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ARTICLE



WADA at twenty: old problems and old thinking?

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ABSTRACT

The decision taken at Lausanne in 1999 to establish WADA represented a new start in anti-doping: a new organization under new leadership with new sources of funding, new headquarters and a new and wider anti-doping remit. The establishment of WADA also represented a potential new start in another way, for it offered an opportunity to develop fresh thinking and new approaches to anti-doping. To what extent has such fresh thinking been evident in WADA policy over the past twenty years? This question is examined via a focus on two key policy issues: WADA's rationale for anti-doping policy and the reliance of WADA's anti-doping policy on a strategy based on biological testing. What have been the implications of decisions in these areas for the outcomes of WADA policy, as measured by the number, and the type, of doping offences identified by WADA? It is argued that in many respects WADA's policies represent a missed opportunity for, far from bringing new thinking or offering a new approach to anti-doping, WADA has for the most part simply reiterated and intensified policies which have a long history of failure and that those policies continue to be largely unsuccessful in controlling drug use in sport.

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Introduction

The World Anti-Doping Agency (WADA) was born out of the crisis precipitated by the doping scandal in the 1998 Tour de France and by the longer-term loss of legitimacy by the International Olympic Committee (IOC). IOC drug testing had, over many years, proved spectacularly unsuccessful in catching drug-using athletes (Hoberman 2004), with numerous allegations of corruption, including suppressed positive test results and reported positive tests where no action had been taken at previous Olympic Games (Hoberman 2001, Houlihan 2002, Teetzel 2004). The result was that, by the 1990s, the reputation of the IOC as the upholder of high sporting ideals and the defender of drug-free sport was coming increasingly under attack for what Houlihan (1999, p. 184) has described as 'a lack of enthusiasm among senior members of the IOC for an intensive anti-doping programme' and what Hoberman (2001, p. 245) has called 'widespread cynicism about doping control'. It was in this context that WADA was established following the Lausanne conference in 1999.

The decision taken at Lausanne to establish WADA represented a clear rejection of the IOC's leadership in this area and a new start in anti-doping: a new organization under new leadership with new sources of funding, new headquarters and a new and wider anti-doping remit (Hanstad *et al.* 2008).

But the establishment of WADA also represented a potential new start in another way, for it offered an opportunity to develop fresh thinking and new approaches to anti-doping. For example, it had often been pointed out that the traditional rationale for anti-doping, based on concerns for athletes' health and fair play, lacked both consistency and coherence. Moreover, there were no criteria for judging the success or failure of policy, while anti-doping policy, unlike most areas of public policy, relied almost exclusively on a single strategy: biological testing.

Supporters of WADA can point to a number of developments which, they would claim, represent significant advances in the campaign against doping. In his keynote speech to the *Play the Game* conference in Eindhoven in November 2017, the WADA President, Craig Reddie, listed WADA's 'many achievements' since 1999, including the creation of the World Anti-Doping Code and subsequent revisions, a progressive sanctions regime, scientific research, the accreditation of drug testing laboratories and the introduction of biological passports for athletes (Play the Game 2017). The WADA Code has certainly involved a significant move towards the standardization of sample collection procedures, laboratory analysis and the imposition of sanctions on athletes from different sports/countries who test positive for banned substances. It is also the case that in the period since WADA was established there has been a significant increase in the number of doping control tests, particularly out of competition.

But how should we evaluate Reddie's claims? As Houlihan has noted, 'it is essential that ways are devised to measure the success of ... policy instruments and agencies in achieving the desired objectives' but he adds that performance indicators are frequently based on the measurement of 'outputs rather than outcomes' (Houlihan 1999, p. 103; emphasis added). Reddie's claims of WADA's achievements are clearly based on WADA outputs – such as the creation of the WADA Code or the accreditation of laboratories – rather than the outcomes of WADA policy and would seem to constitute a clear example of the muddled thinking to which Houlihan refers. The measurement of the outcomes – rather than the outputs – of WADA policies is a critically important issue to which we shall return later.

More generally, critics would argue that in many respects WADA's policies, as outlined above, represent a missed opportunity for, far from bringing new thinking or offering a new approach to anti-doping, WADA has for the most part simply reiterated and intensified policies which have a long history of failure. Let us consider this in relation to two key issues identified earlier: the rationale for anti-doping policy and the overwhelming reliance of anti-doping policy on a strategy based on biological testing. It is important to stress that both these issues – unlike Reddie's claims above – relate not just to WADA's outputs but, much more importantly, have significant implications for the *outcomes* of WADA policies, as measured by the number, and the type, of doping offences identified by WADA.

