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**Social change and doping decision-making: Building a conceptual framework and
survey item development**

Report compiled for the World Anti-Doping Agency
Social Science Research Scheme

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Abstract

The relationship between broad social changes related to globalization (i.e. media/social media, medical support, professionalization/funding) and athlete perceptions is under-researched, especially with regard to doping. Taking a mixed methods approach, this project examines the experiences of these trends among athletes who competed at the Commonwealth Games between 1986 and 2014. This project is comprised of two studies. In study one we used archival data and semi-structured interviews with 48 athletes from four sports and eight countries to understand how globalization has influenced sport and athletes directly. By considering how these experiences changed over time, we were able to improve our understanding of the way these trends impact athlete lives and careers. We found that athlete resources, especially medical and financial, continues to vary across sport and country and potentially leave athletes more vulnerable to risky behaviors such as doping. Study two built on the athlete interview data to develop a set of survey questions that may capture how broad social trends impact on athletes perceptions of doping. Future researchers may validate these questions.

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1. Introduction

Insufficient attention has been paid to the relationship between broad social change over time and athletes' perceptions of doping. Social scientific research on athletes' attitudes and perceptions of doping have clarified some factors in athletes' perceptions and decisions, though they have not been analyzed in ways that help us to understand overarching social changes. Previous research also has not attempted to capture the influence of these changes over time. This project aims to address this gap in our understanding of doping through a mixed methods approach.

By identifying key aspects of globalization, medicalization, technology, and related processes, we will be able to conceptualize how social forces impact upon individual athletes, and in turn how the experiences and attitudes of individual athletes are the dependent upon, and reflective of, developments at the meso- and macro- levels of their sport environment.

This project aims to provide an understanding of how social changes influence athletes' doping behaviors and attitudes. Using three qualitative techniques, this project will offer practical guidance for understanding and researching the relationship between macro-, meso-, and micro-level processes. The overall objective is to improve researchers and policymakers understanding of the relationship between social change and doping among athletes. To do so, this project has produced a framework for conceptualizing and analyzing the relationship between social changes and doping attitudes that can be used in future research. Additionally, we have produced a set of survey questions for gauging the impacts of these changes on doping attitudes, which future research may validate.

Because of the complex nature of this project, we have divided this report into two studies. Following the background section, we present these studies separately. Study 1 includes the main archival and interview data collection stages. Following a discussion of the methods for this study, we present the results of the interviews with CG athletes and a discussion of how broad social trends have impacted athlete perceptions of

doping. Study 2 focuses on the development of the survey questions. It begins with an overview of the

Purpose of the research

The relationship between broad social changes and athlete perceptions is under-researched, especially with regard to doping. The purpose of this study is to explore the relationship between broad social change and doping perceptions among athletes.

Specifically, this project aims to:

- conceptualize how social forces impact upon individual athletes, and how the experiences and attitudes of individual athletes are reflective of these trends;
- enhance our understanding of how social changes have impacted athletes over time;
- develop a set of preliminary survey questions regarding the links between broad changes and individual perceptions that may be further developed and validated.

2. Background

Social scientists and sports scholars have noted the impacts of broad social changes and processes on sport. Central to these studies have been forces of globalization, medicalization of daily life, and commercialization on the ways sport has evolved and is contested and consumed. However, few studies have linked broad patterns of change to athletes' experiences and perceptions, especially those around doping. This is surprising given the view of many scholars that the individual experience is intertwined with the processes of globalization (Maguire, 2000) and the global nature of the doping issue. Globalization can be understood as growing consciousness of the world as a single place as part of the increasing connectivity between societies (Robertson, 1992). With both positive and negative effects, sport has been influenced by processes of globalization, as Thibault (2009: 4) noted, "the evidence that sport is globalized is uncontestable." Scholars have identified a range of relevant themes that relate sport

and globalization. A prominent focus has been upon the nature of identities: local, ethnic, national and global. However, sports organizations are global, raising questions about policy and politics; and sports consumerism is global, leading to exploration of corporate development and influence (Sage, 2015). Media technology has dramatically changed in the past 20-30 years, and continues to do so, while in parallel the use of hosting major sports events has become as an economic and political opportunity (Horne and Manzenreiter, 2006). As Smart argued:

Sport is now an established part of a globally extensive entertainment industry and sportsmen and sportswomen have eagerly embraced the notion that they have a responsibility not only to be successful in competition but also to entertain spectators and viewers by participating in the promotion of sport as spectacle. In turn, sportsmen and sportswomen have come to recognize that the global popularity and media profile that sporting success brings can deliver lucrative opportunities to them ... Global sports events and iconic global sporting celebrity figures have become increasingly important to the promotion of commodity consumption (2007, p. 131).

Sport and sport organizations have a global reach that exceeds those of other prominent global bodies. For example, the International Olympic Committee currently counts 205 national committees (<http://www.olympic.org/national-olympic-committees>) while the United Nations has 193 member states (<http://www.un.org/en/members/growth.shtml>). This type of international interaction has led to the spread of sports to new, diverse places and populations (Thibault, 2009). This has led to opportunities for sport as tool for development and progressive social change (Giulianotti, 2011), as well as for global governance of sport. Sport development is often linked with sports mega-events, such as the Commonwealth or Olympic Games, and the staging of these globally celebrated and consumed spectacles (Rowe, 2012). Scholars have noted, however, how these potentially positive developments may be countered by the exploitation of laborers tasked with actually building the event,

including local workers constructing physical spaces for sporting events (Nauright, 2011) and factory workers producing memorabilia (Sage, 2015). Globalization-related labor issues can affect athletes themselves, as seen through some migration patterns of athletes seeking new opportunities and better pay in other countries than their own. This may be accompanied by the deskilling of sports in some countries from which athletes move (Maguire, 2000; Maguire & Bale, 1994) and present challenges for individual athletes in their career transitions (Agergaard and Ryba, 2014).

Globalization has also led to the rise of global sport governing bodies and policies, most notably anti-doping policies laid out by the World Anti-Doping Agency (WADA) (Dimeo and Møller, 2018; Kayser & Smith, 2008). The result of an international consensus to address doping in world sport, WADA may be understood a product of globalization. WADA sets anti-doping rules and standards for programs to test and monitor athletes, the actual carrying out of which are delegated to National Anti-Doping Agencies (NADOs). While there is some flexibility for NADOs, a central function of WADA is harmonizing anti-doping efforts globally in order to avoid problems arising from local policy and implementation inconsistencies. There has been an increase in WADA's interconnectedness with other global agencies such as UNESCO and Interpol, and new global agencies emerging in recent years devoted to anti-doping (such as the Partnership for Clean Competition, the Independent Testing Agency, and the Voluntary Anti-Doping Agency). There has been an increase in the number of sports and international federations that have become signatories to the World Anti-Doping Code. The recent history of WADA can be characterized by 'mission expansion', including to non-elite and age group athletic populations (Henning and Dimeo, 2018).

Additionally, global flows of information regarding doping that shape public and athlete views often originate with WADA. Beyond its own website with information regarding the banned substances list and Code, resources and information regarding doping and anti-doping are available via NADO-administered drug and substance databases (i.e. globaldro.com; checksubstances.asada.gov.au), Olympic sport and sport governing body

websites, as well as on various social media platforms. Athletes, then, are easily able to access and engage with this information, and their potentially influencing their perspectives on doping as they do so.

Various other aspects of globalization and development are thought to have influenced doping behaviors and anti-doping efforts, such as better technologies for both athletes and anti-doping agencies. Scholars have noted that doping may be viewed as one more technology in a social context full of enhancements (Hoberman, 2005; Lopez, 2012) and technology driven training practices (e.g. McClusky, 2014). However, the development of more and better testing technologies may counter these views, partially deterring doping by athletes as the likelihood of testing positive increases (Kayser & Smith, 2008). By the same token, doping may be enabled by the ease of obtaining doping substances via internet-based sources (Baron, Martin & Magd, 2007), and being able to discuss doping strategies anonymously in online forums (c.f. Henning & Andreasson, 2019). WADA have introduced increased surveillance programs and tougher penalties for anti-doping violations (Saugy et al., 2006) supported by sports governing bodies. The introduction of the Athlete Biological Passport has allowed even closer scrutiny of athlete blood profile data over a longer period of time (Wozny, 2010). Further, a number of countries have moved towards, or actively considered, making doping a criminal offence that could lead to a prison sentence for suppliers and users. As such, technological developments act as both incentives and disincentives for doping.

