

2013

Doping in Sport: Landis, Contador, Armstrong and the Tour de France

Chris Davies

Follow this and additional works at: <http://ePublications.bond.edu.au/blr>

This Article is brought to you by the Faculty of Law at ePublications@bond. It has been accepted for inclusion in Bond Law Review by an authorized administrator of ePublications@bond. For more information, please contact [Bond University's Repository Coordinator](#).

Doping in Sport: Landis, Contador, Armstrong and the Tour de France

Abstract

Doping has always been one of the major issues in sport, and no sporting event has had more doping issues in recent years than the Tour de France. Both 2006 winner, Floyd Landis, and 2010 winner, Alberto Contador, lost their titles after testing carried out during those Tours later showed the use of banned substances. In 2013 seven times Tour winner, Lance Armstrong, lost all his titles after a USADA Report produced overwhelming testimonial and documentary evidence of systematic doping by Armstrong on each of those Tours. The Armstrong case also indicated that anti-doping authorities can now prove doping by any reliable means, rather than relying only on the results of drug tests.

Keywords

World Anti-Doping Agency (WADA), sporting events

DOPING IN SPORT: LANDIS, CONTADOR, ARMSTRONG AND THE TOUR DE FRANCE

CHRIS DAVIES*

ABSTRACT

Doping has always been one of the major issues in sport, and no sporting event has had more doping issues in recent years than the Tour de France. Both 2006 winner, Floyd Landis, and 2010 winner, Alberto Contador, lost their titles after testing carried out during those Tours later showed the use of banned substances. In 2013 seven times Tour winner, Lance Armstrong, lost all his titles after a USADA Report produced overwhelming testimonial and documentary evidence of systematic doping by Armstrong on each of those Tours. The Armstrong case also indicated that anti-doping authorities can now prove doping by any reliable means, rather than relying only on the results of drug tests.

I INTRODUCTION

The Tour de France is one of the biggest sporting events, not only in Europe but also the world, and the release in August 2012, of a report by the United States Anti-Doping Agency (USADA)¹ outlining the doping case against seven times Tour winner, Lance Armstrong, was therefore world-wide news. It provided evidence showing how Armstrong had systematically doped throughout his career, including his Tour wins between 1999 and 2005. For cycling in general, and the Tour in particular, this was just further confirmation of the doping problems present in the sport as both 2006 Tour winner, Floyd Landis, and 2010 winner, Alberto Contador, had previously lost their titles due to doping violations.

This article will therefore examine these three cases in regard to the evidence used to establish the doping violations, which involved both analytical and non-analytical means. It will also examine the impact the case has had on the continuing effort by the World Anti-Doping Agency (WADA) to eliminate doping in sport. Before doing this, however, what need to be examined are the relevant aspects of the World Anti-Doping Code² (WADA Code), and the relevant principles of evidence.

* Associate Professor, School of Law, James Cook University.

¹ Report on Proceedings Under the World Anti-doping Code and the USADA Protocol: United States Anti-Doping Agency v Lance Armstrong
<<http://d3epuodzu3wuis.cloudfront.net/ReasonedDecision.pdf>>.

² World Anti-Doping Agency, *World Anti-Doping Code* (at 1 January 2009) ('WADA Code').

II THE WADA CODE AND THE PRINCIPLES OF EVIDENCE

A The Relevant Aspects of the WADA Code

WADA was established in November 1999, and it is now the world body responsible for the testing of drugs in sport. In March 2003, WADA produced the WADA Code that set out to harmonise the rules relating to drug testing (with an updated version being released in 2009, becoming effective in January 2010). Each country that is a signatory to the Code is then required to have its own national anti-doping organisation, such as USADA.

Article 2 of the Code sets out the various violations; Article 2.1 being the main one as it involves the presence of prohibited substances in the athlete's sample, stating that it is the 'athlete's personal duty to ensure no prohibited substance enters his or her body.'³ Article 2.1.2 sets out that 'sufficient proof of an anti-doping rule violation under Article 2.1 is established'⁴ either by its presence in an A sample, where the athlete then waives the right to have the B sample tested, or when the presence is confirmed by the B sample. Article 2.3, meanwhile, makes it an offence to refuse to submit, without compelling justification, a sample when requested. Article 2.6 makes possession of prohibited substances an offence while Article 2.7 makes trafficking of prohibited substances an offence. Article 2.8 makes the administration, or the attempted administration, of prohibited substances, an offence.

Article 3.1 sets out that it is the anti-doping organisation which carries the burden of proof to establish that an anti-doping rule violation has occurred, with the standard of proof being comfortable satisfaction which is then defined as being 'greater than a mere balance of probability but less than proof beyond a reasonable doubt.'⁵ Article 3.2 then states that violations 'may be established by any reliable means'⁶ while under 3.2.1 'WADA accredited laboratories are presumed to have conducted sample

³ WADA Code, above n 2, Art 2.1.1. Note that in the case involving tennis player, Richard Gasquet, the player successfully argued accidental contamination of cocaine after a positive test: CAS 2009/A/1930 *WADA & International Tennis Federation v Richard Gasquet*. For discussion of this case see Chris Davies 'The Comfortable Satisfaction Standard of Proof: Applied by the Court of Arbitration for Sport in Drug-related Cases' (2012) 14 *The University of Notre Dame Law Review* 1, 11-13.

⁴ WADA Code, above n 2, Art 2.1.2.

⁵ WADA Code, above n 2, Art 3.1. For further discussion see Chris Davies 'The Comfortable Satisfaction Standard of Proof: Applied by the Court of Arbitration for Sport in Drug-related Cases' (2012) 14 *The University of Notre Dame Law Review* 1.

⁶ WADA Code, above n 2, Art 3.2.

analysis and custodial procedures in accordance with the International Standard for Laboratories,⁷ though the sportsperson can rebut this presumption.

