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Olympians' perspectives of environmental sustainability within the Olympic games

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ABSTRACT

The Olympic Games (OG) are renowned for their prestige and socio-economic benefits; however, they have suffered criticism for their environmental practices. Unlike existing studies on the matter, which adopt top-down approaches, the purpose of this exploratory study is to conduct bottom-up research to understand Olympians' perspectives of environmental sustainability within the OG. Data collected through semi-structured interviews with eight Olympians are used in this study to uncover an initial indication of their valuable yet previously undisclosed perspectives. Through the data, the Olympians' awareness of the symbiotic relationship between sport and the environment is shown, alongside the factors that influence it. Uncovering Olympians' perspectives allows for their call for change and collaboration with the International Olympic Committee (IOC) to be highlighted, while indicating that existing obstacles might be limiting the athletes and the Olympics in their efforts, progress and internalisation of environmental sustainability.

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With the climate change crisis being difficult to ignore, discussions around environmental sustainability and the actions we can take towards it have increased substantially (Müller et al., 2021). In the world of sport, such discussions have been gaining momentum, particularly due to the relationship between sport and the environment; sport has an impact on the environment, and the environment and its changes impact sport and its delivery (Wilson & Millington, 2020). The influence of sport on the environment has attracted increasing attention in recent years, with the hosting of mega-sport events having negative impacts on the environment and adding substantially to the ever-growing carbon footprint (Miladin, 2021; Szathmári & Kocsis, 2020). Despite the wider debate on the socio-political and economics benefits (and drawbacks) of mega-sport events (Barclay, 2009; Ferrari & Guala, 2017; Müller et al., 2022; Wilson & Millington, 2020), additional pressures are being raised for their hosting to be sustainable, as we saw with the self-promoted as 'sustainable' – yet heavily criticised – Qatar World Cup (Revill, 2023). Similarly, the Olympics have also found themselves under increasing scrutiny, pressure and criticism regarding their lack of sustainability practices (Geeraert & Gauthier, 2018).

Research on the area of environmental sustainability in sport has so far been rather limited, with a notable focus on systematic reviews and quantitative enquiries that focus on

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the views of policymakers such as the IOC and the Governments involved in organising OG (Miladin, 2021; Müller et al., 2021). While such top-down viewpoints are insightful in appreciating how policy and decision makers think, it only allows for a rather limited light to be shed on the much-advocated holistic understanding of all stakeholders, that would incorporate more bottom-up perspectives (Trendafilova & McCullough, 2018). Stakeholders that have so far been neglected for example, possibly due to the difficulty in accessing them, are the athletes participating in the OG and Paralympic Games (PG), who – one could argue – are one, if not the most important stakeholder in the Games. Not only is institutional change determined by the (often changing) perceptions, beliefs and values of *decisive actors* within the Olympic Movement such as the Olympians (Seltmann, 2021) but also Olympic athletes can help inspire demographics of people with little or no concern for the environment. In fact, the document *Sustainability through sport* (IOC, 2012; see also Scott et al., 2022) aimed to tackle this, advocating the use of Olympians as role models encouraging sustainable practices. As such, their opinions must be explored.

Taking the above into consideration, this exploratory, small-scale study aims to examine this overlooked area and particular stakeholders, in order to gain an initial understanding of Olympic athletes' perspectives of environmental sustainability in sport and the Olympic Games, and thus offer some very much required 'bottom up' insights (Graham et al., 2018) to the ever-pressing issue of environmental sustainability. Through these limited yet previously undisclosed insights, we provide an account of the Olympians' beliefs, appreciation and obstacles towards sustainability, but also on the potential of the OG to assist in such efforts.

Following this introduction, the research note comprises five sections: a literature review, a methodological section, a findings section, a discussion section and a concluding section in which the limitations of our study as well as recommendations for further research are put forward.

Literature review

Environmental sustainability is widely concerned with how we could continue to operate without negatively affecting the environment, by ensuring that we protect its existing biodiversity and replenish the resources used (Morelli, 2011). In the case of sport, it is suggested that maintaining the social and natural environment to its current state is no longer viewed as sustainable. Arguments highlight the need for sport to improve its environment in order to be considered sustainable, due to sport's role as a social movement, or 'a key social platform', towards evoking wider change in environmental sustainability (UN (United Nations), 2022, p. 1; see also Chernushenko, 2001). As such, questions are increasingly being raised on mega-sport events' impact on the environment, with research arguing that they are to be blamed for pollution, extensive use of resources and significant carbon footprints (Bunds & Casper, 2018; Trendafilova & McCullough, 2018; Trendafilova et al., 2014). Simultaneously, due to the interconnectivity between sport and the environment, sport is also being impacted by environmental changes, with some sport organisers resorting to artificial and wasteful practices, such as increased watering and fake snow to overcome these changes (Bunds & Casper, 2018).

