ambivalence:

If we love to play in the ocean, and we know that CO_2 is the biggest threat to the ocean, and facts show that we all have to get down to two tonnes of emissions per person per year. How can we then defend flying a flight to the other side of the globe, where the main purpose is surf? Is this in reality institutionalised egoism and what sentiment is it really that we are chasing, that makes us fly across the globe to experience it?

Seemingly, it is not as easy as claiming that if you love nature and the ocean, you protect them, but what do the research findings reveal about this?

Surfing and the Environment

According to McCullough et al. (2018), four main discourses have dominated the research on how nature-based sports influence the environment. (1) a discourse around the impacts of nature sports on biophysical properties of ecosystems, (2) discussions on how, among others, the expansion of skiing areas has affected land use, (3) the impacts of tourism on local social systems, and (4) since the 1990s, a discourse on the global impacts of sport travel and the production of sport equipment. These discourses also signal a move from a focus on nature-conservation to a focus on climate-protection. When we discuss the environment and being environmentally aware in this article, we use these concepts as umbrella concepts that involve nature conservation, climate protection, and pollution. That is—we do not directly deal with the environment as materiality in this article. Rather, we focus on how the environment is perceived, given value an acted upon.

Another, parallel discourse has been about whether, and to what extent, participating in nature sports and outdoor activities

makes people more concerned about environmental issues than people not participating in such activities. According to the general belief, as people have personal experiences in and with nature, they also take care of it. This claim is also found in research. Olive (2016, p. 503) states:

> *With a sense of individual connectivity and experience so key to the development of ecological sensibilities, nature-based sport and physical cultures offer productive and potential space in terms of environmental sustainability.*

However, as Høyem (2020) shows, it is difficult to maintain a causal relation between being in nature and aspirations to protect the environment. In Norway, where outdoor recreation is highly popular and deeply connected to the national identity, these kinds of thoughts have been taken for granted. From the early 1970s and onwards, outdoor recreation in Norway, to some extent, has been connected to the deep ecology movement. Naess (1973), a Norwegian philosopher who coined the term *deep ecology*, was an avid rock climber and outdoor enthusiast. Although most Norwegians participating in outdoor recreation most probably have not read Næss' work, he has deeply influenced the Norwegian discourse around outdoor recreation (Gurholt, 2008). This might have influenced the thought that just being in nature (in the correct ways) leads to behaviour that is good for nature. However, as shown by Hille et al. (2007) in their study on leisure consumption, traditional outdoor sports, such as cross-country skiing and hiking, had the third highest energy use out of the leisure activities they examined. Outdoor activities were behind holiday travels and visits to friends and relatives but had three times the energy consumption of traditional sports (Hille et al., 2007, p. 164). The reasons for the high energy consumption connected to outdoor recreation are the amount of travel to outdoor areas and the use of outdoor-specific clothing and gear. Seemingly, at least from the perspective of the above-mentioned fourth discourse on sports and the environment, there is not much to the argument that spending time in nature leads to environmentally sound behaviour. Being an active outdoor recreationist is actually among the worst leisure activities people can participate in when it comes to energy use and CO_2-emissions. Concerning the energy use in outdoor recreation, Aall et al. (2011, p. 467) state, "We have also found that the large increase in negative environmental impacts of leisure activities can be characterised by the proverb 'the road to hell is paved with good intentions'." They find that experiencing nature (seeing new places, etc.) has "unfortunate side effects in also acting as drivers for producing more negative environmental impacts when applied to leisure activities (*ibid*, p. 467). In other words, experiencing nature does not necessarily entail environmental behaviour. However, this is complex matters—studies of place-attachment have come to different conclusions. Some studies have shown that place-attachment leads to more pro-environmental behaviour (Vaske and Kobrin, 2001) while others have found it to be associated with less pro-environmental behaviour (Uzzell et al., 2002). Place-attachment might be a too wide concept to study environmental behaviour. When Junot et al. (2018) narrowed the concept down to place *dependency*, how people perceive that they are dependent on a certain environment for their own well-being, they found that it corresponded to environmental behaviour. Still, even if people state that they are concerned about the environment and that they turn off the light when they leave a room and compost their kitchen waste, that doesn't necessarily translate into an environmentally sound lifestyle. These environmental values are, we suppose, typical middle-class values, and at the same time it is the middle class that has the highest energy use connected to leisure activities. Composting kitchen waste doesn't really help much compared if you take the family on two annual trips to Thailand. Larson et al. (2011, p. 68) claim that, "A growing body of research shows that positive exposure to nature through outdoor recreation participation may contribute to a pro-environmental ethos." The problem is that having an environmental *ethos* does not, as said, necessarily entail actions that are environmentally sound. In a study of mountain bikers in the US, Barnes (2009) found that some environmentalists were taken by surprise by the deteriorating effect their activities had on the landscape. Further, Wilson and Millington (2013) suggest that some wilderness activities are based on deceptive associations with environmentalism. More specific to surfing, Booth (2020, p. 26) states that "…a large body of evidence challenges the notion of surfers as active environmentalists who are willing to protect coastal environments because of their relational sensibilities with the waves". Moreover, As shown by Hille et al. (2007) and Aall et al. (2011), partaking in outdoor recreation, even though it might entail an environmental ethos, is actually one of the least favourable pastimes that people can engage in, concerning their ecological impact. The same can probably be said about surfing. Borne (2018) asks if surfers are more environmentally aware than the general population because of their close contact with nature. His own answer is "unfortunately there is little evidence to support this proposition" (Borne, 2018, p. 53). Surfers in general have high environmental engagement, but statistics show their much higher carbon footprint than that of the general population (Butt, 2015). In both surfing and outdoor activities in general, there seems to be a gap between the participants' concern for the environment and pro-environmental behaviour (Stoddart, 2011; Butt, 2015; Evers, 2019; Wicker, 2019).

As Berns and Simpson (2009) note, an array of concepts is used in studies on environmentalism. In this article, we use the concepts of environmental *attitudes* and environmental *actions* to differentiate between people's environmental values, ethos, and concern, on one hand, and actions that have beneficial impacts on the environment, on the other hand. Hill and Abbott draw the boundaries between the two concepts in this manner:

> *Opinions expressing the general responsibility of individuals and groups to maintain the quality and function of ecological systems are environmental attitudes. Environmental actions are activities that people engage in with the intent to preserve or enhance ecological systems. People may agree with environmental attitudes without actualizing these beliefs through environmental actions* (2009b, p. 158).

MATERIALS AND METHODS

To get a grip of surfers' environmental attitudes, actions and ambivalences, we rely on two sets of data: one quantitative dataset based on an online survey ($n = 251$) and six qualitative semi-structured interviews.

To sample data from a wide range of Norwegian surfers, a survey was chosen as the preferred method. This allowed us to let our data be in dialogue with and complement Hill and Abbott's study of surfers in Florida (2009a; 2009b). For the survey, we used the Questback software. The survey was distributed through different Norwegian surf-related Facebook pages. As Whitaker et al., (2017) points out, recruitment through Facebook is a cost-effective recruitment tool. 251 surfers responded to the survey of which 19% identified as women and 81% as men. The majority of the respondents were between 18 and 39 years old, with 58, 28, 11, and 2% belonging to the 18–29, 30–39, 40–59 and 10–17 age ranges, respectively. The low number of surfers under 18 years old might seem surprising but is probably due to the requirement to have a driver's licence to be a surfer in Norway. As a young surf culture, not many young people have parents who are also surfers and willing to drive them to the beach to surf. Geographically, most parts of Norway were represented, from Kristiansand in the south to Lofoten in the north. Southwestern Norway was over-represented, but this is also probably the area with the highest density of surfers in the country (Langseth, 2012). However, self-recruitment *via* Facebook might have its downsides. One consequence of this method is that surfers who do not use Facebook are not represented in the survey. Also, as Lazarow and Olive (2017) notes, self-selection can lead to a bias towards core participants. In our case this could also mean that our respondents are surfers that are more concerned about the environment than the average surfer. However, in a study of Facebook surveys compared to traditional surveys, Kalimeri et al. (2020) found that biases was negligible. How and if this recruitment method has influenced our results is hard to know. Nonetheless, we think that the effectiveness and advantages of using such an approach outweigh potential biases.

The questionnaire items were divided between attitude questions and action questions. The questionnaire was set up in such a way that when the respondents had answered one set of questions, they could not go back to change their answers. Our reason was to prevent the respondents from changing their answers to the attitude questions if the action questions revealed to them their lack of environment-friendly behaviour even if they had stated their environmental inclination. The question whether the surfers considered themselves to be environmentally conscious was deliberately loosely defined. From our side we didn't want to state if we thought about nature conservation, pollution or climate protection. We used a vaguely defined term to reveal what the informants themselves think when such a term is used.

To gain a deeper understanding of the attitude–action gap, especially the potential ambivalences resulting from this gap, we relied on semi-structured interviews (Kvale and Brinkmann, 2009) conducted among surfers living on the Lofoten Islands in northern Norway. Lofoten Islands is one of the most popular surf destinations in Norway and probably the Norwegian surf area that has received the most attention in the international surf media. Hence, many travelling surfers surf in Lofoten. However, the informants who were recruited for this project were either permanent or seasonal residents of Lofoten and therefore well integrated in the local surf culture. The interviews followed a guide containing questions and issues concerning surfing and environmental matters. The interview guide was not strictly followed, allowing a departure from it if interesting themes merged that we had not thought of when developing the guide. Four men and two women were interviewed. Their ages ranged between 21 and 41 years. The interviews lasted between 70 and 140 min each, which were all recorded and fully transcribed.

As we are both surfers, we might run the risk of just accepting other surfers' storeys of themselves as environmental stewards. To avoid this, we adopted an analytic strategy that we could call a "theoretically informed reading of the results." The theoretical framework used in this article has been applied to both the construction of the questionnaire and the interview guide and the analysis of our data. This means that we use theoretical concepts as tools to create distance and to objectify the empirical data. It also indicates that we reject ideas of a "holistic" approach to the gathered materials and refuse taking interviewees' statements at face value. Rather, our aim is to remain critical of and distanced from our data in order to gain insights into the theme of surfing and sustainability.

We gathered the data in accordance with the guidelines of the Norwegian National Committee for Research Ethics in the Social Sciences and the Humanities (NESH). The answers to the questionnaire were not traceable to any names or IP addresses. All interviewees received written information about informed consent before agreeing to be interviewed. The transcribed material was anonymised and safely stored in a secure database after the interview process.

THEORETICAL APPROACH

In this article, we approach the attitude–action gap from two different angles. One angle lets us highlight the individual ambivalences that surfers might experience in relation to their environmental attitudes and actions; the other helps us develop an understanding of how the value system in surfing gives surfers recognition for being "green" on the one hand and extended travelling on the other. These values thereby give surfers impetus for both pro-environmental attitudes *and* actions that might not be pro-environmental. From the former perspective, we use social psychologist Leon Festinger's theory of cognitive dissonance (1957) and environmental psychology. From the latter perspective, we apply Bourdieu (1977, 1990) conceptual framework to get a grip of values, and recognition in surf cultures.

Festinger (1957) is well known for his concept of cognitive dissonance. Broadly speaking, Festinger's theory is an attempt to describe how contradictions between convictions and behaviour cause unpleasant mental tensions. More specifically, in Festinger's framework, the concept of cognitive dissonance is coupled with cognitive consonance. Festinger divides human

attitudes and actions into three parts: affective, cognitive, and behavioural components. If there is concordance among these components, Festinger calls it cognitive consonance. He holds that this is the state that we strive for as human beings (1957, p. 3). A discrepancy between these components will lead to cognitive dissonance. People will then try to alter these components so that they return to a state of consonance. In other words, cognitive dissonance describes an unpleasant and unstable mental condition that is experienced when an individual's thoughts and values do not match one's actions. In environmental psychology, cognitive dissonance has been used to describe what occurs when environmentally conscious people find out that their behaviour is not environmentally sustainable. They can either change their behaviour or create consonance by legitimising their behaviour in one way or another (Lavergne and Pelletier, 2015; Stoknes, 2015).

A question to Festinger could be: do people necessarily experience unpleasant emotions when there is a discrepancy between their attitudes and actions? Moreover, is the attitude–action gap just a cognitive dilemma? A foundational thought in sociology is that individual actions and thoughts are connected to the social groups to which the individual belongs. To grasp how surf culture influences attitudes and actions, we now turn to Bourdieu (1977, 1990, 1999) understanding of social practise and processes of recognition.

As Bourdieu's perspective is well known and often used in the sociology of lifestyle sports (see Laberge and Kay, 2002; Wheaton and Beal, 2003; Fletcher, 2008; Atencio et al., 2009; Thorpe, 2009; Langseth, 2012; Langseth and Salvesen, 2018; Tøstesen and Langseth, 2021), we do not elaborate Bourdieu's framework in detail here. Building on Langseth (2012), we use Bourdieu to understand how surfers, through subcultural socialisation processes and accumulation of surf-specific forms of capital, develop strong affectual relations with central values in the surf culture. Nonetheless, a brief explanation of Bourdieu's lesser-known understanding of recognition and the link between recognition and desire is needed.

Recognition is a key term in sociology and social philosophy. Axel Honneth's "Struggle for recognition" (2007) and Charles Taylor's "The politics of recognition" (1994) are perhaps the most central works in modern recognition theory. Bourdieu has to a lesser extent been central in recognition discussions. Whereas Honneth and Turner are strongly normative—they are concerned with how mechanisms of recognition *should* work to create the most just society—Bourdieu's understanding of recognition is connected to how recognition actually works in specific social groups. In Pascalian Meditations (1999, p. 173), Bourdieu argues that the pursuit of recognition is the driving force behind all investments actors make in a field. In other words, Bourdieu sees recognition as fundamental to a field's capital system. Recognition is what both lays the foundation for the existence of a field and what actors within the field strive for. Building on Bourdieu, Crossley (2001) argues that desire is connected to recognition. In Crossley's view, what people desire, what they strive for and their passions are connected to what is given recognition in the social environment where they belong. Bourdieu (1996) states that there are just as many forms of libido as there are social fields. All fields have their own norms and rules that should be incorporated into each agent's habitus for the agent to be able to play the game. For a game to function well, the agents have to forget that they are playing a game; the rules of the game have to be viewed as "natural." According to Bourdieu, incorporating a field's rules is what makes actions appear meaningful (1990, p. 66). The dominating rules of the game are taken for granted; they represent what Bourdieu calls the fields' "doxa" (1990, p. 58). That means that desire and passion is related to being part of a social game. Surfers that fight on the beach over an argue about who stole whose wave, is not the result of antisocial affects, but rather an expression of the surfers' heavily involvement in the surfing game. Even if the fighting is antisocial normatively, it is deeply social because it stems from their investments in the surfing game. Simply put, passion is related to what is given credibility in a certain social environment. The question for us, then, is if attitudes and actions connected to pro-(or con)-environmental behaviour is given recognition within surf cultures. Our research thereby ties with other research that highlights the connexion between emotions, affects and socio-cultural processes, and narratives (see Tamminen and Bennett, 2017) and the connexion between environmental actions and emotions (Carmi et al., 2015).

RESULTS AND DISCUSSION

Surfers' Environmental Attitudes

As reported by both Hill and Abbott (2009b) and Borne (2018), surfers state that they have environmentally inclined attitudes. Our survey's results, to a large degree, show the same tendency: 84% of the surfers state that they either agree or strongly agree that they perceive themselves as environmentally conscious. Almost nobody disagrees with being environmentally conscious. Another factor that might indicate something about the respondents' care for the environment is that 65% report "experiencing nature" as one of the most important motivations for surfing. Now, this does not necessarily point to environmental attitudes—a person might be interested in nature experiences without being concerned about the environment. Nonetheless, many of the interviewees in the qualitative sample claim that the close relation with nature that surfing provides gives rise to environmental thoughts. "Bjørk" says, "Of course, everyone who resides in and uses nature have a responsibility (…). If you use nature, appreciate it and think it is nice, then you have a responsibility to be good to it." "Frank" takes it a bit further. For him, spending time in nature does not just give surfers the responsibility to act in environmentally sound ways, but communion with nature is what instils environmental sensibilities in surfers:

> *It is clear that as surfers, we are especially close to nature. Compared to football, for instance, the cause is obvious why surfers are more environmentally conscious. It is because we are directly confronted with nature in the activity itself.*

TABLE 1 | Frequency of respondents participating in specific environmentally responsible activities ($n = 218$).

Beach clean ups	69%
Eat less meat	50%
Avoid products containing micro plastic	33%
Avoid red listed seafood	30%
Reduce air travel	23%
Member of an environmental organisation	18%
Other	27%

The narrative of how being in the ocean makes surfers environmentally conscious is widespread in our data. This is also found in many other outdoor activities and is discussed in the research literature (e.g., Høyem, 2020). As we mentioned earlier, this narrative is complex and debatable. In the preceding excerpt, Frank states that surfers are more environmentally conscious than football players. That might be the case, but we know that when it comes to environmental actions, at least in terms of energy consumption and CO_2-emissions, outdoor activities are generally worse for the environment than organised sports (Hille et al., 2007). Let us have a look at how surfers in Norway transfer or try to put their attitudes into action.