Article 7 sets out that initial reviews are to be heard by the anti-doping organisation responsible for the results management,⁸ with Article 8 stating that there is a right to a fair hearing which includes the right to be represented by legal counsel, and to be able to present evidence, including the right to call and question witnesses. The right to appeal to the Court of Arbitration for Sport (CAS) is outlined in Article 13⁹ while Article 20 sets out the roles and responsibilities of the signatories, such as the International Olympic Committee (IOC), International and National Federations, and the National Anti-doping Organisations.

WADA's Code also has a collateral document that outlines the list of substances prohibited under the Code. This is known as the Prohibited List and it is updated at least annually.¹⁰ It separates the substances and methods into a number of categories. The first are those which are prohibited at all times such as anabolic steroids (S1); peptide hormones, growth factors and related substances (S2); and diuretics and other masking agents (S5). The second are those which are prohibited in-competition, such as stimulants (S6) and narcotics (S7), which will be tested on match or race days, but will not be tested by the anti-doping agencies out-of-competition. The third category are those substances that are only prohibited in particular sports during competition, and these include alcohol (P1) in sports such as archery and shooting, and beta-blockers (P2) in sports such as gymnastics and shooting. There are also a number of listed prohibited methods, the most significant being blood doping (M1).

It should also be noted that, like all Olympic sports, cycling is bound by the WADA Code and has a governance structure involving an international body, the Union Cycliste Internationale (UCI), as well as national governing bodies. A series of

⁷ WADA Code, above n 2, Art 3.2.1.

⁸ For example in the case involving Spanish runner, Josephine Onyia, the matter was first heard by the Real Federacion Espanola de Atletismo (RFEA) with an appeal eventually being heard by CAS: CAS 2009/A/1805, CAS 2009/A/1847 *IAAF v RFEA & Josephine Onyia*. For discussion of this case see Chris Davies 'The Comfortable Satisfaction Standard of Proof: Applied by the Court of Arbitration for Sport in Drug-related Cases' (2012) 14 *The University of Notre Dame Law Review* 1, 7-8.

⁹ Noted that in *Gusmao v FINA* CAS2008/A/1572 it was stated that the WADA Code did not apply directly, but since it had to be implemented by the rules of an international federation such as FINA, the Code could be examined for the purpose of interpreting the corresponding FINA rule.

¹⁰ WADA Code, above n 2, Art 4.1.

interlocking contracts then binds the individuals to these organisations and also the WADA Code.

B The Relevant Principles of Evidence

CAS had made it clear that it is not a common law court, and it is therefore not bound the common law rules of evidence.¹¹ It is suggested, however, that in fact CAS usually does follow the rules of evidence; the reason being that doing so gives its decisions credibility.¹² When examining CAS cases it is important to at least have an understanding of the relevant principles of evidence, particularly in regard to doping cases where, rather than relying on a positive sample, the agency involved is relying on the 'any reliable means' clause in the WADA Code.¹³

One relevant evidentiary principle is presumptions. Article 3 of the WADA Code outlines the rebuttable presumption that tests carried out by WADA accredited laboratories are accurate. The reason for such a presumption is to make the evidentiary task easier by effectively redefining the burdens of proof, with the burden of proof then being on the athlete to show that the laboratory results were not accurate. Note that the standard of proof for the athlete trying to rebut this presumption is usually the lower balance of probabilities standard.

Under the common law, expert evidence is permissible to assist the court in certain matters. CAS, too, permits the use of such evidence. However, unlike the common law it does not have an admissibility requirement, with essentially enables anybody to give expert evidence before a CAS hearing, with it then being a weight issue for the CAS Panel hearing that case.¹⁴ Note though that an admissibility issue means the evidence may not even be admitted, but if it is, then weight is the probative value that should be placed on a particular piece of evidence deemed admissible.

In its Report USADA stated that it was bringing a non-analytical case against Armstrong,¹⁵ that is, it was not relying on a positive test for its case. Much of the evidence it had accumulated was in the form of testimonial evidence. Under the common law, witnesses are permitted to testify in court what they have perceived

¹¹ *D'Arcy v Australian Olympic Committee* CAS 2008/A/1574, [59].

¹² Chris Davies, 'Expert Evidence and the Court of Arbitration for Sport.' (2012) 12 *International Sports Law Review* 25, 30.

¹³ *WADA Code*, above n 2, Art 3.2.

¹⁴ Chris Davies, 'Expert Evidence and the Court of Arbitration for Sport.' (2012) 12 *International Sports Law Review* 25, 31.

¹⁵ Report on Proceedings Under the World Anti-doping Code and the USADA Protocol: *United States Anti-Doping Agency v Lance Armstrong*, 9.

with one of their five senses, even though what a witness has overheard may be hearsay, and therefore prima facie inadmissible under common law. Hearsay involves an out of court assertion brought in to assert the truth of the matter asserted, and the reason why such evidence is prima facie inadmissible is that the law considers it to be unreliable. However, the common law, and its related statutes, has made exceptions to the hearsay rule, usually where the circumstances indicate the evidence is likely to be reliable. Often the exceptions relate to admitting what is known as first hand hearsay, with perhaps the most significant exception being admissions and confessions.

The credibility of a particular witness, meanwhile, will affect how much weight will be placed on that witness's testimony. What will affect this credibility will be subjective factors, such as the apparent honesty of that witness, and other more objective factors, such as how well they are likely to have seen a particular incident. Under common law witnesses are not allowed to express opinions, unless they are accepted by the court as being experts. However, a witness's personal experience and knowledge can be relevant to their testimony, and this may, in some circumstances, positively affect their credibility and therefore how much weight should be placed on that evidence.

While under common law the only offence actually requiring corroboration is perjury, the presence of corroborative evidence will have an impact on the weight to be given to that evidence. From a legal perspective, corroboration means confirmation and the corroborating evidence must have the element of independence.¹⁶ An obvious example is another eye witness independently corroborating the evidence of an eye witness, though an eye witness account can also be corroborated by other forms of evidence, such as a piece of documentary evidence.

