

**UNIVERSITY of
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**Perceptions of legitimacy, attitudes and buy-in among athlete groups: a cross-national
qualitative investigation providing practical solutions**

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

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Acknowledgements

Reaching national and international level athletes can be difficult, and we thank the sports federations and anti-doping organizations that helped us connect with participants.

We are most grateful to the athletes who were able to take time out of their own schedules to speak with us and offer their experiences and views. Their contributions made this project possible.

We also thank Dr. Carlos Henrique Vasconcellos Ribeiro for his work with the Brazilian athletes included in this project.

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Executive Summary

Introduction: In order to achieve its stated purpose, anti-doping relies on athlete buy-in to its overall goals and methods and their compliance with anti-doping policies.

Previous research on athlete behavior focused on ways to induce athletes into compliance. However, the authors of the Sport Drug Control Model hypothesized that athletes' views of anti-doping and their resultant behaviors resulted from their first-hand experiences with anti-doping (Donovan et al, 2002). These and similar findings supported the hypothesis that the greater the levels of perceived legitimacy of anti-doping organizations among athletes, the greater the likelihood athletes would comply with anti-doping policies. A better understanding of which experiences at the policy, agency, and individual levels are viewed positively or negatively can provide a path for improving perceptions of legitimacy among athletes.

The purpose of this study is to investigate perceived legitimacy, athletes' attitudes, and buy-in towards anti-doping policies in a selection of national contexts and sports. The overall objective is to provide clear, practical guidance as to how to improve the athlete experience to increase levels of perceived legitimacy of anti-doping organizations and regulations among athletes.

Method: Twenty-four national and international level athletes from seven countries (Australia, Brazil, Denmark, India, South Africa, U.S., U.K.) and six sports (athletics, badminton, cycling, fencing, field hockey, swimming) participated in interviews via video call (e.g. Skype). Participant ages ranged from 18 to 56. Interviews averaged 30 minutes in length and were audio recorded. Each followed an interview guide prepared after analysis of the existing literature on perceived legitimacy. Following transcription, the data were analyzed using both pre-determined themes (i.e. Education; Testing) and codes emerging from the data (i.e. received AD education; never received AD education). There were five resulting central themes: Education, Rules, Testing, NADOs, and Sanctions.

Results: Anti-doping enjoys high levels of legal legitimacy and compliance among athletes. This is most evident in the general acknowledgement that WADA and affiliated NADOs have the authority to set anti-doping rules and then enforce them through testing and sanctions. None of the athletes questioned the existence of the WADA Code or Prohibited Substances List as the binding documents for substance use in sport. Athletes were also generally compliant with anti-doping. This was partly due to their belief that sport is better without doping and partly because their ability to compete and/or earn their livelihoods as athletes is dependent on that compliance. Athletes generally view anti-doping as reflecting their own values reflected in anti-doping policies, education, and use of anti-doping testing. Athletes found policies as written to be generally fair, as they are intended to hold all athletes to the same standard.

Athletes also reported receiving education and that the educational sessions and materials were valuable. Athletes were generally eager for more education and resources to be available so they could proactively ensure their compliance. Athletes were also in favor of anti-doping testing, and despite the view that testing can sometimes be awkward or inconvenient most thought that such inconveniences were justified. Indeed, most acknowledged that significantly more testing was required to be effective.

Athletes began to have doubts about anti-doping in the practical application of the policies and its effectiveness at keeping banned substances out of sport. Athletes doubted the ability of NADOs in other countries to rigorously test their national athletes, even when they had full confidence in their local NADO to do so. This discrepancy was rooted in their inability to verify that athletes in other countries were being tested with similar frequency to their own and to questions about the collection and processing procedures in other countries.

Athletes' were skeptical that anti-doping is actually detecting athletes. Most athletes did not feel that the system was able to detect doping in either their own or other sports, based on several factors: their own experiences of low testing frequency, a near

absence of out of competition testing, and the predictability of testing. This skepticism was exacerbated by stories of athletes' doping going undetected for years before testing positive, stories and rumors about athletes seeking ways to get around the testing system, and high level scandals involving athletes and countries. As such, athletes in this study reported that the system itself was less a deterrent than were their own values and beliefs about competing drug-free.

Conclusion: The athletes in this study were in favor of anti-doping in principle and generally supportive of the education programs, testing system, and penalties. However, they were also skeptical of the ability to equitably test all athletes across countries and sports, and to effectively detect and deter athletes from engaging in doping. Athletes in this study saw clear areas where the system was weak and open to abuse. It is appropriate to conclude that a motivated athlete would likely have a similar understanding and attempt to exploit the system's vulnerabilities.

Recommendation: In light of these conclusions, eight key recommendations are proposed:

- Increase engagement with athletes in settings unrelated to testing, such as through education and resource provision, meet and greets, and via email or social media.
- Develop resources in partnership with athletes to improve ease of access and overall user experience and to ensure they are practically useful to athletes.
- Encourage strategies to reduce the predictability of anti-doping testing both in and out of competition.
- Develop strategies for communicating the amount of testing done across countries.
- Consider having an external organization that takes an 'auditing' approach to all countries and sports to ensure that systems of education and testing are in place.

- Since athletes are concerned about variability of testing in other countries, new funding models could re-allocate resources to ensure that a minimum level of testing is implemented.
- Engage with athletes to explore potential solutions to the problem of inadvertent doping. The challenge appears to be in making an appeal, however there may be ways to facilitate inexpensive and faster appeals processes with some flexibility around the application of 'strict liability'.
- Sanctions could be more clearly designed to punish the organized, deliberate cheats, while being more proportionate towards the less 'serious' cases.

1. Introduction

The success of anti-doping systems and policies will largely be determined by athletes and to what extent they comply with various rules and regulations. Strategies for athlete compliance have been the focus of research on anti-doping education (Backhouse, McKenna & Patterson, 2009; Johnson, Butryn & Masucci, 2013), whistle-blowing (Erickson, Backhouse & Carless, 2017; Whitaker, Backhouse & Long, 2014), national-level criminal codes for doping use (Sumner, 2017), athletes' perceptions of substances (Outram & Stewart, 2015; Stewart, Outram & Smith, 2013), the role played by coaches and other athlete supporters (Allen, Morris, Dimeo & Robinson, 2017; Engleberg & Moston, 2016; Mazanov et al, 2014) and deterrence (Strelan & Boeckmann, 2006). Each sought to understand what most impacted upon athlete views and behaviors around doping, often seeking areas where athletes could be induced to comply with anti-doping.

In their Sport Drug Control Model (SDCM), Donovan, Egger, Kapernick, and Mendoza (2002) found that one of the attitudinal factors affecting athlete views of doping was the perceived legitimacy of anti-doping. Here, the authors hypothesized that the greater the perceived legitimacy of an organization, the greater the likelihood of compliance with its policies. Perceptions of legitimacy, then, were shaped by first hand experience with the anti-doping system and with the shared experiences of their peers (Donovan et al, 2002, p. 276). These findings, as well as research offering support for the importance of perceived legitimacy for athlete compliance (i.e. Jalleh, Donovan & Dabling, 2014), opened a new avenue for impacting attitudes at the organizational level: improving the athlete experience with anti-doping.

More recent studies have begun to outline how athletes' perceptions of anti-doping legitimacy are shaped. Overbye's (2016) study of Danish athletes found that while athletes were generally satisfied with their own national doping systems, they were more likely to be skeptical about other countries' systems. An international survey of elite athletes found that athletes are more likely to question the application of anti-

doping rules and processes rather than the rules themselves (Efverström, Ahmadi, Hoff & Bäckström, 2016). Together, these underscore the importance of interactions with anti-doping agencies on athletes' perceptions. They further demonstrate the need for a better understanding of how experiences with anti-doping come to be viewed as positive or negative and in what ways athletes feel improvements can be made at the policy, agency, and individual levels.

Purpose of the research

Though anti-doping is integral to sport and the daily lives of athletes, it is unclear how engaged athletes are with the system, how they rate their experiences with various aspects of anti-doping policies and institutions, and how each influences athletes' views of the role of anti-doping and its efforts. The purpose of this study is to provide guidance as to how to increase and maintain perceived legitimacy of anti-doping organizations and regulations among athletes. Specifically, this project:

- investigates perceived legitimacy through athletes' attitudes, and buy-in towards anti-doping policies in a selection of national contexts and sports;
- aims to enhance conceptualization of this issue to inform future research;
- proposes ideas for new approaches for sports organizations to improve athletes' perception of the legitimacy of anti-doping and thus their engagement with policies, education, and deterrence strategies.

2. Background

The concept of perceived legitimacy has been examined and operationalized in several non-sport sectors. Studies have focused on a variety of institutions including government and policy (i.e. de Fine Licht, 2011; Gibson, Caladeira & Spence, 2005), international governance (i.e. Føllesdal, 2006), policing and courts (i.e. Gibson, 2008; Hough, Jackson & Bradford, 2013; Riccucci, Van Ryzin & Lavena, 2014), entrepreneurship (Iakovleva & Kickul, 2011), and multi-stakeholder initiatives (Mena & Palazzo, 2012). Because theories of perceived legitimacy have been developed and

sharpened elsewhere, we are able to transfer some of these ideas to sport and anti-doping contexts. Of course, concepts and theories of perceived legitimacy are applicable to sport contexts outside of anti-doping. Such work could be applied to areas such as sport governance, finance, event hosting, non-profit sport organizations, youth sport protections, and gambling regulations. Questions of legitimacy, and especially perceived legitimacy, are central to the existence and success of many institutions and policy-makers claiming authority over some aspect of sport.

To call an authority legitimate is to suggest that it has recognized right to make rules and carry out their enforcement (Schmelzle, 2011; Gowthorp, Greenhow & O'Brien, 2016). Legitimacy has been studied as it relates to organizations (Mena & Palazzo, 2012; Vergne, 2011), governance (Schmelzle, 2011) and political institutions (Gibson, Caldeira & Spence, 2005; Gibson, 2008; Hough, Jackson & Bradford, 2013). In sport, this might mean the body responsible for making policies about how events are contested, what is considered fair play, and how breaches of these rules will be dealt. Studies of legitimacy within sport include EU sports governance (Geeraert, 2014), motivational climates of various sports (Duda, Olson & Templin, 1991; Walling, Duda & Chi, 1993; Miller, Roberts & Ommundsen, 2005), and the effects of direct participation in sport on attitude orientation (Kavussanu & Ntoumanis, 2003). Anti-doping organizations are meant to be the legitimate arbiters of substance use in sport. However, legitimacy takes several forms and is derived from various sources.

Legitimacy for regulating is commonly conferred by a legal authority according to established legal processes (Føllesdal, 2006). This is what is known as legal legitimacy (Føllesdal, 2006). By approving the WADA Code and providing operational funding, these groups authorized WADA to regulate and enforce policies related to anti-doping in sport. This is the type of legitimacy conferred on NADOs when they are established by a national government according to local procedures and laws. WADA and its associated agencies are only legally legitimate within sports that have accepted them as such by the relevant governing stakeholders by signing the WADA Code. Even with legal

authority, other organizations may contest anti-doping agencies' power to define and decide the issue (Gowthorp, Greenhow & O'Brien, 2015).

Despite its authority among member organizations, WADA does not have purview in all times or places, or even within all sports. Individuals who use substances banned by anti-doping authorities outside of sport are not subject to WADA's policies. Neither are athletes in sports or leagues where the governing body does not recognize WADA or other NADOs as authorities. In both cases, athletes are bound by national or local law, by the rules set out by the sports organization or its designated authority, but not by those set by WADA. For example, privately owned and run sporting events are not obliged to enforce anti-doping policies or uphold bans on athletes who have tested positive. This was illustrated in late 2015 when former professional cyclist Lance Armstrong won a 35-kilometer trail running race while still under a lifetime doping ban from the U.S. Anti-Doping Agency (Roche, 2015).