The rationale for anti-doping policy

As numerous authors have noted (e.g. Black 1996, Waddington 2000, Dimeo 2007, Kayser *et al.* 2007, Waddington and Smith 2009), ever since anti-doping regulations were introduced from the 1960s, the two major justifications for the ban on the use of performance-enhancing drugs have been those relating, firstly, to the protection of the health of athletes and, secondly, to fair competition, the so-called 'level playing field' argument; put succinctly, it is held that drug use (i) may damage the health of athletes and (ii) it is a form of cheating.

Many scholars have pointed out that these arguments do not provide a convincing rationale for anti-doping policy. Critics have pointed to several inconsistencies in the health-based arguments: that there are many drugs on the banned list which appear to have few, if any, adverse side-effects; that many drugs which are legally used within sport have well documented and potentially serious side-effects; that there is a powerful argument which suggests that elite sport, because of the intensity of modern training and competition, is itself damaging to the health of athletes (O'Leary 2001; Savalescu and Foddy, in House of Commons 2007, Waddington 2000, 2004); that there is

a relative absence of, and ineffective enforcement of, regulations which protect the health of athletes (Murphy and Waddington 2007); and that sporting organizations around the world for many years happily accepted huge amounts of sponsorship from the manufacturers of tobacco and alcohol (Waddington and Smith 2009), products which, as a report on illegal drugs from the Royal Society for the Encouragement of the Arts, Manufacturers and Commerce (RSA) pointed out, 'cause more damage to human health than all the other drugs put together' (RSA, 2007, p. 317). In similar fashion, several authors have argued that the 'fair play' argument is fundamentally flawed since athletes do not compete on a level playing field; for example, the access which athletes have to key resources – such as financial support, training facilities, the support of experts in exercise physiology, biomechanics, nutrition and sports psychology – varies enormously between rich and poor countries. Many scholars would agree with Houlihan's considered judgement that 'relying upon health-related arguments to provide a basis for anti-doping policy ... is not possible', while 'a rationale for banning drugs constructed around fairness fails to provide the desired watertight basis for policy' (Houlihan 2002, p. 132). He concludes that, while the arguments which are conventionally used to justify anti-doping policy 'have a certain plausibility ... none is, by itself, capable of providing a sufficiently strong underpinning for the enormous investment of resources currently devoted to the anti-doping strategy' (Houlihan 2002, p. 123).

It should be stressed that this is not a trivial issue for, as Houlihan also notes, 'Until a satisfactory answer can be given to the question "Why oppose doping?" it is not possible to define with sufficient clarity the problem that the sporting and government authorities are trying to tackle nor is it possible to defend anti-doping policy with confidence' (Houlihan 2002, p. 123).

The WADA code: a missed opportunity

As we noted earlier, the establishment in 1999 of a new worldwide anti-doping agency provided a real opportunity for fresh thinking, not just in relation to technical issues such as testing procedures, but also in relation to key policy issues such as the rationales for anti-doping regulations and for the inclusion of some substances and the exclusion of others from the list of banned substances and procedures. WADA has manifestly failed to seize that opportunity.

In terms of the rationale for anti-doping policies WADA has, in effect, uncritically taken on board the traditional arguments concerning health and fair play – arguments which, as we noted earlier, lack both coherence and consistency; the result is that the WADA Code fails to clarify the many problems associated with earlier anti-doping rationales. But the problem runs deeper than this, for the WADA Code does not simply replicate existing problems; worse, it has muddied the water even further by the introduction of a new criterion which WADA uses, along with the widely criticised criteria relating to health and fair play, to determine which substances or practices are placed on the banned list.

Under Section 4.3 of the Code, a substance or method is included on the prohibited list if WADA determines that it meets any two of the following three criteria: (i) that it has the potential to enhance or enhances sport performance; (ii) that the use of the substance or method represents an actual or potential health risk to the athlete; and (iii) WADA's determination that use of the substance or method violates what it calls the 'spirit of sport' (WADA 2003, p. 15–16). In adopting the 'any two from three criteria' as a basis of policy, WADA has in effect radically redefined what constitutes doping and this has created a serious anomaly: that a substance may be banned because it is held to be potentially damaging to the health of athletes and that its use is also held to be contrary to the vaguely defined 'spirit of sport', *even though the substance may have no performance-enhancing effect*.