In the past two decades, scholarly interest has been drawn on the relationship between sport and environmental sustainability, with early emphasis placed on sport organisations and their efforts and reluctance to 'go green'. McCullough and Cunningham (2010) explored the social and political pressures from the organisations' stakeholders, driving organisations' involvement in environmental sustainability programmes; while Babiak and Trendafilova (2011) identified that sport organisations that were environmentally sustainable were able to build stronger relationships with their stakeholders and had achieved a reputation for doing so. McCullough et al. (2016) also argued that we have yet to be provided with a roadmap on how positive changes can occur for sport organisations, potentially further feeding into the lack of urgency demonstrated to fully engage in environmental sustainability.

In response to this, McCullough et al. (2016) introduced the ‘green waves’ conceptual framework illustrating the evolution of environmental sustainability in sport through three waves. The first wave captures sport organisations that show the first signs of appreciating environmental issues and creating sustainability programmes and actions to address them, albeit rather rudimentary and perfunctory. The second wave calls for a deeper engagement of sport organisations. In this wave, the individuals within an organisation become more knowledgeable about environmental issues around them (become ‘green teams’), and are empowered in the design and implementation of appropriate measures towards addressing unsustainable practices. The third wave requires sport organisations to be able to internalise and integrate environmental sustainability practices, which are viewed as an integral part of the running of the organisation. In this conceptualisation it is argued that a gradual development will materialise, in which a sport organisation can progressively overcome barriers to become environmentally sustainable through the conscious effort of all stakeholders (McCullough et al., 2016).

In practice, and while a notable change towards environmental sustainability has been seen within sport organisations (Trendafilova & McCullough, 2018), challenges in achieving environmental sustainability still exist, with critics arguing that since sport is widely commercialised, it is financial (and not sustainability) interests that dictate the decisions made and actions taken (Miladin, 2021; Wilson & Millington, 2020). At the same time, this criticism is further supported by the fact that decisions on change are made in a top-down manner in which organisations, such as the IOC, are to create and implement changes without the input of other key stakeholders like the athletes or the wider public/audience of the Games (Graham et al., 2018). This leaves us wondering how a bottom-up approach in addressing environmental sustainability could materialise.

The OG are an interesting context to focus upon, since due to their wide popularity and political nature, they can be a platform for environmental sustainability issues in sport to be approached (Müller et al., 2021). It is in fact argued that environmental issues and concerns have been noted in the Olympics for nearly a century (Del Fiacco & Orr, 2019). Specifically, the years 1932–1992 and 1994–2000 represent the first two phases in which environmental sustainability can be seen in the Olympics, originally driven by the public and then by the host cities. Del Fiacco and Orr (2019) present the years 2000–2012 as a phase in which the *IOC mandates environmental sustainability*, actively addressing environmental issues, as seen in its 2000 Sydney and 2012 London ‘Green Games’ (McCullough et al., 2016; Wilson & Millington, 2020).

Interestingly, all OG since 2012 have widely and at times excessively promoted their sustainability intentions and practices, leading critics to argue that their efforts are focused more on promoting a ‘greener image’ and less on being sustainable, giving ground to accusations of ‘green-washing’ (Geeraert & Gauthier, 2018), due to their inadequate sustainability practices (Müller et al., 2021). Del Fiacco and Orr (2019), therefore, argue that we are since 2012 experiencing an *environmental regression* in the Olympics, in which financial and success driven motivations are surpassing environmental concerns, even when directly linked with negative environmental impacts.

Simultaneously, as it was previously argued, scholarly attention has failed to truly capture all stakeholders and their views on sustainability. While fans (Casper et al., 2017) and sport organisations (Babiak & Trendafilova, 2011), for example, have been studied, athletes’ perceptions have yet to be captured, leaving us almost unaware as to what one of the most important stakeholders of the Olympics think. In this study, we align with Scott et al. (2022) argument that athletes have collectively the power to instigate and bring about change in sustainable practices, while contributing to a more holistic understanding of the phenomenon, and as such, we aim to offer a first glimpse to their, so far ignored, perspectives on environmental sustainability in sport and the OG.