Beyond legal legitimacy, legitimacy can take other forms that have less direct relationship to an institution's legal status. Normative legitimacy is determined by the degree to which compliance with the authority can be morally justified to its constituents (Føllesdal, 2006; Hough, Jackson & Bradford, 2013). This generally refers to following the rules because it is the right thing to do. Doping in sport is widely accepted as morally and ethically wrong. Since anti-doping seeks to prevent doping, athletes may follow the rules because doing so conforms with the prevailing view of doping-free sport as the norm. Simple consent to an institutions rules or practices by constituents is not enough to signal buy-in on the part of constituents. Compliance may signal fear of punishment for non-compliance rather than any perception of legitimacy of the authority. As such, it is necessary to have wide social acceptance of the right of an institution to exercise power in addition to having conformity with its actions (Hough, Jackson & Bradford, 2013). The greater the acceptance of an institution's authority, the higher the level of legitimacy held by that institution.

Social or empirical legitimacy refers to the general willingness by constituents to comply with or support an organization or institution (Føllesdal, 2011; Ronglan, 2015).

Empirical legitimacy exists when 'the governed recognise an obligation to obey power-holders, believe that power-holders act according to appropriate normative and ethical frameworks, and believe that power-holders act under the rule of law' (Hough, Jackson & Bradford, 2013: 332). Empirically legitimate institutions are those that are both morally valid as well as having the proper legal authority to wield power (Hough, Jackson & Bradford, 2013).

Legal legitimacy may be conferred by a regulating authority, such as when governments and sports governing bodies granting WADA policy making powers and giving NADOs the right to enforce those policies. Normative and empirical legitimacy, however, are not automatically conferred on an authority. This occurs through processes of legitimation (Føllesdal, 2006). These processes can include inputs or direct participation by constituents, democratic procedures, consent by peer authorities and constituents, and outputs that result in binding decisions. As such, what institutions actually do will have strong bearing on how and what types of legitimacy it will gain.

Inputs, outputs, and effectiveness

How institutions act, through determining what needs to be regulated and how, can be more or less derived from constituents. Inputs represent the voices and will of the governed (Mena & Palazzo, 2012). This is based on the notion that 'political choices should be derived, directly or indirectly, from the authentic preferences of citizens and, that, for that reason, governments must be held accountable to the governed' (Scharpf, 1997: 19, cited in Mena & Palazzo, 2012). The more individuals see their views, priorities, and goals reflected in an institution's actions, the greater the likelihood they will view the institution as legitimate.

Not all issues carry equal importance in the eyes of the governed. Some issues are more important because they impact the daily lives of constituents, while others may not because they appear far removed from, or even invisible to, the public. In the

former case, these obtrusive issues are self-evident to the public and require no awareness-raising efforts to be understood as an issue of importance (Islam & Deegan, 2010; Neuman, 1990). One example might be the dilapidated state of local recreation facilities. This would be easily and regularly noticed by the public and is an issue that impacts everyday life. While statistics or media reports may confirm what many already experience first-hand, they are not necessary as indicators that the phenomenon exists. Obtrusive issues may quickly lead to calls to regulatory institutions for action.

Unobtrusive issues are those that are not immediately experienced and may require media reports to make their importance known (Islam & Deegan, 2010; Neuman, 1990). Some issues, such as the availability of sports for girls in other countries, may go unnoticed by the public for years or decades. Reporting on such issues increases their visibility and conveys the importance of the issue to those on the outside. Unobtrusive issues can also generate calls for action if the issues become important on a wide-scale. Both obtrusive and unobtrusive issues can be the basis of inputs.

An issue such as doping by athletes may vary as either obtrusive or unobtrusive. In sports like cycling, doping seemed to be a self-evident issue that athletes were well aware of without being told so by an outside source. Other athletes, however, may not experience doping as an unobtrusive issue in their sport until cases are reported or they are told that it is an issue of immediate concern. Once the issue is known either experientially or via reporting, athletes may call for something to be done and may offer views on how it should be addressed. The way an institution addresses an identified issue also impact its legitimacy.

Outputs are results of actions undertaken by an institution. Factors such as how thoroughly an institution is able to address an issue or solve a problem facing its public and how effective the action is each play a role in determining its legitimacy (Mena & Palazzo, 2012). Effectiveness is the degree to which a governing institution can solve problems it has targeted (Schmelzle, 2011). If an institution undertakes an ineffective

strategy to address a problem identified by the public that leads to poor outputs, its legitimacy may be weakened.

The effectiveness of an institution relies necessarily on its stated goals (Schmelzle, 2011). If the institution aims to meet a specific goal through a policy effort but falls short, the size of the deficit between the stated goal and the actual output will determine its effectiveness. Outputs, therefore, can only be evaluated for effectiveness relative to the way the problem is identified and policy goal (Schmelzle, 2011). It is important to note, however, that effectiveness of a policy has no bearing on the moral correctness of the institution. An effective policy may still be immoral. Effectiveness also does not guarantee input legitimacy, as an effective policy may ignore or contradict the will of the governed (Schmelzle, 2011; Mena & Palazzo, 2012).

The ability of an institution to reflect the will of the governed (inputs) and identify and address issues through regulation or policy (outputs) in a way that meets the stated goals (effectiveness) can aid in the process of legitimation. While broad legal and social legitimacy is important to the functioning of an institution, individuals may still act contrary to stated rules and regulations if they perceive the institution as an illegitimate authority. Processes of legitimation give the governed an opportunity to engage with the governing system. Engagement can take various forms, including direct participation, participating via elected representatives, or approval through referendum (Føllsdale, 2006). Legitimation processes such as these may improve how legitimate an institution is perceived, by offering avenues through which it is held accountable to the governed. As such, top-down, centralized policies might have weaker legitimacy if those affected by them feel alienated from the decision-making process, while legitimacy is likely to be stronger if there is participation, transparency, and a democratic process.

Perceived Legitimacy

Perceived legitimacy generally 'refers to the degree to which an individual perceives that a specific behavior or class of behaviors is acceptable' (Conroy et al., 2001: 406). This concept can be applied to the behaviors of other individuals, but also to the

activities and behaviors of institutions and systems. An individual's view may be based on factors such as whether or not it is within the bounds of rules or laws and the level to which they feel those rules or laws are legitimate.

Conceptualizations of perceived legitimacy have been applied to individuals' views of non-sporting institutions and systems. Outside of sport research the concept has been used to understand judicial legitimacy (Gibson, 2008), policy acceptance (Gibson, Caldeira & Spence, 2005; de Fine Licht, 2011), social capital in entrepreneurial success (Iakovleva & Kickul, 2011), gender representation in policing (Ricucci, Van Ryzin & Lavena, 2014), and the transfer of state powers to non-state entities (Mena & Palazzo, 2012). Perceived legitimacy has also been applied to various aspects of sport, including sporting aggression (Maxwell, Visek & Moores, 2009; Rascale et al., 2010), moral reasoning (Bredemier et al, 1987; Miller, Roberts & Ommundsen, 2005; Conroy et al., 2001), motivational climate (Boixadós et al, 2004; Walling, Duda & Chi, 1993), and behaviors resulting from goal orientation (Duda et al., 1991; Duda & White, 1992).

Performance enhancement and doping are topics that researchers are just beginning to consider from the perspective of perceived legitimacy. One underpinning issue of this research is how different forms of enhancement are regarded by athletes and governing bodies. Various performance enhancing behaviors may be viewed in very differently from one another, often depending on the context in which it is discussed. As Shubert and Konecke (2015) explain, previously acceptable performance enhancement behaviors came to be known as doping as a result of changing definitions of what is legal and legitimate within sport. They take as legal those enhancement practices that are allowed according to the rules of sport. Legitimate enhancement, however, is that which are 'compatible with the discussed values elementary to sport' (Shubert & Könecke, 2015 p. 69). In this conceptualization, most behaviors will overlap both categories and be both legitimate and legal or illegitimate and illegal, but this is not necessarily true for all behaviors. Therefore, a behavior may be legal but widely considered against sporting values, such as the use of therapeutic use exemptions for

banned substances. It is within the rules of the sport but many see this as an illegitimate use of enhancing substances (Overbye & Wagner, 2013).

While issues of individual behavior are central to anti-doping, this project is focused on the way athletes perceive anti-doping institutions and systems. Athletes are primary stakeholders in both sport and anti-doping efforts, but are also the group scrutinized in both cases. Previous research has argued that perceived legitimacy may underpin some athletes' views of and attitudes towards anti-doping efforts (Jalleh, Donovan & Jobling, 2014). As such, if laws and policies are considered just in both purpose and application, individuals are more likely to comply. With regard to anti-doping, the greater athletes' perceptions of anti-doping systems as legitimate, the more likely they are to follow the rules.

Perceptions of legitimacy are determined by several factors and across multiple levels of engagement. Anti-doping is a federated system—WADA is the global governing body that makes policies, while national-level anti-doping organizations carry out the surveillance and enforce policies—with multiple levels of stakeholders. International sports federations, national governments, national sport governing bodies, event organizers, and athletes are among those groups that must all buy into the system for it to function as a legitimate body. Further, each of these and their relationships with one another have impacts on the perceptions of members in the other.

In situations where an individual must rely on another person or an institution for material outcomes—such as the ability to compete in sport at an elite level and gain external rewards—that person is said to be outcome dependent (Van der Toom et al., 2011). A study of motivations for individuals to view institutions as legitimate found that when an individual is dependent on an authority they are more likely to view that authority as legitimate (Van der Toom, Tyler & Jost, 2011). These findings suggest that an athlete dependent on anti-doping organizations for the right to compete may view those organizations as more legitimate. The authors also note that in hierarchical relationships, where the more powerful can withhold outcomes from the less powerful,

social change may slow. For athletes this may mean that the pace of change around anti-doping policies or processes happens only gradually, if at all, since they are dependent on being in good standing with anti-doping and its member organizations in order to compete. Athletes are likely to remain compliant with anti-doping even when it goes against their own interests, since doing otherwise would lead to their exclusion from sport.

Athletes may also vary in their views of the issue of doping itself, impacting their view of the role of anti-doping agencies. Athletes may view doping as a serious issue that impacts their training or competitions—an obtrusive issue (Islam & Deegan, 2010). This may carry an expectation that a sport or sports-approved effort would be undertaken to address this issue and that such efforts are a good use of available resources. Athletes may also be more willing to comply with some of the more intrusive aspects of anti-doping efforts, such as keeping whereabouts information up to date and submitting to frequent testing. Conversely, athletes may feel that their participation is relatively unaffected by doping or that doping is not as important as other matters impacting their sport. This may be affected by the sport an athlete competes in and that sports own history with doping. If a sport has few cases of doping or is widely viewed as not having a doping problem, athletes may feel that anti-doping efforts are largely unnecessary. These athletes may then have a less favorable view of organizations and their efforts to address what they see as an unobtrusive issue (Islam & Deegan, 2010). These athletes may require more evidence that doping is a problem and that requires a concerted effort to address. Media coverage of doping cases and high profile scandals within their sport may aid in raising awareness of the seriousness of the issue.

Athletes' perceptions of the legitimacy of anti-doping organizations may also be influenced by how well the organizations take their views and experiences into account (Sharpf, 1997). When athletes see their inputs reflected in the policies that determine the various ways their participation—and sometimes their livelihoods—are to be regulated, they may regard the organization as a legitimate authority on the issue. This,

in turn, may make them more likely to comply. The opposite situation, in which athletes feel they are being regulated in ways that do not take their needs or experiences into consideration, may also impact perceptions of legitimacy. Ignoring athlete inputs may lessen the legitimacy of the organization in the eyes of its population.

Anti-doping organizations must also demonstrate that their policies are actually having a positive effect on the issue of doping in order to be perceived as legitimate (Sharpf, 1997). Having defined doping as a serious problem for both sport and the athletes, and having determined that the policy of banning substances and then testing for them is both a deterrent and effective for stopping doping athletes, anti-doping organizations must demonstrate that the policies are getting the intended results. The policy outputs then need to demonstrate that athletes are either being deterred from using banned substances or that they are detecting sufficient levels of use to justify the policies. Without such evidence, athletes may regard the organization as ineffective in addressing doping. That may then suggest that these organizations lack the capability to be a legitimate authority on the topic.