Medicalization

Scholars have identified and explored broad trends in the inter-relationship of medicine and sport (c.f. Carter, 2012; Heggie, 2011). Medical technologies and the development of sports medicine have played key roles in doping, both in monitoring and detecting drug usage and also in developing performance enhancing drugs (PEDs) (Hoberman, 2005; Waddington, 2015). Processes of medicalization, where social issues are made medical issues, have been fueled by the greater interconnectedness of globalization. Some scholars have noted the interconnected interests between states, sports

organizations, media, sporting goods industries, and science/medical professions, terming these relationships as the sports/medical-industrial complex (Maguire, 2015). Indeed, new relationships between sport and medicine, further spurred on by the commercialization and increased competitiveness of sport, along with the continuing medicalization of daily life, have been posited as an explanation for doping in sport (Waddington & Smith, 2009). Athletes who are continuously monitored and routinely treated with medications may become desensitized to using a range of substances, including PEDs. The use of Therapeutic Use Exemptions for medical products is a potentially risky context for doping (Overbye and Wagner, 2013). Further, athletes whose careers and livelihood are dependent on their ability to perform at a level that will attract sponsors, or that will prevent them from losing current sponsorships, may be susceptible to doping (Mazanov, Huybers & Connor, 2011).

The risks related to data security and confidentiality were highlighted when the Russian Fancy Bears hackers released documents pertaining to high profile athletes' applications for TUEs. Similarly, biological passport information collected by sports organizations and anti-doping testers was released to media organizations and publicized, leading to intense criticism of specific countries and individual athletes (Dimeo and Møller, 2018). The level of trust that athletes have in the procedures and processes undertaken by WADA and its associate organizations can vary over time and place, and can relate to education, testing, and the imposition of sanctions (Efverström, Bäckström, Ahmadi & Hoff, 2016).

Media and social media

Technological shifts are also related to the role of media in sport and the commercialization of sport and mega-events. As media has expanded beyond the radio and television to include any internet-connected computer or mobile device, sport is continually becoming ever more available for consumption. These expansions and new points of contact through social media and micro-blogging platforms, such as Twitter, mean that athletes are ever more visible and available without the mediation of

journalists (Liu & Berkowitz, 2014). The flood of sponsorship money into and media coverage of some sports have lengthened playing seasons and put athletes under pressure to perform almost year-round, making it difficult for athletes to recover from the intensity of competition (Crompton, 2014). This may also account for some turning to use of banned PEDs to simply make it through a season (Christiansen, 2005). Research has also demonstrated that if athletes perceive doping as common they may be more willing to engage themselves, as a way to level their odds in competition (Moston, Engelberg & Skinner, 2015). Media focus on doping scandals may work to inflate the issue of doping in sport, making it seem more common than not. However, other research has demonstrated that the idea of a positive test becoming known to their teammates, other athletes, and wider social circles, made more likely with the advent of global media, served as a protective factor against doping (Dimeo et al., 2012). Thus, the localization of anti-doping can appear to be just as effective a deterrent as global flows of information and the risk of potential sanctions.

Further impacts of global media on sport can be found in the broadcast abilities and reach of media conglomerates (Thibault, 2009), the shaping the conditions in which sports are contested (Crompton, 2014), determining which sports to broadcast or not (Thibault, 2009), reproducing sport for re-consumption (Rowe, 2009), and amplifying coverage of happenings within sports, including doping scandals (Connelly, 2015). Media can also aid in the spread of sporting values, including those of clean sport and playing true. Values promoting the belief in “natural” ability in competition and the shame that accompanies being publicly labeled a cheat influenced young athletes to avoid doping (Bloodworth and McNamee, 2010). These values messages, information, and anti-doping education have been facilitated by the spread of web-based media to athletes who may have previously been left out.

Together these social forces have led to the emergence of a global sport achievement model. In this model, in order to be considered a success an athlete must be competitive, appear, and perform within normative bounds, as defined by western

sporting organizations who “own” sporting values (Maguire, 2012) and in accordance with global “sport values” (i.e. clean sport). Athletes, then, must train and compete in accordance with these norms, despite disparities in resources, local values, and inequitable treatment among athletes (Bretón, 2000). In cases where athletes are impoverished or otherwise feel they have no other chance for success outside of sport, the pressures may lead athletes to seeking out PEDs (Tamburrini, 2006). Evidence of such issues has emerged in East African running. By contrast, the highly publicized Russian doping system was a top-down, centralized system in which athletes were given no choice but to dope. Indeed, there are a wide range of doping motivations and contexts (Henning & Dimeo, 2014).

3. Method: Study 1

The methods for this approach were multiple and mixed, including primary source content analysis and interviews with two groups of stakeholders. The research for Study 1 proceeded in three stages, each laid out below. Beginning with a comparative case study approach, this research explored the ways broad social changes were reflected in the environments of athletes competing in the CG across time (1986 to 2014) and how these environments then impacted athletes’ perceptions of sport and doping. The case study approach was appropriate for this type of exploratory research focused on how or why phenomena occur in particular context (Yin, 2003). In this case, the phenomenon in question is the perceptions of doping among athletes. Comparing cases allows the researcher to establish the relationship between the context and the phenomenon in question (Yin, 2003). Here, the cases were the 1986 and the 2014 CG.

Focusing on the events and athletes involved in a recurring event allowed us to examine and measure tangible changes over time and on multiple levels, from international to the individual. As a global multisport event, the CG provided an opportunity to examine several sports and athletes from dozens of countries. The 1986 Games in Edinburgh were contested before the development of the Internet and social media, multi-million dollar athlete contracts, and the era of multi-billion dollar bids to host and produce

international sporting events. These CG also preceded current anti-doping efforts, as sport was still two years away from Ben Johnson's positive doping test at the 1988 Olympics Games that would bring new scrutiny to athletes and a worldwide awareness to the issue (Hunt, 2007). The number of countries competing in 1986 and then in 2014 (26 and 71, respectively) and the number of events contested (10 and 17, respectively) illustrate the growth and increased global reach of the CG. These developments are similar to those occurring elsewhere in international sport during this time, such as the expansion of the Olympic Games of the Fédération Internationale de Football Association (FIFA). Athletes in the 2014 Glasgow Games, then, competed in a vastly different environment than those in 1986.

3.1. Archival data collection

The first stage of data collection consisted of collecting and analyzing primary source documents to determine what the major sport developments were during the years before and immediately after the 1986 CG. These were then compared with those of the years preceding the 2014 competition. Archival data for Commonwealth Games Scotland, the organization responsible for the planning and management of both the 1986 and 2014 Games, are held at the University of Stirling in Scotland (see <http://libguides.stir.ac.uk/projects/hostsandchamps>), the home institution of the co-investigator. These archives contained plans, reports, committee meeting minutes, and correspondence records. These records allowed us to consider specific contextual differences between the 1986 and 2014 CG. For example, we were able to compare the technological developments, costs, budgets, staff, production system, and media coverage of each event. Archival materials included newspaper and other media reports on the CG and participating athletes, official records and plans for producing the event, and follow-up reports on each Games. In order to analyze these data, photographs of all relevant documents were taken by the researcher.

Following collection, documents were analyzed for content and sorted into broad thematic codes reflecting the study aims: medical, commercial, technology, policy.

These were then refined to 14 sub-codes: doping, anti-doping, athlete health, professionalism, amateurism, event sponsorship, athlete sponsorship, media sponsorship, media coverage, social media, uniforms/kit, event technology, security, anti-doping rules, contest rules. Coding was done manually via an Excel spreadsheet that referred to the document image number and portion of the document reflected by the code. These formed the initial framework for understanding specific types of broad changes between the 1986 and 2014 CG. These codes were also used to develop the interview questionnaire used in the second phase.

3.2. Interviews with sport and CG stakeholders

The second stage consisted of semi-structured interviews with five relevant sport and CG stakeholders. In the interest of economy and scheduling, interviews were conducted in person or via Skype or other video conferencing tools as necessary. Platforms like Skype provides a face-to-face interaction between interviewer and interviewee that facilitates rapport and in-depth discussion. Further, Skype allowed for a broader international sample without the need for extensive travel.

Participants were contacted through the research team's professional networks. Each was provided information on the nature of the project, its aims and objectives, funding source, and methods, along with an invitation to take part in a loosely structured, recorded interview. The participants included the former Chief Executive of UK Sports Council and Sport England; CEO of Commonwealth Games Scotland; former Chairman of Commonwealth Games Scotland; the Former Director of Ethics and Anti-Doping at UK Sport and Secretary of Commonwealth Games Federation Medical Commission; and the former Head of Sports Medicine at the Sportscotland Institute of Sport. These interviews were broad and conversational in nature, each lasting 60-125 minutes. Interviews covered what each stakeholder viewed as the most important developments in sport and at the CG in the years considered, including: developments for sports in general, the sport industry, media and news coverage, communication, consumers, sponsors, specific sports and contests, and athlete training and competition.