Environmental Actions

As shown in **Table 1**, the surfers in our survey respond that they are involved in environmental actions to varying degrees. Of the survey participants, 69% report that they have been involved in beach clean-ups, and 50% state that they eat less meat. However, only 18% are members of an environmental organisation. If being a member of an environmental organisation is an expression of attitudes or actions is hard to comprehend, depending on how involved the person is in the organisation. Nonetheless, it might hint that even if surfers consider themselves environmentally conscious, only to a little extent do they get so involved that they choose to become members of such organisations. Perhaps more relevant to this study is the finding that only 23% of the respondents say that they try to reduce their air travel (more about that later). The same pattern is found in the qualitative data. Beach cleans-ups seem to be what surfers are most concerned about. "David" explains:

> *I try to think of what is important to do for the environment (…) because you do get a bad conscience sometimes. So, I participate in beach clean-ups with barbeques and things like that—where you pick up waste and it also becomes a social event.*

David clearly regards participating in beach clean-ups as a way of doing something good for the environment. A beach clean-up event does not only seem to be about tidying up the beach but is also more of a personal catharsis as it helps David deal with his feelings of a bad conscience about the environment. Such events also have a social element that seems to be a motivating factor for environmental actions. In contrast, "Clara" explains that she does not need this social dimension or an event to pick up waste from the beach:

> *I participate in beach clean-ups sometimes, but it is not there [that] the big effort is made, really. It is rather when you go for a hike or are in the water—when you find waste and take it with you. I do not feel that I have to be at a beach clean-up to pick up waste because I do that anyway.*

The reason behind the popularity of beach clean-ups and picking up garbage is probably that pollution from waste on beaches is concrete and visible. As "Eddy" says, "It is only when you get to the beach and you see waste floating around that you get motivated to do something about it." Several informants express their stand that it is when their local surf spot becomes affected that they really start doing something for the environment. Compared with other environmental threats, such as carbon dioxide emissions and non-biodegradable chemicals from surfboard and wetsuit production that are abstract and distanced, the waste on the beach is concrete and experienced directly. Evers (2019, p. 424) calls this direct, embodied experience of non-human agents like waste on the beach "polluted leisure": "The concept of polluted leisure describes the embodied, sensorial, emotional, intellectual, spatial, and technological emergence of pollution—material and social, harmful and nonharmful, actual and perceived assembling with leisure". In our data, polluted leisure, when experienced directly, when surfers for instance see and feel that the beach is flooded with plastic waste, seems to give direction to environmental actions. Whereas the embodied sensual experience of garbage on the beach might be the reason that so many surfers participate in beach clean ups, other environmental hazards are only known through scientific "black boxing" (Latour, 1987). The technological emergence of pollution does not seem to entail the same actions as those directly experienced. Nevertheless, pollution that are not experienced through the senses, seems to have an impact on the respondents. As seen in **Table 1**, almost 50% of the respondents say that they eat less meat. This can be perceived as a response to the more abstract threats of climate change. Frank says, "I try to eat less meat. Not necessarily because I am against eating animals [but] more because I try to contribute to limiting the industry and of course, also because of health reasons". For Frank, apart from thinking about his own health, his reasons for not eating much meat are connected to the meat industry and the industrial production of meat. Similarly, Bjørk says, "I am very concerned with meat production. I don't eat anything that is mass produced. Just whale, reindeer and moose." Perhaps surprising to international readers, Bjørk views eating whale as part of being environmentally concerned. In most places, this might be regarded as unethical in itself, but she considers it part of eating short-travelled, non-mass-produced meat.

Another question is if these surfers think about environmental issues when they buy surf equipment. **Table 2** shows that over half of the surfers in the survey own more than three surfboards. If that is a high number or if it is necessary might be debatable, but it does indicate these surfers' quite high consumption of surfboards. Nearly half of the respondents also own more than three wetsuits. Having two wetsuits can be said to be a necessity in Norway. A person should have a thick wetsuit to surf during

TABLE 2 | How many surfboards and wetsuits do you own? (N = 250).

	Surfboards (%)	Wetsuits (%)
0	6	2
1	20	19
2	22	34
3	15	23
4	14	12
5+	22	9

TABLE 3 | How often do you buy new surfboards and wetsuits? (*N* = 240/243).

	Surfboards (%)	Wetsuits (%)
More than once a year	5	2
Once a year	22	18
Every second year	24	26
Every third year	19	25
Every fourth year	9	10
Every fifth year +	20	20

TABLE 4 | What is most important for you when you buy surfboards and wetsuits? (maximum 2 answers) (*N* = 246/249).

	Surfboards (%)	Wetsuits (%)
Eco friendly production	12	15
Price	39	33
Brand	7	6
Specifications	74	59
Durability	33	61

TABLE 5 | Flights per year where the purpose of the flight is surfing.

	0 (%)	1–2 (%)	3+ (%)	N
Domestic	65	25	10	228
Europe	35	60	5	221
Rest of the world	37	58	6	233

the winter months in Norway, but the winter suit is too warm in the summer. Thus, to be a surfer in Norway means that one does need at least two wetsuits. The fact that many surfers have more than that might just be a sign that they use their wetsuits for a long time, even after these are semi worn out. The question then is rather how often these surfers buy new apparel and equipment.

Over half of the surfers in this survey buy a new surfboard every year or every second year (51%), and almost the same percentage (46%) is found to buy wetsuits within the same time frame (**Table 3**). Again, the question of whether there is a "need" for these purchases can be discussed. Undoubtedly, the findings indicate a high amount of consumption of products with a substantial content of chemicals and substances that are not exactly eco-friendly. Several manufacturers of surfboards and wetsuits have developed products that are less harmful to the environment. These industry efforts of green consumerism (Erickson, 2011) and ecological modernisation (Wilson and Millington, 2013) does not seem to appeal to the surfers in this survey (**Table 4**). Nonetheless, when buying new wetsuits, the most important factor, along with specifications (the suit has to fit; otherwise, it will not be warm enough), is durability. What this means is hard to know based on our data. It can mean that the buyers are concerned with economy (they do not want to spend money on wetsuits too often) or with the environment.

Taking flights is probably the surf-related activity that has the largest impact on the environment. As shown in **Table 5**, most of the surfers in the survey do not fly much domestically, and about one-third do not take any international surf trips annually. However, approximately two-thirds of the respondents admit taking one to two surf trips to Europe and internationally per year, which involve flying. In other words, the average surfer in this survey goes on one or two trips to Europe each year, and one or two trips to destinations farther away. As Borne (2018) points out, emissions from flights are where surfers really stand out as not behaving in an environmentally sound way. David says:

> *I fly about six times a year, I think. A couple trips abroad, and a couple domestic. The dilemma is that people who surf also travel a lot via planes. People like to travel to places with good waves, but flying too much is not good for the environment.*

In their study on surfers surfing at spots where surfing is forbidden because of bird nesting, Løland and Langseth (2017) found that surfers continued to surf despite the ban because of the activity's deep importance to them, a part of their identity and habitus. The same phenomenon can be observed here; David explains about extended travelling in the search for high-quality waves. Nevertheless, he also expresses a certain ambivalence towards this—he knows that the quest for high-quality waves is not environmentally sustainable.

Ambivalence and Dissonance

As we have shown, most surfers consider themselves environmentally conscious. The qualitative interviews provide the same result from all but one informant. At the same time, we observe that their actions, especially regarding surf-related consumption and travel, somewhat oppose their self-image. Hill and Abbott (2009b, p. 160) state that

> *even though many surfers consider themselves environmentally progressive, we find that they are incompletely aware of their own environmental impacts, thus limiting their behaviour as environmental stewards.*

Following the same line of thought, Stoddart (2011, p. 20) informs that "These inconsistencies between attitudes and behaviour are not unusual. Rather, they are among the many tensions and paradoxes inherent to social life in the twenty-first century consumer-oriented society." The question is to which degree surfers are aware of the discrepancy between their attitudes and actions. And—if they are aware of it, how do

they deal with this ambivalence? Clara relates to this issue when she says:

> *I would say that I am environmentally conscious to the degree that I understand that my actions influence the environment and have an understanding of how bad it can be. I am aware that my actions have negative consequences for the environment. I know that flying somewhere has a cost for the earth because you leave a footprint.*

Many of the informants express similar ambivalences—they know that their actions are not good for the environment. For some, this gives rise to a feeling of a bad conscience. Bjørk states:

> *I quickly get a bad conscience when I travel. Maybe not so much by car, more with planes. Because you want so much to travel. But is that really environmentally conscious? And at the same time, the desire to travel is huge. And I think that it is a challenge that many who see themselves as being environmentally conscious have. They also want to travel and are adventurous.*

For Bjørk, surfing and environmental consciousness appear as an utterly ambivalent and complex relation. The desire to travel and experience exotic waves is strong. At the same time, a bad conscience lurks at the back of her mind. This seems common to most of the informants. However, Eddy expresses another view:

> *When it comes to surfing, I don't let the environment stand in the way of a flight. Absolutely not. Then I'd take a flight to go surfing. If you have the means to do it—then it is just "off we go". Then surfing comes ahead of the environment.*

Even if the quotes from Bjørk and Eddy show contrasting feelings of guilt and lack of remorse, they both reveal a passion for surfing that makes them act in ways that are not environmentally sound. For some participants of this study, this seems to lead to what Festinger calls cognitive dissonance. Environmental psychologist Per Stoknes (2015, p. 63) explains, "We have two thoughts, or cognitions: *I have a large carbon footprint*. And I've learned that CO_2 *leads to global warming*. These two notions don't go well together. They conflict with a positive self-image and create a vexing discomfort." This appears to be exactly what happens to our informants. According to Festinger (1957), to reinstate consonance, people experiencing dissonance have to legitimise their behaviour in some way or another. For instance, Frank says, "Well, I am environmentally conscious, but if I act in an environmentally friendly manner, I don't know. I try to eat less meat. (…) and I always sort my waste." Eating less meat and participating in beach clean-ups can be perceived as measures that help justify the informants' self-identification as environmentally conscious. To cite another example, David says, "I bought a bike so I can start biking to work. That is being environmentally conscious." Biking to work and eating less meat can be viewed as simple measures that compensate for the ambivalence and the dissonance that the informants might feel. This can be considered what Wicker (2019) calls "low-cost situations." Cost, as it is used by Wicker here, is not about economy, but rather what facets of an activity that is seen as more or less important by the participant. Wicker finds that many sport participants engage in low-cost environmental actions, such as separating waste and buying local food. In contrast, it is much harder for athletes to scale down on travelling, which seems to be a high-cost situation—situations that are more important to the athletes. As Lazarow and Olive (2017, p. 215) states "…what surfers are willing to give up to secure better environmental and social conditions is difficult to know, and decisions are often influenced by various social and cultural trends." However, participating in low-cost situations apparently might be seen as helping surfers get rid of their dissonance. Another way of justifying travelling is by stating that they actually learn a lot about the environment when they travel. David explains:

> *You do get to see and experience a lot when you travel. I've been to Indonesia, and I have seen how much plastic floats around. You do get very aware that we as human beings should do something to take care of nature.*

The thought that David expresses here is that even though travelling has environmental impacts, it can be defended because it leads to pro-environmental behaviour in the second instance. It is difficult to determine the degree to which there is any truth to such a claim. Such a statement can nonetheless be interpreted as an expression of David's attempt to justify his actions in order to create cognitive consonance.

To return to the question of high vs. low cost, why should travelling be considered a high cost? As Bjørk says in an above-cited quote, surfers consider themselves ecologically responsible, but they also feel the urge to travel and embark on an adventure. Eddy delves into this self-contradiction when he says:

> *Whatever your activities are, these are going to affect the environment in some way or another as long as you are passionate enough. I don't think there are people who give up good experiences because these affect the environment.*

Eddy clearly indicates that for him, and in his opinion, for most people, the passion for surfing outweighs taking care of the environment. As Evers (2019, p. 433) explains, concern about the environment is entangled with other desires and needs. Many of the surfers in our data material are torn between two passions—a passion for the environment and a passion for surfing that entail travelling and consumption of surf-related goods. To further explore this issue, we now turn to the sociology of passion.

Cultural Dissonance

The theory of cognitive dissonance to a certain degree presupposes that human beings are rational actors; if a person acts in conflicting ways, this must be solved in some way or another. This might be the case for some informants—for instance, they have to defend their travelling by saying or thinking that they do a lot of other good things for the environment. Others may not think of or feel such conflicts. Another question is to which degree these inner conflicts are felt and to which extent they are narratives that interviewees come up with when pressured to talk about the issue in an interview. Anyway—whether these are real feelings or narratives—this

research has so far shown a gap between actions and attitudes. The surfers seem to have two conflicting passions; one drives them to perceive themselves as environmentally conscious *and* the other drives them towards actions that are not so good for the environment. To understand the process behind passion development, we have to turn to the value system of surfing, in other words, what is given recognition in the surf culture.

The connexion between value systems, recognition and desire development has previously been described by Langseth and colleagues. They have shown how risk can be perceived as a form of symbolic capital in base-jumping, climbing and freeride skiing, which gives rise to a logic that connects risk-taking, recognition and status (Langseth, 2016; Langseth and Salvesen, 2018; Tøstesen and Langseth, 2021). In a study on Norwegian surfers, Langseth (2012) has found that the dominant forms of symbolic capital are skills, subcultural knowledge, commitment, and local affiliation. According to Langseth, these values determine status and position in the social hierarchy of surfing. The values are gradually learned as neophyte surfers are socialised in the surf culture and become "natural" —taken-for-granted part of surfers' thinking. These values can be regarded as part of the doxa of surfing, values that are naturalised and not questioned (Bourdieu, 1990). The values described by Langseth are of course not exhaustive—the value system of surfing is more extensive than this. The question then is how the attitude–action gap can be understood from this perspective. Let us look at a few quotes. Clara says:

> *When I tell people that we have [stayed for] five weeks in Sri Lanka, it is inconceivable for some to travel and be away for such a long time just to surf, but it can impress others. It can be an explanation of why many choose to travel because it is a status symbol to surf in many different places and that you are not narrow-minded and just surf in Unstad.*

Several elements are revealed in this quote. First, when Clara says that many people do not understand why she can go on such extended trips just to surf, we assume that these people are probably non-surfers—persons who do not understand the passion for surfing—and in Bourdieu's view, stand outside the field of surfing and do not comprehend its inherent value system. Second, the quote shows that just surfing on your local spot (in this case, Unstad, Lofoten) is regarded as being narrow-minded. In other words, staying and surfing in your local environment are not what gives recognition. Third, she clearly states that travelling "impresses" people and grants status. She goes on to elaborate on this matter:

> *Maybe you have surfed a wave that requires a certain skill level and that everybody knows about. And people just ask, "Have you surfed there?" For your own part, you feel [a sense of] achievement, and I also think that it has to do with status—that you have been around and can impress people in that way.*

Here, Clara expresses two things: surfing famous waves abroad gives a sense of personal achievement *and* grants status and recognition. The Bourdieusian point here is that these two elements are connected; what people want to achieve is linked to what offers them status and recognition in a certain culture. In the value system of the surf culture, travelling is a form of symbolic capital that grants status and recognition. It can be perceived as part of the unquestioned doxa of surfing. Much like in skiing, where participants rely on mobility networks to perform their preferred activity (Stoddart, 2011), surfing is also deeply connected to transport (see Wheaton, 2020). Both in form of car dependency and long-haul flights. The value that travelling holds in the doxa of surfing has a long history, and it would be outside the scope of this article to provide an in-depth analysis of this theme. Ruttenberg and Brosius (2017, p. 111) maintain that "…surf media and industry continue to construct a travel-to-surf narrative.…" Aside from media and industry, another element that influence the value of travel in surfing is that modern surfing has always been connected to tourism and travel. After surfing regressed as a pastime in Hawaii in the nineteenth century, its rebirth was to a large degree part of marketing Hawaii as an attractive tourist destination at the end of that century (Warshaw, 2010). Furthermore, when surfing advanced from an activity that had very few participants to become part of the pop culture in the 1950s and the 1960s, movies such as *Endless Summer* (1966) highlighted travel as an essential aspect of what it meant to be a surfer and thereby consolidated travelling as part of the value system of surfing.

The point here is that travelling is so ingrained in the surf culture that even surfers who perceive themselves as "green" cannot and will not avoid it. Instead of understanding the attitude–action gap at just a cognitive level, it is important to comprehend that this discrepancy has deep roots in the cultural history of surfing. Travelling is important to surfers, and so is being "green." Again, it would require much more space than this article allows to delve into the connexion between surfing and environmentalism. Nonetheless, it is safe to say that being environmentally conscious is also part of the value system of surfing. Stoddart (2011) found that in the discursive construction of skiing, skiing is linked with nature and environmentalism. The same can be said about surfing. Eating less meat, taking part in beach clean-ups and so forth are also actions that give recognition in the surf culture. When a person opens a surf magazine, one will find a lot of information about how important professional surfers think it is to take care of the environment. As mentioned, exploring how environmentalism has come to be part of the value system of surfing would require systematic research on this subject. Nonetheless, the connexion between surfing and environmentalism is probably linked to surfing's relation to the countercultures of the late 1960s. If this is correct, it might also to contribute to understanding of why climate protection is less on the agenda than pollution and nature conservation for ecological inclined surfers since climate change was not part of the environmental concern for the countercultures in the 1960s.

When present-day surfers are socialised in the surf culture, they learn, among other things, that as surfers, they should be concerned about the environment, *and* they should travel. Both have value and offer credibility and recognition. The action–attitude gap seems to be an inherent part of the value systems of surf cultures. In addition to regarding this gap as just a cognitive

problem, we consider it as a form of *cultural dissonance*. Cultural dissonance is a concept that is used to some extent within sociology. Usually, it used to highlight disagreement *between* different cultures and philosophical traditions (Ade-Ojo and Duckworth, 2016). We use the concept in another meaning. The way we have come to use it, on the basis of the empirical material in this article, the concepts aim at understanding opposing values *within* a culture. In our instance, cultural dissonance is when surfers are given recognition for both having environmental attitudes *and* extended travelling. Both can be seen as being part of the doxa of surfing, but it is not necessarily felt as a cognitive dissonance. Rather, both travelling and consumption of surf-related goods, on one hand, and being "green," on the other hand, are perceived as natural and to a large degree unquestioned aspects of being surfers. Even if these values can be viewed as opposing, it is still taken for granted that as a surfer, you should strive for both; you ought to be green and you should explore and be adventurous.

CONCLUSION

In this study, we have aimed to explore surfers' attitudes and actions regarding environmental issues. We have found that a majority of the surfers in this study perceive themselves as environmentally conscious. Our findings also show that regarding environmental actions, surfers are mostly involved in what can be called low-cost activities that do not disrupt their identities and passions as surfers. This means that there is a gap between surfers' attitudes and actions. This gap gives rise to ambivalent feelings; many of the surfers in our study reveal that they experience what Festinger (1957) calls cognitive dissonance. To compensate for these ambivalent feelings, the surfers participate in beach clean-ups, eat less meat and state that the act of surfing and being in nature make them more prone to take environmental action.