This point is of considerable importance, for it represents what many would regard as an illegitimate and dangerous extension of WADA's power to include not just the control of performance-enhancing drugs within a sporting context, but also the use by athletes of recreational and non-performance-enhancing drugs outside of the sporting context. As has

been argued elsewhere (Waddington and Møller 2014), the longstanding definition of doping has almost universally been understood to involve the element of performance enhancement. This has been the case with just about every definition of doping from the early statement by the Council for Europe in 1963, through definitions by national anti-doping organizations such as the UK Sports Council in the 1990s (Waddington and Møller 2014, p. 248–249), to a definition of doping drawn up by the IOC in preparation for the Lausanne Conference which established WADA. In that policy document, the IOC defined doping as the ‘use of an expedient (substance or method) which is potentially harmful to athletes’ health and/or capable of enhancing their performance’ (IOC, 1999). The use of marijuana was never banned by the IOC and the rationale for this was made perfectly clear at the time of the 1988 Olympic Games in Seoul, Korea, where possession of marijuana is a criminal offence; in the words of the then president of the IOC Medical Commission, ‘Marijuana does not affect sporting performance’ (*The Times*, 14 September 1988). A similar position was expressed by Professor Arnold Beckett, another leading member of the IOC Medical Commission, who stated: ‘If we started looking at the social aspect of drug-taking then we would not be doing our job’ (*The Times*, 14 September 1988).

In another document drawn up for the Lausanne Conference, the *IOC Report of the Working Party on the Protection of Athletes* explicitly rejected the idea that sporting organizations should try to regulate the use of recreational drugs. It stated:

While the IOC has a strong interest in preserving the fairness of Olympic competition, and while it has strong grounds in sport ethics for seeking to eliminate doping, it is on far riskier ground if it seeks to mandate moral rules unrelated to sport. It is not clear why sport, or the Olympic Movement, should be part of a general campaign to eliminate, for instance, marijuana use. If sport federations or the IOC wish to take a stand against recreational drug use (or tobacco, or alcohol abuse, or other social problems) then this should be done through codes of conduct rather than through rules that govern sport (IOC, 1998).

The distinguished sports philosophers Angela Schneider and Robert Butcher were even more direct in their comments. They argued:

Quite simply, the IOC has no good grounds for including marijuana on the restricted list, or for testing for its use. The mandate of the IOC for drug testing is to ensure that athletes compete fairly. The rules against drug use are to ban performance-enhancing substances – marijuana is not a performance-enhancing substance, so the IOC has no business testing for it. Some people might argue that the use of marijuana is illegal (and perhaps also immoral) and so the IOC is justified in testing for its use. But what possible grounds are there for suggesting that the IOC has a role in enforcing the law? The IOC is a sports organization, not a law-enforcement agency. Similar arguments apply if we suggest that the IOC has a role to play in enforcing morals. In all sorts of areas, community moral standards are contested and open to debate. There are many people throughout the world who believe that homosexuality is morally wrong – yet it would be both absurd and immoral to suggest that the IOC has a role in testing for, and prohibiting from competition, anyone who has engaged in same-sex sexual activity (Schneider and Butcher 2001, p. 132).

At the Copenhagen conference in March 2003, at which the WADA Code was negotiated and accepted, spokespersons for several governments objected to the ‘any two from three’ rule and pointed out that it is precisely the performance-enhancing nature of a substance or technique which has long been the central defining characteristic of doping. WADA, however, chose to ignore these warnings and it has, in effect, redefined what constitutes ‘doping’ in a way which means that, for the first time, athletes can be punished for a form of behaviour – the use of a recreational drug which is not performance-enhancing – which almost nobody would regard as cheating and which does not constitute ‘doping’ in any meaningful sense of the term. In redefining ‘doping’ in this way, WADA has laid itself open to accusations of dangerous ‘mission creep’; specifically, that it has moved beyond the legitimate objective of seeking to control doping within sport to the illegitimate objective of seeking to control the personal lifestyles and private lives of athletes away from the sporting field.

Defenders of WADA's decision to add marijuana to the prohibited list may point out that, unlike anabolic steroids, which are banned at all times, marijuana is only banned in competition. However, it remains the case that athletes who have used marijuana, not to enhance performance but as a recreational drug, in the days before competition may still test positive in competition; that this is not merely a hypothetical scenario is indicated by the fact that, in the period from 2011 to 2017, there have been no fewer than 1503 positive tests for marijuana (WADA 2012, 2013a, 2014, 2015a, 2016, 2017a, 2018). What have been the consequences of this shift in WADA policy? How has this policy shift impacted on the outcomes of WADA policy as measured by the number and type of doping cases detected by WADA? Perhaps the first point to note is that in any area of social life – whether in the criminal law, in school rules or in anti-doping regulations – it is almost inevitably the case that as the number of actions which are deemed impermissible increases, so both the number of offences committed and the number of people sanctioned will also increase. In the case of anti-doping policy this has meant that the total number of athletes who have been sanctioned for drug use will have been swollen by the addition of those athletes who have tested positive for marijuana. While the number of positive tests for marijuana has varied from year to year, in some years, the number of positive tests has been very substantial; in 2011 and 2012, marijuana was the third most commonly identified substance on the prohibited list, and in 2012 it represented 9% of all positive tests (WADA 2012, 2013a). This raises two points of considerable importance. Firstly, the inclusion of marijuana on the banned list will have had the effect of increasing both the total number of drug offences committed and the number of athletes sanctioned, but – since marijuana is not a performance-enhancing substance and those who use it cannot be accused of cheating in any meaningful sense of the term – *it will have done absolutely nothing to weed out 'cheats' or to produce a more level playing field.*¹