These principles of evidence will therefore be kept in mind when analysing the CAS cases arising from 2006 and 2010 Tours and the Lance Armstrong case.

III THE 2006 AND 2010 TOUR DE FRANCE

A Floyd Landis and the 2006 Tour

On 20 July 2006, after Stage 17 of that year's Tour, the eventual winner, Floyd Landis, provided a urine sample to the UCI from which the Laboratoire National de Depistage et du Dopage (LNDD) found an Adverse Analytical Finding, first in the A sample and then the B, for exogenous testosterone.¹⁷ While seven other A samples

¹⁶ *R v Baskerville* [1916] 2 KB 658, 665.

¹⁷ CAS 2007/A/1394, *Floyd Landis v USADA* [2].

taken during the Tour had tested negative, subsequent testing of Landis's B samples proved positive in four of them. Landis appealed against the findings to USADA's Anti-Doping Review Board, but this appeal was rejected, with arbitration proceedings then commencing before the American Arbitration Association (AAA) in September 2006. The AAA finding was that Landis had breached the UCI's Anti-Doping Regulations, and as a result, he was disqualified from the 2006 Tour and banned from competition for two years. Landis subsequently appealed to CAS.¹⁸

The CAS Panel noted the presumption under Article 3.2.1 of the WADA Code, and stated that the testing had been carried out in accordance with international laboratory standards.¹⁹ It then held that the LNDD's quality control schemes were 'appropriate to the type and frequency of testing performed by the laboratory.'²⁰ The Panel then stated that it was comfortably satisfied with the determination that an anti-doping violation had occurred, based on Landis's Stage 17 sample, and that he had not rebutted the presumption that there was exogenous testosterone in his sample.²¹

The Panel also made it clear that it preferred the evidence of the Respondent's experts, noting that in his closing brief address, Landis's expert had asserted that his search for the truth in the case had been obstructed, before claiming there had been biasness, inconsistent and false statements as well as fraudulent documents. The Panel, however, found no evidence to sustain any of these serious allegations, while at the same time finding 'much force in the Respondent's contention that the Appellant's experts crossed the line, acting for the most part as advocates for the Appellant's cause, and not as scientists objectively assisting the Panel in search of the truth.'²² This, it should be noted, is consistent with common law in regard to the principle that the first duty of an expert is to the court, not to the client. It also indicates that Landis did not have a strong case and was trying to find a way to have the decision overturned on a technicality.

In the case involving Alberto Contador,²³ meanwhile, the cyclist accepted the positive tests, but then claimed they were the result of contamination.

¹⁸ Ibid [3].

¹⁹ Ibid [10].

²⁰ Ibid [55].

²¹ Ibid [244]-[245].

²² Ibid [240].

²³ CAS 2011/A/2384 *UCI v Alberto Contador Velasco & RFEC*; CAS 2011/A/2386 *WADA v Alberto Contador Velasco & RFEC*.

B Alberto Contador and the 2010 Tour

1 Background Facts

It was on 25 July 2010, that Alberto Contador was crowned winner of the 2010 Tour de France in Paris. However, unbeknown at that time was that the analysis of Contador's A and B samples from his routine in-competition doping test in Pau just four days earlier, on 21 July, would produce a positive test for the prohibited substance clenbuterol in the concentration of 50 pg/ml.²⁴ Further urine and blood samples taken during the race also tested positive for clenbuterol, and while Contador accepted the positive results, he claimed that the origin of the banned substance was contaminated meat.²⁵

Due to the low concentration, the UCI and WADA 'decided to conduct a series of investigations in an attempt to understand the finding obtained'²⁶ and to see whether it may 'indicate that other anti-doping violations could have been committed than just the presence of clenbuterol.'²⁷ Following the investigation, UCI and WADA proceeded with an anti-doping violation case against Contador; the matter being heard by the *Comite Nacional de Competicion y Disciplina Deportiva* (CNCDD) of the *Real Federacion Espanola de Ciclismo* (RFEC) on 26 November 2010.²⁸

On 14 February 2011, the CNCDD rendered its decision stating that 'the extremely small concentration found in Mr Contador's Sample could have been due to food contamination and the reports submitted by WADA do not rule out that possibility, only considering it unlikely.'²⁹ It also accepted that proof he had eaten such meat was 'impossible since the element of evidence had disappeared.'³⁰ The CNCDD also stated that 'the extremely small amount found has not enhanced the sporting performance' and that there was no negligence on the part of Contador.³¹ However, in March 2011, both the UCI and WADA lodged appeals with CAS against Contador and the RFEC.

²⁴ Ibid [11].

²⁵ Ibid [13]. Note that other CAS cases which have involved a contaminated food defence include CAS 2009/A/1755 *Adam Seroczynski v IOC*. For discussion of this case see Chris Davies, 'Expert Evidence and the Court of Arbitration for Sport.' (2012) 12 *International Sports Law Review* 25, 27.

²⁶ Ibid [15].

²⁷ Ibid [15].

²⁸ Ibid [22].

²⁹ Ibid [28].

³⁰ Ibid [28].

³¹ Ibid [28].