Method and data

Guided by the aim of this exploratory, small-scale research, qualitative data generated through semi-structured interviews were used for this study. Focusing on Olympic athletes, a hard-to-reach

demographic, allowed us for rich data to be gained by a previously understudied population (Fugard & Potts, 2015). As such, purposive criterion sampling was employed, with the criterion being the athletes' participation in one or more OG while representing their country. One hundred and forty athletes, who met this criterion were contacted through email and social media (LinkedIn, Facebook and Instagram), with eight agreeing enthusiastically and being interviewed for this study (seven Olympians and one Paralympian). Appreciating the difficulties in accessing such participants (not just athletes but Olympians), this number, albeit small, was considered sufficient to gain some initial, previously undisclosed, insights from Olympic athletes, as literature on hard-to-reach knowledgeable interviewees suggests (Fugard & Potts, 2015; Guest et al., 2013; Manoli & Hodgkinson 2021), paving thus the way for further research on the topic. The interviewees were between 21 and 34 years old and more information on them can be found in the [Table 1](#) below.

Before the commencement of the interviews, an interview schedule was designed and was tested through a pilot study, with an ex-national level athlete from France, selected through convenience sampling. The final schedule, which did not change from the pilot study, included four broad areas: athlete awareness of environmental sustainability; questions on McCullough's et al. (2016) 'three waves theory' delivered in layman's language; the role of the athlete in environmental sustainability; and perceptions and ideas on improving sustainability.

The online semi-structured interviews were conducted between June and July 2022, through Microsoft Teams. Semi-structured interviews were chosen since they allow for the flexibility required to develop a conversation with the participants, while ensuring that all four parts of the interview schedule designed are also followed. Online interviews were chosen since they allowed for the necessary flexibility to fit participants' busy schedules, while overcoming barriers of distance and differences in time zones. The interviews lasted between 40 and 60 minutes and were recorded and later transcribed. The 'interview-data-as-a-resource' tradition was used to reflect the interviewees' reality (Seale, 1998) about the topic, and extract examples from the data were selected to highlight accounts put forward (a sample list of the questions asked during one of the interviews can be found in [Appendix A](#)).

We adopted Braun and Clarke's (2006) six-step approach to thematic analysis, which was conducted manually. Reflexive notes were kept after each interview, which were revisited before the interviews were listened to again alongside reading the transcripts, for a deeper familiarisation with the data to occur. Then, initial notes made on the transcripts allowed for the generation of the initial codes. Following this, the codes were cross-examined and arranged under wider themes. This step involved reviewing the transcripts again, to identify patterns in the data. Once several themes were identified, a thematic map was created, to assist in refining the themes and control for overlaps. This refining and reviewing process, allowed for the re-organisation of codes, subthemes and themes in a meaningful way, which in turn was used for the presentation of the findings of this exploratory study (a shortened version of the thematic map can be found in [Appendix B](#)).

Table 1. Participant information.

Interviewee	Country	Sex	Sport	Olympics	Experience
1	Great Britain	Female	Hockey	Summer	1 Games
2	Great Britain	Male	Rowing	Summer	2 Games
3	Great Britain	Male	Cross country ski	Winter	2 Games
4	Great Britain	Male	Skeleton	Winter	1 Games
5	Great Britain	Male	Para-Athletics	Summer	2 Games
6	Africa ^a	Female	Swimming	Summer	1 Games
7	Europe	Female	Swimming	Summer	1 Games
8	North America	Male	Speed Skating/ Cycling	Summer/Winter	3 Games

Country not named in the study in order to protect the anonymity of the athletes as requested.

To ensure this study's rigour, the coding and reflexive notes were shared among the research team, while reviewing meetings also took place to further clarify any points raised and ensure that there was clarity in the thematic analysis and how it was presented, while appreciating and controlling for, when possible, the unavoidable biases. Finally, ethical approval was sought for and given from the first author's University employer, with a corresponding ethics protocol adhered to throughout the study (i.e. informed consent, right to withdraw, anonymity, etc.).

Findings

Three main themes emerged through our findings: *athlete awareness*; *the role of Olympians*; and *the need for change*.