But there is a second, and much more disturbing, aspect of this situation. McNamee, who has argued in favour of keeping marijuana on the WADA prohibited list, has used the situation described above to produce the most remarkable, and disquieting, argument in favour of the ban on marijuana. He writes that under the WADA Code:

Cannabinoid use if detected would constitute an ADRV [Anti-Doping Rule Violation]. Since ADOs [anti-doping organisations] do not actually catch so many doping cheats this is not unimportant. According to WADA's 2011 figures, there were 445 positive tests for Cannabinoid use including famously the multi-Gold-medal-winning figure Michael Phelps. This datum represents the third highest category of doping (prohibited substances) for which athletes were tested ... Might its exclusion lead to a diminution of WADA's legitimacy? After all, there appears to be some relationship between the credibility of a system which places a burden on athletes and the positive effect of those burdens (McNamee 2012, p. 384).

McNamee acknowledges that WADA is not very good at catching what he calls 'doping cheats' (thereby, incidentally, implicitly accepting that those who use marijuana are not 'doping cheats') and then suggests that the inclusion in WADA statistics of the figures relating to the number of positive tests for marijuana use helps to conceal the ineffectiveness of WADA in catching real 'doping cheats'; in other words, the inclusion of data on athletes sanctioned for marijuana use creates the (misleading) impression that WADA is more effective than it really is. We agree with McNamee that this 'is not unimportant', for if there was a general realisation of how ineffective WADA is in catching 'drug cheats' – to be examined in the next section – this would indeed constitute a crisis of legitimacy for WADA which would echo the crisis of legitimacy which faced the IOC in the 1990s.

WADA's failure to grasp the nettle of developing a more coherent rationale for anti-doping policy and for the inclusion of substances on the banned list has also impacted, we would suggest, on the legitimacy of WADA, in a sense very different from that raised by McNamee. In general, it might be argued that organizational rules will be accorded greater legitimacy by those who are subject to those rules if they are seen as fair and appropriate; by the same token, rules which are seen as unfair and inappropriate are unlikely to be accorded legitimacy (Waddington 2010). In relation to elite athletes' perception of the legitimacy of the inclusion of marijuana on the

prohibited list the evidence is unambiguously clear. In May 2012 the Coalition of Major Professional Sports in Australia called for marijuana to be removed from the list, arguing that marijuana should not be grouped with drugs, like steroids, which are clearly performance enhancing (Kelland 2012). The Danish Elite Athletes' Association has similarly argued that social drugs 'which are not performance enhancing should be removed from the list' (Blæsild 2012). And in their *WADA Code Review*, EU Athletes, representing 100 player unions and more than 150,000 European athletes, stated that 'cannabis made up 18.7% of reported violations in Europe in 2009 using up valuable resources that could have been targeted at real doping cheats. It should be removed from the list' (Palmer and Baer-Hoffmann 2012). It is clear that elite athletes who are subject to this rule do not regard it as legitimate since they make a clear distinction between performance-enhancing and non-performance-enhancing drugs and do not therefore regard those who use marijuana as 'real doping cheats'.

The ban on social drugs also impacts on the effective use of WADA's scarce resources, for it is clear that the ban on marijuana draws WADA away from its legitimate focus and thereby hinders the effective implementation of anti-doping policies. WADA's budget for 2017 was US\$29.7m (WADA 2017b) which is a very limited budget for an organization with global responsibilities; for comparison, the annual income of a medium-sized English university, such as the University of Leicester, was £305m in 2016–2017, roughly fourteen times as much (University of Leicester 2017). WADA is clearly not over-endowed with resources and it is important that it focuses its scarce resources on those areas which constitute its core functions.