2 *The CAS Decision*

At the CAS hearing UCI, WADA and Contador all provided 'extensive expert evidence'³² with WADA also presenting statistics that of the 250 clenbuterol adverse analytical findings reported between 2008 and 2010, except for some cases in China or Mexico, no claim for contaminated meat had ever been proven.³³ It was pointed out that the use of clenbuterol for fattening animals was strictly prohibited by European legislation, it was a criminal act in Spain,³⁴ and that based on the 'the last three published reports of the European Community, the probability that bovine meat is contaminated with clenbuterol is 0.0042 per cent or less than 1 in 20 000.'³⁵ WADA also pointed out that no other member of Contador's Astana team had tested positive to clenbuterol, and that whilst the traces in Contador's sample could have come from contaminated food, they were also 'consistent with a transfusion with clenbuterol-contaminated plasma.'³⁶

The CAS Panel accepted that direct proof Contador ate contaminated meat, which then caused the adverse analytical finding, was not possible, and so therefore he could only succeed in discharging his burden of proof by proving that 'in his particular case meat contamination was possible and that other sources from which the Prohibited Substance may have entered his body either did not exist or are less likely.'³⁷ It also noted that WADA accepted that an acquaintance of Contador, a Mr Cerrón, had purchased 3.2kg of meat (veal "solomillo") from Larrezabal butchers in Irún, Spain, on 20 July 2010, had transported it to Pau, France that day, with Contador then consuming the meat that evening and the following lunchtime.³⁸ It was established from delivery notes that Carnicas Mallabia SL was the supplier of the meat, and using the relevant ear tags, the animals were traced back to the Felipe Rebollo slaughterhouse. Internal reports from the slaughterhouse then traced the animals back to a farmer named Lucio Carabias.³⁹

It was submitted by Contador that the meat may have come from another supplier, and claimed the origin of the meat was uncertain and suggested it may have originated in South America.⁴⁰ The Panel, however, found this 'highly unlikely' and

³² Ibid [58].

³³ Ibid [130].

³⁴ Ibid.

³⁵ Ibid.

³⁶ Ibid [132].

³⁷ Ibid [261].

³⁸ Ibid [269]-[270].

³⁹ Ibid [274].

⁴⁰ Ibid [282].

considered it ‘very likely that the supply chain of the relevant meat can indeed be traced back to Lucio Carabis’ farm,’ though it could not ‘entirely rule out the possibility that the meat came from another unknown location in Spain.’⁴¹ Contador then argued that ‘since the level of clenbuterol testing in Spain is so low, it is not only plausible, but it is likely’ dishonest farmers would resort to using it.⁴² The Panel, however, held that since the implementation of the Regulations, this illicit practice had ‘become very rare in Spain.’⁴³

Expert reports were produced in regard to the statistics relating to the testing for clenbuterol. WADA relied on Dr Rabin’s report to establish that ‘the meat consumed would have had to have been contaminated to a level significantly in excess of the minimum detection levels in the EU,’⁴⁴ and indicated that ‘the relevant animal would have been slaughtered immediately or shortly after the administration of the last dose of clenbuterol.’⁴⁵ WADA claimed this worked against Contador’s contaminated meat proposal since it meant there was no benefit in regard to the animal, yet it increased the risk of the farmer being caught.⁴⁶

The testimony of Dr Javier Martin-Pliego López, meanwhile, also supported WADA. Dr López’s conclusion was based on the EU Reports, being ‘that the probability of a bovine animal being contaminated with clenbuterol has been zero or almost zero in Spain during the last few years.’⁴⁷ However, Professor Sheila Bird argued on behalf of Contador that the ‘EU 2008 Report contains severe limitations’, stating that the ‘EU’s testing regime is based on low frequency random testing of bovines’ which have ‘low deterrence-value’ and ‘are more readily avoided or results falsifiable.’⁴⁸ Professor Bird also stated that ‘the “meagre” number of 353 samples tested for clenbuterol at the Felipe Rebollo slaughterhouse(s) between 2006 and 2010, cannot rule out a clenbuterol contamination rate as high as 1 out of 100 slaughtered veal calves.’⁴⁹ But, in the second round of submissions, WADA produced another expert report from Dr López which critiqued the report of Professor Bird.

⁴¹ Ibid [290].

⁴² Ibid [293]. Note that Contador’s assertion that clenbuterol is a known contaminant in meat was supported by the expert report of Professor Vivian James.

⁴³ Ibid [295].

⁴⁴ Ibid [296].

⁴⁵ Ibid [296].

⁴⁶ Ibid [296].

⁴⁷ Ibid [306].

⁴⁸ Ibid [307].

⁴⁹ Ibid [309].

The CAS Panel, however, held that Professor Bird's 1/100 was 'an extreme figure,'⁵⁰ and stated that the tests carried out in the Felipe Rebollo slaughterhouse were 'highly important' and showed 'that this slaughterhouse did not have any clenbuterol positive tests.'⁵¹ It therefore agreed with the UCI and WADA submissions that 'the possibility of a piece of meat being contaminated in the EU cannot entirely be ruled out, but that the probability of this occurring is very low.'⁵² Thus, while 'the contaminated meat scenario is a possible explanation for the presence of clenbuterol in Mr Contador's Sample ... it is unlikely to have occurred.'⁵³ However, it was also stated that 'if the Panel were to conclude that the other two theories are impossible or less likely, then the Panel would be prepared to consider the meat contamination scenario as sufficient proof.'⁵⁴ These other two theories were the blood transfusion theory and the contaminated food supplements.

It was WADA's submission that Contador's adverse analytical finding was more likely 'the result of the application of doping methods than by meat contamination.'⁵⁵ WADA's case was that Contador undertook a transfusion of red blood cells on 20 July 2011 and the following day injected plasma to hide the variation of haemoglobin values, and erythropoiesis to hide the variation of reticulocytes in his system. This was needed in order to preserve a natural blood profile and mask the transfusion which would be detected through the Athlete's Biological Passport (ABP). WADA's claim was based on the plasma being contaminated with clenbuterol.⁵⁶

WADA presented statistics that between 2008 and 2010 there had been 250 adverse analytical findings, 18 of which had been in cycling.⁵⁷ It also presented a list of 12 former or current team-mates of Contador who had been banned for doping in order to counter his claim that he had 'never taken doping substances' and 'I have always been surrounded by people ... who categorically reject the use of doping substances.'⁵⁸ WADA claimed that 'the tainted environment in which the Athlete lives, enhances the likelihood that the source of the adverse analytical finding is doping rather than a contaminated piece of meat.'⁵⁹

⁵⁰ Ibid [320].