Athlete awareness

All athletes interviewed showed some level of awareness of the symbiotic relationship between sport and the environment. The level of awareness each athlete had differed depending on several factors. First, the sport in which they participated, with athletes performing winter sports having been exposed to impacts such as reduced snow levels during their training or participation in events, and those performing indoor or summer sports having experienced less changes in their environment. As such, athletes performing winter sports were able not only to elaborate on how climate change is affecting their training, but also to recall how unsustainable practices were adopted in some cases to counterbalance the effects of the environment on the sport, especially when sport events were staged in possibly unsuitable climates.

As interviewee 4 suggested: *'for winter athletes it's something affecting your training year in, year out'*; while interviewee 3 further criticised previous Winter OG editions by arguing that: *'They do stupid things like doing the cross-country ski race in the middle of a desert where there is no snow, and they have to use snow cannons to make it'*. Less criticism was expressed by the athletes participating in the Summer Olympics, such as interviewee 2 who argued that *'We tend to have slightly more extreme weather in some places. In the summer there may be days when its less comfortable to be rowing, but you'll still do it'*.

Another factor influencing Olympians' awareness of the symbiotic relationship between sport and the environment was that of the athletes' career stage. As the athletes argued, in their early career stages, their focus tended to be primarily on experiencing and competing in the Olympics, while enjoying the spectacle the Games provide to the participating athletes as well, and as such, early-stage Olympians tended to be more experience-motivated, as is illustrated in the following quote:

When you come into sport, it is this amazing spectacle, you know it's like this gold shiny thing you can't take your eyes off ... becoming more conscious of things that are going on around you comes with age. (Interviewee 5)

It was suggested that later on in their career, athletes tend to consider and reflect upon other aspects of their sport and the OG, and as such they begin to appreciate better the environment in which sports take place.

Culture also appeared to influence Olympians' awareness of sports' relationship with the environment. It was argued that the Olympic Games can be considered a stimulant for change, especially in cultures in which environmental practices are not yet widely adopted. For example, athletes, such as interviewee 6, argued that while sustainability was not a topic discussed in her home country, mega-sport events such as the OG can be a catalyst for positive change in that direction. As interviewee 4 put it:

They're trying to make a difference, even kind of [redacted, mention of a particular country], which doesn't have a great history with that stuff . . . even if countries that were historically not bothered about emissions. If they're focusing on it and pushing the carbon neutral, I think that's a positive.

It was nevertheless acknowledged that imposing universal sustainability standards through the Olympics could be considered challenging and rather problematic to countries that had not engaged in such practices in the past. This is because these standards would be based on existing practices in western cultures and/or developed economies, and as such they might not be tailored or applicable to all contexts.

Role of Olympians

All interviewees acknowledged their ability and responsibility to act as positive role models regarding issues of sustainability, with interviewee 5 arguing: *'I think the privilege of being a public figure and the responsibility is to promote positivity and inspire, and I think that should be a big thing for what we do as Olympians and Paralympians'*. Nevertheless, it was also argued that barriers exist in promoting sustainability, with the main one being the prioritisation and external expectations of performance, which outweigh any athlete's personal interests in sustainability in the OG. As interviewee 8 argued: *'I want to be ecofriendly But at the same time there's a certain level of performance expectations on us as athletes to meet'*.

As such, and due to the pressure and emphasis placed on performing, and the corresponding fear of underperforming, which can have a devastating impact on an athlete's career, successful outcomes are valued significantly higher than environmental concerns. Simultaneously, and despite the interviewees' interest and enthusiasm to become positive role models for the environment, all interviewees felt that promoting sustainability could be considered hypocritical, since the increased travelling required as part of their training and competing schedules corresponds to increased levels of carbon contribution. Or as interviewee 3 suggests: *'Part of me believes that I do not have the right to do it when I feel that I pollute so much by simply travelling and doing all these races'*.