However, our main point in this article has been to show that the attitude–action gap might be inherent to surf cultures. In surf cultures, there seems to be a cultural dissonance, opposing values that give surfers the impetus to consider themselves "green," on one hand, and to take actions that are not environmentally sustainable, on the other hand. Hill and Abbott (2009a, p. 293) state that an organised, critical eye on the surf industry and on the destructive practises inherent in the surf culture is needed for surfing to become sustainable. We agree, and we would add that it is the doxa of surfing itself that needs to be changed. If surfers are open to such a transformation—that is an open question. . . .

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

ETHICS STATEMENT

The studies involving human participants were reviewed and approved by NSD (Norwegian centre for research data). The patients/participants provided their written informed consent to participate in this study.

AUTHOR CONTRIBUTIONS

TL and AV contributed to the conception and design of the study. AV organised and collected the data material. TL wrote the first draft of the manuscript. All authors contributed to manuscript revision, read, and approved the submitted version.

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Is Sport Sustainable?—It Depends!

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Is sport sustainable? Could sport be sustainable? Is there hope? The short answer is: it depends. This article discusses the six most essential issues on which answers to the questions above depend. First, it depends on what we already know about sport and sustainability. Second, it depends on how we observe or define sport and sustainability, respectively. Third, it depends on the ontology and epistemology on which the definitions and theories are based. Fourth, it depends on how we describe and explain the relationships and dependencies between sport, society and the environment. Fifth, it depends on how historical and sociological theories describe and explain how societies and civilizations operate, develop and eventually collapse. Sixth, it depends on whether we believe is it possible to plan and steer the future. These conditions indicate that the questions are challenging to answer but not impossible. Based on sociological systems theory, the author concludes that sport will not be sustainable unless modernity changes into a different kind of society—a world society that operates and governs from the binary code of sustainable/unsustainable instead of today's statal code of power/powerless.

Keywords: sport, sustainability, sociological systems theory, civilizations rise and fall, new society

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INTRODUCTION

In March 2019[1], I was watching the television broadcast of the ski-jump contest at Holmenkollen Ski Festival. For years, this yearly festival has had a national significance, and the ski-jump facility has long been a symbol of national identity and pride. Suddenly, looking at the spectacular performances, I noticed that the bib numbers' sponsor pinned to ski jumpers' chests were CHOOSE[2], an international actor in the business of selling carbon compensations. I become shocked and disappointed. Is this how the ski sport will reduce their carbon emission problem? Will all sports follow suit, buying carbon offsets so athletes and supporters can travel with a clean conscience while leaving developing countries responsible for producing energy from clean and renewable sources? To me, this is almost like cheating or paying indulgence. Sport, I thought, as all other organizations and institutions in modernity, should endeavor to choose the right and most effective means to minimize their impact on environmental, economic and social sustainability. Is modern sport willing to go all the way to be sustainable? Is it possible at all for modern sport to be sustainable? Is there hope? The last three questions are crucial to answer.

I started reading academic articles and books realized soon that the answer was: "It depends!" This article will address what I saw as the six most essential issues that answer the three questions above. The answers depend on what we already know, what the research on this topic has revealed, and whether the right questions have been asked. Second, I discovered that the answers depend

[1]This article is a revised and extended version of my key note at EASS Conference "Sport and the Environment," June 3-6, Bø I Telemark, Norway.
[2]https://chooose.today/partner/.

on how both sport and sustainability were defined and delimited in public discourses and current research. Using one definition of sport combined with one definition of sustainability led both commentators, debaters and researchers to very different conclusions about whether sport can be sustainable than if they used other definitions. Third, it also struck me that the answers depend on the ontology and epistemology embedded in the definitions, analysis and scientific theories. Taking the world as it is, seemed natural to some debaters and researchers, while others insisted that everything is socially constructed. The different ontologies and epistemologies affected, of course, which conclusions the debaters and researchers could draw on the question above. Fourth, and most importantly, ontologies and epistemologies also influence how researchers think about how societies work, how they operate and develop, and how this may impact individuals in particular and nature in general. If one assumes that sport is produced, maintained and developed within a society, then whether the sport is sustainable depends on and is influenced by its attributes and operations. Fifth, my reading revealed a need for theories that represented the complex and intricate relationships between individuals, sport, society, and the environment, or at least discuss the rise and fall of civilizations, including modern society's prospects. Sixth, whether the sport is sustainable depends essentially on whether sport is able to steer itself toward sustainability or whether there is a possibility of political steering within and between societies over centuries, and not least, steering for a certain future. In the following, I will delve into these six issues and show how they frame the answers I am able to give to the questions above.

The current literature seldom addresses these framing and determining conditions for our understanding. That is understandable in light of the vast complexity and intricacy of the issues. Nevertheless, this article will tentatively address these six necessary conditions for answering whether the sport is, or can be, be sustainable. I think the time is ripe to lift these issues forward and discuss them. I do not pretend to give neither a comprehensible nor final answer to the question, "Is sport sustainable?" I only want to raise awareness about how our thinking is conditioned and determined. In other words, I suggest a theoretical perspective to understand the relationship between sport and sustainability and eventually help the sport to become sustainable.

In the following, I first present and discuss some of the most definitive studies on sport and sustainability. Then I invite the reader to reflect upon how we as ordinary humans and as researchers observe the world and find ways to describe it. From this detour in the philosophy of science, I look into how "sport" could be defined and delimited and which consequences these efforts have on the question of "is sport sustainable?" Next, I do the same definitional exercise concerning "sustainability," showing some of the attempts to characterize this phenomenon and document the complexity and intricacy the definitions reveal. Doing so gives me the tools to discuss how sport influences and cope with sustainability and concludes that sport seems both unwilling and unable to reduce its impact on sustainability. This conclusion leads me to claim that sport, metaphorically speaking, carries the DNA of modernity and cannot be more sustainable nn modern society. This claim again opens for a discussion of relevant theories to explain how societies and civilizations develop and fall, how they react to challenges and catastrophes, how they change and restructure. Therefore, the question of whether the sport is sustainable has to be placed in that historical context. I will therefore look into some "grand theories" for an answer, theories that address the rise and fall of societies and civilizations and why some collapse and others survive (Diamond, 2003, 2005; Turchin, 2007). Since the pressing question of whether modern sport can be sustainable, I will also relate sport and sustainability to the challenges facing the 21st century (Harari, 2018). Most important, however, is my use of the sociological theory of Niklas Luhmann (Luhmann, 1984, 1997a). In my opinion, his approach offers the most convincing perspective on how societies have evolved historically and may develop in the future. In particular, his view on modernity and its attributes (Luhmann, 1998) helps me answer whether sport and society can be sustainable.

This article is an explorative and tentative theoretical discussion of the issues raised above. The space limit allows only painting a broad and impressionistic picture, using stiff brushes and intense colors. This contribution is, therefore, more of an essay than a traditional scientific article. In this particular thematic context, I find it very appropriate to follow Bateson's (1972) advice of "connecting the dots" rather than "analyzing the dots." This task is more urgent now than ever before, in particular on the topic of sustainability. As Fritjof Capra wrote: "… this [connecting the dots] is critical today not only in science but also in politics and civic life, as most of our political and corporate leaders show a striking inability to connect the dots."[3]

SPORT AND SUSTAINABILITY—ATTENTIONS AND PREREQUISITES

What do we know about sport and sustainability? A Google search using the keywords "sport and sustainability," returned almost 230 million hits. Searching on Google Scholar with the same keywords gave nearly 560,000 hits. Both findings indicate the relatively considerable *attention* focused on this topic as well as implying its importance. Searching for each keyword alone came up with one surprising result: "Sport" gave 10.5 billion Google hits and "sustainability" 0.8 billion. The great interest in sport indicates that it has considerable potential to impact the public's observations and responses to the demands of being more sustainable. This potential is one crucial reason for making an in-depth analysis of sport and sustainability.

This rather crude and superficial search showed that "sport and sustainability" is an *important* topic worldwide, at least on the Internet. Second, it documented that a comprehensive review of all aspects of "sport and sustainability" is too large of a task for one scholar to cover in one article. Third, I got a provisional impression of the variety and debt of the postings and papers

[3]http://www.anecologyofmind.com/gregorybateson.html (read 21.01.2021).

on this topic to position my contribution in the societal and scientific context.

Looking through a fraction of the links popping up during the Google search, I discovered that sport is *doing* a lot to be more sustainable. Webpages and articles tell us that sport is concerned with pollution, recycling, carbon emissions, and so forth. The results inform us that many voluntary and organizational initiatives are trying to make the sport more sustainable, such as banning the fossil fuel industry from sponsoring sports and committing sports organizations to adopt a climate action framework. We learn also of conferences that have stated that only exact, bold actions will position sport as a sustainability leader. We read that sustainability is one of the three pillars of the Olympic Agenda 2020. These searches indicate that sport and sustainability involve individuals, organizations, institutions, politics, economy, technology, and nature. They all seem to be entangled and dependent on and influenced by the actions and responses of others.

Most of the same issues and themes appeared in the scientific articles and books revealed by the Google Scholar search. As one can imagine, it is impossible to give credit to all the 560,000 hits. Many of these articles focus on how sports organizations in general and the sports industry, in particular, have developed *strategies* to address relevant issues. The concern for sustainable management of sport has triggered two types of environmental initiatives: to reduce the harmful carbon footprint and to use sports to raise ecological awareness (Trendafilova et al., 2014). Sports organizations around the world have adopted many environmental programs. My concern with this adoption is the lack of a thorough theoretical analysis of what makes sport unsustainable in the first place. To put it bluntly: it is not sufficient to recycle cups and bottles after a soccer match, heating the stadiums with renewable energy, more use of public transportation by subways, etc. These actions are more or less symptomatic treatments. One has to address more precisely why fans, facilities, transportations etc., have emerged at all. "Something" has transformed sport from a ludic, informal, leisure activity to a global, commercialized, professionalized spectacle with grave consequences for environmental, economic, social and psychological sustainability. It is crucial to identify this "something" to solve the challenge of sustainability.

I In the following, I will focus only on exemplary scientific contributions that outline the prerequisites to make sport sustainable or not. For example, Lindsey (2008) claims that sustainability is a crucial issue in sports development these days. Yet, he also claims that research on sport and sustainability lacks a *theoretical* underpinning. Lindsey's contribution in that regard is to conceptualize sustainability in sport development. I fully agree with Lindsey that the research needs more theoretical support. However, I am surprised that Lindsey only addresses the conceptual problem of sustainability. Why didn't he also discuss the conceptualization of sport? Without taking a closer look at the sport's distinctiveness and operations that have consequences for sustainability, much of the theoretical efforts may prove worthless. And is "sport development" the proper perspective to make the sport more sustainable?

Socialization and *learning* are prerequisites for convincing individuals and groups to become more sustainable. McCullough et al. (2016) give an extensive review of the current research on environmental sustainability in sport, focusing on sports organizations. They further suggest a model of how individuals, organizations, and institutions may learn and act to implement waves of environmental sustainability into the sport. The authors also offer a conceptual framework and empirical descriptions to understand how the awareness and importance of sustainability ebb and flow in sport and why this happens. Undoubtedly, this is essential knowledge about how sports organizations respond to the sustainability issue. However, they do not have an explicit discussion of the autonomy of sport that may obstruct parts of the efforts to be sustainable or discuss what aspect or dimensions of environmental sustainability they are studying. In particular, a discussion about whether sport in its modern configuration could be sustainable at all, could have been interesting.

The comments above lead to a discussion of whether the ambition of winning could be combined with the responsibility of taking care of the environment. Barker et al. (2014) touch on this question in their article "High-performance sport and sustainability: a *contradiction* of terms?" To a certain degree, they show that elite sport and sustainability are incompatible and contradictory. The authors point out that many athletes exploit their bodies for short-term gain or cheating for victory. Elite athletes face extreme pressure. The selection process among capable athletes, the continual stress to perform, and the desire for success almost force athletes to do whatever it takes to be the best. Even if the authors suggest that it is difficult to see how elite sport could be sustainable today, they nevertheless express hope if elite sport pays more attention to educating the athletes on sustainability. As they claim, "Learning is essential" (p. 7). I agree that learning is essential in all human practices. However, what is the main lesson athletes learn in sport? Is it to be fair and morally responsible, to be sustainability-conscious or a winner?

The Norwegian sports philosopher Sigmund Loland believes it is possible to be all three (Loland, 2006). This is a recurring theme in his extensive and inspiring writings. Loland believes that sport could be sustainable, given some *necessary changes*. In this article from 2006, he discusses whether the Olympic Games can serve their environmental concern for sustainable development by selecting and reforming individual sports. He answers his question by first defining the ideal of sustainable development and then reviewing Olympic sports, calling for reforms concerning the objective of sustainable development. Without going into detail about his rather convincing argumentation, I will focus on his reformist requirements. He argues, and I quote: "If we are to take the Olympic ambition of sustainable development seriously, not only record sports but sports with specialized performance ideals ought to be abandoned or reformed" (p. 150). This suggestion is somewhat radical. I find Loland's argumentation and conclusion interesting and very similar to my own. However, in my opinion, he does not quite settle the question. Specialization and breaking records are, metaphorically speaking, only elements and sequences of elements of Sport's DNA (more on this later). Loland does not

identify "the genetic code" that orders such elements (records) and sequences of elements (specialization) in sport.

This short review brings forth two critical issues. First, these articles suggest necessary *prerequisites* for the sport to be, or become, sustainable. Second, the public and scholarly discussion seem to disregard, or at least pay little attention to, the *distinctiveness* and *operations* of sport as a social system and how these aspects work for or against the idea of sustainability. Both topics are decisive to reflect upon if we aim to answer whether the sport is, or can be, sustainable. More importantly, these topics are decisive to answer the vital question "Is there hope?" So, how can we identify both the prerequisites, distinctiveness and operations of sport as a social system and the traits of sustainability? To answer these questions, we first enter the playing field of ontology and epistemology. This detour is essential to discuss how we observe the appearance and reality of these phenomena and their reciprocal impacts.

OBSERVING THE WORLD—SOME EPISTEMOLOGICAL STATEMENTS

As scientists, we ask a significant number of essential or ontological questions. "What is sport?" or "What is sustainability?" are two examples. Quite a few answers have been suggested on these two concepts. More important, one question often slips away: "How do we know?" We should remind ourselves of this epistemological question from time to time. Luhmann gives an answer I find compelling. As scholars, we should take "the world as it appears without asking ontological or metaphysical questions … Whatever appears can be interpreted as being the exclusion of other possibilities … If something appears as structure …, it is a strong argument for its being an indication of reality" (Luhmann, 1990a; p. 83). In other words, Luhmann is more concerned about epistemology than ontology, and so am I. *Identifying* the structure and operations of sport indicates its reality. Sports involves structure–fitness, music, and dance as well. As individuals, we observe the structured movements of fitness, dance, music, and sports. We take these structures for granted as an indication of reality and may choose to participate. Researchers take such structured activities as real and as expressions of a social institution's or a social system's existence, in my terminology. From this, researchers such as myself specify and explain how and why social systems emerge, how they are produced and reproduced.

Maturana proclaimed in the 1970s: "Everything said is said *by* an observer." An intriguing answer to the critical question of "how do we know?" At a later conference, von Foerster cited and reformulated Maturana's postulate: "Everything said, is said *to* an observer" (von Foerster, 1979; p. 5). In doing so, von Foerster established a vital connection among three fundamental factors: an observer capable of formulating descriptions, a language connecting two observers, and the society that emerges when at least two observers use language. von Foerster also emphasized that every observer has cognitive blind spots. What we use to observe—be it microscopes or telescopes, concepts or theories—makes us see some things and disregard others. These ways of observing defines how we understand the "realities," how we communicate about them, and how we deal with them. Realities as sports and sustainability are no exceptions.

Since I am the observer in this article, I have to clarify my *background* and *perspective* for observing sport and sustainability. I base my answer on 40 years of studies on sport as a social system, or more precisely, "How is sport possible?" (Tangen, 2004). My Ph.D. study started in 1982 with a Weberian approach to understanding the development of sport in the Western world. It ended up being a homage to Niklas Luhmann (Tangen, 1997). Since then, I have observed different aspects of sport and its psychological, social and environmental environment through this remarkable theory. I find the approach particularly suitable, supplemented with similar theories and concepts, for determining whether the sport is sustainable. In other words, I perform what Luhmann (1984) calls a second-order observation, observing other scholars' observations.

Luhmann (1984) developed Maturana's and von Foerster's epistemological point of departure further. His analysis of society is grounded on two *premises* that stem from the concept of observation. "(1) Every description of society must take place within society; that is, it is subject to observation, and this observation, at least today, is reflective. (2) Every description is bound to the basic structure of the operation of observing and therefore not overcome the limitations this implies." (Luhmann, 1998; p. 78). These premises apply to everything I say in this article.

When observing, we make *distinctions*. We observe differences between this and that, focusing on the foreground and ignoring the background. For example, one crucial difference is whether the tennis ball is "in" or "out." If the ball is in, one of the players earns points. The distinction between winner and loser is made when one of the players reaches a specific number of points. In this article, I use the distinctions sport/society, society/environment, problem/solution, and sustainable/unsustainable to discuss some crucial aspects of the driving question—"is sport sustainable?" The definitions and theories I present in the following are also distinctions, though very sophisticated distinctions.

Observing through differences is probably the most basic operation used to gain knowledge in biological, psychological, and social systems (Luhmann, 1984). Luhmann refers to the mathematician George Spencer-Brown's terminology that two operations are going on: *distinction* and *indication*. A distinction, or difference, is made between something and something else. The inside of something is then indicated or marked. When two or more individuals agree to determine who runs fastest, the social system of the sport emerge. A distinction between sport and everything else is drawn. The selection of athletes, the length of the run and the start and finish lines indicate that the system's inside is marked. The first athlete to reach the finish line is the fastest and, therefore, the winner (Tangen, 1997).