Interviews were recorded and transcribed, then analyzed using thematic coding using Microsoft Excel. These interviews resulted in seven themes: professionalization, medical support, anti-doping education, anti-doping awareness, anti-doping testing, and national context. These results, taken together with the archival data, were used to develop the interview schedule for the CG athletes.

3.3. Interviews with CG competitors 1986-2014

The main data for this project came from interviews with athletes who competed at the CG between 1986 and 2014. Forty-eight athletes (17 female) from eight countries (Australia, Canada, England, New Zealand, Botswana, the Cayman Islands, Scotland, and Guernsey) representing four sports (athletics, cycling, shooting, and badminton) were interviewed (see figure 1). Due to the small number of athletes taking part in some sports from some countries, we have not included a gender identifier in the results to protect athlete anonymity.

Figure 1: Participants by country an sport

	Athletics	Cycling	Shooting	Badminton
Australia	2		2	
Canada				3
England	3		2	
New Zealand	7	6	4	
Botswana	1			
Cayman Islands		1		
Scotland	8	1	6	1
Guernsey		1	1	

3.3.1. Recruitment

Recruitment of study participants occurred via three channels: personal contacts of the research team, national CG organizing groups, and national sport federations. In each case, individuals or organizations were sent an email outlining the goals of the study, the methods, guarantee of anonymity, funding source, and contact information for the

Researcher. Organizations were asked to share the recruitment email with athletes directly, so that they could contact the Researcher on their own, or to provide the Researcher with contact information for athletes who were willing to be contacted by the Researcher. The contact email specified that we sought athletes who had competed at the CG between 1986 and 2014.

The research team did experience one main difficulty during the athlete recruitment phase. Despite attempting to contact athletes through a number of intermediaries and by various means (email, telephone, social media), we were unable to recruit athletes from several sports and countries we intended to include. There were two obstacles to the recruitment efforts. First, not all CG countries have active CG organizations with reliable contact information. Several have joint Olympic and CG organizations, though not all of this contact information was reliable as well. Second, national sport federations were often either unwilling to provide contact information for appropriate athletes or they simply did not respond to the research team's attempts to make contact. Though this was unfortunate, we did manage to interview with 48 athletes.

3.3.2. Interview Data Collection

Following initial contact, participants were each sent an information and contact sheet about the project and a written consent via email. Interviews were scheduled at the participants' convenience and were conducted on Skype or other video messaging service, telephone, or face to face. Interviews were recorded on a digital audio recorder and lasted between 12 minutes and 95 minutes, with an average of ~40 minutes. Interviews followed a semi-structured format. The semi-structured format allowed for a conversational tone and gave the Researcher opportunities to ask follow-up and clarifying questions. Athletes were encouraged to speak freely and expand on their ideas and experiences. Interviews were then transcribed verbatim for analysis

Interviews were conducted using a prepared guide drawn from the previous phases of the research (see Appendix A). The interviews had eight sub-sections: demographic information, Commonwealth Games environment, athlete funding, athlete medical

support, anti-doping education, anti-doping awareness, anti-doping testing, national context.

3.3.3. Data Analysis

Following transcription, the interview data were organized and coded using Microsoft Excel. The data were analyzed using both pre-determined themes (i.e. Funding; Anti-doping awareness) and codes emerging from the data (i.e. received sponsorship funds; received national funds). The data were first coded inductively, allowing themes to emerge, resulting in 48 codes. For a more streamlined analysis, these themes were then condensed according to five broader, pre-determined themes. These were then organized into six central themes: national context, medical and health support, funding/professionalization, media and social media, anti-doping awareness, and anti-doping education. Each theme is described in the results section and quotations from the athletes are used to illustrate the specific topics that emerged from the interviews. These themes were used as the main topic categories for developing the survey items.

3.3.4. Ethical Oversight

This research was approved by the University of Stirling's School of Sport Ethics Committee. For interviews, all participants were provided written information regarding the project aims, research team, and funding source, as well as information on preservation of anonymity (in the case of athletes) in the initial recruitment email. In addition to written consent forms, all participants gave verbal informed consent recorded at the very beginning of their respective interviews.

4. Results: CG athlete interviews

From the codes applied to the interview data, six central themes—national context, medical/health support, funding/professionalization, media/social media, doping awareness, and anti-doping education—emerged.

4.1. National context

The national context in which an athlete lives, trains, and competes may have an impact on how they understand doping and the potential ramifications of being caught (Dimeo et al, 2012). All athletes noted that the response to a doping case from a CG athlete would be very negative.

There would be a big backlash, for sure because as I say I think on the whole New Zealand, is a very much in that space of fair sport and doping is very much frowned upon. And so it would be in general with most, New Zealanders would think that would be a major issue and something that really is not good at all. (Cycling, New Zealand, 1998)

Everyone would be appalled. They'd be very, very, they'd be really upset about it. Yes. A lot of the athletes won't even take vitamin supplements and things in case they've got something in them. They're erring on the cautious side. Some people take multivits and things or vitamin D or something and others won't take anything at all, other than the fact they know they can take paracetamol and ibuprofen, things like that. Other than that, they stay away from almost everything they possibly can. (Shooting, England, 1994)

It would be very frowned upon and the stigma that comes with it and anything. Then other athletes would then also be under the spotlight by association. (Athletics, Australia, 2014)

Some noted that the specific environment of their sport would impact on the response to a doping case. This athlete from England's 2014 shooting team noted that due to the relatively small size of the sport, a doping athlete would be stigmatized: 'It would be horrendous, they would be an outcast.' Part of this might be due to the nature of shooting, a sport in which athletes feel there are very few banned substances that actually enhance shooters' performance. This was echoed by other shooting athletes who note that even what could be mitigating circumstances of accidental use would not protect an athlete from public scorn:

You want to earn it and so even if you took something accidentally and you had to say that didn't influence my competition and I still earned it, you don't want anything to be in the way of others recognizing that you earned it the fairest way. So once you realize that you are a slip-up couldn't mean that you get a doping result and regardless of whether or not that actually gave you any benefit people would look at you as not having earned it. Then that as the motivator not to slip up. (Shooting, New Zealand, multiple/2014)

Another aspect of national context was the size of the country athletes represent. Due to the limited number of countries included in the CG, athletes from smaller countries or nations can have a much higher profile than they would at an event like the Olympics, World Championships, or World Cup level of event. The small size of many of these countries also contributed to a sense that testing positive for a doping substance would be worse because of the weight of representation on each athlete sent. Athletes representing countries such as Scotland and New Zealand were especially conscious of this and noted that national pride would impact on the response to an athlete doping at a CG.

I think the response for a whole range of these reasons would be pretty damning. Ehm, because I think we do tend to look at our sports people as maybe being above all that. I know there have been allegations and issues over the years but, I think particularly nowadays we look on our international sportsmen or people representing Scotland at the Commonwealth Games particularly because it is one of the few opportunities in athletics nowadays to get the opportunity to represent Scotland (Athletics, Scotland, 1986)

We've had a marathon runner who tested positive and generally the reaction is what I would expect the reaction to be in New Zealand. Now it's a country that loves sport, prides itself on being fair, it prides itself on being the underdog that punches above its weight and does that fairly and kinda fights against the odds and it would be scorn, it would be just absolute contempt for that person and nothing that that person subsequently said or did, I think would redeem them. (Athletics, New Zealand, 1994)

I think because we're quite a small country the public really care about the athletes that are representing them (Shooting, Scotland, 2014)

There were also fears of repercussions for athletes who test positive for banned substances that transcended sport. Such responses could have an impact on the social, economic, and professional lives of athletes in ways that may be completely unrelated to sport. These athletes noted specifically that due to the small sport communities in Scotland and Guernsey, doping athletes not only risked their sporting careers but their personal and professional reputations, as well as the athlete's family members. In such small countries athletes felt it was harder to hide a news story about something like doping, largely due to there being so few elite athletes representing these places.