This is a matter which clearly concerns some of those charged with the responsibility of enforcing the WADA Code. Tim Lythe of the New Zealand Federation of Athletes has pointed out that anti-doping organizations expend a lot of resources on policing 'low (or no) risk substances such as cannabis' and he suggests that the WADA Code 'needs to refocus its resources around detecting those athletes who are genuinely and systematically cheating the system' (Various Authors 2012, p. 4). Graeme Steel, Chief Executive of Drug Free Sport in New Zealand, has similarly stated that 'there is a strong and valid argument that dealing with cases involving cannabis use ... is a significant misallocation of ADO resources' (Various Authors 2012, p. 33).

We agree. The inclusion of cannabis on the banned list unnecessarily burdens WADA with the use of its limited resources in sanctioning athletes for using a substance that does not enhance performance. And this is not an insignificant burden; as we have noted, positive tests for cannabis may constitute a significant proportion of all positive drug tests. The administrative and legal costs of prosecuting these cases divert WADA's scarce resources away from its real task: the detection of drugs which are performance enhancing and which therefore offer those who use them an unfair advantage over other competitors.

WADA's reliance on biological testing

The absence of fresh thinking in WADA's approach is most obvious in the intensification of the traditional reliance on biological testing. This has been the standard approach to every major sporting drugs crisis since the 1960s: each crisis has been followed by demands for more testing and, when this fails, demands for yet more tests and further intensification of the same old policy. This policy has, we will argue, been spectacularly unsuccessful. Let us examine this issue in some detail.

More than half a century ago, the American sociologist Howard Becker noted that attempts to understand drug use are mainly concerned with the question: why do they do it? He noted that attempts to account for the use of drugs – he was concerned specifically with marijuana use – lean heavily on the premise that the presence of any particular kind of behavior in an individual can best be explained as a result of some trait which predisposes or motivates him to engage in that

behavior'. He notes that this trait is usually identified as psychological but he adds: 'I do not think such theories can adequately account for marijuana use' (Becker 1963, p. 41–42).

The bulk of Becker's analysis is devoted to showing that the process of becoming a drug user is *necessarily* – that is it cannot be other than – a *social* process and that any attempt to understand the drug user as an isolated, self-contained individual is necessarily misleading and unhelpful. Thus, any drug user – inside or outside of sport – needs to get information from others about the kinds of drugs which are available and their effects, they need to learn how to use those drugs and how to recognise the effects of the drugs. And since illicit drug use both inside and outside of sport is generally held to be a deviant or immoral – perhaps even illegal – activity, drug users need to develop a relationship with a reliable 'connection', that is a dealer in illicit drugs, and also to establish their own credibility as a person who can be trusted to buy and use drugs without endangering anyone else. In addition, and since drug use is illicit and/or illegal, they are also required, firstly, to understand, and to accept, the importance of maintaining secrecy concerning the use of drugs not just by themselves but also by others and, secondly, they are constrained to reject conventional definitions of drug use as immoral and to develop a rationalization for their own use of drugs (Becker 1963, p. 41–78).

Numerous sociologists of sport have subsequently documented the networks of social relationships involved in drug use in sport. In 2000, for example, Waddington drew attention to what he called 'the doping network' and he wrote: 'it is clear that at the elite level it is simply unrealistic to see the individual drug-using athlete as working alone, without the assistance and support of others' (Waddington 2000, p. 159). Writing about drug use in cycling, Christiansen has similarly noted that 'doping requires the cooperation of others', adding: 'There is a need for contact with people who can help with storage and delivery ... but especially with expertise and relevant knowledge. Without people who know which drugs to take, when to take them, and how they work, access to drugs is useless'. He emphasises that networks 'have to be established gradually through friends and colleagues who can help the rider gain contact with "the right people"' (Christiansen 2005, p. 505–506).

Other social scientists who have documented the networks of relationships involved in drug use in sport include Brewer (2002), Hoberman (1992, 2002, 2003), Monaghan (2001), Bette (2004) and Brissonneau (2015). The key distinguishing characteristic of all these social science perspectives on drug use in sport is that they seek to understand the behaviour of drug-using athletes 'not by focusing on the athlete as an individual, but by locating athletes within the network of relationships in which they are involved within sport', that is the web of interaction with other athletes, coaches, managers, team physicians and others, and also within broader social changes such as the increasing competitiveness and commercialization of sport (Waddington 2016, p. 22).

However, this research seems to have been entirely ignored by anti-doping policy makers and to have had almost no impact on anti-doping policy. Ever since anti-doping policy began to develop from the 1960s, anti-doping organizations have implicitly and uncritically accepted as a basis for policy the individualism which is such a marked feature of modern western societies. Thus, anti-doping policy has been based on a highly individualized conception of the elite athlete, who is presented as an asocial, isolated individual who is able to make more or less free and unconstrained choices. But this conceptualization is fundamentally flawed. It reflects what Norbert Elias called a 'Homo clausus' conceptualization of the elite athlete (significantly conceptualized in the singular) as a 'closed person', rather than a more adequate conceptualization of athletes (in the plural) as 'Homines aperti', that is 'open people', bonded together with other people in various ways and whose actions and choices are constrained, to varying degrees, by those bonds with others (Elias 1970).