⁵¹ Ibid [321].

⁵² Ibid [324].

⁵³ Ibid [332].

⁵⁴ Ibid [333].

⁵⁵ Ibid [334].

⁵⁶ Ibid [336].

⁵⁷ Ibid [338].

⁵⁸ Ibid [341].

⁵⁹ Ibid [342].

The Panel, however, rejected the claim, stating that ‘the tainted environment’⁶⁰ carried no evidentiary weight since ‘no person in the “environment” of Mr Contador saw or alleged that Mr Contador underwent a blood transfusion.’⁶¹ After taking into consideration the expert reports of both Dr Ashenden and Mr Scott,⁶² the Panel held that Contador’s ‘blood parameters cannot establish a blood transfusion,’⁶³ as the inconsistencies seen by Dr Ashenden in his ABP were ‘not conclusive’ and were ‘too speculative and insufficiently secure to rely on as convincing supporting evidence that an athlete underwent a blood transfusion.’⁶⁴

It was noted by the Panel that ‘neither UCI nor WADA were apparently confident enough to bring in a doping charge against the Athlete based directly on their allegation of a blood transfusion.’⁶⁵ It then held that ‘although the blood transfusion theory is a possible explanation for the adverse analytical finding, in light of all the evidence adduced ... it is very unlikely to have occurred.’⁶⁶

The third explanation for the adverse analytical finding was that it was the result of contamination from a food supplement, with Contador listing the supplements he and other members of his team had taken. It was submitted by WADA that every rider on Contador’s Astana team underwent at least two anti-doping tests during the 2010 Tour de France, with Contador being the only one to fail a test.⁶⁷ Thus, if this was the result of the contaminated food supplements, there was ‘a very high

⁶⁰ Ibid [344].

⁶¹ Ibid [345].

⁶² Ibid [351]. It was noted that Contador’s experts had focused on his blood parameters from the 2009 and 2010 seasons to rebut the accusation of blood doping in the CNCDD proceedings. In the CAS hearing WADA’s expert, Dr Michael Ashenden, looked at Contador’s reticulocyte values collected during the 2010 Tour de France, and claimed they were atypical. This was on the basis that they were higher than natural, out of competition values when they were expected to be lower when competing. Dr Ashenden also stated that they ‘were significantly higher than the values measured during his previous victories at the Tour de France’ when ‘they should be comparable.’ Contador’s expert, Mr Paul Scott, however, stated in his expert report at [361] ‘that there is no such thing as “natural” reticulocyte percentages’ and the ‘value must be expressed with a reasonable range bracket’ which ‘must include experimental error and expected physiological variation.’ Mr Scott also found Contador’s 2010 Tour de France values to be ‘decidedly not atypical’ at [359].

⁶³ Ibid [367].

⁶⁴ Ibid [369].

⁶⁵ Ibid [453].

⁶⁶ Ibid [454].

⁶⁷ Ibid [471].

likelihood that other riders from the Astana team would also have tested positive for clenbuterol.’⁶⁸ Contador approached the six manufacturers that produced the supplements made available to the Astana team and they confirmed that no-one had ever blamed them for a failed test. They also stated that they carried out external, independent tests, none of which had ever revealed the presence of clenbuterol.⁶⁹

The Panel concluded that, based on the evidence it had before it, ‘that the supplement theory is possible’⁷⁰ and the question then was ‘whether the meat contamination theory or the food supplement theory is more likely to have occurred.’⁷¹ The Panel then held that Contador ‘took supplements in considerable amounts’⁷² and ‘that it is incontestable that supplements may be contaminated’⁷³ as there have been positive tests for a food supplement contamination. Since it was ‘highly unlikely’ the ingested meat was contaminated, the Panel concluded that Contador’s positive test was ‘more likely to have been caused by the ingestion of a contaminated food supplement than by a blood transfusion or the ingestion of contaminated meat.’⁷⁴

Contador was therefore found guilty of an anti-doping rule violation,⁷⁵ was held to be ineligible to compete for two years⁷⁶ and was disqualified from the 2010 Tour de France.⁷⁷ It should be noted that if Contador had argued that the positive test was a result of contaminated food supplements the outcome would likely have been the same, or at least similar, due to the liability imposed on the athlete in regard to what they allow into their body. American swimmer, Jessica Hardy, for instance, likewise tested positive for clenbuterol at the 2008 US Olympic Trials,⁷⁸ and despite being able to prove that it had entered her system by means of contaminated food supplements, she was still considered to be negligent and was banned for one year.⁷⁹

The case involving Lance Armstrong, meanwhile, was different on two accounts; firstly because it was presented as a non-analytical case, and secondly because it was not arbitrated by either the AAA or CAS because Armstrong decided not to contest

⁶⁸ Ibid [472].

⁶⁹ Ibid [475].

⁷⁰ Ibid [481].

⁷¹ Ibid [484].

⁷² Ibid [487].

⁷³ Ibid [487].

⁷⁴ Ibid [487].

⁷⁵ Ibid [489].

⁷⁶ Ibid [492].

⁷⁷ Ibid [511].

⁷⁸ CAS 2009/A/1870 WADA v Hardy & USADA, [5].

⁷⁹ Ibid [139].

USADA's findings which, in its Report, comprehensively covered all its collated evidence.