Interestingly, all interviewees argued that the Olympics could be considered the ideal platform for the promotion of environmental sustainability, due to their global reach, high interest and affluence. Simultaneously, however, they all criticised the practices they had witnessed, raising questions on the integrity of the sustainability efforts, underlining a perceived reluctance to implement positive changes. It was suggested that the Olympics had both the 'privilege' and the 'responsibility to do better' in terms of environmental sustainability and the promotion of a positive example to the world, as the following two quotes illustrate:

The Olympics have an amazing opportunity . . . they have almost unlimited resources, and they could try and do something amazing to try and influence people and make them more eco-friendly in their own practices. (Interviewee 3)

They have the opportunity to show sustainability . . . I think that's the privilege they have but it's also the responsibility to do better. (Interviewee 2)

Need for change

In line with their beliefs on the Olympics' responsibility and opportunity to promote sustainability, all athletes highlighted the need for change for the Games to truly become a catalyst for positive steps forward. First, it was strongly argued that the OG and the athletes themselves should show more respect and appreciation for the environment in their practices, by accepting that sport should adapt to the environment, rather than the other way around, as has been the practice adopted in the Olympics thus far. In addition, a unanimous call was made by the interviewees for a better and closer collaboration between the IOC and the

athletes participating in the Games, or as interviewee 5 put it *'Individually we're gonna struggle, collectively that's where we can make a difference'*. All athletes argued that the Olympic Movement currently tends to operate as two separate entities (IOC – Olympic athletes), rather than a unified force, which could better promote and improve sustainability efforts. While scepticism was expressed by the interviewees on the IOC's interests and agenda on sustainability, as well as on the way in which the Games are delivered, they all argued that they would actively support any sustainability efforts made from and around the Olympics. This call for collaboration was also paired with the suggestion that a clear strategy needs to be set by the IOC, which the athletes can then adopt and promote, as interviewee 1 suggested: *'I think the Olympics needs to have a robust strategy around environmental sustainability in place, because that allows a platform for the athlete, who is interested, to speak from'*. This 'robust strategy' as it was put would then empower the athletes, who could also benefit by educational programmes on sustainability offered to them by the IOC. As interviewee 6 argued, even a mere discussion on the topic could have helped and empower her, while allowing the Olympics to actively progress their efforts for sustainability.

Discussion and implications

Olympians' understanding of the importance of environmental sustainability can be clearly evidenced through this study, offering us some initial insights into these key stakeholders' views of not only the Olympics, but sport in general, regarding environmental sustainability. Through this, we are presented with a rather 'simple' or 'limited' understanding of sport protecting and not damaging the environment that scholars like Morelli (2011) have proposed, rather than the more 'complex' and 'wider' idea of sport improving the environment in order for it to be considered sustainable expressed by both academia (Chernushenko, 2001) and policy (United, 2022).

While our interviewees' views on the lack of environmentally sustainable practices in relation to the Games align with existing literature (Bunds & Casper, 2018; Trendafilova & McCullough, 2018), their interest and appreciation that the Games and themselves can play a key role emerge for the first time through this study. In this effort, a call was also made from the Olympians for a rather holistic approach towards sustainability, echoing the arguments made by Trendafilova and McCullough (2018) for a comprehensive understanding and response to the matter. This research, therefore, further emphasised how such efforts can and should materialise, while incorporating bottom-up viewpoints such as the ones offered in this study, and thus using this exploratory study and tangible suggestions from the Olympians to potentially begin improving the Olympics' environmental sustainability practices.

Using the three waves conceptual framework of McCullough et al. (2016), we can also argue that the Olympians appreciation of environmental practices in the Olympic Games would fall under McCullough et al. (2016) wave two. This is because the athletes showed a deep appreciation of environmental issues, while being able to critically reflect on existing unsustainable practices and how they could be improved. Through the athletes' reflection, it was also made clear that significant obstacles exist, like their performance focus and the Games' reluctance to improve, stopping Olympians from progressing further (McCullough et al., 2016). Utilising the waves framework as a lens to examine Olympians' appreciation of environmental sustainability in this study can allow us to begin to grasp the views, criticism, and lack of progress of one of the key stakeholders in mega-sport events, the athletes, and the Games themselves, noting that the Olympics might have indeed regressed (Del Fiacco & Orr, 2019). This in turn allows us to suggest that the green waves conceptual framework (McCullough et al., 2016) can be used as a classification tool not only for organisations, but also for other key actors in the sport ecosystem, potentially further expanding its theoretical and practical implications.