I feel like in Scotland basically everybody knows each other in elite sport...It would be a massive thing if somebody-- Say I had been caught for doping, it would've been a massive thing because you do this kind of thing, "I know that person personally." That means they're now doping just because you know them personally. I think it would've been a really a huge deal. I think that for me that was the main deterrent for me for not doping. It wasn't actually particularly a moral thing. It was and some way it's a moral thing, "I don't want to cheat." But I think more of the deterrent was I thought I would get caught and I would hate to be—my reputation and people to be talking about me like that. (Badminton, Scotland, multiple/2010)

I think everybody would be, and the team, would be incredibly disappointed. There's only 33 athletes going from Guernsey, you know everybody, if you know what I mean. I think it would be a horrible shock if you found that somebody in your team, for whatever sport it was, the shooters, the bowlers, whatever, I think we'd all be really upset. We are a-- I don't know what's the word really. It's like a family team. Everybody does know everybody. We all know the coaches, we're all mates in and out of-- It's a sport. I think it would be a nasty shock... I think a lot of people, they know who they'd be letting down, they'd be letting down themselves, they'd be letting down their sport, they'd be letting down the sponsors, the team that is getting us there, their employers. It's a small environment that we live in, anything, black mark against your name, that's it. You're very unlikely get a job. You wouldn't get a mortgage. Your kids would be ridiculed. (Cycling, Guernsey, 2014)

While most athletes noted that this social shaming or stigmatization would be a deterrent to doping use, some noted that there is a limit to how strongly these responses should be. There has been a push in recent years to criminalize doping, which may be viewed as a disproportionate response (Henning & Dimeo, 2018). One athlete who competed at multiple CG was wary of efforts to criminalize athletes who dope.

The general public think, and I've heard people say this, "They should go to jail, these drug cheats. They should put them in jail." I mean, come on, we're talking about a sport, we're talking about a pastime. We're not talking about physical violence or murder or something. I mean, somebody takes a tablet that a thousand people who walk down the street tomorrow might be on and because they're in a particular sport all of a sudden they're a criminal almost. (Shooting, Australia, multiple/14)

In some ways this athlete challenges the notion of sport exceptionalism, the idea that sport and sport values are separate from other aspects of social and political life (Lenskyj, 2000). By noting that doping can include using things that are legal outside of

sport or available with a medical prescription, this athlete is questioning the idea that athletes should be treated so differently from non-athletes. In this view, anti-doping responses should be proportional and in line with other non-sport offenses.

4.2. Medical and health support

As noted previously, doctors and other medical care have become a routine part of many sports. Though this may appear to be only a recent trend, athletes have often sought and used a range of medical services. Indeed, all the athletes in this project indicated that they had to access medical staff for sport-related injury or illness at some point. Such needs were taken into account in the planning of the CG. The athletes at the 1980s and 90s editions of the CG indicated that medical provision was available to them during the time of the Games ways similar to the later CG athletes.

The team had some medical staff that were available [at the CG], yeah. And my recollection of that is they were available as and when you needed it. I don't recall in the lead up to the Games anything being available, I did have a number of injury issues that concerned me but it was very much up to yourself to find treatment from that source again. (Athletics, Scotland, 1986)

Yeah we always had a team doctor. Commonwealth Games always had full medical team so that included a Doctor, a Massage Therapist, a Physio, the works really. (Athletics, New Zealand, multiple/1986)

We would have in the village for the whole of the team, and that sort of thing. (Athletics, New Zealand, 1990)

Yes, so in Glasgow, we had one of the team doctors was assigned to Shooting, and on the days, I think it was when they were free from their other sports, cause they get assigned lots of sports, they were at the Shooting Range in case any of us need help, I think I was top priority because I've got Arthritis—Rheumatoid Arthritis—so he was there on the days I was competing. We also had physio support every day at the range. (Shooting, Scotland, 2014)

However, there seems to have been a range of support for athletes' medical care outside of the CG available to athletes from the 1980s through the 2014 CG. Athletics athletes from both New Zealand and Australia, where athletics is still considered an

amateur sport, noted that cost-free and supported medical care was limited to the time in and around the CG.

At the Commonwealth Games yes there was all the support available to you once you were onsite in the village, but that wasn't a continuous or on-going thing. (Athletics2, New Zealand, multiple/1986)

Yes, we did have an Australian Team Doctor and medical team at our disposal during the duration of the Games, and the Games last for 2-3 weeks, but before that we didn't have access or that kind of access to support. (Athletics, Australia, 2014)

However, this also varied by country. Athletes from Canada seem to have been given broader access to various medical and health professionals even during the 1980s. Athletes involved in badminton, which athletes reported was a very minor sport in Canada at the time, noted that they were offered high levels of support as part of their membership of the national team. Use of these services was still up to the athlete, of course, but the support for was available.

Yes, for two and a half years I was at the National Training Center which was in Calgary, and along with that you got coverage, you got some physiotherapy, you got a sports psychologist. There were things attached to the sport which we got access to so in that sense, yes, but not a huge amount. I mean, we had trainers and we had—I think those would be the main three things, a sports psychologist, some physio if we needed it, and then trainers that we had access to, and of course the facilities as well. (Badminton2, Canada, 1986)

I had access to physio and team doctors and things. Back in my day, I'm going to say, the sports psych people and nutritionists, I'm going to say that wasn't to the forefront like it is today. I'm heavily involved with that now with the national team. I can make comparisons now that yes, that was not either a priority or it wasn't on the radar for me or maybe for our sport back in those days but they are now. (Badminton, Canada, multiple/1986)

Athletes at later CG were more likely to report a range of available services that were linked to high performance sport programs that offer support for athletes deemed likely to reach international levels of competition. This athlete noted that they had become used to the range of medical care included through New Zealand's high-performance program and had continued some of this even after retiring from competition.

And so I have a physiotherapist, a massage therapist that I continually see, and a medical doctor or a sports medical practice, that I kind of have a massive taste for that from over the years. So yeah, kind of key people on my team. Part of that is through the high performance structure we have in New Zealand where athletes in the hard heart performance system have predated provider that they see, and even though I'm no longer in that system, having stepped out of it I still see those same people who still support. So I do feel like I've got quite a high performance team to put in medically. (Athletics, New Zealand, 2014)

About half the athletes indicated that sport psychologists were available across the CG we considered here. Athletes at later CG were generally positive about their value as a preparatory tool for training and competitions. Athletes at earlier CG varied much more in their reported use of these services, as above, though some like this shooting athlete did utilize the psychology services.

Once I got some success at World Cups, the Institute of Sport provided the option for sport psychology. I certainly took advantage of that. Not to the degree where they come to the range and work with you on the range. More catching up with—even though they did a couple of times, but generally, it was just catching up with them at their office or whatever to talk about your ideas and plans and goals, et cetera. They tried to then obviously, give some guidance and help to prepare and give you booklets and videos—not videos. Mental rehearsal cassettes and that sort of stuff. (Shooting, Australia, multiple/86)

Athletes indicated that services to help with things like mental pressure and diet were not only useful for training, but also for understanding how to maximize training without feeling the need to turn to supplements or other substances (e.g. sleeping pills) to cope with a lifestyle centered around a high-performance lifestyle. Provision of high quality medical and health services may act as a barrier to athletes turning to other products, substances, or methods not allowed in sport.

4.3 Funding and professionalization

The athletes in this project were all elite athletes in their chosen sport, both in terms of their self-identification and their status as CG competitors. However, not all athletes were considered to be professional, either by themselves or by their national sport governing bodies. This meant there was a range in how much each athlete received in

terms of pay or stipends, and this varied across the years as well. The consensus was that sport has many more professional opportunities currently than in previous decades, but that those opportunities are not spread out across sports and countries. Athletes competing in the 1980s recounted a range of ways they earned money to support both their training and their everyday lives. These included taking part- or full-time jobs, winning prize money, small sponsorships from businesses, and development funds available to countries and sports that qualified as under-resourced. Public funding or high-performance funding was something that athletes from the 1980s and 90s did not have access to, with the exception of the Canadian athletes (as discussed above).

I did not receive any funding at first. I left school and worked in a jute mill. Then, I got a scholarship to the states, where I cleaned students' rooms at end of term for a flight home. When in the States I started winning road races then this funded my athletic training so I raced to earn. (Athletics, Scotland, 1986)

I got appearance fees, I got prize money, and I got shoe company sponsorship so that was my three sources of money (Athletics, New Zealand, 1986)

At the time, how it works was it was funded through the cycling association and funds that they got at the time through the what is known as UCI today. It was called the Amateur International Cycling Federation back in those days. Now, it is known as the UCI which is the governing body. There was a little bit of funds that came from there through the Olympic Committee for development...Government back then didn't support sport like that. They didn't have a sport authority. (Cycling, Canary Islands, 1986)

I can't remember specific areas eh certainly nothing that I can recall from the governing body. I was competing in quite a lot of international marathons and there was good prize money that you could earn. The head of that was obviously how well you performed and a little appearance money. I would say that there was no structured support the way there is nowadays in terms of at GB level, they have all these different schemes and people are put on different programmes. (Athletics2, Scotland, 1986)

I had a Cycling manufacturer here in New Zealand who used to give me a bike. So basically they'd give me a bike at the start of the year and I'd ride it for that year. And then at the end of that year I'd sell it on to somebody else and I'd give them the money for how much I'd sold it for....Then I had things like fundraising and some family friends chipped in and things like that. Parents obviously provided a bit of support back when I was young. (Cycling, New Zealand, 1998)

While all sports are time and energy consuming at the elite level, some do require athletes to train for hours per day or multiple times per day. Balancing this against school or work can be a great challenge (Comeaux, 2013; Pflum, Nadler & Miller, 2017). One athlete explained first how local sponsors were encouraged to support athletes competing at a high level, then how they experienced elite endurance athletics training with a demanding job that often took them beyond standard full-time hours.