This individualistic bias underpins many aspects of anti-doping policy. It fits very well, for example, with the persistent – though frankly incredible – claim consistently made by anti-doping organizations over many years, that the fact that only 1–2% of tests on athletes are positive indicates not the limited effectiveness of testing, but rather that we are dealing with only a few

isolated and deviant individuals, the occasional 'bad apple' in an otherwise good barrel of fruit. But more significantly, these individualistic assumptions can be seen in a central aspect of anti-doping policy: the emphasis on biological testing as a means of detection.

And let there be no doubt that biological testing has always been, and remains, the very heart of anti-doping policy. In recent years, the number of samples analysed by WADA-accredited laboratories increased every year from 2011 through to 2015, with a 7.1% increase from 2014 to 2015 (WADA 2016, p. 4), with a further increase of 7.1% from 2016 to 2017, when no fewer than 322,050 samples were analysed (WADA 2018, p. 1). The introduction of the athletes' biological passport scheme has, of course, served to further emphasise the reliance on biological testing; in 2009, 6,082 samples were analysed for the scheme and this figure has regularly increased – in some years by over 60% – and in 2017, 29,130 samples were analysed, more than a fourfold increase in eight years (WADA 2018, p. 1).

As a means of illustrating the individualism which underpins this approach, as well as its obvious limitations, consider the landmark positive drug test of Ben Johnson at the Seoul Olympics. That test told us that Johnson had used the steroid stanozolol but it told us almost nothing else of value. It told us nothing about Dr Jamie Astaphan, the physician who supplied the drugs to Johnson and who monitored his drug use. It told us nothing about the fact that Dr Astaphan had an international clientele of elite athletes from many countries in North America, Europe and Africa. It told us nothing about the network of doctors in North America who were prepared to supply performance-enhancing drugs to athletes. It told us nothing about relationships between athletes, nothing about the culture of drug-using athletes and, in particular, the 'brotherhood of the needle', which bound drug-using athletes together in a code of silence. And it told us nothing about the competitive and other pressures on elite athletes to use performance-enhancing drugs. In effect, it told us nothing about the 'doping network'. Put simply, Johnson's positive test told us nothing about what was going on outside, as opposed to inside, his body. The mass of detailed information, indicated above, about the doping network in Canadian sport was generated only by the decision of the Canadian government to establish the *Commission of Inquiry into the Use of Drugs and Banned Practices Intended to Increase Athletic Performance* (Dubin 1990); had the matter been left to the anti-doping organizations, we would probably have found out nothing other than that Johnson, the 'bad apple', had used stanozolol.

The limits of biological testing

Many researchers have expressed doubts, on a variety of grounds, about the effectiveness of biological testing as a means of detecting and controlling drug use and, indeed, WADA has itself recognised the lack of effectiveness of its testing programmes. A working group established by WADA to examine the effectiveness of testing programmes accepted that there is '(n)o research-based evidence that OOC (out-of-competition) testing as conducted is effective' (WADA 2013b, Appendix 'A', p. 11) and that 'drug testing programs have been generally unsuccessful in detecting dopers/cheats' (WADA 2013b, p. 2). In a serious indictment of its own programmes, WADA noted that over the last 20 years – and despite increased testing, increasingly expensive and sophisticated tests, more out-of-competition testing, and greatly increased intrusion into the private lives of athletes through the Whereabouts programme (Waddington 2010) – still only around 1% of tests produce adverse analytical findings; as WADA has itself noted, there has not been any statistical improvement since about 1985 (WADA 2013b: Appendix 'A': 1). In other words, WADA's testing system is no more successful at identifying drug-using athletes than the widely discredited and corrupt system operated by the IOC.

The ineffectiveness of WADA policy in controlling drug use in modern sport is starkly revealed in a recently published study of the prevalence of drug use in elite level sport which found a level of

past-year admitted doping by 43.6% of athletes at the IAAF World Championships and 57.1% at the Pan-Arab Games. The study used the randomized response technique, now considered the most effective technique for obtaining relatively reliable data on drug use, and the authors concluded that doping 'appears remarkably widespread among elite athletes, and remains largely unchecked despite current biological testing' (Ulrich *et al.* 2017). It is difficult to see how even the staunchest defender of WADA could interpret these data as evidence of the success of WADA policy.