Perceived Legitimacy of Anti-Doping Organizations and Policy

Several studies have sought to determine what influences athletes' likelihood of doping. Most have focused on micro or individual level factors. Petroczi, Mazanov, & Naughton (2011) surveyed university athletes to determine how they characterized doping, functionally as a training aid or illegally as a type of illicit use. They argued that understanding how athletes characterize doping could aid and improve anti-doping interventions. Strelan and Boeckmann (2003) modeled doping behavior around deterrence theory using four categories of sanctions: social, legal, self (i.e. shame), and health concerns. In this model, these are held against potential benefits of doping and a rational decision is reached. Few studies have focused on the higher-level systems that affect athlete choice, though Stewart and Smith (2008) developed a model of drug use that combined macro and micro level factors. Athletes may comply with anti-doping or not, and this model took into account globalization, sport culture, and

masculinity/identity, in order to provide context for understanding athletes' decision making. In a second study, the authors found that athlete attitudes were pragmatic toward their substance use rather than being guided by either strict morality or a perfect cost-benefit analysis, calling a punitive system based on notions of morality and deterrence into question (Stewart & Smith, 2010).

Compliance is a central issue for anti-doping organizations at all levels. One model of compliance, known as the Sport Drug Control Model (SDCM) developed by Donovan et al (2002), reviewed literature pertaining to behavioral and attitudinal change and found six factors that influenced athletes' attitudes towards doping (Donovan et al, 2002). These were: personality factors, threat appraisal, benefit appraisal, reference group influences, personal morality, and legitimacy (Donovan et al, 2002). In the model, the more favorable athletes viewed anti-doping work as valid, credible, equitable, effective, and fair, the more legitimate they viewed those organizations (Donovan et al, 2002). This, in turn, made compliance with anti-doping policies more likely.

In an 'opportunistic' test of the SDCM, Gucciardi, Jalleh, and Donovan (2011) used a questionnaire with model-related concepts to survey 643 elite athletes from Australia. The findings here demonstrated that only threat and benefit appraisal, along with personal morality, had a strong relationship to doping attitudes—each of which are closely associated with general compliance. Perceptions of legitimacy, however, had only a weak and non-significant association with doping attitudes. Though inconsistent with previous findings, it raised questions about the need for athletes to fully accept anti-doping versus the need to simply comply. However, a more focused test of the SDCM found a strong relationship between perceived legitimacy and attitudes towards anti-doping (Jalleh, Donovan & Doblin, 2014). This was in contrast with the previous test, but consistent with studies not on the SDCM specifically. This supported the link between greater compliance with anti-doping policies and stronger belief that anti-doping systems are fair and effective (Donovan et al, 2002). Improving perceived legitimacy of anti-doping among athletes, then, would improve compliance.

This link provides support for studies, such as the present one, that investigate the specifics of how and why athletes perceive organizations in the ways they do and for developing strategies to improve areas where athletes see the system flagging. One such study by Overbye (2016) investigated how Danish athlete experiences with the testing system and their perceptions of its effectiveness locally and worldwide affect their views of anti-doping. The majority of athletes surveyed had a favorable view of the local testing system, though less in some other countries' systems, but trust was lessened in the event of a testing experience in which mistakes or breaches of protocol happened. Athletes reported a greater distrust in one specific part of the process after they had used it themselves, the Therapeutic Use Exemption (TUE) system, believing that it was easy for others to abuse (Overbye & Wagner, 2013). This same study showed there may a gender distinction in the acceptance of anti-doping values, as female athletes were more likely to respond in ways consistent with anti-doping norms (Overbye, Knudsen & Pfister, 2013). The findings also suggest that context matters, as how widespread doping was perceived to be in a sport had a strong influence on how positively athletes in that sport viewed the testing system. Context was also key in a small study of elite athletes from five continents that found the ability to comply with anti-doping policies varied widely (Efverström, Bäckström, Ahmadi & Hoff, 2016). The inequalities between the ways global policies were implemented locally were linked to deficits in legitimacy among the sampled athletes. The authors recommend that policies account for contextual differences to reduce procedural injustices experienced by athletes 'privileged' countries (Efverström, Bäckström, Ahmadi & Hoff, 2016: 84).

3. Method

Research on perceived legitimacy has mostly focused on athletes from a single country and been quantitative in approach. Though such studies are important and have strengths, a qualitative approach is necessary to complement and enhance this existing knowledge base. In order to better clarify the concepts and to create a nuanced model

of perceived legitimacy as it relates to anti-doping, it is important to probe athlete experiences more deeply than is possible in a survey format. Qualitative studies allow the researcher to build rapport with the athletes, and to allow the athlete the space to describe and expand upon their experiences related to the topic at hand (Bryman, 2004; Seale, 2012). Qualitative research on athletes' attitudes toward doping have yielded significant findings for ways to improve the effectiveness of anti-doping programs, especially with regards to educational interventions (Bloodworth & McNamee, 2009; Chan et al., 2014; Kirby & Moran, 2011; Whitaker, Backhouse & Long, 2014). Such studies are able to get a more complete account of athletes' views and attitudes, as well as the experiences, relationships, and information that have shaped that world-view.

Due to the nature of anti-doping, where the consequences of a mistake or loss of trust can have dire impacts for both athlete and sport, it is imperative that athletes are able to communicate their views in a respectful environment from which their views will be presented to policy makers. The semi-structured interview format offers such an environment and further offers space for athletes to expand on their views through open-ended and directed follow-up questions. A similar interview format in research on Scottish athletes enabled researchers to offer a clear, nuanced picture of the contextual influences on doping attitudes and behaviors (Dimeo et al, 2012). We therefore employed semi-structured interviews with a cross-national and cross-sport sample of athletes.

Ethical Oversight

This research was approved by the University of Stirling's School of Sport Ethics Committee. All participants were given written information regarding the project aims, research team, and funding source, as well as information on preservation of anonymity 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.

Participants

Twenty-four national and international level athletes from seven countries (Australia, Brazil, Denmark, India, South Africa, U.S., U.K.) and six sports (athletics, badminton, cycling, fencing, field hockey, swimming) participated in the research. Participant ages ranged from 18 to 56.

Recruitment

Study participants were recruited through three avenues: personal contacts of the research team, national sport governing bodies, and national anti-doping organizations. In each case, the individual was sent an email outlining the goals of the study, the methods, guarantee of anonymity, funding source, and contact information for the Researcher. The recipients were asked to share the recruitment email with athletes directly, asking them to contact the Researcher on their own, or to provide the Researcher with contact information for athletes who could be contacted by the Researcher. The contact email specified that we sought national or international level athletes who were currently active or recently retired from sport.

The research team did experience one main difficulty during the athlete recruitment phase. Despite attempting to contact athletes through a number of intermediaries (NADOs, national sports federations, club and university teams, investigators' professional and personal contacts, including with the support of WADA management) 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 main obstacles to the recruitment efforts. First, NADOs were unable to offer contact information for athletes competing in sports for which they do not conduct anti-doping testing or education for athletes. This was an issue with sports that have a low profile nationally. Second, national sport federations and governing bodies were either unwilling to provide contact information for appropriate athletes or they simply did not respond to the research team's attempts to make contact. While we understand that the topic is sensitive and they rightfully want to protect athlete privacy, the unwillingness to work with the project was an unanticipated obstacle. Though club and

university teams were helpful where they were able, they often did not have athletes at a level where they were engaged with anti-doping. Contacts that were provided to us by sports federations and NADOs did result in an interview about half the time.

Interview Data Collection

Following initial contact, participants were sent a written consent form and information about the project, as described above, via email. Interviews were scheduled at the participants' convenience and were conducted on either Skype or on WhatsApp's video call platform. Interviews were recorded on a digital audio recorder and lasted between 20 minutes and 75 minutes, with an average of ~30 minutes. The interviews were then transcribed verbatim for analysis. Interviews followed a semi-structured format. The semi-structured format allowed for a conversational tone between Researcher and participant, as well as opportunities for asking follow-up and clarifying questions. Athletes were encouraged to speak freely and expand on their ideas and experiences.

Interviews were conducted using a prepared guide covering sport and anti-doping topics that reflected concepts related to perceived legitimacy drawn from the literature. The interviews had three main parts: demographic information, NADOs, processes and regulations. The demographic portion collected data related to age, sport and discipline, and competitive history. The NADO section considered attitudes toward and interactions with NADOs, mainly through education and testing experiences. The third section focused on the athletes' views of the rules as written, anti-doping processes, and sanctions.

Data Analysis

Following transcription, the interview data were organized and coded using TAMS Analyzer version 4.48b7ahEC, an open source qualitative research software. The data were analyzed using both pre-determined themes (i.e. Education; Testing) and codes emerging from the data (i.e. received AD education; never received AD education). The data were first coded inductively, allowing themes to emerge, resulting in 74 codes. For

a more streamlined analysis, these themes were then organized according to five broader, pre-determined themes. These central themes were taken from the main topics covered under the latter two sections of the interview guide. These themes were: Education, Rules, Testing, NADOs, and Sanctions. Each theme is described and quotations from the athletes are used to illustrate the specific topics that emerged from the interviews.

4. Results

From the codes applied to the interview data, five central themes—Education, Rules, Testing, NADOs, and Sanctions—emerged.

4.1. Education

All the athletes related that they felt education was necessary for anti-doping to be effective. The amount and quality of education varied widely. Some athletes reported receiving regular anti-doping educational programs and updates:

We have national camps maybe three times a year at [name of camp]. Maybe at two of those camps each year there are seminars given, on anti-doping information and athlete tracking information disseminated to athletes.

(Australia, Fencing)

It's like an online course thing you have to do and in the end it's a great way to do it, because it's the Australian Institute of Sport. So it's a way for them to make sure they're doing their education, that they won't pay [competition costs] unless you do it. (Australia, Hockey)

Yeah we have that. They do that every year. If you make it onto the program they have a seminar that you can go to before an international competition. So it's pretty in-depth, yeah. (South Africa, Swimming)

I think probably leading up to any major event we would get some education. So we always got it. I was remembering getting it leading up to the Commonwealth

Games, so Delhi and Glasgow. Because I think it was a hotspot for hockey, it always became more prominent then. In other things, it wasn't, I don't know, I guess we didn't really get tested as much as other athletes, like other sports. So, I think it probably became a bit, I don't know if prominent is the right word, but the chances of getting tested were higher in leading up to major events. So, I would say we probably got education, probably once a year or every couple years, I would say, about sort of the testing protocol and things like that. (U.K., Hockey)

I've done quite a lot of them as well, actually. Normally when we go away on sort of a national camp or as part of a team there's always a bit of a talk around anti-doping, and we've been in seminars and tutorials that they take you through the anti-doping procedures. I would probably say that's been at least once a year for the last five years I've had that, yeah. At least once a year we've sat and maybe it's not been a full run-through of the protocols, as I've been tested a fair few times, I think British swimming are aware that I'm comfortable, I know what I'm doing...But yeah, I had that a fair few times, I guess once a year for the past five years I've had a talk about that. (U.K., Swimming)

I received it only three or four times. I receive more information from the army. Since I entered the army I started to receive more these kind of materials and I have to participate in an educational program at least once a year. I think army is concern with its public image. Me and my friends have to be in the programs, I think army are concerned we don't bring any damage to them. (Brazil, Athletics)

Other athletes reported receiving only a small amount of educational information regarding anti-doping:

Regarding emails, I practically get none. And documents, we only get the forms we sign like before and after we get tested. The consent forms that say you're actually going to get tested. Education, we actually don't know a lot about it.