IV THE LANCE ARMSTRONG CASE

A The Case Against Armstrong

The evidence presented in USADA's Report included sworn statements from more than two dozen witnesses,⁸⁰ including teammates from both the US Postal and Discovery Channel cycling teams.⁸¹ USADA also stated that there was evidence from a number of Armstrong's past samples that corroborated this evidence,⁸² while evidence was also presented that in 1996, while undergoing chemotherapy for testicular cancer, he admitted taking performance enhancing drugs.⁸³ USADA's case was that Armstrong had not only used erythropoietin (EPO),⁸⁴ testosterone and undergone blood transfusions, but had 'ruthlessly' expected his teammates also use these drugs and methods.⁸⁵

The charges brought against Armstrong were therefore:

- use or attempted use of banned substances
- possession of banned substances or methods
- trafficking of EPO and testosterone
- administration and/or attempted administration to others of EPO and testosterone
- assisting, encouraging, aiding, abetting, covering up or other complicity involving one or more anti-doping rule violations.⁸⁶

These charges essentially covered every available violation under the WADA Code, with USADA's main source of evidence being witness testimony.

⁸⁰ Report on Proceedings Under the World Anti-doping Code and the USADA Protocol: United States Anti-Doping Agency v Lance Armstrong, <<http://d3epuodzu3wuis.cloudfront.net/ReasonedDecision.pdf>> 2.

⁸¹ Ibid 4.

⁸² Ibid 16.

⁸³ Ibid Addendum Part Two, 1.

⁸⁴ Erythropoietin is a hormone that controls erythropoiesis, that is, red blood cell production.

⁸⁵ Report on Proceedings Under the World Anti-doping Code and the USADA Protocol: United States Anti-Doping Agency v Lance Armstrong, 6.

⁸⁶ Ibid 7-8.

B The Witness Testimony

Evidence that Armstrong had been doping during the 1999 Tour included the witness testimony from seven members of the US Postal team with fellow cyclist, Tyler Hamilton, being described by USADA 'as the ultimate insider on Armstrong's first three Tour winning teams.'⁸⁷ Another important witness was the team's masseuse, Emma O'Reilly,⁸⁸ and significant witnesses for the early Tours included Italian cyclist, Filippo Simeoni, and Betsy Andreu, wife of US Postal teammate, Frankie Andreu.⁸⁹

The evidence from these witnesses was that the riders on the team were using performance enhancing drugs in the form of EPO, testosterone, human growth hormones and cortisone, the drugs frequently being administered by team doctor, Dr Celeya.⁹⁰ This included during pre-Tour camps, with Emma O'Reilly, for instance, giving evidence of making an 18 hour round trip from France to Spain in May 1999.⁹¹ The trip was made at Armstrong's request, and on her return, she gave him a bottle of pills which she understood to be banned substances.⁹² Hamilton, meanwhile, gave evidence that at this time he had been in need of EPO, with Armstrong providing him with some that had been stored in a refrigerator.⁹³ Another US Postal team member, Jonathon Vaughters, also testified that Kristin Armstrong, wife of Lance, told him that they kept EPO in their refrigerator in Nice, France.⁹⁴ O'Reilly also testified that at the end of the first day of the Tour Armstrong had said to her, 'Now, Emma, you know enough to bring me down' after she became aware of the team's cover-up in relation to his positive test for cortisone.⁹⁵

Thus, in regard to the 1999 Tour, USADA stated that 'the evidence that Lance Armstrong doped on the way to his first Tour de France victory is overwhelming.'⁹⁶ Five teammates and two other witnesses all gave first-hand evidence of Armstrong's violations of sport anti-doping rules.⁹⁷

⁸⁷ Ibid 22.

⁸⁸ Ibid 17.

⁸⁹ Ibid 16.

⁹⁰ Ibid 16-7.

⁹¹ Ibid 29.

⁹² Ibid 29.

⁹³ Ibid 29.

⁹⁴ Ibid.

⁹⁵ Ibid 32.

⁹⁶ Ibid 36.

⁹⁷ Ibid 37.

One major change from the 1999 and 2000 Tours was that it had become known that a new test for EPO had been developed, with there being testimonial evidence that the US Postal team had therefore turned to blood doping. Team manager, John Bruyneel, testified that 500 cc of blood was withdrawn from each of the team riders, with this blood later being re-infused during the Tour.⁹⁸ Fellow US Postal rider, George Hincapie, meanwhile, provided 'first hand evidence' of Armstrong using testosterone during the 2000 Tour, as well as a product called actovegin.⁹⁹

Floyd Landis, meanwhile, became a key witness for the 2002 Tour, stating that he shared doping advice with Dr Ferrari, who was soon under suspicion of being heavily involved in doping practices.¹⁰⁰ Landis also gave evidence that Armstrong gave him EPO when he needed it,¹⁰¹ as well as testosterone patches.¹⁰² Both riders also underwent blood doping, with Armstrong stating this was necessary due to the new EPO test. Landis testified that he personally witnessed Armstrong being re-infused with blood the day before the individual time-trial in 2002,¹⁰³ on 11 July and 17 July during the 2003 Tour,¹⁰⁴ and also on two occasions during the 2004 Tour.¹⁰⁵ He then testified that he 'witnessed Armstrong using EPO to stimulate reticulocyte production following his blood transfusions in the 2003 and 2004 Tour.'¹⁰⁶ Three members of Armstrong's new Discovery Channel team, meanwhile, gave evidence concerning doping on the 2005 Tour, as did Frankie and Betsy Andreu,¹⁰⁷ with George Hincapie also testifying Armstrong administered him with EPO prior to that Tour.¹⁰⁸

While Armstrong decided not to confront the evidence, USADA made it clear that, had he contested it, the case of USADA v Armstrong would have had witness after witness being called to the stand who, under oath, would have confirmed the

⁹⁸ Ibid 38.

⁹⁹ Ibid 44.

¹⁰⁰ Ibid 57.

¹⁰¹ Ibid.

¹⁰² Ibid 58.

¹⁰³ Ibid 59.

¹⁰⁴ Ibid 63.

¹⁰⁵ Ibid 70.

¹⁰⁶ Ibid 67.

¹⁰⁷ Ibid 75.