Interviewee: [Sponsorships] were available and people were sponsored by companies who would be encouraged to support their local athlete, or by big corporations that just had a big program and like having a squad of different athletes in different events. Then there were people who could organize their own little bits picked from the local sports shop and a bit from the local business and the bit from a retired athlete who runs his own engineering company. My own sponsorship was never any more than free kit from whatever sports company I was with. It was Adidas originally then I think I did a bit of Puma a bit with Asics, but most of the time Adidas for many years. So I got all my years kit off them.

Interviewer: Wow. It's amazing to think of-- I know that there are still athletes now that work full-time, but to work full-time and to be an endurance athlete just sounds incredible.

Interviewee: It was. It was very hard. You just had to train, get up early and train, go to work and train, back from work, and be on my knees. And then this would be on top of a ten-hour day. It's a lot. You don't work 40-hour weeks [in their profession]. 40 hours is a breeze. 50 hours was at least the average. (Athletics, England, multiple/1986)

While athletes competing internationally in the 2000s often competed in a fully commercialized sport context where event sponsors could pay millions of dollars to advertise at major competitions (Pitt, Parent, Berthon & Steyn, 2010) and multi-million dollar contracts for major professional sports stars are increasingly common, many still do not earn enough to even cover the costs of competing. Athletes in many of these sports are not yet fully professionalized (Wicker et al, 2012). Athletes who competed in 2014 also reported a lack of funding or sponsorships that would allow them to train as a professional. Often this led athletes to self-fund the majority of their careers. Though seemingly more common in lower profile sports, such as shooting, athletes across sports

reported similar financial issues. Support once they were appointed to a national team may then be available, but there were no guarantees for any of these athletes.

I'd say, it's probably 95% self-funded, but the actual Commonwealth Games itself, we get funding from the Commonwealth Games Federation, which will help, obviously towards our travel costs, equipment, kits, that kind of thing, but for all the racing that I do in between time, so the National Championships, the World Championships and things that I go to, that's all self-funded. (Cycling, Guernsey, 2014)

Nowadays it is pretty much more self-funded but once you are selected into the Games there will sometimes be some funding sports for that final build-up, from corporate New Zealand. (Shooting, New Zealand, multiple/2014)

In recognition of me going to the last Commonwealth Games because they understand that I'm having to pay for all my competitions before that, obviously the Commonwealth Games is all funded, but the competitions that I've been to, to gain my qualification scores, it's all been self-funded, so they give me a small amount of money to help towards self-funding... Basically I compete for Scotland but I feel like it is all me. (Shooting, Scotland, 2014)

I had sponsorship from Team Sports Aid, through Lloyd's TSB Local heroes Campaign, and again Team Sports Aid through the Jaguar Academy of Sport. I had smaller companies sponsor me a couple of hundred pounds here and there, but unfortunately, that really didn't get me very far. (Shooting, England, 2014)

These athletes indicated that they were expected to compete at an elite/professional level in order to secure any kind of funding, but because they were not actually able to train as professional (i.e. full-time), they were forced to cobble together funds just to stay in the sport. Other athletes may choose to change the types or locations of competitions they participate in as a way to maximize their earning potential. Sports like badminton are still relatively low profile in many countries, but are quite lucrative in others. This Canadian athlete, who now coaches badminton, noted that the sport has changed drastically in terms of earning potential since the 1986 CG.

There's way more money. There's a lot more competitions. There's some huge leagues with big money. I think, like I said, now that you can follow it on the internet, there's a much bigger audience of interested people. It's way bigger in Asia and still a lot bigger in Europe than it is here. We're at the small pool compared to the coverage that they have over in Asia and North America or in

Europe. It's huge over there. It's gotten really professional. Like I said, a lot more money and just the internet. (Badminton2, Canada, 1986)

Financial support can be a deciding factor in one's ability to continue competing in their sport. This can be especially true for athletes who have financial responsibilities beyond just their own needs, such as supporting children or other family. One Australian athlete who competed at multiple CG noted that the lack of financial support for athletes who just miss the cutoff from receiving support may be a contributing factor to a decision to use a prohibited substance or method within the sport of shooting.

They offer zero support to people who just miss out. Typically in this country and I can name 10 of them over the last 20 years, people who've just missed out, very talented individuals leave the sport because they just destroyed it. They missed out by a tenth of a point or something. They've had one bad elimination and they're just ignored. The sport loses great talent because there is nobody there with a safety net...People don't get selected by a tiny margin. As I said, there's no support mechanism for them, and it destroys people mentally, or maybe they leave the sport. Or maybe then they figure, I need that extra keep, I need something, I need an advantage, I need that extra 1%. If I can get it in a bottle, we've got to the risk. (Shooting, Australia, multiple/2014)

That athletes who just miss receiving funds could leave the sport is troubling, especially as forced retirement or forced breaks can present mental health problems and other risks (Hong & Coffee, 2018). This is linked back to the provision of medical and health support services for athletes, which, like funding, is often linked directly to a qualification or performance standard of some kind. While standards are necessary to keep sport and governing bodies viable, that athletes are left without support is an emerging issue. Additionally, much of what these athletes pointed to is that economic insecurity influences their daily lives, both in and out of sport contexts. Other studies of sport have found that contingent funding and contracts may lead athletes to feel that they must engage in doping (Aubel & Ohl, 2014). Athletes who need support to continue training may be tempted to engage in doping as a way of simply continuing to compete after missing out on funding schemes or they are otherwise unavailable.

4.4 Media and social media

Given the changes in visibility brought about by shifts in media and the more recent rise of social media, it would seem that media would play a key role in how athletes experience their sport and the pressures they face while competing. Indeed, athletes from the 1980s and early 90s CG mostly reported that while there was a lot of media coverage, they were largely insulated from much of it. This seemed mainly due to either a lack of coverage or simply not being aware of what coverage was being sent back to their home countries.

I remember some of the televised matches. I remember some matches being sent home, CBC covered it a bit, and I do remember hearing that sort of thing. Of course, you didn't hear about it much until you got home because there was no real internet, and the phone calls were expensive, we just didn't bother with any of that sort of thing. There was some media coverage but obviously not like today. It really was, you're aware that things were being televised and being sent home back to Canada. (Badminton2, Canada, 1986)

We had it a lot but it wasn't anything like the media circus at the big games [Olympics] where you literally had to organize press conferences and queues of interviewers wanting to talk to you. Usually the team's management tried to beat up all these reporters who want to organize meetings with you. It wasn't like that. It was more casual because it was in a small place, smallish press squad. All very affable and relaxed (Athletics, England, 1986)

I think because, again running for Scotland in a Commonwealth Games being held in Edinburgh, there was considerable interest in the event, I don't think anything like the same extent as nowadays even compared to Glasgow 2014, but there was, ehm, considerable media interest. Certainly a lot more attention than given to any other athletics event in Scotland at that time. (Athletics, Scotland, 1986)

Well my race wasn't covered by the New Zealand media and my mother recorded it, through another company, it came through from Australia, I competed against the World Champion who was an Australian, I wasn't interviewed, and they didn't show my medal ceremony on TV in New Zealand or speak to me at the village. (Athletics, New Zealand, 1990)

There seems to have been a media shift in the mid-1990s. Athletes who were at multiple CG reported that around that time the CG went from being a friendly, hometown affair to becoming a true spectacle. With this came some new challenges in terms of being distracted from or during competitions.