The only thing we do know is when we actually get tested. So they tell us like what they're going to do and how they're going to do it. (India, Swimming)

I've literally attended two before. That's usually before International competitions. So, two seminars before International competitions, before Commonwealth Games and before (inaudible). Other than that, no education, I don't get pamphlets or emails or anything like that. So nothing. (South Africa, Badminton)

There have been times in the past where I've been drug tested and they've given me the option of if you want this particular information on your drug test sent to your email, go ahead and check this box. I've done that, so along with that email there's been some information. There have also been times when I've been sick and needed to take medication, so I've had to research myself and go onto the USADA website and find out just to make sure, double check that I'm not taking something on the banned list. But as for WADA or USADA just sending me information, I don't think in the last five years that's happened once. (U.S., Athletics1)

We don't even know who they are! Just as an athlete group, before we used to go off before competition, they've done two programs with us, but they haven't even said where they're from, who they are or anything like that. So we don't get much at all. (South Africa, Badminton)

Yet others reported they had received no anti-doping education:

I have never received any email or anything from Anti Doping Denmark or any other anti doping. I've been tested once, not in Denmark. (Denmark, Cycling)

I haven't been to any class. Only got an email once a year. I think the Hockey Federation sent something out with some new information about some changes in the rules and stuff. But then we also have on our web page the Danish Hockey Federation with the link to the doping rules and how it works. But our sport is

not that big so they don't do too much with the Hockey Federation. (Denmark, Hockey)

So far I haven't really gotten any emails or anything from doping organizations...it's basically just something we're aware of and we're all aware of what to do when approached by someone. It's a basic knowledge. (India, Swimming)

Athletes identified areas where education could be improved. The one most referred to was communication, in terms of both volume and quality:

At least in Denmark, I think they can try to reach out to more players. But I guess it's also hard when there are so many athletes and all countries and I guess they don't have that many workers. So I guess it could be hard and have time to do that. (Denmark, Hockey)

There needs to be better communication. They need to educate people a lot more. There needs to be a better education in South Africa with us...we get nothing here. So they need to improve education here, sport wide. (South Africa, Badminton)

I think maybe if they can talk more to the athletes in general that would be maybe a good idea. Because the stuff I've told you now I have given through to the National Federation but maybe it doesn't get through to WADA. Who knows? So I think there's definitely room for improvement, especially on communication. (South Africa, Cycling)

Both. I believe they could give us more information. More meetings to talk about it, maybe. I have heard ABCD had some tests [that] are completely a mess. The few times I had it was completely normal, but I heard many bad talking. (Brazil, Cycling)

Athletes also had specific suggestions for improving anti-doping education, most specifically identifying values-based education strategies:

I think that some of the impetus for education should probably fall more on the sports associations themselves. I think USA Cycling could do a better job educating people on the anti-doping process. Like what does it mean to put something into your body? Really working with the junior athletes and teaching them the ethics and principles of sport, but also like physiological principles at a young age. That's not really the aim of anti-doping agencies, but it should be the aim of the sports bodies. The sports bodies and sports agencies for whatever sport you're in should really be charged with the education. At least from my perspective. (U.S., Cycling)

Educate people and tell them it's not an equal playing field. And if they all know that it's going to screw your sport and you can't compete because you've taken drugs, then don't take them. And it's not rocket science! And that's what I keep saying, you know reiterate to my kids that I coach all the time that, you know, hard work will get you there. Talent also, you know, if you've got the talent then you can just nurture that, but it's also the determination, and the want to win. And that all comes from here. And you don't need to put drugs in your system to make you better if you tried hard enough. Athletes are made by hard work. (Australia, Cycling)

4.2. Rules

Athletes were generally in favor of anti-doping rules, as all were in agreement that rules around what is acceptable to use and what is not are necessary for fairness. Athletes pointed to the need for flexibility on the part of anti-doping to keep up with the evolving science of enhancement.

I think they're fair as of the current state of doping. Obviously, as new substances are introduced they'll have to evolve as they have done previously. But as it stands, I think they're fair. (Australia, Fencing)

I think it's pretty fair. I mean, you have to start somewhere. You have to have a list. If you say anything goes but you have some things banned, you have to have a list and it has to evolve. They've been evolving the list, like meldonium has been added. And I think that's good because the products and methods will be changing and the list has to keep up with that. There will always be debates about things that aren't on the list. And you have to have that debate, WADA has to get the science lined up around it, do their homework, and inform the athletes well in advance. (U.K., Athletics)

I do think so, yeah, but I do have a very limited knowledge of what is banned and what isn't. I know cough syrup is banned. But I do think it's pretty fair. I know there has been some confusion about deadlines and things, when they're supposed to have substances and things. I don't know about that, but I do think they're generally fair. (India, Swimming)

Athletes had concerns about the clarity and ease of actually following the rules. This had to do with the nature of how products are sold and branded and the difficulty in comprehending the scientific nature of the rules, especially when athletes do not feel they need to concern themselves with the specifics outside of the banned substances list.

Yeah just in general, the list of medicines and the list of everything, to me, what's prohibited, it's like impossible to try and figure out and understand sometimes. You really have to sit down and do research. Which you know you've gotta do, and you better check, and there's a whole list of things to go through. And if you don't have a doctor that knows what they're doing you're screwed. (South Africa, Badminton)

To be honest, for me my opinion...the way that they write the rules, I feel like the approach is so scientific that people like us that just want to compete and etcetera, they put it in such a way that it's really not understandable and in the easiest of terms, if that makes sense. And it just seems like they're protecting themselves in a way. There's always a loophole some ways around wiggle ways around. (South Africa, Badminton)

I think because we all get sent out emails 'now this is on the dope, this is on the banned list.' You're getting constant updates from that. It wasn't like, we didn't engross ourselves in these things...in terms of the rules and specifics, I don't think many of us were reading the rules at the line and interpreting them. It was just, yeah. It's hard to answer that because you're not really engaging with them a huge amount. (U.K., Hockey)

The need for clarity on the science behind some prohibitions was also noted, as athletes expressed uncertainty about the reasons why things are added to the banned list. This caused some athletes to call into question how abreast of new doping challenges are anti-doping organizations.

You know, for the most part I haven't come across anything where I was like, 'oh man that's that's dumb, we should or shouldn't be allowed to use it.' But then with the recent sort of, episode, meldonium, you know that was able to sneak in under the radar for 20 years or something and they finally realized, 'this does kind of have a performance enhancing effect.' I don't know how many things like that are currently under the radar. And then they sort of botched the whole ruling of banning it without having any real science behind [the ban], and without having any real evidence of it, etcetera, etcetera. I don't really know how many things are sneaking under the radar how many things are out there that could be performance-enhancing that aren't currently banned, but I haven't really ran across anything that is currently banned that I feel like "that seems silly." (U.S., Swimming)

I do, I think it can be excessive in some areas, in that things can be a bit redundant. For example a few years ago caffeine was banned up to a certain amount. And if you think about it, the human body functions well on about 4-5mg per kilogram of body weight, but if you take more like 9mg per kilogram of body weight your performance actually drops off the edge of a cliff. Their standard is like 12mg, so it makes no sense because if you did you'd be sacrificing performance by a lot. So I think there are certain things on there that are redundant or maybe a bit outdated. (U.S., Athletics)

...I know here in Australia they've been doing a lot of tests with cannabis for healing processes with illnesses and such. It's never really been a drug in my mind that's been performance-enhancing. I'm really pleased that in Australia here it is actually allowed to use for medicinal purposes to help those people that are sick get well. But if it's still on the banned list, then you can't take it. That's all there is to it...They need to actually find out what it is that it does to performance and, if it doesn't [enhance], then take it off. (Australia, Athletics)

4.2.1. Strict Liability

The area where athletes mainly split with regards to anti-doping policy was over the principle of strict liability. Under this, athletes are held responsible for any substance found in their bodies, regardless of the way it was ingested or the athlete's intent. Some athletes were in favor of this strict policy even if it means that some athletes will receive bans for unintentionally taking a banned substance.

There is a decent amount of explanation and clearing up matters, but at the same time is really quite strict that if you fail a test it's your responsibility. Like the slogan is '100% Me' and it's your responsibility. If a coach or a trainer gives you something it's up to you to decide whether to put that in your body. So yeah I'd say it's strict but also reasonable. (U.K., Badminton)

I suppose it depends on the circumstances, but then everyone can just start saying 'oh I didn't know, I've taken this, I didn't know I was taking that.' and that's where it starts to get a bit sort of grey doesn't it? And I always think my example is Alain Baxter, who's the Scottish skier who got his medal taken off him at the Olympics. Thing is he didn't think that this Vicks spray had anything in it....and that's fair enough, because the information on anti-doping and stuff wasn't great back then...but I think now, knowing how much information is out there, you can go online, you can check what you're taking. Like most governing bodies you've got a nutritionist and stuff. So I don't think you've got an excuse for that really anymore. Like 'I didn't know this had it.' Well, you could have quite easily gone online, Googled the thing, put it into that, you know, website and found out if it was illegal or whatever. So I just don't know if that can be an excuse anymore, because there's so much knowledge and people are so aware of it now. (U.K., Hockey)

If you're a positive test, you're a positive test; it's a negative test, you're a negative test. And there shouldn't be discrepancies between that, as unfair as it might be to people who might be contaminated and it really wasn't their fault. Then, I'm sorry but you're going to have to take this one on the chin, take this one for the team, because that's just the way it is. Because we can't have people thinking there's going to be leniencies around...but I definitely think there shouldn't be an alternative. If you've been caught with a banned substance in your system you should be treated as such. (U.K., Swimming)

The other group of athletes felt intent needed to be taken into account when determining if an athlete has truly tried to circumvent anti-doping rules. This was viewed as necessary to both protect athletes using something inadvertently, but also to ensure that an intentionally doping athlete would receive the proper punishment.

When you say a positive test it could mean, you know, someone like me, who's had a nasal inhaler and had no idea....Even though I'm responsible for what goes

in my body, you know, four years for a nasal inhaler? I don't know. I think it needs to be definitely case-by-case. (Australia, Cycling)

I'm sort of at a point where I feel there can't really be any excuses. It's up to the athlete to make sure that these things don't happen and can't happen. So yeah, I mean obviously if you have a guy that gets busted for EPO, that's very obvious. I think that's quite different from a guy that's been found to have some sort of asthma medication in his blood because he actually has asthma. But there obviously needs to be a line. I'm sure these things can be sorted out, but it's just a question of some one must be able to do that. (South Africa, Cycling)

But I do think that it's very different case for an athlete who's taking medication because they were sick as opposed to an athlete who clearly had the intention to try and get an unfair advantage. So I think to have a blanket sort of rule doesn't work. And I do think the severity of the punishment should be suited to the nature of the crime. And if there's a clear intention from the athlete to cheat, it should be lifetime. They shouldn't be allowed back into sport at all. (South Africa, Athletics)

I do question the strict liability, because I don't think strict liability applies to everybody the same. Again if we look at teams that have resources, I'm sure there are teams, there are federations, that are doing internal testing before competitive testing. I think at some level you're probably a fool if you're not doing internal testing before competitive testing. So for me that kind of takes the strict liability thing and it really distorts it. (U.S., Cycling)

4.3. Testing

Athletes discussed a range of issues related to testing, the centerpiece of anti-doping efforts. One question that drew a range of responses was on the frequency with which the athletes had been asked to submit a sample for anti-doping. A few reported being

tested quite regularly, often coinciding with an upcoming event such as the Olympics or with reaching a new high level of competition.

Like around the London Olympics it was a lot, and I think it was mainly because, like, at the time, like, the year before I was world champion, and then the next year I was world champion. So in the lead-up to London, obviously you're a targeted athlete, so there was a fair bit. There was an occasion where it was twice in one day, one at 7 a.m., one at 9 p.m. Which, I've got two kids as well, so I wasn't too happy about the 9 p.m. one. But yeah it was obviously outside of my time slot allocated as well. But yeah, so a fair bit. After London, how regularly? I'd say every three weeks probably. In the lead-up to something like that, probably it's pretty frequently. (Australia, Cycling)

So, throughout my career I was regularly tested. I was part of, certainly the UK's testing pool, and I think I was on some sort of international testing pool. So I was frequently tested in and out of competition. It was mostly urine testing, later blood testing but mostly urine. (U.K., Athletics)

Yes. Many times. Since me and my colleagues reached the Olympic finals, we have to make the tests frequently. It is very common for me now. In the hotel, in my house, any place or any time I say them I will be, I have to be able to make the tests. (Brazil, Athletics)

Some athletes reported being tested only sporadically or with a relatively low frequency throughout their careers.

I only got tested in the lead up to the Olympics. I hadn't been tested prior to that, so I've only been tested twice. (Australia, Fencing)

I actually only got tested one time when I was with the national team and that was in Russia. We were playing a practice tournament and I got tested from the Russian Hockey Federation. That was in 2010 or something like that. (Denmark, Hockey)

I personally have only ever been tested once. It was at the Pan Am champs after the team event. When our team won the event they chose one random person from the team and that happened to be me. (U.S., Fencing)

In all these years, I have been tested more than 10 times. I think 12 in total. (Brazil, Athletics)

Others reported not being tested for prohibited substances at all, or only when in-competition. Not being tested despite competing at a very high level was viewed negatively by athletes.