Conclusion, limitations and further research

This small-scale study offers a preliminary and valuable understanding of the levels of awareness in Olympians regarding environmental sustainability, while paving the way for more research on the topic. It must be noted that the limited number of participants, and their demographics in this study is one of its limitations, which in turn limits the generalisability of its findings. Nonetheless, due to the difficult-to-reach population and the exploratory nature of this small-scale study, the number of interviewees can be considered adequate for some initial findings to emerge. It is important to note that although social science research tends to favour big sample sizes and routinely accords them a privileged position (Maruna & Matravers, 2007; Mechelin & Liu, 2023), the reality is that it is difficult to specify minimum requirements for sample size in qualitative research. Clark et al. (2021, p. 386) suggest that ‘the size of sample that is able to support convincing conclusions is likely to vary from situation to situation’, and this is especially the case with peculiar, hard(er)-to-reach groups in which it is the ‘information power’ (Malterud et al., 2016, 1759) that makes all the difference. Hennink and Kaiser (2022) found that studies using empirical data reached saturation within a narrow range of interviews often including as a small sample such as ours, particularly those with relatively homogenous study populations. The few outlier studies that needed to make a point about country differences needed larger samples for saturation. Of course, we do not engage in a discussion on whether perspectives differ by country in this research note, exactly because of our small sample. In our research note, there are ‘hints’ of data saturation in the sense that for some of the issues discussed, all participant ($n = 8/100\%$) had the same view (e.g. all interviewees felt that promoting sustainability could be considered hypocritical, since the increased travelling required as part of their training and competing schedules).

In addition, a limitation of our study is that most of the interviewees in our sample are British. Future research should focus on more athletes and differing demographics among them, and a greater comparison between the global south and global north to gain a broader understanding of Olympians’ perspectives. Simultaneously, since the aim of the study was to gain previously undisclosed insights, we can argue that only analytic generalisability in which similar patterns in the data could be noted in similar settings, can be potentially achieved. As far as preliminary research goes, this study acts as a springboard of understanding into the factors underpinning athletes’ level of awareness of environmental sustainability, while calling for more research on the matter.

Disclosure statement

No potential conflict of interest was reported by the authors.

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Argyro Elisavet Manoli is an Associate Professor of Marketing and Management in the University of Bergamo. Following a career as a marketer in the sports industry, and having worked for English, Spanish and Greek football clubs, as well as international sport events and federations, Prof. Manoli begun her academic career in the UK, working for Loughborough University and Teesside University. Her research interests focus on two broad areas, marketing communications management and integrity management in the context of sport. Within these two themes, she has published extensively in highly esteemed journals, and has been awarded funding from prestigious institutions. Prof. Manoli was an academic expert on the European Commission Expert Group for Sport Integrity and is the author of the EU Report Mapping Corruption in EU Member States. Her research has been presented in the European Parliament and in numerous highly regarded academic conferences, as well as regularly cited in public policy. She is the Associate Editor and sits on the editorial board of a number of prestigious journals.

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Georgios A. Antonopoulos is a criminologist working on organised crime and illegal markets. He is a Professor of Criminology in Northumbria University, and has taught at the University of Durham and at Teesside University, and has delivered guest lectures at several European universities including Utrecht University, the University of Trento, Panteion University of Social and Political Sciences, and the University of Zagreb. Previously he was visiting fellow at Sheffield University and at Vrije Universiteit Amsterdam. A former local government officer, he has worked in partnerships providing strategic direction to community safety partners with the aim of coordinating criminal policy. He has led and managed projects funded by the European Commission, the Economic and Social Research Council, and the British Ministry of Justice. Prof. Antonopoulos is member of the Global Initiative Against Transnational Organised Crime, board member of the Cross-Border Crime Colloquium, series editor of the Routledge Studies in Organised Crime, and editor-in-chief of the journal *Trends in Organised Crime*.

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Appendix A: Sample list of interview questions asked during an interview