¹⁰⁸ Ibid 76. Note that despite the presence of the test for EPO since 2000, it also became known that the 'testing window' is narrow, and USADA stated that De Ferrari was aware that if it was injected into the vein, rather than subcutaneously, it would only show up in a test for a matter of hours, and a rider would certainly not test positive the following morning: at 138.

charges.¹⁰⁹ This testimony was USADA's main source of evidence, but it should be noted that it was corroborated by documentary and other evidence.

C The Documentary Evidence

In some ways the most damaging evidence against Armstrong was the records from Dr Ferrari's Swiss Company, Health and Performance, which recorded numerous payments from Armstrong. One such record was for a payment of US\$150 000 made in 2002,¹¹⁰ while another confirms that Armstrong sent US\$100 000 to the company on 29 March 2005.¹¹¹ The significance of this later date is that it was after Armstrong had denied working with the discredited Dr Ferrari. In total, there was documentary evidence indicating Armstrong had paid Dr Ferrari's company over US\$1 million between 1996 and 2006.¹¹²

However, while USADA acknowledged that the core of its case was the testimonial and documentary evidence,¹¹³ it was not limited to just this evidence, and despite Armstrong's claim about never having tested positive to prohibited substances,¹¹⁴ the Report also referred to further corroborating analytical evidence.¹¹⁵

D The Analytical Evidence

The first analytical evidence dates from the very first day of the 1999 Tour when Armstrong tested positive for cortisone, but Dr de Moral backdated a prescription for a cortisone cream, allowing Armstrong to claim it had been needed for a saddle sore, a claim that was accepted by the officials.¹¹⁶ Samples taken during that Tour were later tested for EPO in 2004 by the French Anti-doping Laboratory (LNND), acting on its own initiative, with six of Armstrong's samples testing positive.¹¹⁷ However, it failed to analyse the B sample, as required under the WADA Code, which meant that they could not be used as proof of an anti-doping violation.¹¹⁸

¹⁰⁹ Ibid 14.

¹¹⁰ Ibid 57-8.

¹¹¹ Ibid 78.

¹¹² Ibid 107.

¹¹³ Ibid 139.

¹¹⁴ Ibid 36.

¹¹⁵ Ibid 16.

¹¹⁶ Ibid 32.

¹¹⁷ Ibid 142.

¹¹⁸ Ibid 142. USADA also noted that in the early days of the EPO test, a call for a positive test was set very high which is why a sample from Armstrong at the Tour of Switzerland in

USADA, meanwhile collected samples from Armstrong between 13 February 2009 and 30 April 2012, after Armstrong returned to competitive cycling, with WADA also having samples obtained by UCI which had been taken between 16 October 2008 and 18 January 2011. Testing on the USADA samples indicated an unusually low percentage of reticulocytes from the 2010 Tour, which it claimed was an indication Armstrong had been blood doping.¹¹⁹ It was also noted that during the first seven days of the 2010 Tour, the samples showed increases in blood plasma volumes, which USADA noted was to be expected during periods of intense exercise. However, testing taken over the following three race days revealed the plasma volume decreased to pre-race levels, which is something that would happen with blood doping.¹²⁰

While USADA requested both laboratory and collection information from UCI in order to validate these results, UCI refused on the grounds it would only do so with Armstrong's consent, which he refused to give.¹²¹ USADA, however, still stated that the examination by experts of Armstrong's parameters from the 2009 and 2010 Tours indicated that the likelihood of it occurring naturally was less than one in a million, and that this therefore built a 'compelling argument consistent with blood doping.'¹²²

E The Admissions and Confessions

While USADA did not rely on it to prove its case against Armstrong, the Report also provided evidence of a possible confession that may have occurred at the Indian University Medical Centre while Armstrong was undergoing chemotherapy in October 1996. USADA's Report states that both Frankie and Betsy Andreu testified that 'they witnessed a confession of performance enhancing drug use by Lance Armstrong.'¹²³ USADA also claimed that Betsy Andreu had 'told numerous people about the hospital room confession ... within days after it is alleged to have occurred.'¹²⁴ Armstrong, however, claimed that Betsy Andreu had concocted the story in 1996 before telling it to other people.¹²⁵

2001 was only classified as being 'suspicious'. However, USADA noted that under current WADA standards, this would now have been classified as a positive test: at 145.

¹¹⁹ Ibid 141.

¹²⁰ Ibid 141.

¹²¹ Ibid.

¹²² Ibid 87.

¹²³ Ibid Addendum Part Two, 2.

¹²⁴ Ibid Addendum Part Two, 3.

¹²⁵ Ibid Addendum Part Two, 4.

However, what cannot be disputed is Armstrong's confession to Oprah Winfrey in January 2013, though it is suggested that he never admitted to anything that had not already been stated, with strong supporting evidence, in USADA's Report. Perhaps the most significant claim made by Armstrong was that he had not doped during his comeback Tours in 2009 and 2010. It is suggested there may have been a tactical reason behind this since Armstrong was trying to claim that there is a statute based limitation in regard to his previous Tours in that they were over eight years ago. USADA, however, claims that this eight year limitation, found in Article 17 of the WADA Code, was suspended by Armstrong's fraudulent concealment of his doping.¹²⁶ In arguing this, USADA stated it was 'relying on the well-established principle that the running of a statute of limitation is suspended when the person seeking to assert the statute of limitation defense has subverted the judicial process, such as by fraudulently concealing his wrongful conduct.'¹²⁷ While USADA has a strong argument based on this principle, the denial by Armstrong also indicates that the evidence regarding possible doping in 2009 and 2010 is significant, even if Armstrong did not win either of those Tours.