1988 all I could do to communicate with home was handwrite a fax and send it, and hope to get a reply. By '94 even then most of us didn't have mobile phones. I think I was quite impressed by the Australians having mobile phones so they could communicate while they were there. We had an England team meeting before the event and they said, "Don't get involved with the media wanting to interview you, it'll just disrupt you, talk to them after your event." Which was very good and right actually because they just want to broadcast something. I did a little bit for my local papers so that, again, it would promote the sport. I didn't particularly want to promote me and they're obviously keen to do things like that. (Shooting, England, multiple/1994)

The whole thing with the CG shooting events in Kuala Lumpur, they were all televised, because one of the things I had to get used to and shooting in the final was they had a television camera right in front of me, which I wasn't used to. (Shooting, Scotland, 1994)

A further shift that was possibly related to the increase in security around large sporting events such as the Olympics more broadly (Giulianotti & Klauser, 2011; MacDonald & Hunter, 2013) was that athletes who stayed in the athlete village at the CG were fairly well removed from media who were generally not allowed inside. As this 2014 Cyclist from New Zealand noted, "During the games in the village, you're not really exposed, well I wasn't exposed to like radio or TV either." Others were only just gaining a higher profile within their sport or event and had not yet become a well-known media interest. This 2014 athletics athlete from Botswana noted that they were largely left alone because they had not yet broken out as an athlete yet, "By then I think maybe it was just okay because I was not popular like now so I think – I didn't have a lot of interviews so I think it was okay."

Scottish athletes at the 2014 Glasgow CG had a slightly different experience, as the marketing for the Games in the months before they began was extensive in order to draw interest in the range of events being contested. This athlete noted there was more attention given to national athletes at this point, and that attention came from a range of sources.

It was pretty mental, I think it was on all the time, and even just the people coverage.....You couldn't walk anywhere without someone kinda noticing you in a tracksuit. The media coverage in the build-up of it I graduated from Uni that year

so, even the University used me as part of their media campaign as well...Local media were more afterwards really they didn't do much stuff before the games, they did a retrospective interview rather than anything before. I think it was par for the course, it was good because a lot of people like family and friends who weren't as interested in sport or athletics and just because it isn't covered in the media that much all of a sudden they take more of an interest and I think it kinda raised the profile of sport to people who maybe aren't interested in it in general. (Athletics, Scotland, 2014)

This athlete seems to indicate that the interest in their sport and in them as an athlete was driven largely by traditional media coverage. While athletes did not report being bothered by this, they did indicate that it was coverage of events like these that shaped the public perception and interest in their sport.

The big media shift at the 2014 CG was the presence and use of social media as a channel for Games coverage. Athletes at these noted that social media rather than traditional media that was being used to share coverage and commentary about the CG. This amount of social media coverage seemed to be the biggest change from other lower level competitions and from previous editions of the CG.

Yeah, a lot of different avenues with social media at that time. Facebook was obviously the big one, Whatsapp every now and then, Instagram. Twitter was probably not as big at that Commonwealth Games and in previous years, but still available for extra information. (Athletics, Australia, 2014)

I'm trying to remember but I think the social media was the biggest change. 2014, everybody was—well, I wasn't, but everybody else was tweeting, for instance, Facebook and Tweeting even more so than 2010. It's only four years difference, but the social media platforms change so rapidly and things come and go. That was certainly a big thing and it's going to be big in the Gold Coast [2018 CG] too. The possible distractions of 24-7 media, a story will be on a web page that will pop up and then it'll be dead 12 hours later and people tweeting their thoughts. (Shooting, Australia, multiple/2014)

Most athletes did not report feeling extra pressure from the increased media presence at CG. Perhaps due to the ubiquity of social and traditional media, athletes seemed to take it in their stride. Many of these athletes also had previous experience at world-level competitions, which may have helped prepare them for any increased attention.

4.5. Doping awareness

Of course, all the athletes were aware of doping in sport at the time of these interviews. However, athletes who competed in the earlier CG were split on how aware of doping they were and how early in their careers they became aware. Some reported that they felt—and still feel—rather naïve about doping in their sport.

I am so naïve enough to believe that the vast majority of people participating at that level are clean. But perhaps there are – I still think that only ever a minority that might be doping or would be led into doping. So there are certain countries where you feel that we get to apply all these institutionalized approaches. But I am still confident enough that 1,500 or 2,000 people in track and field competing at the Olympics or Commonwealth Games or whatever, most of them are clean. Most of them are doing it because of they want to do it and they enjoy sport. (Athletics, Australia, 1986)

I was pretty naïve, I thought, I would have thought everyone was clean but I very much doubt that but I wouldn't have known who was and who wasn't. (Athletics, New Zealand, 1990)

That these athletes were both athletics competitors is surprising, as that is a sport with a long history of doping scandals. Most notably, the Ben Johnson scandal at the 1988 Olympics that brought global attention to the issue (Hunt, 2011; Ritchie & Jackson, 2014). Others from that era dispute this and recalled that it was well known that doping was common even in the 1980s, partly due to the Johnson scandal, and that they suspected it was occurring in several sports.

We knew it going on. It was around the time of Ben Johnson. We were all well aware of it and years prior to that, too. There was one badminton player in particular that got caught with steroids and got banned for the year, an Indonesian player. I remember watching his match, and he just was going on and on forever, but afterwards it made sense. But no, we were certainly aware of it and it was floating around at the time, too. (Badminton2, Canada, 1986)

I can't say even at that stage we were away from the – I was away from the like '70s and early '80s in the Olympics and the Commonwealth Games when I was watching them that, we had athletes that were concerned around doping. Particularly from East Germans and Russians. And I guess it was always in the background in the '80s and you knew people were – there were more than enough rumors of doping, and the suspicions were there that it was quite

widespread in the eastern bloc that then a lack of any – because there was no competition testing at that stage it was in the background of everything that we did. (Athletics, Australia, multiple/1986)

Others were clear that they understood doping was going on in other sports, but that they did not think doping was issue in their sport at the time. This Canadian athlete noted that awareness was raised when anti-doping testing began in Canada as a result of the national sport funding scheme.

Doping was not an issue in our sport ... I realized there was an issue in other sports. Our sport was lumped into it whereby virtue of what was happening in other sports, we started testing a lot at competitions, there were anti-doping stations and drug testing after competitions and all that kind of stuff. Then random testing as well because we were part of the national funding with Sport Canada (Badminton1, Canada, 1986)

Many of the athletes competing in the 2000s noted that they were aware of doping in sport, but not because they had any first-hand experience with it. Most reported really becoming aware of it as an issue through media coverage of high-profile athletes getting caught. Despite this knowledge, most of these later CG athletes did not feel that it was an issue that impacted on their careers directly, nor did it impact on how they trained or prepared for competitions.

[Before 2006] I was aware of doping and obviously as well the anti-doping system, but it was in quite a general way that I was aware of doping. It was all just rumor and hearsay. I had never really felt that it directly affected me. That was partly because I wasn't really at the level where it would directly affect me. I wasn't running fast enough to be at the level where doping is really making a big difference to major results of big competitions. I was aware of it in a general way but I guess I naively thought, "Well, this is a sport I love. I want to be an Olympic athlete, duh, duh, duh." I never really seriously considered it as being detrimental to me personally. (Athletics, England, 2006)

Because there were a lot of people that were taken back their medals, that they were using drugs to perform...I don't think about it so much. Unless someone is caught then I will think about then. But if there's nothing happening, I'll never think about it. (Athletics, Botswana, 2014)

I don't really remember it being an issue. I guess my focus – my first experience whether it's more understanding, the importance to keep yourself safe as an athlete of through probably the anti-doping seminars rather than being aware of

other athletes doping – famous athletes so what I am trying to say is that my first sort of awareness of it was to do with information education about you have to – so it was this big kind of unrelated thing that I didn't really have an awareness for earlier on. (Athletics, Australia, 2014)

For most of the athletes in this project, the effects of the increased media coverage of doping actually led to their awareness of doping as a problem. Many still did not feel that it was a problem for their sport as they did not perceive it impacting them directly, a situation found in a previous study (Overbye, 2018). That doping exists as a problem that is removed from the athlete's own experience speaks to an interesting media dynamic, especially as athletes did not report feeling undue pressure from increased media coverage even at large-scale spectacle events like the CG. Several reported being so focused on their own training that they basically ignore things they cannot control, such as worrying about whether or not their competitors are doping.

4.6. Anti-doping education

Much attention to anti-doping education has been paid by researchers and anti-doping agencies in recent years (Backhouse, 2015; Masucci, Butryn & Johnson, 2019; Sagoe et al, 2016). Predictably, there was quite a gulf between the athletes competing in the pre-WADA years of the 1980s and 90s and those who competed in the 2000s. Athletes from those earlier CG reported receiving no formal anti-doping education and even not really understanding that would be something they would need. Athletes reported mainly self-education of anti-doping in the absence of any formalized information or course.