Yeah I mean, we can pretty safely assume that at the big, major meets are going to be testing. Nationals if we finish in the top eight there's probably better than 50% chance we're going to be tested. Whereas in the pro circuit usually you have to win an event to be tested, maybe top three. But after top three it's much more unlikely that you be tested. (U.S., Swimming)

I don't understand why Anti-Doping Denmark don't test, you know, people when they're on the national team and when they are competing [at a] high level. Yeah, it surprises me as well... but when I'm thinking about, it it's weird that I have it this way. Because I've never, you know, I've never been in touch with them and it's a bit disappointing. I'm disappointed that they haven't been testing me or any of the other [cyclists]. (Denmark, Cycling)

Because out of competition I haven't been, I've only been tested once in a year and they're supposed to test me every month. So I think in that regard they're not as, I don't want to say functional, but they're not as aggressive because they're not visiting people as often as they should be. Because I think most athletes, they will take stuff out of competition and then only get the effects during competition when it won't pick anything up. So to me an improvement would be to test more frequently out of competition. (South Africa, Swimming)

I don't believe I have [been tested out of competition], actually...so I think as of this coming year I'll be eligible for WADA knowing my whereabouts. But as for out of competition, I don't believe I've been tested out of competition yet. (U.S., Athletics)

4.3.1 Predictability

One aspect of testing that troubled some athletes was that they felt they could sometimes predict or know ahead of time when testing was going to happen. Especially with regards to out of competition testing, this seemed to undercut the claims that testing was intended to be random or unexpected. The concern was that if they expected to be tested, others who were engaging in doping could anticipate when they would be tested as well and possibly get around a positive test.

The only thing I would say, they would come to us and tell us it's random, but I don't think it's random. As in, the way that they select, I mean they'll come select five girls and then there comes, like, five different girls the next day. And that's not random cause it's different. (Australia, Hockey)

Not really, but it's very obvious to know that they will come on weekends. I have given this through to them as well, that they must not only come on a Saturday or Sunday. You can clearly see that it's guys that are not doing it full-time, so they've got their day jobs, so this is something they do in their spare time or something. So it's easy to see that they only get out on weekends most often. (South Africa, Cycling)

No, I don't know when in the quarter it's going to be. But, for instance, I was actually just tested Monday by USADA and I would be fairly certain that I won't get tested again until January rolls around. I could be wrong but for the last 12 to 18 months it's been exactly once a quarter. Since I've been a little bit lower, I didn't have such a successful last year, I went lower on the world rankings, since that occurred it's been once a quarter with exactly regularity. (U.S., Swimming)

I believe some athletes have more information than others. (Brazil, Cycling)

Kind of, yes. It's basically like if you win a gold or a silver you're going to be tested anyway. Because at our international level meets there are pretty few swimmers and there are a few events, so only like 20 people win golds or silvers and then maybe some random swimmers...I mean they don't tell us that we're going to be tested but you pretty much know if you win a gold or a silver you're going to be tested. (India, Swimming)

So it really almost just comes in waves. So when it comes in I almost know. You can see one person post on social media 'I was just tested, clean athlete, 100% me' or whatever and then you can be like, 'okay I'm pretty certain that FINA has a warrant out for everybody to get tested, so I'm pretty sure that I'm going to get tested soon.' You can pretty much guess when you're going to be tested so long as there's someone who's been tested before you. You can be pretty fairly certain when they're going to come and they usually come in waves. At least that's what I found about out-of-competition testing. (U.K., Swimming)

Conversely, some were unable to anticipate when they would be tested, especially out of competition. Athletes viewed this unpredictability as a positive feature.

Out of competition I've never had any suspicion that I was going to be tested on that given day when I was tested. That's very good. (Denmark, Badminton)

There's always testing at all of our World Championships, but we are never notified which event or who's going to be tested. They just turn up at the end of the event and tap you on the shoulder and say 'we are from the anti-doping and you've been selected for a drug test.' (Australia, Athletics)

No, never! They actually always catch me by surprise. I don't know how they do it, but it's usually when I'm least expecting them if they show up. But they've definitely got the random testing pretty spot-on. I never expect it. Like, I think that they'll test me and then they'll test me again two weeks later. So I would

think that would be like a month at least, but then sometimes it'll be two months until I see them again. So it's pretty completely random. (South Africa, Athletics)

So I'm aware there are testers there, but I don't know I'm going to be tested until I step off the courts at the last match of the day and I see the person with the clipboard. (U.K., Badminton)

I don't know if someone can know if will be tested, but...you know, sometimes you are in the field training and the lads from ABCD or WADA drop by and ask you to have the test. There are 12, 14 athletes from different nationalities in the field and these guys ask two or three athletes to make the tests almost immediately. It is very difficult to know ahead. (Brazil, Athletics)

4.3.2 Confidence in process of own samples

Most athletes had a high level of confidence in the testing process, from sample collection to the laboratory results. This was largely due to the high levels of professionalism by the sample collectors encountered by the athletes.

100% confidence. The process that they go through, so this is in Australia, so if I were to be tested overseas it would be completely different. But from what I can see in Australia, the way they do the test is so thorough, at least the bit we see, we don't see the scientific side in the lab after, but very confident in the process itself. (Australia, Hockey)

I think I'm pretty good at kind of trusting that the test will be real. I'm more concerned that I've consumed something that I didn't know had a banned substance in it. I'm more concerned about that compared to the actual test being false or tampered with in any way. I really just trust the laboratories to do their job perfectly well. (Denmark, Badminton)

I am pretty confident that they're pretty accurate. Because, at least during the testing procedure, there's nothing fishy going on or anything like that during the

procedure. Yeah I'm confident they're accurate and I hope that it is after. But there have been a lot of cases where swimmers have tested positive so I think it's pretty legitimate. (India, Swimming)

I'm very confident that they're going to be accurate, yeah. I'm confident that, like, I know that's what's in those sealed boxes is what's in the sealed boxes, because you have to, we checked, we do all the checking and we watch, like, I watch them put all the containers in the boxes. So I know everything's been done and there's no way to get into the sealed containers. So I'm pretty, pretty confident that they're going to be fine. (South Africa, Swimming)

I'd say fairly confident. I feel you have to be, you have to have that trust with them. But yeah, I know you can encounter some difficulties with like language barriers and stuff, and just general strictness of the tests sometimes kind of varies. But I personally am quite confident that once it goes to the labs the results will be quite accurate. (U.K., Badminton)

100% confident. But there were an event I was really concern. It had happened a couple of years ago. A guy asked me to have the test in my house. Problem was he had 5 little plastic glasses and he put all my stuff in those 5 glasses. One of them wasn't covered by the strong plastic they used to have, but he asked me if he could this specific glass. Otherwise I would make the test again in a different day. I told him he could, but in this specific test I started to be concerned about the results. At the end, everything went well, but I will never let someone do it again. (Brazil, Athletics)

In the same way that positive encounters with testers increased confidence in the overall process, negative encounters or questions about the integrity of the testing process reduced athletes' confidence in the testing process.

...I definitely don't have confidence in the tests being run. Especially if you research some of the things. I think there was a boxer, in boxing the test they do

they are all contracted with USADA and all the tests boxing was asking for were not exactly what USADA would normally do to try to catch a cheat. And boxing started, like, an independent one that boxers can sign up to voluntarily. And the test they were doing was way ahead of what you USADA or WADA are doing. They're more expensive tests to look at the samples, but it made me think like 'why the hell aren't all the tests that we're given being looked at or scrutinize this closely?' It doesn't really give you much confidence that they're doing everything they can to protect the athletes, because essentially that's what it's there for. (Australia, Cycling)

On the negative side, there are a number of factors that make me not have confidence in the system. So from what we read in the Times about the Sochi Olympics, I read about swapping the stickers on urine bottles. I remember being tested by USADA in the U.S. once and a number of athletes had been tested before me and their samples were on the table in front of me, and he had to leave the room for something. So I could've just swapped all the samples or whatever, and I found that kind of alarming. (U.K., Athletics)

Possibly confident. I think I have trust, but to be honest, more confidence in the testing that was done in China than the testing that was done in Congo because I have no faith in the African system. It's backwards here in Africa. (South Africa, Badminton)

4.3.3. Inadvertent positives

Athletes were evenly split on whether or not they had concerns about inadvertently testing positive. Roughly half indicated that this was something they usually felt as a result of being tested, even when they were sure they had not used or taken any questionable substances or products.

I suppose it's like when you get breath tested by a police officer, even when you haven't been drinking, you still feel nervous. For me, I take a few different

medications for medical reasons and just having to list them down makes me a little nervous because I think if I went in there and hadn't taken a single thing and it went in there it would be much easier to feel relaxed. But yeah, I think that's something that's always in the back of my mind. The more I write down, the more chance something could go wrong. But I'm very thorough with checking my own meds so I don't really have anything to worry about. (Australia, Hockey)

Yes. Yes. I don't take drugs, but I'm so scared that something, somehow, I don't know. I don't know. I'm just scared. You never know. You never know. (South Africa, Badminton)

Yeah, sure, definitely. So, I mean the whole supplements thing is like that. Supplements are unregulated. Education coming out from authorities about supplements was always that it's unregulated, strict liability. And I had correspondence with U.K. Athletics to say, 'yeah, well you're telling me all this stuff but what am I supposed to do? Am I supposed to go to a factory where they're producing the supplements and see with my own eyes, Take their word for it? How far do you have to go to feel good about it?' But there was never any guidance on it. (U.K., Athletics)

Yeah, occasionally. Like, obviously, you declare what you've taken, like Advil and paracetamol and those kinds of things. And sometimes I'll write them down even if I haven't taken them in the last week, just in case. Because I would maybe take them at some point. So yeah, I'd say it's always in the back of your mind, but it would be a freak thing and I feel like the B sample would definitely rectify any mistake that had been made. I feel like there's adequate processes in place to counteract a false positive. Or I hope there is. (U.K., Badminton)

Again I knew I was totally fine, but if somehow the test returned positive I would let my whole team down....just a concern in general. When I actually took the test it was very well-monitored. They watched me put the seal on myself and

sign it, and as long as everything was kept intact from the place where it was put in the bottle to wherever it's looked at. But I don't know it just made me nervous. (U.S., Fencing)

Others were unconcerned with a possible inadvertent positive. Some described avoiding any product that might be questionable to guard against such a situation, while others were confident in their own or their suppliers research and safeguards into products used.

I mean, obviously supplements you don't know exactly what goes into supplements. It hasn't really crossed my mind. I'm fairly careful about what I put into my body so I don't think I'd get a false positive. At least I hope not. I guess you say that until you get a false positive, right? (Australia, Fencing)

Nope I'm not worried about that (inadvertent positive). Just the way I'm living my life, I'm pretty sure that nothing's ever going to show up and the results. Yeah I'm always confident that if they come and test us, I feel confident that my results would be good. (Denmark, Hockey)

No, I don't use any recovery drinks or anything that can be contaminated, so I don't worry about any of that...I've actually got a letter from our sponsor that supplies us with nutrition that they can guarantee us that it cannot be contaminated. (South Africa, Cycling)

I know through Informed Sport that whatever supplements I take and things like that are absolutely clean, so I never have any worries about what is going through my sample. (U.K., Swimming)

No, I haven't [concerns about inadvertent positives]...Because things always went well when I was doing the tests. (Brazil, Cycling)

4.3.4. Detection

The area where athletes had the least positive views of anti-doping was in their confidence that testing is actually detecting doping athletes. The few that did, related their confidence to athletes actually being caught.

One hundred percent definitely. Even athletes here you see are getting caught by doping tests, so I do think it's doing its job. And that it's really helping and doing its job, yeah it definitely is. (South Africa, Swimming)

Mostly yes. I feel if someone is like really, really trying to cheat the system then they could maybe find a way. But I think most people get caught who are doping...I think it's true in my sport, but I don't know that I'm knowledgeable enough about others to say. Maybe not with endurance based sports. Like there could be room for heavier testing or more testing, pretty much. (U.K., Badminton)

However, most were not so positive. Athletes reported feelings of frustration with athletes going undetected, despite what they saw as clear indications that doping was going on. Athletes identified two main problems. First was the inability of testers to detect doping when testing athletes in competition.