We use distinctions to describe the world and ourselves, making sense and gaining knowledge, be it sport, sustainability, science and other phenomena. Biological, psychic and social systems emerge from the *initial* drawing of a distinction between the system and the environment (Luhmann, 1984). Everything

but the system itself is the environment. The individual psychological and organic system, other social subsystems, and nature are the sport system's environment. Identity is created when the difference between the system and the environment re-enters the system. References to and descriptions of itself and the environment express the system's knowledge about itself (self-reference) and the environment (external reference). This knowledge is practical and useful, but only temporary. The knowledge renders the system capable of maintaining and changing as responses to inputs from the environment. However, when the distinction between the system and the environment for some reasons ceases to be drawn, the system and the environment cease to exist.

From the initial distinction between the system and the environment, the system maintains and develops itself by making new distinctions. All social systems are *autopoietic*, which means that they produce, reproduce and organize all their constituent elements. They are self-creating, self-organizing, self-maintaining and self-developing entities. Nothing is imported "readymade." They are operationally closed, which means that they operate only within themselves (Luhmann, 1984). The sport system produces its participants, performances, events, facilities, and rules (Tangen, 1997). However, the sport system continually observes and relates to the other subsystems of society. Each system decides its contact with its environment. It shields itself from countless influences while selecting a few relationships. Luhmann conceptualizes such relationships as structural coupling, a mechanism for mutual influence (Luhmann, 1984).

In other words, the social system of sport *observes* itself and the environment and gains *identity* as different from the environment and *knowledge* about its various impacts on the environment. It is *autopoietic*; it produces and reproduces everything it consists of. But what are these distinctions and indications that are operative in sport day in and day out? Which consequences for sustainability follows from the distinctiveness of sport and its autopoietic operations? I attempt to answer these questions in the following section.

THE DISTINCTIVENESS AND OPERATIONS OF MODERN SPORT

I think most of us will agree that modern sports are about winning and losing, following specific rules and norms, performed in distinct arenas and stadiums after training and preparing for months and years. Participants are included based on membership and selected to teams and contests according to specific performances and standards. The competitions, i.e., the matches, the downhill races, the tournaments, the marathons and so forth are events, scheduled and planned for months and years ahead. The events can be small as a soccer match for children or mega, as the Olympic Games. New playing fields and arenas are planned and built for specific purposes and different sports. Athletes, sports leaders, spectators and tourists travel between cities, countries and continents to compete, organize, support and experience the sport. These structures and operations are clearly observable, but what are the fundamental distinctions and indications behind them? Can a non-essential definition capture the more or less concealed distinctiveness of sports and sporting behavior?

I have observed that many social scientists do not define the social phenomena we call sport (Tangen, 1985, 1997). At best, some use ad *hoc* definitions that encompass somewhat different social phenomena as sport, fitness, exercise, physical education and so forth. The ad *hoc* definitions are presented in a rather superficial manner and passing. As mentioned earlier, I am also somewhat surprised to see that scholars put great efforts into defining sustainability but leave out their view on what is distinctive about sport and its operations. The absence of reflections on modern sport's distinctiveness and operations makes it difficult to conclude whether it is sustainable.

Roland Barthes once asked: "What is sport?" He continued: "Sport answers this question by another question: who is best?" (Barthes, 1961/2007; p. 58). From my perspective, he is right. It seems that every society, every culture, both historically and contemporary, had some body-based practices that could be intuitively observed as a sport. In contrast, other practices were intuitively considered as "something else." In my research, I extracted some distinctive characteristics based on Luhmann's concepts elements, operations, and code. I ended up claiming that sport is "displaying and comparing bodily movements to determine who is the ablest, i.e., the winner" (Tangen, 1985, 1997, 2000). Sport is about winning and avoid losing. This distinction differentiates sport from other body-based practices like exercise, fitness, physical education, and so forth and differentiates sport from politics, science, economy, and religion (Schimank, 1988; Luhmann, 1990b; Stichweh, 1990).

Using Luhmann's terms, I claim that the binary and *primary* code of sport is "win/lose." Other body-based practices such as exercise, fitness, and outdoor life activities have their code, which I do not have space to discuss. Everything going on in sport is about deciding who runs fastest, jumps highest, or is strongest. This code is observable in the epic story of Gilgamesh, in the description of the wrestling match between the great ancient Babylonian hero Gilgamesh and his friend Enkidu. We can observe the code in the "Iliad" when of funeral games of Patroklos during the siege of Troy is described. More so in the stories of the ancient Olympic Games in Greece, the cruel "Ludi" at the Roman amphitheater, the horse races at Circus Maximus as well as in the "leikir" of the Vikings, the tournaments of the medieval knights, the deadly ball games of the Mayans, and the Tikopian dart matches. They were all about winning and losing (Tangen, 1997).

However, the *primary* win/lose code was supplemented or extended during the 19th and 20th centuries. The sport system started to experiment with the *secondary* code of "improve/decline" to secure the victory (Tangen, 1997). It was not enough to be the best, but the athletes also had to be better, run faster, jump higher, and be stronger. Selecting the proper operations and avoid the improper ones concerning winning were easier using the secondary code. Whenever a loss was experienced, the reflections centered around possible reasons for the less successful performance. This change of focus opened up

more possibilities but also more risks. The attempts to improve could fail. The contingency increased. However, the benefits were more promising than drawbacks. This *double*-code is the "driving force" behind all sporting practices, even though the "force" is much stronger in elite sport than leisure sport.

The "curse" of modern sport is that it is not enough to be the best among your peers. The nagging question continually "haunts" the participants: "Am I better than others in this local community, in the county, in my country, in the World?" This urge for *sporting omnipotence* had to be satisfied, virtually at all costs, with possible consequences for environmental, economic and social sustainability. The emergence of elite sport is a manifestation of this urge. Many contests are staged locally, nationally and internationally to determine who is best in running, jumping, throwing, swimming, playing soccer, and so forth. Even children and sporting amateurs find meaning in traveling around to compete, performing leisure sports. Parents or voluntary adults fill up cars with children to play soccer matches against a local city team. Amateurs travel from Norway to Italy to participate in Marcia Longa, a cross country ski race. Significant events, like World Cups, Olympic Games and other mega-events, attract spectators by the thousands, also traveling from home to the hosting city. They cheer on their national heroes and confirm the significance of sport in modern society. In particular, they applaud record-breaking performances, i.e., performances that exceed every other performance in the actual discipline. Athletes and amateurs travel to areas where they can exercise at high altitude to perform better at lower altitudes. Some escape winter and snow, travel to warmer places to play golf in winter times. Others travel to exotic locations to find the more giant and more exciting waves to surf on. Supporters, journalists, TV-camera-operators follow the tracks of the athletes and teams worldwide, leaving thousands of tons of carbon emissions behind them. All this traveling related to elite and leisure sport, is really alarming and should be analyzed and discussed in relation to sustainability.

Allen Guttmann's seminal work *From Ritual to Record* indirectly documents the development of sport's double-code when he describes sport's evolution from ancient Olympic sport to modern Sport (Guttmann, 1978). According to Guttmann, seven changes took place in modernity: secularization, equality, specialization, rationalization, bureaucratization, quantification, and the quest for records. Every one of these modern characteristics indicates the urge to improve and enhance the performances. Other scholars have added similar and supplementary features (Schimank, 1988; Stichweh, 1990). What is important to stress is that Guttmann's and others' characteristics imply that the double code of modern sport—the win/lose and improve/decline—is distinctive and operative in modernity. To enhance the performances and to win, every stone is turned. Only the sky is the limit. The Olympic motto "Citius–Altius–Fortius" manifests the distinctiveness and indicative operations in modern sports. The slogan also blatantly signifies the hyperbolic tendency of growth in modernity.

We have to realize that the double-code and modern sport motto are *pathological* with *pathogenic* consequences (Tangen, 1988, 2003). Athletes cannot run in fewer than zero seconds. Athletes will not high jump 6 meters without a pole. Athletes will not lift 5 tons in a bench press. Despite this, modern sport continues to improve as if these performances were possible. Such pathological ambitions demand vast resources and competencies. Modern sport has to cooperate with other social systems to get these resources and competencies. The social system of sport gives mass media access to events, contests, and profiled athletes in exchange for exposure and public attention. The sport system enters into contracts with sponsors in exchange for equipment and money. Modern Sport approaches governments and municipalities to get political support in exchange for grants to build facilities and training centers. The sport even places itself at the disposal as a laboratory for human enhancements and its athletes as "guinea pigs" in exchange for scientific knowledge and expertise (Hoberman, 1992) to realize the pathological ambition of *Citius–Altius–Fortius*. Modern elite sport is dangerous and endangered due to its double-code (Schimank, 2005).

In modern elite sports, each athlete, team, and nation search for a competitive edge (Pielke, 2016). The urge for sporting omnipotence has become an "arms race" made possible by the attention, resources, competencies, and legitimation from the other social subsystems just mentioned. This hyperbolic development has resulted in unanticipated but alarming internal and external consequences for sustainability. Besides, we should also pay attention to the impact of leisure sport on sustainability given the number of participants, their conspicuous consumption of sports related products and extensive traveling. However, the development of modern elite and leisure sport is not sufficient analyzed before we take a closer look at the intricate and complex relations between sport, society and sustainability.

SPORT, SUSTAINABILITY, SOCIETIES AND CIVILIZATIONS

Sport is an essential element in modern society. If is affected by the society that surrounds it as well as affecting the society itself. Sustainability have impact on both society and sport and vice versa. To understand the complex entanglement between sport, society and sustainability, we also need to see this complex in light of the development of civilizations. Let's start with the claim that sustainability is not a new problem.

Sustainability has been observed and tried counteracted before. Studies of civilizations indicate that civilizations embed seeds to their own demise. Historically, a particular society's increased regional success was often followed by crises that were either resolved, thereby producing sustainability, or not, thereby leading to deterioration (Diamond, 2003; Turchin, 2007). However, the problem has accelerated in modernity as a consequence of this particular type of society. Now, the whole living Earth is threatened. Still, there is no consensus about how this problem should be conceptualized or solved (Purvis et al., 2019). However, scholarly observations and descriptions are essential to lifting forward and discuss in this context.

Carson's book *The Silent Spring* Carson (1962) exposed the pesticide DDT hazards and questioning the faith in technological

progress. The book initiated a shift in global environmental consciousness. In 1972 the report *The Limits to Growth* (Meadows et al., 1972) was published. Using data modeling and simulation, the authors tried to calculate how long it would take before human consumption (of energy) exceeded the Earth's finite supply of resources. Both books emphasized the dangers of unlimited growth and progress, indicating that the environment has a homeostatic balance that should not be disturbed.

The Brundtland Report for the World Commission on Environment and Development introduced the term "sustainable development" (Imperatives, 1987) based on the idea of balanced development. The report emphasizes that sustainable development is a "… development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Imperatives, 1987; p. 16). The report further argues that sustainable development is "the process of people maintaining change in a balanced environment, in which the exploitation of resources, the direction of investments, the orientation of technological development and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations."

Since then, the debates have been intense about how the concept should be defined and how sustainability should be realized. Here it suffices to give some examples to indicate the difficulties of defining and delimiting this concept. The 2005 World Summit on Social Development identified three *pillars*, or domains, of sustainability: economic development, social development, and environmental protection. Three intersecting circles often represent these three pillars with overall sustainability at the center (Purvis et al., 2019). James and Magee (2016) suggested four *domains*: economical, ecological, political, and cultural sustainability. Another model (Thomas, 2016) indicates that humans attempt to achieve their needs and aspirations via *seven modalities*: economy, community, occupational groups, government, environment, culture, and physiology.

Lately, the UN has proposed 17 sustainable development *goals* to promote prosperity while protecting the planet. Each goal is substantiated by facts and concretized as actions. For example, goal 13, "Climate action," states that "global emissions of carbon dioxide (CO_2) have increased 50% since 1990." Therefore, the UN calls us to take action "Act now to stop global warming." In discussions of whether the sport system is sustainable, these goals are useful. I will later relate the sport system's distinctiveness and operations to some of these goals in particular.

However, one should also distinguish between *internal* and *external* sustainability. By internal sustainability, I mean how the distinctiveness, self-reflectiveness, and operations of the social subsystems affect the subsystems' inner states. For example, could the modern sport, in the long run, cope with the internal consequences of following the pathological code of continuous and limitless performance enhancement? External sustainability refers to how modern subsystems influence the environment, particularly some of UN's sustainability goals, such as individual health, equality, climate change and so forth. Traveling to national and international events and competitions is an example of how sport affects external sustainability. Could the modern globalized sport continue under the horizon of carbon offset and global warming due to traveling?

The discussion of sustainability and the conditions for it has to consider *theories of societies*, theories that observe societies' and civilizations' development and demise, and why some societies flourish and others founder. This article is not the place to delve into and discuss the benefits and shortcomings of the many lengthy and insightful books other scholars have written about this. I only want to mention the most relevant and exciting contributions as a backdrop for discussing sustainability and sport. Diamond's *Guns, Germs, and Steel* Diamond (2003) is a monumental study of the interaction between history, culture, climate and the environment. However, it is also a remarkable study of why Western civilizations came to dominate the world. Modern sports as athletics, basketball, soccer, baseball, cricket etc., played their part in Western societies' cultural imperialism (Guttmann, 1994). Diamond's follow up study, *Collapse*, explains why civilizations decline and demise (Diamond, 2005). Five factors that the civilizations often are responsible for themselves are operative: environmental *damage* like deforestation, pollution, soil depletion or erosion; *climate* change; *hostile* neighbors; *withdrawal* of support from friendly neighbors; and how a society or civilization *respond* to its problem, environmentally, politically or socially.

Turchin (2007) offers a supplementary explanation. In his book *War and Peace and War*, Turchin raises the question, "How are empires possible?" He focuses on essential aspects of how certain groups develop through time, not human individuals. Some groups develop and grow and become empires, mostly due to group traits and responses to events in the surrounding environment. Turchin claims that historical *dynamics* are a result of conflict and competition between groups. He also assumes that different groups have different degrees of cooperation among their members, resulting in various cohesiveness and solidarity. This latter aspect is coined *asabyia*, the capacity of a social group for concerted collective action. Groups of people, finding themselves on fault-line frontiers, develop a high capacity for collective action, enabling them to build empires. However, strong empires contain the seed of future chaos. Prosperity cause population increase and overpopulation and reduced fortunes for the elites. Discontent and strife emerge. Civil wars and popular rebellions burst out. Turchin also claims that rise and fall repeat in phases or cycles lasting 2 to 300 years. Our modern civilization is at the start of the decline if I understand Turchin correctly. The crucial question for modernity is: is there hope for stopping the fall?

Harari (2018) poses *21 Lessons for the 21st Century*, emerging from five challenges related to technology, politics, despair and hope, truth and adaptivity. Sustainability is only one part of one of the political challenges that face modernity, namely "Nationalism." Harari claims that nuclear war, ecological collapse, and technological upheaval threatens human civilization's future. Somewhat ironic, he lifts the Olympic movement forward as an example of how nations can cooperate globally. He sees this competition between nations as an amazing geopolitical agreement. However, he does not discuss the possibility that the contract may result

from one international organization's iron grip on the sport, an organization being criticized for being undemocratic, elitist, corrupt, and unsustainable. Is Harary implying that this form of government is needed to solve nationalism and the other 20 lessons with sustainability consequences? This issue has to be discussed.

The few characteristics, structures, processes and prospects presented above indicate the vast *complexity* and *entanglement* of sustainability, making it very difficult to determine whether the sport is sustainable. On the other hand, as a researcher, one cannot focus on only one or a few attributes, especially since many sustainability elements interact, depend on, and influence each other. This dilemma has no solution but being explicit on which sustainable dimensions, pillars or goals one focuses. In the following, I try to follow that principle. But again, my description is broad and sweeping. What I have tried to document is that the sustainability problem could not be solved without great changes in the society in particular, and the modern civilization in general. Hopefully, my analysis may be considered thought-provoking, but relevant.

Having taken these epistemological, theoretical and definitional detours, I am now ready to suggest a tentative answer to the questions, "Is sport sustainable?" and "Is there hope?"

SPORT AND SUSTAINABILITY

Modern sport's pathological ambition of breaking all records and transgressing all limits threatens its *internal* sustainability. The combined logic of winning and improving drives the sport system to produce better performances, more abled athletes, more systematic training, better equipment, more accommodating facilities, more efficient organizations, more spectacular events and more effective search for the best talents. This ambition already has severe effects on the sport itself and several of the UN's sustainability goals.

The boundless ambition of sport seems to carry its demise. Schimank (2005) pointed out how modern sport's autonomy is dangerous and endangered. It threatens the health of the athletes and the legitimacy of sport in society. These threats may reduce the willingness to participate and the support from governments and sponsors. As mentioned above, the Norwegian philosopher Sigmund Loland warns against Olympic athletes' specialization and record-breaking tendency (Loland, 2006). He claims that these tendencies have to be abandoned or reformed significantly. I think reforms are not enough. I am not sure that abandoning the tendencies are possible either. The modern urge to be sporting omnipotent is very strong. Put differently, the logic of sport threatens the sport itself, i.e., its internal sustainability. Besides, modern sports evoke excitement and patriotism, making it challenging to get rational arguments through in public discussions. Emotions trump reasons.

There seems to be a consensus about the benefits of sport on individual health, integration and equality, community feeling, learning of fair play, engaging in voluntary public engagement and so forth. However, these benefits must be compared and weighed against the disadvantages that sport brings about. Many athletes suffer from injuries, eating disorders, and lower self-esteem due to the urge to enhance their performances. Some athletes use legal and illegal performance-enhancing drugs and methods, risking their health, even their lives. Elite sports use whatever technology available to improve the performances (Pielke, 2016), increasing the athletes' risks for damaging their health. These risks go against the UN's sustainability goal #3 ("Good Health and Well-being").

Politically, the sport system claims "Sport for all." Still, there is a discrepancy between visions and reality. Sports recruits *unequally* regarding gender, race, age, class, income, and other socio-cultural distinctions. The critical question is why? Gils et al. (2021), in a forthcoming study, found that recruiting mentors to supervise coaches in elite sports was based on three distinctions. First, recruiters selected possible mentors from their network. Second, competence and trust were qualities the recruiters looked for, but they could not explicitly define these qualities when questioned. Third, the recruiters did not consider gender balance critical to meet the organization's demands and achieve the desired performances. Gils et al. interpreted these distinctions as an expression of *institutional logic*, a performance logic that permeated the whole elite sport system. This performance logic trumps the social-democratic ambitions of equality and the institutional commitment to follow this national policy. More generally, the performance logic outperforms sustainability goal #5 ("Gender Equality").