I don't think that happened [anti-doping education], at all really. I mean I think we were much more self-reliant back then. We educated ourselves in a lot of things. I educated myself on strength and conditioning, I educated myself on nutrition, I educated myself on physical testing, I educated myself on published anti-doping policy so I think we were much more self-reliant back then, it wasn't handed to us, we went out and found out the information (Athletics, Scotland, 1986)

I can remember at the time and later being sent out what was on the doping list and to be aware of it and not to take anything. I can't remember when it first began but I was probably later (post 86) when it became much more of an issue...It wasn't on the radar in the same way. (Athletics, New Zealand, 1986)

Never in my entire life. I think the education that we all received was probably the playground stuff where we were whispering about this that and the next thing behind each other's backs and who's doing this and who's doing what. There was no formal sit down and you know any prescribed sort of way of dealing with the problem and it was a problem even back then and there was no education on that. (Athletics2, Scotland, 1986)

That all of these athletes are track and field athletes who received no anti-doping education is itself noteworthy, as the International Association of Athletics Federations (IAAF) did have a list of banned substances at this time and had one of the earliest doping bans in sport (de Hon, 2017). Things began to change after the first WADA Code, though that change happened over time. For example, athletes who were active in the years just after WADA was established received more of a functional education about anti-doping.

It was just to give you a little bit of a heads up about what to expect. Then as the years went on, I feel like the anti-doping-- The level anti-doping definitely increased or anti-doping information and education definitely increased. If I remember right before my first Commonwealth Games I'd never been drug tested. They gave me a practice drug test just so that I knew vaguely what to expect. I remember now having been drug tested properly, I remember they didn't do it exactly how you would do it which is one thing I think-- When you're actually getting drug tested they watch you really closely and you have to tuck your T-shirt up and they're really strict about they've got to see everything. I remember at the first one it wasn't nearly that strict. (Badminton, Scotland, multiple/2010)

As anti-doping progressed, the education seems to have improved. Athletes who competed at the 2014 CG all reported receiving regular anti-doping education. Often this was mandatory for being a part of the national team.

I think Scotland is very up to date and very on the ball with that information and they really stress that it is so important and there has been compulsory sessions to attend even so much as I've flown up to Scotland to be in a team meeting that has included Anti-doping and flown back so they really stress the importance (Shooting, Scotland, 2014)

Yeah, there was a requirement that each athlete should complete modules in the lead up to the games... I don't think they were sufficiently educated the athletes, I think it was a matter of ticking the boxes. (Athletics, Australia, 2014)

I was across here a few weeks ago for a morning seminar with UK Anti-Doping and tomorrow I appear for a series of meetings and one of those is an anti-doping meeting. I found that was incredibly useful. It really brought me up to date. I think actually when we obviously Guernsey is quite dominated by shooters in our Commonwealth Games team and it was surprising how much we had between us as knowledge as a group, but I think we all picked up little bits here and there. We were all very clear on beta blockers. (Shooting, Guernsey, multiple/2014)

Yes, we always have it. Even in [Botswana] we would do education in doping. They teach us there about it. (Athletics, Botswana, 2014)

That so many athletes reported being educated and feeling that education was part of being a national team athlete reflects the focus on improving and expanding anti-doping education (Masucci, Butryn & Johnson, 2019). Athletes from the later CG expressed high confidence in the education they had received in the run up to the CG. Though collecting data about anti-doping education at all other times was outside the scope of this project, it does appear that some of this education was tied to participation in the CG. As noted above, the CG can be the highest competitive level many athletes will reach. The regularity of anti-doping education outside of this international level of competition is unclear.

5. Discussion: Study 1

In this section, we reflect upon the results from the interviews above in order to focus upon the key points. It is important to note that all athletes supported the values and rationales of anti-doping policy and organizations.

There was strong feeling among the interviewees that their national context increased awareness of the risks associated with doping. More specifically, the reputational risks from having a doping violation were magnified by the close-knit sporting community in which most of these athletes operated (Dimeo et al, 2012). In a small country, and for some smaller sports especially, there are relatively few athletes and coaches: they all know each other, and in some cases have family connections. The stigma that comes with any form of anti-doping can create huge challenges for athletes trying to recover their careers in sport (c.f. Dimeo & Møller, 2018), even starting a new career can be

undermined by the public awareness of a doping case. CG countries and sports tend to be smaller than many of the successful countries at other world-level events, which increases such challenges. However, it is noteworthy that athletes in this study were forward-thinking and could foresee the reactions within their communities. For anti-doping education efforts, this might mean broadening the focus of athlete learning beyond the fear of a ban from sport to address the potential longer-term risks to one's self, family, and social environment. On the other hand, a more humanistic approach would be to educate media reporters and sports fans to help reduce the stigma around doping and create avenues for banned athletes to return to sport. This is supported by previous research demonstrating that many bans are likely the result of accidental or inadvertent doping (de Hon & Coumans, 2007).

All of the athletes interviewed appreciated the support provided by medical staff for a range of issues. The direct link between medicalization and the risk of doping has not been empirically linked, though the role of "doping doctors" has been noted in previous research (e.g. Dimeo & Møller, 2018). However, the athletes could get advice from nutritionists, physiotherapists and psychologists who could help them find ways to recover and optimize performance without resorting to doping. The evidence presented here, however, solely focuses on medical support that is not for doping purposes. Athletes were clear that they needed and utilized medical support, especially when made readily available to them via national team membership. Some even noted that they maintained relationships with some of these medical personnel beyond their period of membership on a national team or while at an event. Having these trusted connections with doctors and other service providers who are well aware of both elite athlete needs and doping policies may further help prevent athletes accidentally ingesting banned substances (c.f. Backhouse & McKenna, 2011). Athletes reported a range of services—including nutritional support—they felt kept them from needing such things as nutritional supplements or other substances that might leave them vulnerable to inadvertent doping. Athletes who view supplements as part of a rationalized approach to diet and nutrition run the risk of inadvertent doping, an issue that has been

increasingly addressed through anti-doping education, third party verification of manufacturers, and social media awareness campaigns.

The issue of sponsorship and other forms of funding was discussed by the interviewees in quite diverse ways. Every athlete, regardless of whether or not they were considered by their governing body as “professional,” approached their training and competition in a professional, disciplined way. Sport was a profession, if not the only one. It is clear that within CG sports, the past 30 years have seen a significant increase in commercialization and professionalization of sport, events, and athletes. The Games may offer athletes from small, niche sports the opportunity for a higher profile during the period around the competition. As such, this may put pressure on athletes to perform well in order to maximize financial or sponsorship opportunities (Mazanov, Huybers & Connor, 2011). Situations of financial security potentially function to reduce the risk of doping as athletes feel confident in their short- and long-term stability, as previous work has shown the reverse situation to potentially increase risk (Aubel & Ohl, 2014; Fincoeur, Cunningham & Ohl, 2018). Similarly, in sports with few opportunities for public funding or sponsorship the risk-taking might be more likely at points of transition where athletes gain or lose such support (Mazanov, Huybers & Connor, 2011). However, it is clear from some of responses that being on the brink of success can increase the risk of doping: there are small margins between huge success and relative obscurity (c.f. Henning & Dimeo, 2014). This risk might be higher in sports where athletes are isolated or have only weak oversight or relationship with a team or group to prevent doping (Fincoeur, Cunningham & Ohl, 2018).

The changing nature of media coverage has been a feature of elite sport globally over the past 30-40 years, with a dramatic shift in social media coverage and interactivity over the past 5-10 years. Athletes did not report anything in relation to the risk of doping. However, we can surmise that the close-knit community deterrence factors reported by athletes in small countries and sports (Dimeo et al, 2012) could potentially now extend wider due to social media. A doping incident can quickly become global

news, leading to criticism, loss of sponsorship deals and long-term stigma that must then be managed (Henning & Dimeo, 2018; Sefiha, 2017). Athletes own use of social media can help them engage with large audiences, and they have some control over the image they present and their personal “brand” (Sefiha, 2017). However, they have no control over how social media users react and the content of messages posted in response, and/or generally how media comment on the athlete. New technologies have been part of globalization, producing new situations and contexts for athletes. If they are concerned about the damage to their reputation from a doping violation, then they are likely to be more careful to avoid potential risks to their personal brand (Sefiha, 2017).