When I ran [race name A] two years ago, [runner's name], who won, tested positive, but the blood they drew from her at [race name A] tested clean. It was a test done out of competition a month earlier that they actually caught her. So that for me, that hurts my mind in terms of the legitimacy of drug testing because I'm like, how? It just bothers me because I imagine what if she hadn't had that out of competition test? Or like how many women have I raced, like maybe at [race name B], who didn't have an out of competition test but were actually doping? That's frustrating. I do appreciate that they're testing at these major marathons but it leads me to believe it would be more effective if maybe all the athletes who are competing in this elite field were tested out of competition. That that would be more efficient....But I don't think most are being caught. It's sad but on the day of [race name B], you know, I'm sitting the room

and my coach nudges me and says, 'you know, I hate to think how many people in this room at some point in their careers have taken drugs.' And I didn't want to think about it...No, I don't think we're catching most but hopefully we're moving in that direction and I do feel confident about that. (U.S., Athletics)

No I don't think so. There's quite a few players in my own sport that others than myself also suspect are doping. We don't really catch a lot of players in my own sport, which is very suspicious in my mind. It's a sport where there's quite a bit of money involved and doping can really have a big benefit. And if you watch all the other sports where there's a lot of money involved and where they really do a very intense job of testing, they catch a lot more athletes. And I don't think badminton players are any different than any other sports, people want to win, there's a lot at stake, and there will always be some who are cheating. And I think it's quite suspicious that we are catching so few in badminton. (Denmark, Badminton)

The second flaw identified was with the tests themselves. Athletes felt that the tests were not advanced enough to catch athletes who were going out of their way to beat the system. That they felt athletes could and do beat the tests undermined much credibility the system may have had otherwise.

I'm not a scientist. I hate commenting on things like this because it's not my field. But at the same time, being an athlete in this sport for such a long time, you're in a privileged position that WADA and ASADA and all these companies are not in, so you hear things and over time history paints a pretty harsh picture doesn't it? So you see that and you think like 'how did they miss this?' And then, yes you do because I have often thought about it even with my own case, and like what are they even testing for? How fine do the tests go? Are they getting the best test? Like they test us, but are they running the best test on those samples to catch the cheaters? Because there are people obviously finding ways to get around it, I believe. (Australia, Cycling)

No. I think from, well, from all the stuff that's happening in the press I am doubting the system now. And doubting that there's ways around it, and the whereabouts, and people missing tests, and so on. And you do start to feel very skeptical about it all... But yeah, it does make you sort of doubt. Especially some of the more prominent sports like athletics and cycling and you start to wonder if it's actually a fair system. (U.K., Hockey)

Yes. But I also think it is possible they cover many things. I mean, you can see in the face of many athletes when they are doing the tests. They are completely different. You can feel by the look. It is almost impossible not to see. It is in the atmosphere. People change, they starting to be serious, almost out of there. (Brazil, Athletics)

4.3.5. Fairness and equitability

Athletes were also split on whether or not they viewed testing being handled fairly and equitably across sports and countries. Athletes that felt that either their sport or their country was fair did not feel able to extend that confidence to other sports or countries.

I think in Denmark they are very fair in, like, how they prioritize who is tested most and who is not. I think it's hard for me to say about other countries because I don't really know that much about how or who they test most or who they don't. But in Denmark I think they're doing quite a fair job, yeah. (Denmark, Badminton)

In short, yes. When I say it's random it's not completely random. I mean they'll take the top whatever section of the field and test from there, but it's not always the same top four or top three. So I think it's fairly fair in terms of the selection process. (Australia, Fencing)

Most athletes did not think testing was carried out fairly or equitably across either sports or across countries within the same sport. Some of this was related to mistrust of specific other country's anti-doping systems or commitment to detecting doping, as well

as to feeling that they had to guess about what kinds of testing to which other athletes were subject.

No, absolutely not. Especially the latest research coming out of Russia and Kenya. Not in any way, shape, or form. In that respect I'm happy to be in America, where I do believe it's a little more objective of a system. For instance, I mean, I'd like to think an American athlete couldn't bribe a USADA official to say 'hey, I'm gonna bribe you this much money to cover up my dirty test.' I don't think that would fly here. I do think that would pass in other places. So no, globally, not even close. (U.S., Athletics)

I think that it's difficult to say because, one, I feel that the processes are there and it is random and they are doing the test. You always do wonder, firstly, are they testing all of the athletes? Because if an athlete doesn't want to be tested they'll make it quite difficult to be tested, they go to these remote locations and you don't always know if the organization is putting in the effort to go to these remote locations and find the athletes there. So I feel like they might be testing a lot of athletes that are easy to test...So I do always have a little bit of concern about that. Like, what are they doing to make sure that the athletes that are in these inaccessible areas are also being tested? (South Africa, Athletics)

I don't believe so. In my sports they are more concerned with the competitions in track than in the field. Athletics has 47 different kinds of sports in only sport. It seems to me they are only concern in the competitions that running is involved. What about shot put? And discus throw? So, I believe they are concern only with 100, 200 meters. (Brazil, Athletics)

In competitions that I've been to, it looks fairly equitable...But now I read in the press that Ethiopia doesn't have a system, that Kenya has just passed a law for it. And then you sometimes see stats for how many tests a certain body has performed in a year. Some countries it's lots, some it's a few. Some countries are well-organized, they're doing their best, putting money into it. Then there are

some countries where they just can't get their act together. I would put Kenya and Ethiopia in that category. Then there are countries that are just trying to subvert the whole system and I would put Russia and other eastern European countries in that category. (U.K., Athletics)

4.4. NADOs

The National Anti-Doping Organizations were the main point of contact for anti-doping for all the athletes. However, athletes were split on how they viewed their own NADOs. These varied somewhat by country and by sport. For instance, Australian athletes found the Australian Sports Anti-Doping Authority (ASADA) favorably in general:

As favorable as you can for someone who takes a urine sample can be. I've always had very positive contact with them. They appear professional. There's no malice in what they do. They appear to be fairly diligent with their testing, but that's just in my experience. (Australia, Fencing)

Favorable. I think it's as I said, a very professional organization and something that we absolutely require to keep our sport clean, all our sports clean.
(Australia, Hockey)

From an Australian perspective, I think it's a good system. They go across every sport, not just track and field. We've had quite a few cases here in Aussie football where a lot of the clubs have been doing lots of different things and they're really getting involved in making sure that they're making it an equal playing field. Because at the end of the day, there are kids that look up to these athletes. Children that want to play the sport and they need to know that it's done on talent and not on what you can put in your body to make yourself better. I think Australia is very strong and that respect which is good. (Australia, Athletics)

Others viewed their home NADOs as a mix of favorable and neutral. The positive views were often related to the professionalism of the NADO staff they had encountered in

the course of their careers, often when giving a sample or when needing clarification on a question.

Favorable, for sure. (Denmark, Badminton)

I would say favorable. I think they seem to be quite alert and open to suggestions. I haven't seen them for quite a while but yes I do think they are doing the job. (South Africa, Cycling)

Generally, I have a favorable view. That's based on my own experience being tested, the education I received, the investigations and bans they've issued. I think possibly they could be more sort of robust and have more teeth if you like but that's not their fault, that's how the organization was created. So right now in the U.K. we have a big austerity project and so UKAD's budget is small compared to what they're expected to do. So if they don't have the money to do what they're supposed to do you can't criticize them for that. (U.K., Athletics)

I would say generally I have a pretty positive view of USADA. I think Travis Tygart is does a good job sort of spearheading the effort the last, however long he's been there. I've always been pleased with my experiences with them, any sort of DCOs or chaperones have always been professional and wanting to do the job the right way. It seems like USADA tries to listen to the concerns from athletes. For the most part it seems like athletes do have a voice as far as communicating their concerns and their desires. I would say that USADA has improved in the past 8 years since I've been having to communicate my whereabouts and whatnot. I think they're trying to make it as easy as it can for the athletes to stay compliant. (U.S., Swimming)

Favorably. (Brazil, Athletics)

I think it's pretty good. At least I can speak for the swimmers. They're very professional, they're very cooperative. They handle everything in a smooth

manner, they don't cause any trouble unnecessarily. All their equipment is there and sealed. (India, Swimming)

Neutral views of one's own NADO stemmed from a lack or low amount of interaction with their respective NADOs. Where athletes reported a neutral view, it was mostly related to not being engaged by their NADOs with any frequency, as well as a lack of clarity about their role and how they carry it out.

I would say neutral I think. I actually don't know that much about them. Of course you hear sometimes, but I guess I would say it's neutral. I don't know why. (Denmark, Hockey)

I'm quite neutral towards them, yeah. Yeah, I don't have contact with them. Look they were quite good when they did give us the breakdowns before we went to compete, they gave us a whole pack of information at the seminar which was handled well, they're quite good at their job. But after that you don't have contact with them. So very neutral, but they were good at what they do. (South Africa, Badminton)

I probably don't know enough about them, but being I've never had any bad experience with them, so probably more neutral. But no, really haven't had a great deal to do with them. (U.K., Hockey)

I would say sort of neutral to unfavorable. I mean, I think in a lot of ways the Lance Armstrong thing made it look like a witch-hunt. It's a huge expenditure of resources. Like how much money did USADA spend to chase down Lance and give him a lifetime ban? If you took the amount of money spent on that whole shebang, like for all the legal proceedings, and you converted that into money for testing around the country, how many people could we have tested? I think their resource allocation needs to be really looked at. If you want to have an actual standardized national anti-doping movement, you need to standardize it

and you need to nationalize it and not just make it for a few elite athletes. So yeah, it makes me a bit skeptical. (U.S., Cycling)

Both. I believe they could give us more information. More meetings to talk about it, maybe. I have heard ABCD had some tests that are completely a mess. The few times I had it was completely normal, but I heard many bad talking. (Brazil, Cycling)

4.4.1. Harmonization in testing

Some of the wariness towards NADOs was due to the perception that not all NADOs tested their athletes in the same ways and with the same rigor.

But in saying that you've got countries, I think one of them is Jamaica, where I think before London they started a Jamaican anti-doping authority or whatever it was, and I think it was one person running it. So it's sort of like 'okay are we all on a level playing field here?' I'm not saying they were taking anything, by any means. But it's that whole thing of protecting athletes and keeping sport fair because you never know what the other countries are going to be doing. And I think that if we're putting ourselves through having to fill out whereabouts and having drug testers come to our training sessions at any time and things like that, then it should be fair across the world, not just for one nation's anti-doping body. (Australia, Cycling)

Because you see how many problems there are, like with Russia now. They've been banned because we can't rely on the doping authorities. We can't rely on their testing. But many countries weren't meeting the requirements. So how do we know? I know how I'm tested. I think I'm tested well. Someone in America might say 'but how can we rely on South Africa's testing? Well, surely they can't be as good as our testing.' So it does make it more difficult to have to face other athletes abroad if you don't know that they've been tested at the same level with you are. (Australia, Athletics)

I was tested in France and it was straight down the line, good communication, there wasn't much of a language barrier...Denmark, again communication was good but not so strict on not handling the equipment. Like, I remember the lady who was testing me ripped open the bag. And I was younger so I didn't say anything at the time, but I might have written on the sheet, and maybe I should've taken a different cup. That was pretty relaxed. India was even more relaxed and disorganized. Singapore was strict, I'd say about the same as the UK. So yeah I've had a lot of experiences maybe not all as positive as the U.K. ones. (U.K., Badminton)

Similarly, others expressed concern about the handling of sanctions by NADOs outside their own.

But it seems like the individual governing bodies of Russian swimming, Korean swimming, Chinese swimming, get to have a lot to say and what the ban is going to be. And that gets back to, okay, if the anti-doping agency of the country has these incentives to sort of look the other way and the country and the sport want to get their athletes back up there, then there's no one making the call. I don't know if it would be WADA or some other International agency that can make the call the other way, but it seems like the power is very decentralized, so each country gets to decide it. (U.S., Swimming)

4.4.2. Responsibility for testing

Related to these views, athletes were also split on where they thought anti-doping testing responsibilities should lie, with a NADO or with another body. Some athletes felt the NADO system was the most logistically efficient, as well as preferable to bodies such as sports federations or other governing bodies.