Sport triggers emotions and *raptures*, in particular, elite sport and significant sports events. Flyvbjerg (2014) identified four sublimes behind the bidding process for mega-events. These explain stakeholders' involvements and raptures, such as engineers, politicians, entrepreneurs, and architects, as a promising alternative. I suggest a fifth sublime, the "interest group sublime", the rapture that advocates of sporting practices get from constructing a building or arena which is much bigger than they had envisaged. This rapture was very apparent in the Oslo case (Tangen, 2021). Janis (1982) argued that *group-euphoria* tends to develop in temporary organizations in the form of buoyant optimism, a leader with great promise of hope, and a shared belief that the group could make "the future unlimited." There are indications that euphoria has developed in the groupthink of intermediary and temporary groups applying for mega-events such as World Cups and bidding for Olympic Games, reducing the ability to make rational decisions. Solberg et al. (2018) and Jensen (2020) suggest that euphoria drove the decisions in the initial phase of applying for the UCI Road World Championships in Bergen 2017 and Oslo 2022, resulting in "irrational decision-making" (Heldal and Solberg, 2019). However, more research is needed to confirm these interesting theoretical concepts. Here, it is essential to emphasize how interests and raptures force local communities and local politicians to vote for events that threaten several UN's sustainability goals (#6 "Clean Water and Sanitation," #8 "Decent Work and Economic Growth," #12 "Responsible Consumption and Production," #13 "Climate Action," #14 "Life Below Water," #15 "Life on Land," #16 "Peace, Justice and Strong Institutions"). These threats also appear in other circumstances.

The professionalization and commercialization of modern sports imply a tremendous amount of money and wealth. This vast wealth is, for some inside the sport system, an opportunity for *easy money*. Critical journalism and scientific studies have exposed cheating, bribery, corruption, match-fixing, and doping in sports (Pielke, 2016). Athletes, coaches, team doctors, and sports executives have cheated and taken money to manipulate competitions. Such behavior threatens the core of the sport. Cobus de Swardt, Managing Director of Transparency International, puts it this way: there exist "… a culture of impunity at the top of sporting organizations that gives free rein to bribery and obscures financial black holes." (de Swardt, 2016; p. xiii). When victories are purchased or manipulated, the reason for competition becomes futile. Accusations about corruption have also been raised against bidders for mega-events. They have paid decision-makers in the international sports federations to vote for their bids. Pielke (2016). considers sport faces a war against cheating and corruption. World Economic Forum warns that "Corruption has the potential to undermine the successful implementation of all 17 [SDG] goals[4]." Without removing the flows of money in sports, these incidences will not disappear, and sustainability will be challenging to reach.

Sport's structural couplings to other systems, indicated in the examples above, influence all these systems' sustainability: the social subsystems, the ecological environment, and human biology and psychology. These relations made modern sport possible and significant but also dangerous in terms of sustainability. Let me very briefly indicate my points. Without *scientific knowledge* and different *technologies*, the improvement of performances would soon have reached a standstill. I wonder whether Bob Hays' 100-meter record at 9.91 seconds during the 1964 Olympics could have been improved very much without surface mounted starting blocks, synthetic surfaces on the tracks, better equipment, and performance-enhancing substances methods (both legal as well as illegal). This technological development holds for all other sports as well. The examples are endless. However, the consequences of the technologization of the sport system are alarming. Sport seems to turn all stones to get the edge (Pielke, 2016). The American social scientist John Hoberman argued years ago that the science of performance and the sport's dehumanization made sport "a gigantic biological experiment carried out on the human organism" (Hoberman, 1992). This technologization of sports threatens the UN's #3 "Good Health and Well-being."

The spectacular and exemplary sports performances and contests became one of *modern mass media's* most exciting themes and topics, second only to the news. Therefore, the contemporary sport could ask for substantial sums of money to give mass media exclusive rights to broadcast the contests and events, such as the Olympic Games, the World Cups of different sports, the Tour de France, and the Super Bowl. This development enriches both sport and the mass media. Metaphorically speaking, these vast economic resources have worked like gasoline to the Olympic flame and its universal motto, *Citius–Altius–Fortius*.

Other businesses followed suit. *The sporting goods market* is a billion-dollar industry. In the United States alone, sporting goods generate more than 47 billion U.S. dollars annually. On the supply side, quoting (Andreff and Szymanski, 2006; p. 27), "the sports goods industry is an oligopoly dominated by a handful of transnational corporations." They further claim that innovations have become crucial in this industry, partly because it helps athletes win or improve their performances, partly to make the sport more spectacular, partly to test new products and technologies, and partly to facilitate mass access and participation. This development is not sustainable regarding UN's sustainability goal #12 "Responsible Consumption and Production."

Since the ancient policy of *"bread and circus*," sport is still used politically. Today, sport is considered politically relevant for fostering democracy and voluntary public engagement. However, we observe that both democratic and authoritarian regimes use sport to *increase international recognition* and global power. In particular, bidding for and organizing Olympic Games and World Cups seems very tempting for large cities and nations. Despite the experiences that most such mega-events fail to give the expected outcomes, the bids are still coming. However, some possible bidders are alarmed by research showing that *mega-events overrun* with 100% consistency (Flyvbjerg and Stewart, 2012). Overruns in these games have historically been significantly more extensive than for other types of mega-projects. Such consequences do not advance sustainability in the sense of #11 "Sustainable Cities and Communities."

As mentioned, the sport has become increasingly aware of its responsibility for the sustainability of the environment, particularly nature. However, the sport system still hesitates to deal appropriately with one major issue that influences the climate: *traveling*[5] Local, regional, national, and global sports presuppose individual athletes and teams traveling to different places, competing for medals, diamonds, points, and fame in their pursuit for sporting omnipotence. Using cars, coaches, and airplanes—most using fossil energy—that pump carbon dioxide into the atmosphere transport the athletes, spectators, and supporters to the events. However, some awareness of this challenge exists. But will sport follow up on this crucial issue and reduce its carbon emission from traveling to almost nothing? I doubt that. Just let me give a few examples of how this traveling threatens UN sustainability goal #13 "Climate Action."

In Agenda 2020 (Recommendation 4 and 5), the IOC *proclaimed* it would reduce its travel impact and offset its carbon emissions[6]. It is not clear whether this only goes for the IOC members and staff or includes all the athletes, support networks, supporters, spectators, and tourists who travel by the hundreds of thousands to host cities worldwide. FIFA has also produced

[4]https://www.weforum.org/agenda/2019/09/serious-about-sustainability-get-serious-about-corruption/ (read, January 2020).

[5]Transport with large cars and long flight (business class) are the two largest contributors to carbon intensity http://shrinkthatfootprint.com/shrink-your-travel-footprint.

[6]https://stillmed.olympic.org/Documents/Olympic_Agenda_2020/Olympic_Agenda_2020-20-20_Recommendations-ENG.pdf (read, April 2019).

sustainability documents regulating the FIFA World Cup, such as in 2014 (Brazil) and 2018 (Russia)[7]. Both organizations mention transportation and carbon management. However, it seems that this only covers transport within the host cities, not the transport of national teams and spectators worldwide. Why this forgetfulness?

In the "Introduction," I mentioned the somewhat ironic solution to the carbon emission problem of transport of athletes by buying carbon offsets. The responsibility for carbon reduction is transferred to people in developing countries. They are expected to plant trees, making more effective cooking stoves or building wind farms. The complexity, morality and effectiveness of this "solution" have been heavily debated. The Guardian journalist and author George Monbiot consider this as a way of paying for the travelers sins[8] However, airlines have offered voluntary carbon offsetting for over a decade, but <10% of air travelers purchase them (Ritchie et al., 2020). These authors suggest more research to understand carbon offsetting and sustainability's political and social context based on their findings. In this particular context, the athletes', sports organizations' and sport event hosts' values and opinions regarding sports traveling and carbon offsetting seem to an important research theme.

Another example of lack of ethical and sustainable consciousness is also expressed in sponsoring the national Norwegian ski jumping team. In an advert, the male and female athletes are lined up under the headline "The Sky is the Limit." The sponsor is the Norwegian weapon manufacturer NAMMO. Norway is the 10th largest arms exporter, with 2.5 billion NOK revenue.[9] The largest group of arms was "bombs, grenades and torpedoes," with 1.1 billion NOK revenue. These weapons' severe effects on the three pillars of sustainability: environmental, economic and social, in the regions they were used, are not documented. However, one can easily imagine the effect weapons have on UN's #16 "Peace, Justice and Strong Institutions." However, this sponsorship made it possible for the national ski jumping team to compete rather well and bring joy to their country's supporters. How should one weigh these outcomes against each other?

To sum up, I find it hard to believe that sport can be internal and external sustainable in modernity. One reason for this is sport's neglect and denial of the most significant challenge concerning sustainability: its own hypertrophic and pathological double-code. The idea of performance-enhancing and sporting omnipotence is so ingrained in today's elite sports that it may prove very difficult to change. This also apply to leisure sport, but in a lesser extent. Here too the performance code is operative, but in a weaker version. In both forms of sport, the transport of athletes and spectators are a major threat to sustainability. The second reason is the inevitable connections between sport and other subsystems in modern society. The exchange of support, resources, competencies, technologies, equipments, and performances uphold and increases the unsustainable impact of sports; metaphorically speaking: it is like pouring gas on the fire. However, these reasons are two sides of the same coin. The attributes of modern sports mirror the characteristics of modernity. "It is not muscle that wins. What wins is a certain idea of man and of the world, of man in the world . . . " (Barthes, 1961/2007; p 42). In the words of the Norwegian peace researcher Johan Galtung, one could argue: "Sport is a carrier of deep culture and structure." (Galtung, 1982), carrying a message of being competitive in ranking nations, teams and individuals. The deep culture and structure of modern sports are, metaphorically speaking, a blueprint of modernity's DNA. This blueprint is the modern sport's blind spot. Sport cannot, and will not, see that its distinctiveness and operations are unsustainable. Instead, sport is fundamentally concerned about how it can operate according to its logic and double-code. And modern sport continually looks for collaborators to run faster, jump higher and be stronger.

Sport reproduces and sustains modernity's DNA in a more explicit and observable way than other social subsystems. This reproduction is sport's societal task, its function (Tangen, 1997). It displays and legitimizes the logic of progress and growth. Mirroring modernity's logic, its embedded contingency, sport paradoxically contributes to modernity and its demise. In this regard, the sport has a valid excuse for its unsustainable behavior; it acts on behalf of modern society. The blame for unsustainability is, therefore, on modern society. Unsustainability is a symptom of a society in crisis. As before in history, modernity produces its demise. Oswald Spengler once predicted, *"Der Untergang des Abendtlandes"* (or "the decline of the West"). As described above, Diamond (2005) and Turchin (2007) recently launched an even more depressing analysis of human societies' fates and empires' rise and fall. Is this where modern society is heading? Will modernity fall? Do we have to change or "leave" the modern society before sport becomes sustainable? Or is there another ways out for modernity, sport and sustainability? Could Harari's (2018) 21 lessons be applied with success? The answer to "Is there hope?," depends on the possibility of changing the modern society. From my point of view, sequences of the DNA of modernity have to be manipulated to elicit change benefitting sustainability.

THE DNA OF MODERNITY

Quite a few sociologists have tried to describe and explain modernity, including Marx, Comte, Simmel, Weber, Durkheim, Parsons, Elias, Giddens, Habermas, Galtung and Luhmann, to name a few. Without delving into the significance of their contributions, I will present a condensed description of some features that characterize modernity from Luhmann's system theoretical perspective. Luhmann's way of thinking are vital to deconstruct modernity and thereafter construct a solution to the consequences the individual, social and environmental consequences the modernity produces.

[7]https://resources.fifa.com/image/upload/sustainability-report-of-the-2014-fifa-world-cup-2509269.pdf?cloudid=educsd2hgasief3yeoyt (read, April 2019).
[8]https://www.theguardian.com/environment/2006/oct/18/green.guardiansocietysupplement.
[9]https://www.ssb.no/utenriksokonomi/artikler-og-publikasjoner/okt-eksport-av-vapen-i-2015?tabell=252747 (read, January 2021).

From an evolutionary perspective, society does not plan to change from, for example, a nomadic to a sedentary lifestyle. Sport does not plans to evolve from ritual to record, to paraphrase Guttmann (1978) and Luhmann (1997b). Evolution instead means waiting for *useable coincidences* or "mutants" (Luhmann, 1997b). Coincidences develop from deviance to differentiation, mostly without intention. From the end of the 16th to the middle of the 19th century, society increasingly reflected upon the contingent "nature" of things. Quite a few forms of societal actions (communications) became independent and autonomous to take care of specific problems (Luhmann, 1997b). Observing the issues of power, wealth, child-raising, justice, truth, and so forth as differences that had to be taken care of resulted in the emergence of autopoietic, or self-organizing, subsystems for each contingency.

Observing modernity, Luhmann (1998) claims that *contingency* is modern society's defining attribute. Embedded in every decision and action was the possibility that anything could be otherwise. "Anything is contingent that is neither necessary nor impossible" (p. 45). "Who is best?" and "How to improve?" is nothing but the defining contingencies in sport. When losing a competition, the losing athletes reflect upon "what could I have done differently?" Winning a game, the winning team asks themselves, "How could we improve to win again?" Decisions have to be made; performances have to be done, but with no guarantee of success. Contingencies determine society's development and the development of its subsystems like sport, politics, economy, science, mass media and so forth.

According to Luhmann, modern society "… experiences its future in the form of the risk of deciding." (1998, p. 71). Every decision may result in undesirable results. There is no way to escape from contingency and risks. If a team participate to win, the team has to accept the possibility to lose. Choosing one method of performance-enhancing may prove wrong, but there are alternatives. The team must acknowledge that there is a "… difference between a judgement before and a judgement after the occurrence of loss." (Luhmann, 1998; p. 71-72). Most decisions and efforts to improve performances will have sustainable consequences, environmental, economic, and social. However, today's decisions about the future are based on today's guesses about how the future will be. But the future may be different. We cannot know. The future is contingent.

This new, functionally differentiated society experimented with possible solutions to stabilize this social system's risks and contingency. Only those solutions that proved useful and solved the problem (that is, were functional) were accepted. Economy, politics, justice, science, and other areas became such functional subsystems. Each subsystem operated based on a distinct and unique difference, structured as a binary code. Moneyed/moneyless, power/powerless, legal/illegal and true/untrue became the code of society's economic, political, legal and scientific subsystem. As discussed above, the code of sport becomes win/lose with a secondary code of improving/decline.

As each subsystem followed its functional imperative, solving a particular problem, it became increasingly difficult for each subsystem to observe the distinctive feature of the society experiencing more and more issues regarding orientation and direction (Luhmann, 1997b). This increase in complexity resulted in an increasing non-transparency and a decreased possibility for steering. The society became decentred, with no privileged place from which to *steer*. No subsystem could, in principle, steer another, only irritate it. At best, each autopoietic subsystem could only steer itself, i.e., doing self-steering. Observing problems to solve is constructed internally. "The political system is in this respect no exception; politics too can only steer itself, and if the steering refers to the environment, then it is only to *its* environment" (Luhmann, 1997b; p. 46). The difficulty of steering the modern world to be more sustainable are evident.

Irritating other subsystems is only possible through what Luhmann conceptualizes as *structural coupling*, a mutual influence mechanism (1984). Each system decides its contact with its environment. It shields itself from countless influences while selecting a few relationships. When a particular company offers a given sum for being the primary sponsor for a specific sport, the sport in question can accept the offer but has to abstain from cooperation with other companies. Structural coupling allows the system to maintain its operational closure and autopoiesis, thereby developing the athletes' and the team's performances.

The functionally differentiated society *spread worldwide*. Other scholars have used terms like colonization, industrialization, and globalization to refer to this process. Luhmann claims that the functionally differentiated society has become a world society, where the functional subsystems dominate and operate paradoxically while being more independent and more dependent on each other. The local and regional peculiarities become in no small degree washed away, even if local variations exist.

The principle of functional differentiation also resulted in *increasing individualization*. The functionally differentiated society offered all people the possibility of inclusion (Luhmann, 1997b). The semantics of this observation was formulated as the human rights of freedom and equality. However, the regulation of the inclusion/exclusion principle was now entrusted to the functional subsystems. The political system itself determines political eligibility. The establishing and maintaining of the family was left to the family system. The economic system regulates participation according to wealth and income (Luhmann, 1995). The sport itself determines who is going to be an athlete or selected to the team. This positions the individual to freely choose whatever opportunity, lifestyle, or career he or she sees as suitable. However, it is crucial to notice that even if human rights secure equality, participation in sport is still not for all. Gender, class, ethnicity, religion still work as barriers to equal involvement and imply social unsustainability. In addition to increased possibilities of inclusion, the individualization process in modernity gave each individual the right to think, speak and act freely. This possibility poses a particular challenge to the implementation of political measures regarding sustainability (more on this later).

The encompassing contingency of modernity leads toward *hypertrophy*, an abnormal urge to grow (Luhmann, 1994). This urge characterizes all the subsystems and society's communication and operation at large. Subsystems are almost

forced to grow but are themselves unable to control this growth. Each subsystem and the society at large increased in complexity. When this became apparent and observable about 1,800, the idea of "progress" was coined. Progress was positive and desirable, whereas the decline was not. This idea became the code that ordered all communication and operation in modernity. The sport experienced and coined this idea in its Olympic motto.