All of the athletes reported a lack of direct awareness about doping in their sports. Those who had competed in the late 1980s and 1990s had a pragmatic view that doping occurred regularly. By the late 1990s and 2000s, perhaps due to the impact of WADA, there was increased awareness of doping and anti-doping. Some athletes spoke of themselves as not competing at a high enough level for doping to be an issue. This proximity seems to be a factor in how important of issue they perceive doping to be (Overbye, 2018). It is possible that the CG have had some level of immunity from doping above events like the Olympics because of the narrower range of countries and sports that participate. Moreover, some of the largest CG countries, such as the United Kingdom, Canada, Australia, and New Zealand, have a history of leadership within global anti-doping initiatives. Finally, there was a clear pattern in the responses that anti-doping education had improved greatly since the 1980s. Athletes who participated in earlier events felt under-educated and under-prepared for testing. More recent competitors attended workshops and expressed their confidence that they have received relevant information.

6. Method: Study 2

The second study in this project built directly on the first. Drawing primarily on the data gathered from the interviews with athletes, we used the analysis to build a pool of items

that reflected how athletes across several years reported their sport experiences and perceptions of doping and anti-doping as related to broader social changes and contexts.

Based on the data derived from Study 1, we developed a pool of 46 questions. These were broadly situated around five themes: (anti-doping) technology, medicine and health, professionalism (funding), media, and training environment (national and sport context). We then asked a panel of experts to evaluate how well each of the questions captured the theme under which it was situated. Following this, we tested the items with 52 UK university athletes for clarity and purpose.

6.1. Participants

The first set of participants were a sample of 25 sport studies or substance use experts in the UK (n=20), US (n=2), Australia (n=2), and Denmark (n=1). Each of these experts has published academic research on sport and/or substance use.

The second set of participants were 52 athletes, all from the UK and who were currently participating in a range of sports, including football, triathlon, swimming, and rugby. There was no overlap in participants between Study 1 and Study 2. The athletes all competed at the University or Club level.

6.2. Procedure

Each expert was contacted via email and invited to rate the survey questions. We used an online survey platform to allow sport science experts to provide feedback on the pool of questions. We asked them to rate how well each question captured the theme under which it was situated on a 10-point Likert scale from 1 (does not at all capture the theme) to 10 (fully captures the theme). We used a 10-point scale in order to get a more detailed understanding of how the reviewers felt the questions did or did not capture the theme. Open-ended text boxes allowed qualitative feedback on the questions and survey in general. The results are described below.

We similarly used an online survey to enable the athletes to provide feedback on the remaining questions specifically regarding readability, understandability, and if the content was relevant to their experiences. Each question was presented with a feedback box and instructions. For questions on which they had no feedback, they were to indicate in the comment box with an 'X.'

7. Results

Though we were not explicitly looking to establish content validity, we used the content validity index as a rough guide for determining which items to retain in the pool (Hurst, Foad, Coleman & Beedie, 2016; Lynn, 1986). To determine this, we took number of ratings of 7 or above and divided it by the number of expert responses. Those that scored .8 or above were retained (Hurst, Foad, Coleman & Beedie, 2016), leaving 31 questions from the original 47.

The pool of questions was further reduced following the qualitative feedback from the 52 athletes. The athletes noted that some questions were too specifically focused on professional or internationally competitive athletes rather than for other elite or elite amateur athletes. We removed indicated questions that reflected these issues. Eight questions were removed based on this feedback for a final pool of 23 questions (see Appendix B). As written, we hypothesize that responses higher in agreement with questions 1, 2, 3, 4, 5, 6, 12, 13, 16, 17, 18, 19, 20, and 21 would indicate less favorable perceptions of doping, while responses in agreement with 7, 8, 9, 10, 11, 14, 15, 22, and 23 would indicate more favorable perceptions of doping.

8. General conclusion

Athletes' experiences of sport and their perceptions of doping and anti-doping are impacted by a number of factors from the micro level to the more macro. Broad social changes linked to patterns of globalization impact society in a range of ways and across levels, not least in elite level sport (c.f. Thibault, 2009). Athletes competing at international events like the CG experience many of these at the individual level (Maguire, 2000; 2015). By examining two cohorts of athletes' experiences of training

and competing at CG over nearly 40 years, this study provides insight into which aspects of broader social change and patterns of globalization impact on athletes and in what ways.

The athletes in this study were all in favor of anti-doping principles, and their experiences also varied widely across time and space. However, the commonalities were in some ways more striking than their differences. All athletes reported that adequate funding, access to medical advice, trust in their support personnel, and regular anti-doping education directly impacted their daily lives. However, what remains unclear is the way in which these impacts are felt: if such support could lead to situations where doping is enabled, or if these are protective factors against all forms of banned substance use. This is not suggest any of the athletes here did or would engage in doping behaviors, but that further investigation into such relationships is warranted.

9. Limitations and Further Research

This study is limited in its size and scope, largely due to the difficulties in recruiting large numbers of elite athletes to take part. Future studies would be strengthened by having a larger sample of athletes, covering additional countries, sports, and competitive years. Several of the athletes in this study were still competing at high levels, which may have impacted how open or vocal they were willing to be about sensitive topics or experiences. However, that many athletes expressed negative views and disclosed negative experiences indicate they were likely responding in accordance with their actual beliefs, especially those who have retired from competitive sport and were participating from a more historical point of view. None of the athletes reported ever engaging in doping practices meaning only the views of athletes who have been found in compliance with the anti-doping system are included. It would be insightful to similarly interview athletes who are currently using banned substances or methods to understand what broad social changes and trends impacted on their decisions to do so.

The survey items included in this study have not been validated. Future research in this area could undertake this validation or adapt these items into a full instrument for measuring athlete views in relation to broad social trends.

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Appendix A

CG Athlete interview guide

Sport:

Country:

Age:

Competed at CG:

Years competitive:

Commonwealth Games environment

--How would you characterize the overall environment of the CG you competed at (i.e. commercialized, professionalized, tense, relaxed)?

--What was the media coverage of the CG like?

Athlete funding

--Are you currently or were you considered a professional athlete?

--Did you receive any sponsorship or funding as an athlete at that time?

-What was the source?

Medical support

--Did you have a medical advisor, either team doctor or personal, who was with you at the CG?

--What kinds of medical staff or services did you most often utilize in the training for and during the CG?

Anti-doping education

--Did you receive any kind of education about doping and anti-doping before or during the Games?

--Who provided this?

Anti-doping awareness

--When do you first recall being aware that doping was an issue in your sport?

--Were you generally aware of doping as an issue when you competed?

--How?

--Was doping ever discussed by your coaches or teammates?

--Did you ever worry that your competitors were doping?

Anti-doping testing

--Were you tested for anti-doping at the CG?

--How would you describe anti-doping at the CG?

National context

--How do you feel the response would be in your country if you were to test positive for doping?

--Is there anything specific about your country that makes you think that would be the response (size, attitude, history)?

--What would the response in your sporting community be to a positive test?

--Is that related to size, competitive level, etc?

Appendix B

Final pool of survey questions

1. I consider having easy access to my doctor (team doctor, GP, etc) a necessary part of my training.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree

2. I rely on physios, chiropractors, masseuses, etc to help me to be competition ready.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree

3. Nutritionists are an important part of my training support.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree

4. Sport psychologists are an important part of my competition preparation.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree

5. Sport psychologists help me cope with the pressure of training and competing.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree

6. The medical care I receive keeps me in top form for training and competing.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree

7. Medication (i.e. prescription or from the pharmacy) is sometimes required for me to perform at my best in competition.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree

8. Medication (i.e. prescription or from the pharmacy) is sometimes required for me to train at a high intensity.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree

9. I use supplements (e.g. vitamins, protein supplements) as part of my training.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree
10. I feel compelled to compete even if I have a minor illness or injury.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree
11. I feel compelled to compete even if I am seriously ill or injured.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree
12. I approach my training as if sport is my professional career.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree
13. I have to be professional in my attitude towards training to compete at the highest level of sport.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree
14. My career is primarily dependent on sponsorship or other outside funding to continue.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree
15. Most people's perceptions of my performance are shaped by media coverage of my sport.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree
16. Social media is a positive tool for athletes to create and manage a public profile.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree
17. It is important that athletes have control over their own media profile.
1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree
18. Having journalists who are knowledgeable about my sport is important for how the public understands the sport.

1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree

19. I feel that I can ask my coach(es) questions about my training, including its structure and purpose.

1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree

20. My coach(es) or other staff are knowledgeable about anti-doping to help me avoid taking a banned substance.

1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree

21. I would feel comfortable sharing the details of my training with those outside my training group or team.

1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree

22. Speaking out about behaviours with which I disagree would put my position on the team or in my training group at risk.

1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree

23. Keeping my spot on my team or training group is very important to me.

1. Agree 2. Somewhat agree 3. Somewhat disagree 4. Disagree