Writing from a background in forensic interviewing, specifically the questioning of suspects by police officers, Moston and Engelberg (2017, p. vi) have written 'we couldn't understand why anti-doping authorities seemed to think that doping could best be detected through biological testing'. They note that 'most police investigations centre on talking to people, both witnesses and suspects. Scientific evidence, like DNA matching, is important and sometimes crucial to a case, but by and large most cases are solved by the simple expedient of talking to people' (p. vi). They go on to suggest that 'the detection of doping through a primary strategy of biological analysis is fatally flawed' and argue that 'the detection of doping has hitherto been conducted in ways that effectively ensure that doping will *not* be detected' (Moston and Engelberg 2017, p. vii, emphasis added).

We share their concerns about the limitations of any policy which relies so heavily on biological testing, though the basis of our concern is rather different and perhaps more fundamental: no matter how technically sophisticated and effective the analysis of urine and blood samples may become, and no matter how sophisticated the process of biological profiling may become – and also assuming that major problems involving corruption and lack of commitment to anti-doping among some anti-doping and federation officials (WADA 2013b) can also be overcome – such techniques will, by their very nature, *remain inherently incapable of telling us anything at all about those people whose actions constrain and encourage and facilitate and conceal drug use in sport*. As we noted earlier, such tests can tell us nothing about the culture of doping, or about relationships between drug-using athletes, doctors, managers, coaches, drug suppliers and others in the doping network. In other words, the results of such tests – even where they are successful in identifying individual drug-using athletes – can tell us nothing about those processes an understanding of which is essential for an understanding of drug use in sport. And without a proper understanding, the possibilities of effective control are minimal.

There is a clear and inherently close relationship between the ineffectiveness of anti-doping programmes and their overwhelming dependence on biological testing. If it is accepted that drug-using athletes rarely work alone, unaided by others – and the evidence is overwhelming – then it is clearly important to identify and to sanction not only the athletes who use drugs but also those who supply the drugs, the doctors who administer them, and the coaches, team managers and others who collude with or conceal their use. But a positive urine or blood sample can only provide evidence of an anti-doping violation on the part of the individual athlete who supplied that sample; it can tell us nothing about who supplied or administered a banned substance and, of course, it cannot be used as evidence against anyone other than the athlete. Put simply, biological testing does nothing – *and can do nothing* – to identify the other people involved in the 'doping network'.

Learning the lessons of the Armstrong case

It is important to note that the case against Lance Armstrong was not initiated as a result of a positive drug test. Rather, it had its origins in another case which the United States Anti-Doping Agency (USADA) was investigating, against another American cyclist, Kayle Leogrande, which was also based on non-analytical (i.e. non-biological) data. In the course of this investigation, witnesses provided USADA with information about people who may have supplied other cyclists with drugs and also information about an alleged doping programme on the United States Postal Service (USPS) team. It was this which led to the USADA investigation which uncovered what

USADA (2012, p. 5) described as ‘a massive team doping scheme, more extensive than any previously revealed in professional sports history’.

The USADA investigation did not focus on Armstrong as an isolated individual but on the *social organization* of doping within the USPS/Discovery Channel teams. As the USADA report documented, ‘Armstrong did not act alone. He acted with the help of a small army of enablers, including doping doctors, drug smugglers, and others within and outside the sport and in his team’ (USADA, 2012, p. 6) and the report documented in great detail the relationships between those within the doping network. It also documented the variety of prohibited substances and methods used by Armstrong and his teammates, not just EPO but also blood transfusions, testosterone, corticosteroids and masking agents.

As the USADA report (2012, p. 4) made clear, ‘the most critical evidence’ came from Armstrong’s former teammates and former employees of his cycling teams, that is from what Moston and Engelberg call ‘the simple expedient of talking to people’. More specifically, USADA interviewed and took sworn statements from more than two dozen witnesses, including 15 professional cyclists and 12 members of Armstrong’s teams. In addition, they also used other non-analytical evidence of the kind frequently used in criminal investigations: banking and accounting records which showed that Armstrong had paid Dr Ferrari, the doctor at the heart of the doping network, more than a million dollars, and emails between Ferrari and Armstrong.

It is also important to stress that forensic interviewing not only proved an effective means of successfully bringing a case against someone against whom it was not possible to bring a case based on analytical evidence but, more importantly, by focusing on the social network of doping, USADA was able to generate ‘more than enough evidence to proceed with charges’ not just against Armstrong but also against former USPS and Discovery Channel team director Johan Bruyneel, former USPS and/or Discovery Channel doctors Pedro Celaya, Luis Garcia del Moral and Michele Ferrara and team trainer Jose ‘Pepe’ Marti (USADA 2012, p. 4).