I think USATF [United States Track and Field] would be the worst possible organization that could do this. Simply from what I know about them in other aspects, and their funding protocol, and their preference to certain shoe brands.

I think they are highly susceptible to being swayed by other organizations. I think that USADA is about as objective, they are the best that we have, they aren't perfect, but they're the best we have. I would not put it in the hands of USATF or IAAF [International Associate of Athletics Federations] if I had the choice. However, if it could triple the amount of testing, sure. If one of them wanted to cover the out of competition and put some money towards that, I guarantee we won't see that from the USATF, but I think that would be a great effort to say, "sure, USADA you have your competition testing and do your thing, but we'll take over this so we can up the ante on this." But now, no I wouldn't want to relinquish control of testing to them. So yeah, I think USADA is the best we have so far. And I certainly hope we don't turn over to USATF anytime soon. (U.S., Athletics)

Yes, I think so. I think because, like you say, they can have that level of engagement with the athletes and go into training centers and really teach athletes, educate athletes on the systems. Whereas if it was worldwide, like just WADA, in general I don't think they'd have that kind of reach with the athletes. It would be harder to set up the workshops. So I think it gives that much more personal, like you're a bit more likely to, you feel more responsibility I guess, because you feel closer to the organization. (U.K., Badminton)

I think the national system works well. Because you have the global, and then that goes down to the national, and I think that they should have their own organization to look at drugs and sports and have its own group to work with. (South Africa, Swimming)

Yeah, I feel like they [NADOs] would be [the best]. I can't see who else would do it. I think they primarily are just focusing on bigger sports than our hockey, which is totally fine. They are doing good job, I think so. (Denmark, Hockey)

Yeah, given my positive experiences it's [NADO] fine. I think [putting anti-doping] within the sport is probably a worse idea I think. The more broader the spectrum

of the organization, the better, I think, because it would be much harder to create corruption. It would be much harder to control, I think. Doing it with ASADA as a whole is better. (Australia, Fencing)

Others, however, felt that an alternative to the NADO system would be more effective and prevent against favoring one country's athletes.

It would give me some reassurance when I look at some of the Asian countries. Again, it would have shown me that the job was being done properly if it's an independent body like WADA and not the national anti-doping body. That way I would see some advantages if it was an international anti-doping agency that did the testing....I should and to this point that you just asked about that if it could be an international agency testing. That would improve, because that way you would remove the doubt that some national anti-doping committees might not be interested in catching their own athletes. (Denmark, Badminton)

I think it's going to definitely depend on nation to nation. But I think it would be better if there was, like, a world organization that sort of carried out these tests. Not to leave it up to the National Federation to do the test. Yes I think it's quite a bit unfair. So I'm not really in favor of that. (South Africa, Cycling)

Yeah, there probably needs to be an external body to your national governing body. Otherwise, then I suppose that's when you could get wee bit of that dodginess. So yeah, I think it needs an external body doing it. Whether they're the best placed, I don't know enough about the organization, but yeah that would be the best to do the testing and education. I guess in terms of education, I guess it's just knowing a wee bit about each sport. When they did our education they were sort of clued-up enough to be able to chat a bit about hockey. (U.K., Hockey)

Just this past year I know there was a big effort from FINA to test multiple times athletes who are ranked in the top 10 of the world, especially from countries

who didn't have its own renowned anti-doping agency. So USADA did their own mainly, Australia anti-doping agency, British anti-doping agency, started their own, and then FINA covered a lot of like China and Russia. I get that it's a cost-saving measure if USADA was doing a good job, let them do it. You know if Travis [Tygart], USADA can do it they're obligated to do it for them. I can see how that looks really bad if you're a Chinese or Russian swimmer. Like if we are subject to this testing under FINA, why aren't the other athletes subject to the same sort of testing?...But I think if it's going to be centralized it needs to be completely centralized instead of sort of haphazardly like it has been, like it was this past year. (U.S., Swimming)

Still others saw an opening for a hybrid system of NADOs and independent bodies. Though, athletes suggesting these alternatives were quick to point out the likely difficulties of implementing such a system.

I think probably a combination is best. The trouble with having a national body, like in a country like Russia they put the goal of their country winning the most medals at an Olympics rather than having a clean Olympics. And the same principle applies with each sport in general, so like with the IAAF if the sport becomes known worldwide as a sport riddled with cheats the sport will die because people won't want to watch it. So there is a conflict of interest. So maybe the answer is a completely different body, but then you have the question of how to staff it, where does the money come from? And if you get a situation where only the rich countries cough up the money, you know are athletes from those countries going to be treated more leniently? I think it's a question where this probably isn't a good answer. So maybe a combination is best. (U.K., Athletics)

So you see, I think it makes a little bit difficult. Because from a cost perspective you can't really expect people to be flown in internationally to go and test athletes all over the world. So it would probably be the best way of doing things

because it would be a more uniform system and you know that everybody would be tested on the same grounds....But from a practical point of view how would you implement some universal system? So I'm sure there must be ways that must be being discussed where they can try to make things more uniform, maybe have an international people going to different countries randomly and being part of a test. Even without telling the other people doing the testing, but going along and doing and seeing what's actually happening. And going all over the world and seeing, rating how things are going. I think there must be a way of determining the standards and how they compare, but having somebody come in that the local people don't actually know, "this is somebody from international," but just think this is a new local person that's been hired. (South Africa, Athletics)

4.5. Sanctions

Sanctions resulting from positive anti-doping tests were one of the more divisive issues among the athletes. All felt that sanctions were necessary as a part of enforcing the rules, but the appropriateness of the current ban lengths—and the rigor with which they are given—was a central point of disagreement.

A portion of the athletes was in favor of the current sanction system, as outlined in the 2015 WADA Code. This includes a maximum four-year ban for a first time anti-doping rule violation.

It is optimum, not good not bad. It is optimum. Because if we start into five or six years, then when will the player be again in their game? I think it is optimum. If we do three years then the player can again compete in any competition. So this is optimum, four years for a ban. (India, Fencing)

I've always said it should be a four-year ban because two years, I don't know, it's not enough time, I think. I think some swimmers actually understand that two years you can still be swimming in the Olympics, which is unfair. Four years as a

punishment, say, is more effective and people aren't going to say they're going to take something if they're going to miss their chance of going to the Olympics. (South Africa, Swimming)

Yeah, I mean something like an eight-year ban would probably end an athlete's career, so I suppose that would be in effect like a life ban. I guess four years is quite good because it's a significant amount of time and they can come back if they want to. And within that there are adjustments, like if an athlete gives information that can help catch suppliers, and get a ban reduced. (U.K. Athletics)

I dunno, it depends on what kind of positive it was, but maybe lifetime ban is too harsh. I think two years is too little, so I guess four years is about right. Yeah, I guess four years is a pretty solid deterrent. (U.K., Badminton)

A slightly smaller proportion felt that the range of reasons a person could test positive was so wide it made the current sanction too harsh. This was especially noted in cases where intent to actually enhance performance was unclear.

I feel like it depends on which person it is and what kind of sport. If we're talking about, now if it's field hockey, then yeah it would be too much [four year ban] because you wouldn't be able to play anymore. But if it was in soccer where the competition is way bigger, then four years sounds way better because they're not supposed to cheat. That might sound arrogant because I don't think that he should have the same rules, but somebody got four years in Denmark and I feel like that's too much. (Denmark, Hockey)

I think that they're overlooking one of the key things, as to why the test is positive. And I think the four-year ban shouldn't necessarily be four years...and what I think really needs to be looked at is what was the intention of the athlete before getting that positive? If there's a clear intention to cheat, then the athletes should be banned from the sport for life. They're a cheater, they intended to try and cheat the system...If there's something that could be found

in the nasal spray then let's look at what could have happened and what the athlete actually said beforehand...So we still need to get some sort of punishment for the athletes that are found to have been substances in their system, but I do think that it's very different case for an athlete who's taking medication because they were sick as opposed to an athlete who clearly had the intention to try and get an unfair advantage. So I think to have a blanket sort of rule doesn't work and I do think the severity of the punishment should be suited to the nature of the crime. (South Africa, Athletics)

Several athletes felt that there needed to be stronger sanctions in the form of longer bans, or alternative sanctions such as fines, returning prize money, or prison.

I think it's good that they have right now raised it from two years to four years. I'm not sure if it's enough, because I think people who take doping should be, I don't know, punished. I think they should have maybe more than four years. (Denmark, Cycling)

I think that if an athlete wins a medal than that medal should be returned, records should be taken off or taken away, and if any prize money has been given, yes, absolutely it should be given back. And I think the fact that they'll be disgraced is enough. You know, just don't let them come back out. That's as far as it is. Like you know, 'you do the crime you do the time.' (Australia, Athletics)

I'm a firm believer that, yes, somehow there must be like, oh I don't know, like a federal crime. So there must be at least a possibility of jail time. I just think that the reward is just too big for these guys and if they get caught, like an instance of this rider at [name of race], he was well on his way to the Olympics and he was on his way to starting to get podiums at World Cup races, and then he gets banned. And he just goes and finds a job and is making a good living today and goes on as if nothing has happened. So a four-year ban is definitely not sufficient. (South Africa, Cycling)

I think it should be a lifetime ban. Absolutely. Beyond that, if you look at someone like Rita Jeptoo who has been proven to be doping for five years before she got caught, that is millions of dollars of revenue that she's brought in. And for a lot of those cases that revenue is not actually returned. That is the only avenue in life that I can think of that you can steal money and not be given jail time. I think it should be either a lifetime ban or jail time, frankly, relative to how much money that you've taken...Maybe that's a little bit harsh, but I think two years is just a slap on the wrist. I now race people that have served a two-year ban in the past and it infuriates me that they are still allowed to race me. I don't think punishments are anywhere close to harsh enough. (U.S., Athletics)

I think they have to improve the rules in the punitive sense, not let them less punitive. (Brazil, Athletics)

I think, um, one thing I am in favor of is athletes being forced to repay prize money and return medals and everything else they've taken. I've seen in my event that many athletes win potentially massive sums of money in the millions of dollars and they don't return it. Then they're banned but they've got a lifetime of money and there is this train of athletes behind them who are owed money and will never get it. So, if you could force athletes to repay prize money and force competitions to reallocate prize money to athletes who are bumped up in the order I think that would be a good way to do it. (U.K., Athletics)

Fewer athletes felt that sanctions should be reduced from the current maximum four year ban for a first time rule violation. This was mainly due to the notions that athletes deserve second chances and due to the risk of inadvertent positive tests.

I think it's a little high, actually. I'm more for the two-year ban at a maximum. I think it's fair to give people a second chance and I'm pretty sure that lots of people will learn from their mistakes. And also I'm a little worried about the athletes that don't do drugs intentionally. They get a very strict ban compared to the guys who are actually doing it intentionally. And I think four years is a long

time and it can ruin a career. Of course, you can say when you cheat then it's your own fault, but I think there should also be room for learning from your mistakes. So yeah, I think four years is a little long. (Denmark, Badminton)

At least in Denmark it's not that big of a sport [field hockey] so I feel like if you got four years that would be ridiculous (Denmark, Hockey)

But I think four years is too harsh....maybe one season. Like a full season from the time they put the sanction on. (U.S., Fencing)

I can see a four-year initial ban as being a valid strategy to, um, get people to take the anti-doping efforts really seriously. But then from my own experience a four-year ban would have basically, it would've stopped me from being a competitive cyclist ever again. And it would've stopped me from coming back clean. And it would've stopped me from knowing the efforts I was making were [based only on] food and water. You know, like without any over the counter vitamins, without any medicines from doctors, without anything. Personally I would've lost a lot, my ban was a two year ban, and I would've lost a tremendous amount if I'd had to serve a four year ban. (U.S., Cycling)

4.5.1. Reductions

One issue that called the sanctioning system into question for several athletes was their perception that there was such variation in who may be given a reduced ban and for what reasons.