Contingency, expressed in the idea of progress, induced *self-reflective* processes within the modern society as a whole, in each of its subsystems and in each individual. Despite the contingent nature of modernity, or maybe a result of just this attribute, every subsystem tried to develop rational and efficient ways to develop itself, be it better policies, larger profits, more justice, truer truths, all manifestations of the DNA of modernity. This DNA has undoubtedly led to a better life for most of the world's populations. Paradoxically, this DNA is also responsible for all the problems related to steering, pollution, global warming, climate change, and so forth, putting us all in the situation to take sustainability very seriously. There are limits to growth in nature, modernity and sport, to paraphrase Meadows et al. (1972). In other words, the modern aims for progress and development threatens the balance of the ecological, social and individual systems. Could we hope for a solution to this self-inflicted threat? Could sport and society become sustainable given the autopoietic "nature" of both these social systems? Will the population in general and the sports followers in particular acknowledge the threat and act accordingly?

IS THERE HOPE?

The reader may experience this article as a rather pessimistic and gloomy view on the sport and its possibility of being sustainable. Hence, I will address one final question: *Is there hope?* Is it possible for the sport to be sustainable? It depends on how individuals, organizations and social systems respond to the six significant issues or problems discussed above. I draw the following seven conclusions:

First, as indicated above, the individualization process in modernity gave each individual the possibility to think, speak, decide and act freely according to how each individual observes the surrounding world. However, there is no guarantee that billions of people will agree to the available information and knowledge concerning sustainability and act accordingly. Psychologists, economists, and philosophers have been studying individual decision-making, using concepts like *wishful thinking* (Neuman et al., 2014), *willful ignorance* and *self-deception* (Alicke, 2017; Wieland, 2017). In the terms of Kahneman (2011), human decision making is flawed due to *heuristic* and *biased* cognitive processes. These psychological traits are essential sources for socially harmful behavior (Grossman and van der Weele, 2016). In this particular context, willful ignorance may shape how athletes, sports leaders, sports enthusiasts, people in general observe the scientific information about climate change, pollution, social inequality etc. If they consider the information and knowledge exaggerated and probably false, they are in a state of willful ignorance and will be unwilling to accept changes toward more sustainable sport and society. Given the autopoietic nature of human consciousness (Luhmann, 1984), it is challenging to convince individuals to think and respond "from outside." Each consciousness produces its own "world view" from its observations of its surroundings to "survive", which might results in grave societal consequences.

Second, my rather superficial reading of current exemplary research indicates that sport does a lot to be sustainable and has had some success with the efforts. However, the sport, the current research and the public discussions seem to have *little awareness* of modern sports' embedded logic and how this logic is defined and strengthened in modernity and severely impacts sustainability. Our knowledge is insufficient and flawed. So are our actions to solve this threat. The lack of awareness and knowledge result in a too optimistic conclusion about whether the sport is sustainable (wishful thinking). Suppose we increase the understanding of the dangers of modern sport's double-code and acknowledge its complex entanglement with the surrounding society, civilization and ecological environment. In that case there may be hope to counteract the dramatic consequences.

Third, my reading also revealed that different meanings of a concept lead to various answers and diversified actions and policies. For example, the sport system may believe in *sustainable development* and decide to follow the guidelines for sustainable efforts: reduce consumption, increase recycling, measure and report according to sustainability standards, better the Earth's carrying capacity, reduce the human impact on biodiversity, etc. The sport system may also subscribe to the idea of sustainable development by using fully electric transportation systems like electric bus, electric train, and the hope that electric airplanes soon will be a reality. The sport system may endorse a belief in sustainable development by enhancing performances by all sustainable means. However, the two terms, sustainability and development, seem to contradict each other (Barker et al., 2014). In society, sustainability and development could not simultaneously be achieved. To unite them is comparable to the task of squaring the circle (Robinson, 2004). Continually improving performances should not be the goal if the sport aims to be environmental, economic and socially sustainable. Quite the opposite seems to be necessary.

Fourth, to achieve sustainability is to go for a *recession* of sport and a decline in the performances if we follow this kind of conceptualization. Is that possible considering the current performance logic of sport? Indirectly Loland (2006) points to the logic of sport in his analysis of sport and sustainability. He suggests that if sport aims to be sustainable, it has to reform or abstain from specialization and record mania. This reform implies a move back to the basics, i.e., discard the secondary code of improving the performances. We could, as an *ethical recess*, go back to the amateur ethos of the English Gentleman's sports when athletes "competed under a prevailing attitude of fairness and sportsmanship, and serious and extended practicing or training for a sport was considered synonymous with cheating" (Sage, 2010; p. 43).

Or similarly, a *cultural recess* may be a solution. We could abandon the specialization and record mania by looking at other cultures and their sports, such as the Tikopian dart game

described by Raymond Firth in the 1930s (Firth, 1930). In this game, winning was essential and losing shamefully. Nevertheless, it was a big occasion for the whole community to celebrate. The arena was dug out and made ready for the game. Interestingly, after the game, the winners would go off to their orchards to pluck coconuts and distribute them to the losers. Both teams would then sit down to drink, eat, and refresh themselves. According to Firth, this was an example of "*winners pay*." This type of contest could also be an example of a sustainable sport. It is about winning, but not about continually improving performances. Like the Gentleman's sports, it lacked the secondary code of modern sport, improvement and was probably sustainable despite the temporary deforestation building the sports arena.

Breivik (2019) suggests another form of recess. He describes changing sport based on Arne Naess's ecological philosophy. This change implies a form of a *recess of values*. He claims, "… one could change sports through a series of steps from shallow to more deep ecological versions." (p. 79). One step is to minimize the use of resources and energy but inside the given sports patterns. A second step is to support and sponsor sports and sport forms that use renewable resources and simple means. The third step involves, wherever possible, sporting activities in natural settings and simple means should be developed. The fourth step addresses the personal level: "one should try to become wise sportspersons who can realize deep ecological concerns through spontaneous play, by touching the Earth lightly and with an ideal of richness in ends and simpleness in means." (p. 79).

Fifth, Loland's and Breivik's proposals only address the symptoms, not the core of the matter. The reason for sport's unsustainability is, in my opinion, the contingent, hypertrophic and pathological code of sport—mirroring the DNA of modernity. Both sport and society need to change. Even though the analysis of societies and civilizations of Diamond, Turchin and Harari show the importance of looking at the question of sustainability from a macro-perspective, I do not find their analysis quite compelling either. I accept their statements that modernity as we know it is in a deep crisis, as other human civilizations have been before (Diamond, 2003, 2005; Turchin, 2007; Harari, 2018). However, despite their books' overwhelming details and scope, I find their solutions to this crisis surprisingly simplistic. After addressing 12 sets of sustainability problems, resulting from different kinds of disastrous decisions humans have made through history, Diamond (2005) is still cautiously optimistic. He sees a possibility for modernity not to collapse in the globalized worlds interconnectedness. In particular, the television and other mass media gives an "… opportunity to learn from the mistakes of distant peoples and past peoples." (p. 525). Turchin suggests a similar solution. People could be mobilized through the Internet and especially mobile phones to enhancing the *asabiya* (Turchin, 2007)—the capacity for collective action for sustainability. Turchin seems to see asabiya, or social capital in Putnam's terms, as a solution to save and reshape modernity. Harari (2018) falls back to individual solutions. He suggests meditating 2 h a day. That may help persons who feel helpless and depressed by the alarming and threatening news about global warming and increased water and air pollution. In a social, political and economic context, Harari's solution appears individualistic, superficial and unfounded. On the other hand, maybe there is no other solution to the sustainability challenge than resign, meditate and survive individually?

Sixth, is it possible for sport to change its double-code and make a recess in a contingent society where the autopoietic code of progress reigns? Is it possible to plan a change in sport and society that give hope for a sustainable world? Is it possible to pull the population in general, and sports enthusiasts, athletes and leaders in particular, out of their wishful thinking, willful ignorance and self-deception and start on a more sustainable path of living? To change, or more precisely replace, peoples' thinking and the unsustainable double-code of sport, we have to change the society we call modernity. Sport is nothing but a blueprint of the surrounding society, carrying its DNA. However, as I mentioned above, societies do not change according to plans. The evolution of new societies means waiting for *useable coincidences* (Luhmann, 1997b). Coincidences develop from deviance to differentiation, mostly without intention. Ironically, it may be possible that sustainability is the useable coincidence that triggers the development of a new society and its subsystems like sport. The alarming IPCC Climate Change Report indicate a "Code Red for Humanity." This report may spur thorough self-reflection at all levels in society, within its subsystems and population. from this One could speculate whether the self-reflections will bring forward new ways of coping with the sustainability challenge, find new ways of reaching collective binding decisions that benefits sustainability, or invent new ways of producing the required energy to maintain a sustainable standard of living and so forth? However, it seems unlikely that this takes place before it is too late. To me, only an extensive social, cultural, economic recession is what it takes to reach global sustainability.

Observing modernity in general and the ecological future in particular, Luhmann wrote: "By now, one thing is clear: evolution has always been, to a great extent, self-destructive, both in the short and long term. … almost all cultures that have affected human life have disappeared. … Cultural forms that are self-evident today and the "world" of today's society will meet a similar fate. No one can seriously doubt this" (Luhmann, 1998; p. 75). Luhmann finds it rather probable that humankind as a life form will someday disappear. He sees three scenarios. (1) Humans may replace themselves with genetically superior humanoid life forms. (2) It is also possible that humans will eradicate themselves through human-made catastrophes. (3) Or maybe in the future, people will "… destroy the common technological devices we take for granted to such an extent that only a very elementary form of survival will remain possible." (p. 75). That sport should have a future, or more precisely existence, seems unlikely in any of these scenarios. On the other hand, different sports have been a part of all the civilizations we know of. So, in the long run there may be hope for some sport practices in the sustainable society and civilization that eventually emerge. This rather depressing conclusion may horrify some, provoke others, and make a few to look for another theory.

To me, Luhmann's theory gives the best answer to whether sport can be sustainable. The solution should invoke a thorough self-reflection and discussion of this issue inside the sport system. The usable coincidence to bring forward changes in the

sport's double-code is the same as for the society, namely the knowledge distilled in the IPCC report, indicating "Code Red for Humanity." Each sport should reflect upon the double-code of winning and improvement and how each sport's uniqueness and distinctive character impact different sustainability forms. Given the analysis above, they could, or should, not reach any other conclusion than sport has to recess, going back to basic forms of sports. Whether that is possible depends on how modernity similarly and synchronously will reflect upon its contingent and pathological "nature" and act accordingly. As implied above, modern society has to change or replace itself into a more simple but global, low-tech based society where playful, physical contests may take place locally and be sustainable. This form of society is the only solution from my perspective; a world society that operates and governs locally and globally from the distinction or binary code of "sustainable/unsustainable," not the statal power/powerless code that rules modern societies.

Seventh, since society cannot plan and steer for the future, society, sport, and individuals have to hope for usable coincidences. Suppose the alarm "Code Red for Humanity" is observed as a usable coincidence. In that case, it might induce self-reflection and communicative responses in individuals, organizations and social sub-systems, and produce vital changes benefitting sustainability. However, we have to wait and see what kind of sport generates from the manipulated DNA of this eventually new, global, sustainable society, if at all. When waiting for the future to unfold, and reflecting and discussing consequences and possibilities, I suggest we, in addition to hope and meditate, act according to the precautionary principle—and listen to Einstein: "We cannot solve our problems with the same thinking we used when we created them."

DATA AVAILABILITY STATEMENT

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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Local Sport Event Policies and Sustainability: A Puzzle Approach

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As demands for more sustainable ways of living increase, organisers of sport events have come under increasing pressure to adapt. At the same time, more and more national and local event policies increase the demand for events. These two trends raise the question of how policy makers can combine the demand for events with a sustainable way of living; a question that so far has been subject to little research. The present paper analyses the conceptualisation of sustainability in all local policies relating to events in Norwegian municipalities. The paper is based on the analysis of policies covering 22 municipalities and includes both general development plans and more specific policies on events in its analysis. The analysis shows that all the municipalities have adopted a "broad" conceptualisation of sustainability, i.e., pursued a development, which should not limit the possibilities of future generations, in their general development plans. Although the general development plans serve as a basis for every other policy, the paper also shows that the municipalities in the specific policies for events often had "narrow" conceptualisation of sustainability, i.e., focusing on making local events reoccurring and/or increasing the capacity for hosting external events. The findings emphasise the relevance of looking at the local level when conducting future studies on events and sustainability and suggest that the practitioners acknowledge the complexity of reconciling demands for more events and increased sustainability.

Keywords: events, sport, policy, local, municipalities, sustainability, Norway, SDGs

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INTRODUCTION

In today's society, organisers of sport events and other large social gatherings are under pressure to find new sustainable ways of staging their events just like the rest of society. On the global level, owners of the biggest sport events like the International Olympic Committee (IOC) and the international football federation, FIFA, have launched initiatives for reducing their environmental impact (Mallen et al., 2011, pp. 241–242; cf. IOC, 2014). Even non-sport organisations such as the United Nations (UN) have promoted new international frameworks for sport's sustainability (ISO, 2012; Buscarini et al., 2021; ISO/TC 292).

Such frameworks are all the more relevant as there is little research suggesting that events currently contribute to sustainable societies when compared to the research suggesting the opposite especially with regard to sport mega events (Lenskyj, 2004; Preuss, 2007; O'Brien and Chalip, 2008; cf. e.g., Collins et al., 2009; Smith, 2009; Mallen et al., 2011; Mair and Whitford, 2013; Zimbalist, 2015; Baade and Matheson, 2016; Zimbalist, 2017; Koenigstorfer et al., 2019; Thomson et al., 2019). Considering research on smaller events, it has been discussed whether these events could be more sustainable (Taks, 2013, 2016). However, other studies show that these events can also have

negative consequences and see a need for more research on best practises and policies (Higham, 2018, p. 68; Lindsey and Darby, 2019; Jiménez-García et al., 2020; Melo et al., 2021, p. 37).

The research interest in small events has also led to a focus on events in series. It has, first and foremost, been concerned with the study of event portfolios, but there have also appeared studies on the spread of event hosting strategies often focusing on smaller events (Ziakas, 2010; Stopper et al., 2011b; Chappelet and Lee, 2016; Andersson et al., 2017; Antchak, 2017; Antchak et al., 2019). Such strategies could be seen as concerned with sustainability in two ways. At their core, the strategies are meant to allow for a continuous run of events and a stable outcome for the local host community (Gibson et al., 2012; Taks, 2013; Clark and Misener, 2015; Antchak, 2017; Kim, 2020, Chapter 3). However, (and potentially in conflict with the first), given the general demand for building sustainable societies, they should ideally also be compatible with the holistic idea of sustainability promoted by, for instance, the UN in their Sustainable Development Goals (SDGs). Right now, research on sport event policies has yet to look into how the policies handle these two conceptualisations of sustainability, which will be developed further in the next section (McCloy, 2009; Leopkey et al., 2010; Stopper et al., 2011a,b; Chappelet and Lee, 2016; Pinson, 2016; Schnitzer et al., 2017; Leopkey and Ellis, 2019). Vassilios Ziakas, who coined the term "event portfolio," for instance, only recently encouraged researchers and practitioners to adopt a "holistic" approach emphasising sustainability as "the triple-bottom-line of economic, social and environmental prosperity" when analysing or developing event portfolios (Ziakas, 2019, p. 29). Comparing the state of the art in sport event strategy research with the research on singular events, one could look to urban geographer Andrew Smith, who, in 2012, discussed how singular events could give leverage to other policies in a host community (Smith, 2012, p. 14; cf. Chalip, 2014). In 2021, research on event policies might be in similar position raising the question: How do or should event strategies work in tandem with other policies?

Answering this question would move the research field forward and has a significant practical relevance compared to studies of single events. After all, improving the sustainability of the event strategies or event policies has the potential to regulate the impact of not just one but several events.

As a contribution to our understanding of sustainability in sport event hosting strategies, the aim of the present paper is to give insight into how (sport) event policies currently conceptualise sustainability in a specific (Norwegian) context and discuss the potential reasons for and the implications of such conceptualisation(s) for practitioners and future research[1].

The first part of the paper introduces the foundation for the paper's analysis and discussion. It begins by outlining the two conceptualisations of sustainability that serves as a basis for the analysis. Afterwards, the theoretical frame for the paper's discussion is introduced making the case that policy development functions as a "puzzle." This theory is closely related with the final part of the introduction that presents the context for the policies analysed in the paper. The second part presents the results of the study before the paper concludes with a discussion.

Conceptualising Sustainability: A Broad and a Narrow Concept

As hinted in the paper's introduction, the increased interest in sustainability affects most parts of society. In a recent paper, McCullough et al. (2020) suggests that "sustainable" has become "perhaps the most important buzzword in contemporary global policy" (McCullough et al., 2020, p. 510). The introduction, however, also suggests that the meaning of this buzzword vary. Extending on this assumption, this section argues that a conceptualisation of "sustainability," depending on the context, is either broad or narrow.

The paper's broad conceptualisation is derived from the World Commission on Environment and Development's definition of sustainable development as a "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment Development, 1987, Chapter 2.I.1). Although the definition has been criticised for being vague (Borowy, 2018, p. 155), it is commonly referred to in literature on sustainability and sport events as well as in general discussions on sustainable development (e.g., cf. Bell and Morse, 2018, p. 188; Caradonna, 2018; McCullough and Kellison, 2018; Escher, 2020; Kim, 2020; Triantafyllidis and Darvin, 2021). Perhaps because of its vagueness, the definition from the commission has been followed up by several more specific and operational framework for evaluating the sustainability of a certain action or society (Bell and Morse, 2018; cf. Kim, 2020, Sec. 2.2.4). Currently, the most prominent of these frameworks is probably the UN's SDGs United Nations. The point of the SDGs is to become common points of references to every nation and potentially for event policies too. Indeed, some goals like Goal 11 ("Sustainable cities") and Goal 12 ("Responsible consumption and production") have already been used as a frame for analysing the local impacts of large sport events (Buscarini et al., 2021; Triantafyllidis and Darvin, 2021).

The triple bottom line is another older but still prevalent sustainability framework especially for businesses and organisations that assesses the sustainability of, e.g., an organisation according to its economic, environmental and social impacts (Elkington, 2004; Purvis et al., 2019).