It is sobering to compare how little we have learnt from positive drug tests of individual athletes with how much we have learned from enquiries which, like the USADA inquiry, have focused not on the individual athlete but on building up a picture of doping networks; other significant examples of the latter, all of which have provided very detailed pictures of such networks, include the Dubin Commission in Canada (Dubin 1990), the investigation and subsequent prosecutions by French police after the 1998 Tour de France (Waddington 2000), and the report into drug use in American baseball by the former US Senator George Mitchell (Mitchell 2007).

Despite the significance of investigations of this kind in going beyond the individual drug-using athlete and opening up the wider doping network for examination, such investigations have rarely been initiated by anti-doping organizations, although USADA should be noted as an exception. In addition to the Armstrong case, USADA was also involved in a highly successful joint investigation from 2003 with the San Mateo County narcotics task force into the Bay Area Laboratory Co-operative (BALCO). It might be noted that investigations of this type have not only generated much more – and more useful – information about doping than could ever be obtained from biological testing of individual athletes, but they have also been instrumental in identifying athletes, like Armstrong, whose use of drugs, despite a long history of regular and systematic drug use, had not been detected by biological testing. The BALCO investigation also implicated a number of world class athletes in drug use including, most significantly, Marion Jones, who, like Armstrong, had previously escaped detection despite being tested on innumerable occasions.

Can WADA kick its addiction?

There are signs that WADA is finally – albeit very belatedly – beginning to recognise the significance of investigations of this kind and their potential to reveal the wider structure of doping networks. In 2015, the WADA President, Sir Craig Reedie, announced that ‘WADA is increasingly of the belief that athletes do not dope alone, and that often there is a member of their entourage

encouraging them to cheat' (WADA, 2015b). This recognition of a basic aspect of drug use is welcome, though those who have argued for evidence-based anti-doping policy will be disappointed that WADA has only just discovered what social scientists have been saying for over half a century!

Reedie's comment was made in relation to a new 'prohibited association' rule in the 2015 WADA Code (WADA 2015c, article 2.10) which prohibits athletes and other persons from working with athlete support personnel who are currently sanctioned or who have been sanctioned in the previous six years for an anti-doping violation. Perhaps of greater significance, however, is another change in the 2015 Code which gives WADA power to 'initiate its own investigations of anti-doping rule violations and other activities that may facilitate doping' (WADA 2015c, article 20.7.10). It was this rule which was used to establish the McLaren Independent Investigation which revealed widespread state-sponsored doping of Russian athletes involving more than a thousand athletes and more than thirty sports – and which thereby pointed up once again the ineffectiveness of biological testing of individual athletes as a means of detecting doping. The 2016 WADA Annual Report recognised that such investigations 'helped prove that non-analytical evidence is of tremendous value to anti-doping and that WADA's investigations and intelligence-gathering capacity need to be enhanced' (WADA 2017c, p. 8). Few social scientists would disagree with this statement, though some may express doubts about whether WADA can really kick its own addiction to biological testing.

Note

1. In a very belated search for a justification for the ban on marijuana, the United States Anti-Doping Agency (USADA) argued in 2014 – a full ten years after the ban on marijuana was introduced – that marijuana was banned because 'it can cause muscle relaxation and reduce pain during post-workout recovery' and 'decrease anxiety and tension, resulting in better sport performance under pressure' (USADA 2014). This immediately raises the question of why tobacco, which also has the capacity to aid relaxation and reduce anxiety, is not included on the prohibited list. Perhaps a cynic might suggest that anti-doping organizations are unlikely to prohibit substances, however unhealthy they may be, which are produced by companies on which so many sports organizations were for so long dependent for sponsorship! More importantly, the USADA claim is based on just one published paper, by Huestis *et al.* (2011) in which the authors note that marijuana has *negative* influences on coordination, movement and technical skills and leads to increased reaction times, all of which would *reduce*, rather than enhance, sporting performance. But Huestis *et al.* ignore the obvious performance-*reducing* qualities of marijuana and simply assert that cannabis can enhance performance because it can 'decrease anxiety, fear, depression' and because 'it is an analgesic that could permit athletes to work through injuries and pain induced by training fatigue'. No scientific evidence is provided to indicate that marijuana is used by athletes in this way and they do not cite any cases where athletes are alleged to have used marijuana as a painkiller; indeed, the unsupported assertion that marijuana is used by athletes as an analgesic strains credulity too far, not least because there are effective painkillers whose use is permitted under WADA rules.

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