- As you have seen from the participant info form, the purpose is to gain an insight into your perceptions of environmental sustainability in the Olympic Games. To start with, do you have any questions for me?
- To start with, can you tell me a bit about your sporting background?
- So what Olympics was that? Was that 3 Olympics you've been to?
- What is your understanding of the term environmental sustainability?
- Talking about environmental sustainability, do you think it is related to sport at all, or do you see it as something separate?
- In which way is it connected?
- Thinking about your sport, how do you think your sport is impacted by climate change?
- Seeing that you've been to three Olympics, have you seen kind of any evidence?
- I know you said that your sport is indoors, but looking also at the Olympics outside your sport, do you think you have seen any evidence of climate change or environmental sustainability changes?
- So if I kind of flip that, do you think that your sport contributes to climate change at all?
- Let's think about the event overall then, how is that related to the environment?
- That's an interesting point you are making there. So, let me repeat what you said there, you think they are impacting the environment?
- Correct me if I'm wrong, but you seem very kind of clued up with what the sport organisations or organisations around you are doing in this area. Can you tell me more about it?
- This leads well into my next question that is environmental sustainability, is it something that you think about as an athlete?
- And so thinking about the Olympic Games you've been to, what kind of exposure is there to environmental sustainability within the game?
- This is an interesting point you make about top down. Could you please tell me more about it?
- The education you mentioned, could you please tell me about any education that you may have received when you're at the Olympics?
- Are there any other issues that come to mind that athletes are aware of in terms of environmental sustainability?
- This is interesting. So do you see these as the main challenges for Olympians then?
- What about the main challenges of the Olympics themselves?
- Do you have any suggestions or ways to improve that or anything that you've kind of talked about or come across?
- And so as an athlete, how do you think sporting organisations use athletes to promote environmental sustainability? Should they? Are they already?
- Would you say that would be quite similar in the Olympics? That they could use athletes in a similar way?
- Ah, this is interesting. So you think they are not?
- Do you really think that? That they are insincere? That's it's all marketing?
- This is really interesting. So, you just said that it's not your main thought either. And it is what you said that it's all about the race?
- So, if you were to rank things, where would environmental sustainability fall? As an athlete, where would it fall on your agenda. Or would it fall on your agenda at all?
- What are your personal views about the relationship of the Olympics and sustainability?
- Can you tell me about any promising things that you've seen at the Olympic Games and anything that maybe is obviously pro environmental or just a positive thing?
- You mentioned culture there, do you think that culture is such a big part of it?
- So are you aware of any other Olympians that have used their platform to benefit environmental sustainability? So this could be within the Olympics or within their sport in general.
- Back in 2012, the IOC released a document and it was called sustainability through sport. Is this something you ever came across or been made aware over to?
- Can you tell me about any experiences you've had with this? You mentioned Olympians been used as role models?
- So, based on what you said, do you think Olympians could actually use their platform to educate others?
- What changes do you think should happen then for this to be achieved?
- So, let's go back to what we discussed before, what do you think could change, any areas you think could improve in the Olympics in regards to environmental sustainability?
- And finally, is there anything else that we haven't touched on that you thought might be useful to the topic?

Appendix B: Shortened version of thematic map

Theme	Code	Representative Quote
Athlete Awareness	<i>Awareness</i>	'We tend to have slightly more extreme weather. In the summer there may be days when its less comfortable to be rowing, but you'll still do it' – Interviewee 2
	<i>Sporting affiliation influence</i>	'For now I would say not so much because they're indoor sports . . . we don't really get impacted because it's all indoors' – Interviewee 8
	<i>Career stage influence</i>	'When I first started off as an athlete, I think It was at the back of my mind . . . I think as I kind of got a bit older, like kind of finishing my studies and thinking about the connection more' - Interviewee 1
	<i>Cultural influence</i>	'From our perspective we have had our industrial revolution and made lots of advancements and now go and tell other countries that they shouldn't do the same thing. It's quite difficult, you know with less developed countries' - Interviewee 2
Role of Olympians	<i>Role model</i>	'Being an Olympian, you should be a good role model, whether its sustainability or anti-doping' – Interviewee 4
	<i>Performance prioritisation</i>	'Our job was to get your boat from the start line to the finish line as quick as possible, regardless of our beliefs' – Interviewee 2
	<i>Hypocrisy</i>	'There's an element of narcissism, because you are making all the right decisions for your performance to be at its very best, so you travel and you pollute and if you win it's ok. I know it sounds bad. I do feel it's a bit hypocritical from my side' – Interviewee 5
	<i>Olympics as a global platform</i>	'I think for events, you know, giving those athletes the platform, giving them the platform to speak for these issues and naturally that has a positive reach' – Interviewee 1
Need for change	<i>Adapt athletes & the Games to the environment</i>	'In the Olympic games for rowing, they should use whatever water is natural . . . I think we (athletes) should adapt to what they already have naturally' – Interviewee 2
	<i>Collaboration athletes & IOC</i>	'If there were to be actual change and we were making real strides to it being truly beneficial and it was factually paced, I can see it, we could use our platform together' – Interviewee 8
	<i>Call for education & strategy</i>	'I guess its not that we don't want to know, its more that we just don't know. No one has really told us anything about in a proper way' - Interviewee 7