Finally, in 2017, the economist Kate Raworth suggested a third model for how to conceptualise or imagine the borders within which sustainable development could take place. Her idea, the "doughnut economy," is that sustainable development

[1]The parentheses around sport are there to indicate that the policies do not limit themselves to sport events in their wording. Still this is mainly a study on sport events as the municipalities' focus in praxis is on sport events (Jensen, 2020), which is also the most developed field of event research (Bocarro et al., 2017). Still, there are also research pointing out the similarities between sport events and events as such (Bowdin, 2012; Getz, 2012) and it will be discussed, in the conclusion, if and how the findings could contribute to the research on events more broadly.

means to stay within the limits of the doughnut not producing too little to sustain everyone's livelihood nor overproducing and thereby exceeding Earth's ecological limited (Raworth, 2017).

All these concepts for achieving sustainable development have a holistic view in common as they target society as a whole (the SDGs) or encourage individual organisations to consider the society of which they are part (the triple bottom line). In this paper, the idea that sustainability requires a holistic view of society and a broad conceptualisation of sustainability is called on.

These models for a broad conceptualisation of sustainability are of relatively recent origin considering that, "sustainability" (or "berekraft" in Norwegian) did not only enter the Norwegian language with the report from the World Commission on Environment and Development. Rather, the report and the discussions it inspired only added a new meaning to at least two existing understandings of "berekraft." According to one of these understandings, "berekraft" is an adjective describing a literal ability to support something physically, like a foundation's ability to support a building. Finally, "berekraft" can also be used to describe something's ability to last figuratively (Det Norske Akademis ordbok; Språkrådet and Universitetet i Bergen). Studies on the use of the English term "sustainability" shows that a similar meaning exists in English. All in all, "[a]s a historical endeavour, sustainability concerns the long-term success of problem-solving efforts," leaving us with the question: what is the problem "sustainability" is meant to solve in a given context (Tainter, 2018, p. 40)?

The first original understanding of berekraft/sustainability is for instance concerned with the problem of whether a bridge is able to handle heavy loads. The problem in the second meaning is about securing a lasting outcome (Dale, 2018, p. 76). In the last century, this outcome has often equalled steady economic growth given the prominent idea of economic growth as a "universal remedy for some of the most pressing challenges of modern societies" (Schmelzer, 2018, p. 171). This, however, is an understanding that could be seen as conflicting with the broad conceptualisation of sustainable development (cf. Higham, 2018, Chapter 4). This means that the conceptualisation of sustainability as a solution to the specific problem of establishing a stable (economic) outcome stands in contrast to the broad conceptualisation and represents consequently the paper's narrow conceptualisation of sustainability. In the present paper, a narrow characteristic would, for instance, apply to a policy aiming specifically at making events in a municipality a common occurrence and, ideally, also self-supported. It is also a conceptualisation which is reflected in Chappelet and Lee (2016)'s study on sport event policies when suggesting that sport event hosting strategies are "employed for the successful bidding and hosting of sport events" (note the plural) (Chappelet and Lee, 2016, p. 36). As a frame for discussing why a certain conceptualisation might come about, the following section introduces the paper's theoretical framework.

THEORY

To enable a discussion of the presence of a given conceptualisation of sustainability as dependent on the problem the conceptualisation is meant to solve, the paper's theoretical point of departure is that an organisation develops policies to solve problems (Dunn, 2018, p. 5). However, this does not mean that there is a direct line between the solution (the policy) and the problem at hand. Instead, the paper considers event policies to be outcomes of processes influenced by other ideas, agendas, policies, etc. In other words, policy development is complex—a view that existing research on policies related to sport events as well as sport and sustainability supports (Leopkey et al., 2010, p. 128; Chappelet and Lee, 2016, p. 5; Lindsey and Darby, 2019).

The complexity arises not only due to the very number of stakeholders but also due to the potential disagreements on what the problem is. While there might be general agreement on for instance the need to have a tourism policy, some might want to regulate tourism flows (problem: there are too many tourists), whereas others want to attract more tourists (problem: there are too few tourists). Explaining that the aim of a given policy therefore only not requires access to the policy but also "knowledge about the antecedent conditions" (Dunn, 2018, p. 5), which will be discussed in the next section.

Before that, looking more specifically at how to analyse and discuss the role of sustainability in the sport event policies, the paper draws on the ideas of sociologist, Christopher Winship, who argues that traditional policy evaluations aiming at finding the best solutions to a specific problem have difficulties in cases "with multiple and conflicting ends" (Winship, 2006, p. 110). Winship here is inspired by, among other things, the idea of "wicked problems," that is, problems that are inter alia characterised by their lack of definitive formulations since "the formulation of a wicked problem is the problem" and also, eventually, definitive solutions (Rittel and Webber, 1973, p. 161). How, for instance, can one formulate a simple problem whose solution would improve peoples' life definitively (Rittel and Webber, 1973, p. 167)? Formulating this problem in simple soluble terms is very difficult, if not impossible, and instead of finding a definitive solution, one should look for ways to improve the conditions or mitigate the problem (and thereby potentially causing new problems) (Rittel and Webber, 1973, pp. 162–163). Based on this complexity, Winship suggests that politicians and researchers see policy developments as puzzles. By assembling the puzzle in new ways or, allegedly, breaking the idea of the typical puzzle, and adding, revising, or removing pieces from the puzzle, it is possible to figure "out how to rectify a set of seemingly conflicting policy ends" (Winship, 2006, p. 119). Even if the stakeholders do not know what the solved puzzle looks like in the end, they know when it appears coherent.

In the present case, I suppose sport event policies can have at least two (potentially) conflicting policy ends. Based on the puzzle theory, the paper concludes with a discussion on how local event policies currently seem to overcome this gap between "non-commensurable world-views" (Winship, 2006, p. 116). As already mentioned, this discussion, however, needs to be

informed by the policies' "antecedent conditions," which the next section introduces.

THE CONTEXT FOR SPORT EVENTS POLICIES IN NORWAY

This section contextualises the analysed policies with a focus on the role of the public administration and the organised sport in Norway as the primary stakeholders in Norwegian sport events (Jensen, 2020).

The paper's focus on local event policies makes the municipalities a natural starting point for the overview. However, the municipalities are also a relevant starting point since the public administration in Norway is generally decentralised giving the municipalities much of the responsibility for Norway's sustainable development (Amundsen et al., 2018; Reed, 2018; Wang et al., 2018; Hansen, 2020). Still, the municipalities also negotiate with other municipalities and public administrations on the regional and the national levels (Hanssen). In 2019, for instance, the Norwegian government required that all Norwegian municipalities make the SDGs a guiding principle in their master plans (Kommunal- og moderniseringsdepartementet, 2019). By then, the local awareness of the SDGs would already have been quite high. In 2018, 84% of 51 municipalities participating in a survey found that the SDGs were important, and one in four had plans for how to implement them (Deloitte, 2018, p. 11). Perhaps less surprisingly, a survey of 22 municipality master plans in 2020 showed that 14 of them already had implemented the SDGs (Seim in Singsaas, 2020). Despite the small samples (in 2018 Norway had 430 municipalities, in 2020 there were 354), the findings indicate a local support for the SDGs even prior to the adoption of the national policy paper. A support, which also would indicate that the global debate is also influential in the local public administration. However, these various policies and initiatives also are subject to local hearings and at least one study focusing on the transportation and area policies in the Oslo has shown that sustainability in that case was a "wicked problem" (Fossheim and Nazareno, 2020). We will come back to how local hearings also influenced the final shape of the local event policies in the result section.

Since Norway does not have a national event policy, the national influence on sport events hosting seems limited compared to the influence found in some other countries (Chappelet and Lee, 2016, p. 11). Instead of a central policy, the national influence is scattered across several policies and regulations. The white paper on tourism is one such thing which notes that sustainability is an overall aim and encourages event tourism (Nærings- og Fiskeridepartementet, 2017). An aim, which national sport policy, however, does not repeat in its section on events (Kulturdepartementet, 2012, pp. 114–115).

Despite the lack of a national event policy, there has, however, been an unofficial practise of providing national financial support for international sport events (Lechner and Solberg, 2021), which the government formalised to a certain degree in 2019 by launching a "test"-event policy. Among other things, the policy asks the host organisations to "consider sustainability"

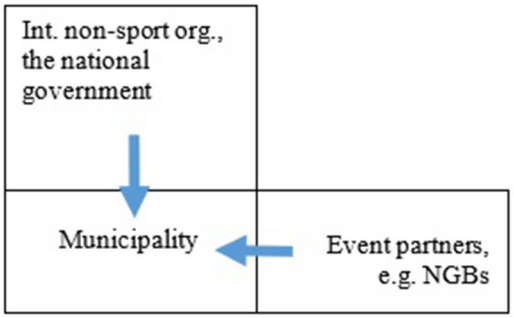

FIGURE 1 | Outline of the theoretical position of a municipality developing an event policy with inputs from above and from their event partners, e.g., the sport organisations.

when applying for financial support without providing additional details (Kulturdepartementet, 2019). Furthermore, Innovation Norway, a publicly owned business advisory company, proposed a national event policy in December 2019, which also emphasises the need for events to be sustainable (Innovasjon Norge, 2019).

In short, policies regulating events in Norway are mainly the municipalities' domain—presumably considering inputs from public partners as well as private stakeholders. Relevant private stakeholders, when speaking of sport events, could, for instance, be national governing bodies (NGBs) and local sport associations. Their inputs related to sustainability in a broad sense could however very well be negligible since a report in 2018 described the Norwegian NGBs' work on sustainability—on a national average—as "moderate" (Geeraert, 2018, p. 172; cf. Goldblatt, 2020, p. 16). Considering the five biggest sport federations' general strategy documents in greater detail confirms this conclusion as only the football federation has sustainability as an overall aim; although the skiing federation discusses the impact of the climate changes on future competitions (Norges Skiforbund, 2016, p. 20; Norges Gym- og Turnforbund, 2018; Norges Handballforbund, 2019, p. 6; Norges Fotballforbund, 2020, p. 4; cf. Norges Golfforbund, 2020). The national confederation of sport in Norway (Norges Idrettsforbund, NIF), however, has sustainability in a broad sense as part of its aims (NIF, 2019).

Still, the NGBs might influence the importance give to sustainability conceptualised narrowly related to sport events, as they all—except the Golf federation—discuss the role events play for their development. The gymnastics, for instance, is seeking to improve the "event quality" of their national senior championship (p. 15) and the skiing federation wants to sustain "Norway's leading position as leading nation and organiser" by hosting international events in all its disciplines (Norges Skiforbund, 2016, p. 25; Norges Gym- og Turnforbund, 2018, p. 12).

Summing up, the contextual section has introduced two main sources of influence to consider in the analysis of the conceptualisations of sustainability. The first can be described as a horizontal relation between a host municipality and its event partners. The second source runs along a vertical axis between the

municipality, the national government, and international non-sport organisations (cf. **Figure 1**). In the discussion, we will come back to the question whether this initial model can account for the paper's results. Therefore, it is important to note that a municipality negotiate with their partners and seek to influence this network. The one-way arrows in **Figure 1** are therefore too simple for a diachronic analysis. The aim of this study, however, is only to determine the influence on the municipalities and their concept of sustainability reflected in their *current* policies.

METHOD

The theory outlined policy development as a complex phenomenon. The contextual section supported this hypothesis and with regard to the choice of method, complexity invites for a case study (Yin, 2018). As the aim of the paper is to give insight into how municipalities conceptualise sustainability in their event policies, the paper's case study however consists mainly of a document analysis.

Material

The empirical data for the document analysis includes all event policies or proposals for such made public by any Norwegian municipality as of December 2020. This data was collected in two rounds. The first round consisted of a search on google.com for "arrangementsstrategi[2]" limited to all subdomains of kommune.no, the common domain for all Norwegian municipalities. The exact search string was "*.kommune.no + arrangementsstrategi" (without apostrophes).

In the second round, this crude data collection was supplemented with a manual search for event policies on each of homepages of the municipalities, for which the first search had returned no results but where it nevertheless seemed likely that the municipality would have an event policy given its size or earlier expressions of interest. This search, in particular, focused on the six municipalities,[3] which participated in the development of the first Norwegian white paper on event tourism (Innovasjon Norge, 2011) and the ten biggest cities in Norway.

In total, the data collection yielded 15 results suitable for further analysis ranging from specific and implemented event policies to the mentioning of events as part of the municipality's master plan (cf. **Table 1**)[4]. The 15 results cover 13 municipalities and two regions (the Haugesund region[5] and the Lillehammer region[6]) covering nine municipalities. The paper, therefore, analyses event polices relevant for 22 municipalities. Given that there are 356 municipalities in Norway, the study could sound limited, which is not the case considering the number of people affected by the policies. In total, these 22 municipalities amount to around 1.9 million inhabitants (∼35 % of the Norwegian population).

Table 1 lists the data considered in the analysis of each municipality with some additional information regarding the event policies. One sees for instance that several of the event policies are quite new. Event policies in Norway seem to enjoy political attention in line with the trend noted in the paper's introduction. The recent changes could however also have to do with a reform of the administrative regions in Norway taking effect on 1 January 2020.

As **Table 1** shows, the analysis, in addition to the event policies, also considers the master plans for all the municipalities [regardless of whether the municipality's policy on events is covered in the master plan, a business policy or a specific event policy (cf. the sixth column)][7] and the proceedings prior to the adoption on the event policies. The aim is to gain a better insight into the influences on the local event policy in line with the policy theory. The data regarding the proceedings is however limited and the focus in the analysis will be on the event policies.

Method of Analysis

The analysis of the policies is based on Glenn A. Bowen's partition of a document analysis into "skimming (superficial examination), reading (thorough examination), and interpretation" (Bowen, 2009, p. 32). The first step (covering skimming and reading) consists of reviewing the policy documents and marking relevant passages, i.e., those relevant for determining the means and ends of each policy and any mentioning of sustainability or event. The second step, "interpretation," covers the analysis of the findings with the aim of characterising the typical ways of conceptualising sustainability in the policies.

While this method should yield relevant results, additional sources of data could have been useful for confirming the obtained information and explore the complexity of the case further [Yin (2018) cf. data triangulation (Johnson et al., 2007, pp. 114–115)]. However, interviews with municipality representatives could have come at the cost of the overview offered by the present overarching document analysis and would be better suited for particular studies. Targeted studies based on interviews and observations could, for instance, show whether local practises diverge significantly from the behaviour prescribed in the policies. In such a case, the current paper's findings would open for a discussion on pitfalls when implementing sustainability in event policies. The analysis, therefore, only considers the data to the Norwegian event policies and municipality master plans as described in the previous section.

RESULTS

The result section comes in three parts. In the first part, the conceptualisation of sustainability in the master plans is analysed. The focus here is to see if there are any general

[2]i.e., event strategy in Norwegian.

[3]Bergen, Kristiansand, Oslo, Stavanger, Tromsø og Trondheim (Innovasjon Norge, 2011, p. 5).

[4]Tinn Municipality figured in the list of results from the search among *.kommune.no, however the municipality has 2019 only allocated money for the development of an event policy and is thus not included in the analysis (Tinn Kommune, 2019). Ørland Municipality figured too but is not included in the analysis as the relevant document only proposed the making of an event policy (Nye Ørland Kommune, 2019).

[5]Covering the Etne, Haugesund, Karmøy, Sveio, Tysvær and Vindafjord Municipalities.

[6]Covering the Gausdal, Lillehammer and Øyer Municipalities.

[7]To be precise, the social part ("samfunnsdel") of the master plans ("kommuneplaner") have been collected for all the municipalities.

TABLE 1 | The data collected for the analysis of each of the municipalities.

Municipality/region	Master plan analysed	Stand-alone event policy?[a]	State of event policy	Event policy effective since	Proceeding analysed
Bergen	Yes	Yes	Approved policy	June, 2018	Yes
Drammen	Yes	No (Master plan)	Approved policy	2013	–
Fredrikstad	Yes	Yes	Approved policy	December, 2020	Yes
Halden	Yes	Yes	Approved policy	?	NA[b]
The Haugesund region	Yes	No (Business policy)	Suggested policy	June, 2020	–
Kristiansand	Yes	No (Master plan)	Suggested policy	May, 2020	–
The Lillehammer region	Yes	Yes	Approved policy	August, 2019	Yes
Oslo	Yes	Yes	Approved policy	May, 2019	Yes
Sandnes	Yes	Yes	Approved policy	2016[c]	Yes
Skien	Yes	No (Master plan)	Suggested policy	2013	–
Stavanger	Yes	Yes	Approved policy	2013	Yes
Sunnfjord	Yes	No (Business policy)	Approved policy	2019	–
Tromsø	Yes	Yes	Approved policy	2017	Yes
Trondheim	Yes	No (Master plan)	Approved policy	2009	–
Ulstein	Yes	No (Business policy)	Memo	2018	–

[a] *Does municipality have a stand-alone event policy or is the policy implemented within a broader plan for the whole of the municipality or region?*
[b] *The archival search yielded no results for Halden.*
[c] *The policy is stated to run 2016–2019, however, as of December 2020, the policy would still be presented as the official policy on the homepage of the Sandnes Municipality (Sandnes Kommune, 2020).*

conceptualisations of sustainability, which the more targeted policies would have to consider. However, a more specific analysis of the conceptualisation of sustainability was not made in the three cases in which the municipalities express their interest in events in their master plans only.

In the last two parts of the results section, the results on the conceptualisation of sustainability related to events in the municipalities' business and event policies, respectively, is presented.

Sustainability and Events in Local Master Plans

The analysis of the master plans shows that the 22 reviewed master plan all considered sustainability; the majority however only do so in a very vague sense.