But how can we collectively figure out where that something came from and whether or not I was malicious or, yeah, you know? And the thing is, people make mistakes. Even in the current situation, people who make mistakes serve longer bans than people who intentionally dope. You can have a contaminated nutritional supplement and serve a four-year ban, where somebody who rides at the highest level, does blood doping, and turns in their team doctor, they serve a reduced sentence. So someone who rides at the highest level will receive less of

a sentence than somebody who unintentionally dopes. That's where I question the whole thing and just kind of chuckle. It's kind of a sham in that regard. (U.S., Cycling)

It is a long period of time, oh. But I also think if any athlete is caught by the anti-doping, he still has a chance to confess. So, he only will be out of competition for two years. It is not fair. He still has a chance to be prepared to another Olympic Games, if WADA catches him in between Olympic Games. And what about the lasts good results of him? He still gets it? So, I think confess it is just a good excuse to be in the Games. (Brazil, Athletics)

People test positive for the same thing, with similar circumstances, and they'll get two different sentences based on their country, and how fast they are, and not things completely relevant to their actual test itself, it seems like. (U.S., Swimming)

4.5.2. Deterrence

Several athletes alluded to the need for sanctions to deter athletes from being tempted to engage in doping. Some felt that a ban of any length would be effective because it would remove the motivation for training and result in the loss of competitive standing.

I think the worst thing for an athlete is to not be able to compete because then like what are you getting out of bed every morning for, what are you training for? (U.K., Badminton)

I think just losing a year of your competitions is a big blow to just about anyone. Because if you miss a whole year you lose all your points, and that's really rough to have to start from nothing. I think that's a pretty strong incentive not to do it. (U.S., Fencing)

Others felt that the sanction needed to be serious enough to lead athletes to see the risk as much greater than the potential rewards of doping. Often these were in relation

to the four year Olympic cycle, where athletes felt the threat of missing an Olympics Games due to a ban was the most effective deterrent.

Yeah, I dunno. It's hard to answer a question like that because I know there are situations that you get a positive for something that you're unaware of, like someone slips something in your drink. That was something that did happen like in 2012 or 2008, there was a top Italian fencer who was really figured might win the Olympics but someone slipped something in his drink and when he was tested he tested positive for a masking agent. In situations like that it doesn't seem fair. But at the same time if you put such a strong threat on it, it could keep people from doing it. (U.S., Fencing)

I'd still like the risk and reward thing must be weighed out. It must be sufficient enough that guys don't even think about it. Where the risk just outweighs the reward a lot more. So you can, I mean, even with a lifetime ban I can come in, dope, and make a lot of money and if he gets away with it that's good. If he doesn't, well, he's made his money and he just goes back to doing something else. I honestly don't I don't think a lifetime ban even would be enough. (South Africa, Cycling)

In a way, yes, but in a way I'm also aware that every situation is different. So four years is a maximum? Then yes. I think there should be a real deterrent like if you cheat there should be serious consequences so you're not like training quietly for two years then come back. So like there should be some real deterrent factor and real serious consequences. (U.K., Badminton)

5. Discussion

The success of anti-doping will be largely determined by how well athletes accept the anti-doping system. Compliance may be compulsory and enforced, in so far as athletes must follow the rules in order to compete. Acceptance, however, goes beyond merely doing the minimum to avoid a sanction. It requires that athletes view and experience

the anti-doping system as just, fair, effective, and accurate in reflecting and responding to their goals and achieving their desired outcomes (Sharpf, 1997). Anti-doping must be perceived as a legitimate governing institution for addressing doping in sport.

Research on athlete's attitudes towards doping is impacted by the perceived legitimacy of anti-doping bodies—WADA and affiliated NADOs and other bodies—to regulate substance use by athletes (Donovan et al., 2002; Jalleh, Donovan & Dabling, 2014). Experiences with anti-doping and sporting contexts have been shown to influence how an athlete views anti-doping. However, the depth and shape of these factors has not been thoroughly studied.

This study examined athlete's views and experiences in order to better understand how their perceptions of anti-doping are shaped and how those might be improved. To gauge the level of perceived legitimacy anti-doping has among athletes, the interviews took an in-depth look at views of: 1) anti-doping education, 2) anti-doping policies, 3) anti-doping testing, 4) NADOs, and 5) anti-doping sanctions. These themes are related to various aspects of perceived legitimacy as defined by the literature on the topic.

Anti-doping enjoys high levels of legal legitimacy and compliance among athletes. This is most evident in the general acknowledgement that WADA and affiliated NADOs have the authority to set anti-doping rules and then enforce them through testing and sanctions. None of the athletes questioned the existence of the WADA Code or Prohibited Substances List as the binding documents for substance use in sport. Athletes were also generally compliant with anti-doping. This was partly due to their belief that sport is better without doping and partly because their ability to compete and/or earn their livelihoods as athletes is dependent on that compliance. That athletes felt their own ability to compete drug free was intertwined with the success of anti-doping preventing doping athletes from competing, an outcome dependent relationship, is consistent with previous research (Van der Toom, Tyler & Jost, 2011). Levels of normative and social/empirical legitimacy, however, are lower among athletes.

This has the effect of lowering the overall perception of legitimacy of anti-doping based on the WADA Code.

Athletes governed by anti-doping organizations who feel that their will is reflected in defining doping as an issue and the strategy for regulation are more likely to see the authority as legitimate (Mena & Palazzo, 2012). In terms of inputs, athletes generally view anti-doping as reflecting their own values reflected in anti-doping policies, education, and use of anti-doping testing. Athletes found policies as written to be generally fair, as they are intended to hold all athletes to the same standard. Fairness in competition is one of the values each athlete indicated in either a direct or indirect way was something foundational to sport. Athletes also reported receiving education and that the educational sessions and materials were valuable. Making sure all athletes are educated about anti-doping rules, risk areas, and developments was in line with keeping the playing field level for all athletes, reducing the chances someone could claim they were unaware of the rules or of a specific substance being prohibited. Athletes were generally eager for more education and resources to be available so they could proactively ensure their compliance. Athletes were also in favor of anti-doping testing to prevent and catch athletes using prohibited substances. Though most admitted that testing can sometimes be awkward or inconvenient, most thought that such inconveniences were worth ensuring athletes were following the rules. Indeed, most acknowledged that significantly more testing was required to be effective. As they understand how the testing system is supposed to function—a mix of in and out of competition tests and the use of a whereabouts system and potentially biological passports—athletes generally thought it had the potential to effectively promote drug free sport and greater fairness.

Where athletes began to have doubts about anti-doping was in the practical application of the policies—the outputs—and the potential for it to keep banned substances out of sport—effectiveness. Athletes varied most in their views of the ability of NADOs to equitably test all athletes, and of the ability for such testing programs to detect doping

by athletes. Athletes doubted the ability of NADOs in other countries to rigorously test their national athletes, even when they had full confidence in their local NADO to do so. This discrepancy was rooted in their inability to verify that athletes in other countries were being tested with similar frequency to their own and to questions about the collection and processing procedures in other countries. While most of these concerns were expressed before the Russia scandal before the 2016 Summer Olympics, athletes interviewed after the news was widespread reported that it did negatively impact their views of some NADOs. As those NADOs are part of the anti-doping system, it is likely that it had some negative impact on their views of the broader system as well.

The most important factor for legitimacy, though, was athletes' skepticism that anti-doping is actually detecting athletes. Most athletes did not feel that the system was able to detect doping in either their own or other sports. Their own experiences of low testing frequency, a near absence of out of competition testing, and the predictability of testing contributed to this view. It was exacerbated, however, by stories of athletes' doping going undetected for years before testing positive, stories and rumors about athletes seeking ways to get around the testing system, and news about the high level scandals involving athletes and countries. This was especially true among athletics and cycling athletes, sports with well-known and well-documented histories of doping. This relationship confirms Overbye's (2016) finding that proximity to doping influences their view of anti-doping efforts: "It is likely that athletes who experience/perceive doping in their close proximity will show a higher degree of distrust in the functioning of the testing system if they can 'observe' how (other) athletes in their sport use doping and get away with it..." (Overbye, 2016: 9).

As core components of the anti-doping system, a perceived failure of the chosen method—testing—to effectively achieve the central goal—detection—could potentially greatly undermine the perceived legitimacy of anti-doping among athletes (Sharpf, 1997). Research (Donovan et al, 2002) suggests that athlete compliance with anti-doping rests on the belief that the system is both fair and effective. While most athletes

view anti-doping as necessary and a positive effort for sport, their own experiences with the system have demonstrated that it has grave flaws. Athletes are aware the system could be easily exploited by athletes seeking to use banned substances. As such, athletes in this study reported that the system itself was less a deterrent than were their own values and beliefs about competing drug-free. Our findings suggest that while athletes agree with the goals and regulations of anti-doping and accept the methods used to enforce those policies, the lack of faith in the system to achieve those goals prevents further buy-in.

6. Conclusion

Perceptions of governing institutions' legitimacy are influenced by several factors, most importantly how well aligned its priorities and goals are with those of the governed and how well policies and other efforts effectively meet stated goals (Meena & Palazzo, 2012; Schmelzle, 2011; Sharpf, 1997). In order for athletes to buy into the anti-doping system, they must view WADA, NADOs, and other anti-doping partners as legitimate. Research has examined the ways athletes' perceptions of anti-doping's legitimacy influence their views and attitudes toward doping (Donovan et al, 2002; Gucciardi, Jalleh & Donovan, 2011; Jalleh, Donovan & Dabling, 2014), though it has remained unclear how and why athletes hold the perceptions they do of anti-doping organizations. By examining athletes' experiences and views of various aspects of the anti-doping process, this study provides insight into which aspects are successful and which are not for achieving athlete buy-in.

The athletes in this study were clearly in favor of anti-doping in principle and even generally supportive of the testing and sanctioning system. However, they were also clearly skeptical of the ability of the system to equitably test all athletes across countries and sports, as well as to effectively detect and deter athletes from engaging in doping. Athletes in this study, all of whom reported being against use of any prohibited substances for enhancement, saw clear areas where the system was weak and open to abuse. That is not to say that these particular athletes are in any way seeking to do so,

but it is appropriate to conclude that a motivated athlete would likely have a similar understanding and attempt to exploit the system's vulnerabilities.

7. Recommendations

- Increase engagement with athletes in settings unrelated to testing, such as through education and resource provision, meet and greets, and via email or social media.
- Develop resources in partnership with athletes to improve ease of access and overall user experience and to ensure they are practically useful to athletes.
- Encourage strategies to reduce the predictability of anti-doping testing both in and out of competition.
- Develop strategies for communicating the amount of testing done across countries.
- Since athletes are concerned about variability of testing in other countries, new funding models could re-allocate resources to ensure that a minimum level of testing is implemented.
- Develop educational tools that build on areas that athletes identify as important to avoiding doping (i.e. personal values) and that demystify anti-doping (i.e. target testing).
- Consider having an external organization that takes an 'auditing' approach to all countries and sports to ensure that systems of education and testing are in place.
- Engage with athletes to explore potential solutions to the problem of inadvertent doping. The challenge appears to be in making an appeal, however there may be ways to facilitate inexpensive and faster appeals processes with some flexibility around the application of 'strict liability'.
- Sanctions could be more clearly designed to punish the organized, deliberate cheats, while being more proportionate towards the less 'serious' cases.

8. Limitations and Further Research

This study is limited in its size and scope. As noted previously, difficulty recruiting athletes limited the number and diversity of athletes included. Future studies would be strengthened by having a larger sample of athletes, covering additional countries and sports. Athletes included in this study were volunteers. Due to the sensitivity of the topic and the unwillingness of many to share a counter-normative view, athletes may have been more likely to hold a socially desirable view of anti-doping, meaning they are supportive of current anti-doping organizations and efforts. However, athletes' willingness to express negative views and disclose negative experiences indicate they were likely responding in accordance with their actual beliefs. None of the athletes reported currently engaging in doping practices, though two admitted to having served a ban previously, meaning only the views of athletes currently complying with the system are included. It would be insightful to similarly interview athletes who are currently using banned substances or methods to understand why they do not comply with anti-doping rules and why they do or do not fear detection. All athletes reported receiving some level of education or having been tested. Including athletes who are currently outside the system to understand how they view anti-doping might provide a broader understanding of how athletes generally perceive anti-doping.

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