Thus, only six of the master plans make an explicit link between sustainability and one of the common frameworks for sustainability conceptualised in a broad sense (cf. **Table 2**). Oslo and Frederikstad, for instance, make explicit references to the SDGs (Frederikstad Kommune, 2018, p. 8; Oslo Kommune, 2019, p. 3 cf. p. 11). Oslo also, as the only of the reviewed municipalities, makes a reference to the national policy paper, which asks the municipalities to incorporate the SDGs into their master plans (Kommunal- og moderniseringsdepartementet, 2019; Oslo Kommune, 2019, p. 11; cf.). This indicates the national level as a source of influence in addition to the global standards such as the SDGs and the triple bottom line, which the Kristiansand and Skien municipalities use to substantiate their conceptualisation of sustainability. Kristiansand for instance declares that the triple bottom line and the SDGs should be a foundation for every future decision. These aims are both "how they [: the municipality] want it" and a contribution to the global development (Skien Kommune, 2015; Kristiansand Kommune, 2020, p. 9; cf.). However, Kristiansand's overall policy, similar to the other five master plans, does not specify how these aims will affect the specific policy fields such as events, which the master plan mentions as an important area for further local development (Kristiansand Kommune, 2020, p. 7).

The remaining nine master plans all mention "sustainability" too but do so without referring to a framework conceptualising sustainability broadly or—in a few cases—only with implicit references. Bergen is an example of the first, insofar, as it wants the city to have "a sustainable growth which considers the climate and the environment" (Bergen Kommune, 2015, p. 11). The plan, however, does not define what "growth" or "sustainability" mean beyond taking the climate and the environment into consideration. The plan from Halden exemplifies the latter as it sees "sustainability" as a response to climate change (environmental bottom line)—a factor when planning the future business logistics and "social sustainability" based on "bridging and bonding" as an aim for the development of the local community (Halden Kommune, 2018, pp. 5, 8, 22). The reference is implicit but for the initiated reader, it is clear that the Halden Municipality is referencing the triple bottom line approach. Similarly, the politicians in Trondheim want a "sustainable city," which "plans for economic, social, and cultural growth considering the needs of today without destroying nature's future ecological sustainability" (Trondheim Kommune, 2009, p. 14).

Trondheim is also one of only three municipalities, which only expresses an interest in events in their master plans (the other two being Kristiansand and Skien, cf. **Table 1**). These expressions of interest are generally brief and general. In Trondheim's reference to events, it is possible to read an effort to make events socially

TABLE 2 | The stand on sustainability in the master plans in every municipality included in the study.

n = 22[a]	Validity for each master plan	"SDG"	Triple bottom line	Otherwise including sustainability
Bergen	2015–2030			Yes (promises to include "sustainability" in a wide range of its policies, p. 3)
Drammen	2013–2036			Yes (the vision being: "sustainable city growth" (p. 15)
Frederikstad	2018–2032	Yes		
Halden	2018–2050			Yes (it is possible to read its plan as compliant with a triple bottom line approach, p. 5)
The Haugesundregion	2015–2027 (Tysvær); 2014–2023 (Karmøy); 2014–2030 (Haugesund); 2017–2029 (Vindafjord); 2016–2026 (Etne); 2011–2023 (Sveio)			All find sustainability relevant for the planning. Some pay special attention to the economic or the environment implications (Tysvær, p. 36.38- Sveio, p. 11, 21). Others have a broad, generation-definition used in the Brundtland report (Etne p. 4) or make the triple bottom line explicit (Haugesund, p. 4).
Kristiansand	2020–2030	Yes		
The Lillehammerregion13F	2014–2025 [Øyer), 2014–2027 (Llh.), 2014–2026 (Gausdal)			The master plans discuss sustainability in relation to specific themes [Øyer: climate (p. 17), Gausdal: public health (p. 6) and Lillehammer: Norwegian law (p.4)[b]].
Oslo	2019–2040	Yes		
Sandnes	2019–2035			Yes (it is possible to read its plan as compliant with a triple bottom line approach, p. 5)
Skien	2015–2022		Yes	
Stavanger	2020–2034	Yes		
Sunnfjord	(founded 1/1 2020. No plan at the time of writing)			Sunnfjord however considered sustainability in some specific plans for e.g., the environment (Sunnfjord kommune, 2019).
Tromsø	2020–2032	Yes		
Trondheim	2009–2020			Yes (it is possible to read its plan as compliant with a triple bottom line approach, p. 14)
Ulstein	2017–2029			Yes (reference to the UN initiated Agenda 21)

[a] *The Haugesund and Lillehammer regions have regional event policies but no regional master plans. I have instead reviewed the master plans of the individual member municipalities (listed in the second column). Therefore n = 22 and not 15 (number of entities in column 1).*

[b] *At the time of the data collection the Lillehammer master plan however was under revision to accommodate a bigger emphasis on the SDG (Lillehammer Kommunestyre, 2020, no. 1/20).*

sustainable into their event aims, cf., the aim of using events for "bringing about development, inclusion, participation and enthusiasm for Trondheim" (Trondheim Kommune, 2009, p. 25). In the cases of Skien and Kristiansand, events are simply important and none of the three cases have any details on how to handle events in a sustainable way regardless of how one conceptualises sustainability (Skien Kommune, 2015, p. 12; Kristiansand Kommune, 2020, p. 7).

On the one hand, the review of the masterplans shows that there is a widely recognised demand for policies based on sustainability in all the municipalities. A demand, which could affect other policies given that a master plan—as, for instance, in Bergen—sets the "long-term aims and strategies for the whole community in the municipality" (Bergen Kommune, 2015, p. 6). On the other hand, although the municipalities generally envision a broad conceptualisation of sustainability, only few municipalities indicate how they plan to implement their sustainability concept.

With regard to the further analysis, the aims of the master plans do not seem to be precise enough to determine the conceptualisations in the specific business or event policies analysed below. Considering only the master plans, the municipalities seem to dodge the dilemma between events and sustainability instead of reconciling the conflicting ends as suggested by the puzzle-theory.

Sustainability and Events in Business Policies

Three of the municipalities (Haugesund, Ulstein and Sunnfjord) include their event policy in a business policy (cf., **Table 1**), and on an overall level, these policies restate the general focus on sustainability with connotations of a broad conceptualisation, which also appeared in the respective master plans. The plan for the Haugesund region, for example, conceptualises sustainability by paraphrasing the definition given in the Brundtland-report; echoing the definition used in the regional master plan (cf. Haugaland Vekst, 2017, p. 7; Haugaland Vekst, 2019, p. 18).

However, with regard to the relation between sport events and sustainability, the business policies do little to make the conceptualisation of sustainability from the master plan more specific. This might be because all the business plans see sport-based events as so important that the events need their own policies rendering any considerations temporary and thus of little

use. Ulstein, for instance, hopes to develop a specific policy since it could improve the "coordination" of the events, Haugesund wants to increase the return on the public financial support, and Sunnfjord plans for a specific policy in order to increase its "professionalism" (Ulstein Kommune, 2018, p. 13; Sunnfjord Utvikling, 2019, p. 19; Karmøy Kommune, 2020, p. 5). Thus, in the future sport event policies, there seems to be support for a narrow conceptualisation, however, at least Ulstein imagines that (when eventually adopting an event policy) the improved coordination of the events will lead to a consideration of the triple bottom line (Ulstein Kommune, 2018, p. 6).

Finally, the analysis of the business policies also supports the initial claim that the interest in events is increasing rapidly. The regulation of events is merely stopping over on its way to an event policy. The risk of such rapid development is, of course, that the focus on making an efficient event hosting policy overtake the need for including a broad conceptualisation of sustainability in the policies. The final part of the results on the event policies will show whether this risk is real.

Sustainability and Events in Event Policies

The data set contains eight local or regional event policies that are either approved or pending approval. In five of the cases (Bergen, Frederikstad, Sandnes, Stavanger and Tromsø), the conceptualisation of sustainability in the policies is related to the narrow conceptualisation. Here, the event policies should mainly help attracting more events to the municipalities. In other words, the policy makers had registered a deficiency of events in the municipalities and sought to resolve it by adopting an event policy. The policy for the Sandnes Municipality is the most clear example of this as it only mentions "sustainability" in the section on economy when explaining how well-established events "remain attractive because of their sustainability and continuity" (Sandnes Kommune, 2016, p. 7). Other policies propose founding forums for exchanging ideas or professionalising the municipality by lessening the amount of bureaucracy, making it easier for organisers to get access to the local facilities, etc. In the case of the Tromsø municipality, the event policy should even—in the end—make more events run "unsupported" by the public and yield a surplus (Tromsø Kommune, 2017, p. 3).

This is not to say the event policies focused only on the monetary aspect of the events. The policy for Tromsø also mentions the potential for events to increase the happiness of the participants and spectators (Tromsø Kommune, 2017, p. 4). This could be seen as a form of social sustainability. However, there is no mentioning of the third bottom line, the environmental dimension. Frederikstad similarly wants, while making the events professional, that events "should be staged in a safe way, which considers the local cultural heritage, nature, noise and safety" (Frederikstad Kommune, 2019, p. 7, cf. p. 16). Finally, Bergen's event policy refers to a general commitment in the business policy to the SDGs and introduces a procedure for certifying the environmental aims of each event (Bergen Kommune, 2018, pp. 5, 14). Still, the policy does not add any explicit demands for how the events should fulfil these aims. Events in Bergen should simply "create an active, attractive and unique event city that supports local value, growth, development, cooperation and experiences" (Bergen Kommune, 2018, p. 6).

Within the five cases without explicit references to sustainability in a broad sense, Tromsø and Bergen thus stand out as ambiguous as they have a potential for a broader conceptualisation of sustainability. Whether this is the case in praxis depends on further studies of the local event practises.

Conversely, the policies in Oslo, Lillehammer, and Halden explicitly consider the sustainability of the events conceptualised broadly. According to the definition given in this paper, this would require the municipalities to adopt "a holistic view of society" when regulating their events. In the Oslo case, the explicit consideration, however, is limited to the ecological dimension if one ignores the implicit social and economic sustainability ingrained in the city's general vision of being "green, warm and more creative" (Oslo Byråd, 2018, p. 1).

In Halden and Lillehammer, the policies combine their commitment to a broad conceptualisation with a commitment to a narrow conceptualisation of the events. In Halden, the policy makers have achieved this reconciliation by setting certain demands concerning the events' social, economic, and environmental impacts as a baseline for supporting the events (Halden Kommune, 2019, p. 2). In other words, Halden, along with the Lillehammerregion, require that event organisers consider the triple bottom line when planning their events (Halden Kommune, 2019, p. 3; cf. Lillehammerregionen, 2019, p. 6). In Halden, the overall aim is even to be "nationally recognised for developing and staging sustainable events of a good quality" if also as part of the local business development (Halden Kommune, 2019, p. 2; Hovedutvalg for samfunnsutvikling og kultur, 2019, p. 1).

Just as it is the case for the policies without explicit references to sustainability, one will have to conduct further studies to see if and how Halden, Oslo, and the Lillehammer region realise their aims and manage to reconcile the broad and narrow sustainability conceptualisations.

In summary, the event policies, to some degree, all conceptualise sustainability narrowly, i.e., aiming at securing a continuous staging of events. Further, picking up the remark from the previous section that one runs the risk of neglecting the broad conceptualisation of sustainability in an event policy, this does seem to be the case as only a minority of the event policies included a broad conceptualisation of sustainability.

Including the proceedings in the analysis might partly explain this focus. In most of the hearings, the primary driver for making the policy turned out to be a requirement for a more efficient handling of events from branch representatives. In Bergen, the proceedings for instance show that event representatives asked for an increased focus on security and a strategic approach to event organisation (Bergen Kommune, 2017). In Frederikstad and Tromsø, it was also a request that an event policy should make it less complicated to host events (cf. Tromsø Kommune, 2017; Frederikstad Kommune, 2019). The inputs on sustainability across all the hearings from non-event-organisers were few and mainly came from other municipalities (in the hearing on the regional policy for Lillehammer) and a few private actors in the Oslo case (not considering the specific

hearing on sustainable events initiated by the municipality) (Oslo Kommune, 2018; Lillehammer Kommune, 2019). There were only few participants from the national sport organisations across the cases, and only the handball federation and the snowboard federation participated in the hearing in Oslo focusing on practical issues (Oslo Kommune, 2018, pp. 3, 67).

Overall, the very sources of influences fit well with the proposed model for influence on the event policies presented earlier (cf., **Figure 1**). The analysis further shows that the horizontal influence seems to be mainly concerned with event-specific issues with less of a focus on sustainability in a broad sense and vice versa for the vertical influence. These conclusions are however drawn on a very limited amount of data.

Summing up, the analysis shows that all the master plans conceptualise sustainability broadly. Several of the master plans acknowledge the SDGs as guidelines for the local policy development and others indicate a will to adopt a holistic perspective making references to the triple bottom line approach.

Looking at the business policies and the event policies, several of the policies conceptualise sustainability in a narrow sense. In these policies, "sustainable" events refer most often to an aim of making events reoccur regularly.

DISCUSSION: THE SUSTAINABILITY PUZZLE

In other words, sustainability with regard to events is an unfinished puzzle for policy makers and when scrutinising the event policies, it becomes clear that the pieces in the event policy puzzle rarely fit perfectly with the master plan. How can one explain this observation and what are the potential implications?

The simple explanation would be that some event policies are simply in need of an overhaul and, in time, the policies will be reconciled. However, such an explanation disregards the character of the problem that the master plan and an event policy (eventually) conceptualising sustainability broadly have to solve. The great variation in conceptualisations found in the paper could namely indicate that there is no obvious solution to the problem. In other words, the problem is wicked.

Regarding the problem for the policies to solve as wicked nuances the observed reoccurring misfit between master plans and event policies. Instead of simply saying that some event policies are in need of an update that would solve the problem, one could see that policies as attempts to improve the solution of an existing problem.

To be more specific, the overall great variation in conceptualisations between the policies (some event policies conceptualising "sustainability" broadly and others in a narrow sense) indicates that the Norwegian municipalities are trying to improve the coherency of their event puzzle. However, as they lay the pieces of the puzzle, the pieces change and, with them, the look of the to-be-completed puzzle requiring the pieces to be laid again. The result is a flux that helps explain why some policies remain vague in their demands. Broad demands after all accommodate new inputs (or new pieces in the puzzle) more easily.

Still, the vagueness does not prevent a policy from making sense. Policy makers do not need have a clear picture of the final look of the puzzle, but they should know when it is improving and when it is not. A "good" policy according to Winship's puzzle-approach is after all a coherent policy not necessarily the most efficient.

What then does it take to make a policy coherent? Basically, it requires a willingness from the stakeholders to take inspiration and develop their perspectives, i.e., enter negotiations. In the case of the present study, the attempts to be coherent have sometimes led to event policies with a narrow sustainability conceptualisation, sometimes not. In either case, the (limited) analysis of the policy proceedings supports the idea that event policies act "in conjunction with [other] public policies" (Smith, 2012, p. 14).

However, the demand for efficiency in handling for instance the climate change raises the question whether the problem of sustainability will remain a wicked problem. As the problem of the climate change becomes more expressed, concrete, and obvious, the pressure to take precautions or adopt concrete solutions increases and future sport event policy makers might find it relevant to draw on another policy-event-relation proposed by Smith (2012), namely, "polices on events," i.e., policies aiming at regulating events as a supplement or replacement of the currently prevalent "policies and events"—model aimed at using events as leverage. The inspiration for such regulation could come from the international frameworks mentioned in the introduction and context section. These frameworks offer a common ground for municipalities and their event partners on which to align their puzzle pieces and become coherent. The SDGs are already part of the Norwegian puzzle whereas international standards for sustainable events, such as the ISO 20121 for sustainable events or ISO 22379 for citywide events (under development), are as of today are missing as pieces.

Also, one could decide to replace the event pieces in the puzzle with other pieces with images (aims) similar to those of international events but with fewer potential negative impacts (cf. Taks, 2016). However, the current high interest in events does not speak for this solution.

CONTRIBUTION TO RESEARCH

This paper is one of the first to consider the local relations between sport events and sustainability from a policy perspective. Its most important contribution to the research is therefore highlighting new relevant areas for further studies. For one, the paper shows the relevance of adding a sustainability perspective to the current research in event policies. Therefore, it opens a wider field of research on the explicit relation between sport events and sustainability, which is likely to become more relevant as the SDGs gain momentum.

The paper however also has its limits which future studies on specific events and their relation to the local event policies could mitigate. It has, for instance, not been able to consider the effect of the current policies. Especially given that some of the event policies are dated, studies of the concrete policy

practise would give a more precise picture of how local event stakeholders handle sustainability. More generally, studies of the actual practise would also show whether the municipalities have the will and the resources to implement the sustainability aims stated in their event policies when faced with partners with potentially diverging agendas.

Finally, the study is based on event policies, which are meant to regulate both sport events and other cultural events. Currently, most event research focus on sport events (Bocarro et al., 2017). However, research based on local policies shows an intriguing field in which it is possible to study both sport and other forms of events within the same framework. In the future, this could lead to greater exchange between the various fields of event studies.

CONCLUSION

The present paper analysed how 13 Norwegian municipalities and two regions conceptualise sustainability in their sport event hosting policies and discussed the potential explanations for and implications of these conceptualisations. The paper thereby highlighted the complexities municipalities could face when being interested in both hosting more sport events and increasing the sustainability of the municipality.

The paper first showed that the municipalities varied in how they conceptualised sustainability in their master plans and specific event policies. On the one hand, all the municipalities conceptualised sustainability in a "broad" sense in their master plans. In other words, the municipalities all agreed that local policy development should take the impacts of the policies on the local society as a whole into consideration. On the other hand, the paper's analysis of the specific event policies showed that these policies did not reflect the conceptualisation set out in the master plans. On the contrary, the specific policies mostly conceptualised sustainability as what the paper defined as "narrowly." Thus, instead of considering sustainable events as something relating to how the event would impact the whole of the local society, the event policies considered events as "sustainable" when they occur on a regular basis.

This variation indicates that the reconciliation of sport events with a broad conceptualisation has no obvious solution. In other words, the problem could be considered as "wicked," implying that any solution to the problem can only be an improvement on the existing approach and not final. Future research and practitioners should thus look to improve the existing solutions. This could include studying cases of best practise, but more detailed knowledge on the negotiations would be just as relevant since the paper, drawing on the puzzle-theory (Winship, 2006), points out that what eventually is adopted as a policy most likely also has to with the policy's ability to appear coherent and not necessarily best practise.

DATA AVAILABILITY STATEMENT

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

AUTHOR CONTRIBUTIONS

The author confirms being the sole contributor of this work and has approved it for publication.

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