F The Intimidation of Witnesses

What USADA also established was Armstrong's pattern of behaviour of attacking, through the media, anyone who stood up against him. One well known example was his verbal attack on Christophe Bassons (who had spoken out about doping in cycling) 'calling him a disgrace and telling him he should get out of cycling.'¹²⁸ After Betsy Andreu made her account of the hospital confession public, Armstrong claimed she was motivated by 'bitterness, jealousy and hatred.'¹²⁹ When she provided information to journalist David Walsh,¹³⁰ and testified against Armstrong in the SCA arbitration proceedings, he described her as being 'vindictive', 'bitter' and 'vengeful.'¹³¹ Floyd Landis, meanwhile, 'was accused of being a liar and vilified in the media' by Armstrong.¹³²

¹²⁶ Ibid 154.

¹²⁷ Ibid 154.

¹²⁸ Ibid 35.

¹²⁹ Ibid Addendum Part Two, 2.

¹³⁰ This was in relation to his book, David Walsh, *From Lance to Landis* (Ballantine Books, New York 2007). The author's comment is that the book contains evidence very similar to what was produced, five years later, in the USADA Report.

¹³¹ Report on Proceedings Under the World Anti-doping Code and the USADA Protocol, above n 15, 151. The arbitration proceedings mentioned involved *Lance Armstrong and Tailwind Sports Inc v SCA Promotions Inc* that took place in late 2005 and early 2006.

¹³² Ibid 153.

USADA also stated that it was aware of efforts made by Armstrong to 'discourage' witnesses from providing it with affidavits.¹³³ Tyler Hamilton, meanwhile, testified that he was 'physically accosted' while having a meal at a Colorado restaurant, with Hamilton stating Armstrong told him: 'When you're on the witness stand, we are going to f***ing tear you apart. You are going to look like a f***ing idiot ... I'm going to make your life a living ... f***ing ... hell.'¹³⁴ USADA then asserted that 'Armstrong's statements and actions plainly constitute an act of attempted witness intimidation.'¹³⁵

What will now be discussed, therefore, is the strength and reliability of these various pieces of evidence in proving a doping violation, either by analytical or non-analytical means.

G Discussion

The evidence in the Floyd Landis case was a straight forward use of a banned substance being proven in a positive A sample, before being confirmed in a B sample. His later admissions during USADA's investigations also indicate the accuracy of these results. The Contador case, likewise, was based on a positive sample, and while Contador attempted to prove it was caused by contaminated meat, this was ultimately unsuccessful. In order to establish this, he made extensive use of expert witnesses, with the CAS Panel stating that he had 'made considerable efforts to adduce written expert evidence of a type which would not even be accessible to more than a few professional athletes with significant income.'¹³⁶ It is suggested that the CAS findings not only confirm a doping violation, but also show that trying to argue a positive test has been caused by contaminated meat is nearly impossible in a western country where the practice of giving animals steroids has been all but eliminated. The fact that records can be used to trace the meat from where it was purchased, to the place where the animal was slaughtered, then to actual farm where it was raised, makes it even harder to argue. The case also required the extensive use of expert witnesses, with its use in the CAS hearing confirming that it involves a weight issue, not an admissibility one.

The Armstrong case, on the other hand, was a non-analytical one, for while there was some analytical evidence, the problem was that it never included a supporting positive B sample. Since Armstrong never agreed to waive the testing of the B

¹³³ Ibid 149.

¹³⁴ Ibid 150.

¹³⁵ Ibid.

¹³⁶ Contador [236].

sample, this meant the analytical results were not acceptable evidence of doping violations under Article 2.1 of the WADA Code. However, Article 3.2 now allows for doping violations to be 'established by any reliable means' with USADA's case being highly dependent on testimonial evidence, corroborated by some documentary evidence. It should be noted that under the common law, testimonial and documentary evidence are usually the most common forms of evidence in both civil and criminal cases.

The strength of the USADA case was the number of witnesses who had testified against Armstrong as this meant all of this evidence was corroborated by these other witnesses. A reasonable proportion of this evidence was witnesses testifying what they had seen, with USADA pointing out that this came from people who knew what was involved and therefore knew what they were seeing. For instance, when George Hincapie observed Dr del Moral and Armstrong together, USADA pointed out that his 'experience and background allowed him to understand that what was happening was blood doping.'¹³⁷ USADA then went on to state that 'this example illustrates how important it is to understand the experience of a witness with doping in evaluating the likelihood that suspicious conduct observed by the witness may be incident to doping.'¹³⁸

Thus, what USADA raised was the issue of a witness's credibility which impacts on how much weight should be placed on their evidence. However, there were also a few instances where what was testified strayed into being opinion evidence. For example, Emma O'Reilly's evidence that she thought the bottle of pills she gave Armstrong contained banned substances¹³⁹ is opinion evidence since she did not actually see what was inside it. It therefore would not likely be admissible in a court of law, though the fact that she was asked, and made, an 18 hour return journey in order to obtain it would be admissible, providing strong circumstantial, that is indirect, evidence supporting a claim the bottle of pills contained banned substances.

There are also undoubtedly some hearsay issues with much of the testimonial evidence which is why USADA regularly stated that its evidence was from people with 'first hand' knowledge. It should be noted, too, that even in the courts what amounts to first hand hearsay is often admitted under exceptions to the hearsay rule.

¹³⁷ Report on Proceedings Under the World Anti-doping Code and the USADA Protocol: United States Anti-Doping Agency v Lance Armstrong, 89.

¹³⁸ Ibid.

¹³⁹ Ibid 29.

For example, Armstrong's statement to O'Reilly after the cortisone cover up in 1999¹⁴⁰ would most likely be admissible as an admission.

However, statements made by people who said Betsy Andreu had told them about Lance Armstrong's alleged 1996 confession are clearly second-hand hearsay and would almost certainly be inadmissible in a court of law. It is suggested too that if a non-analytical case involving extensive use of testimonial evidence is heard by a CAS Panel then perhaps statements by that Panel in regard to what would be acceptable in terms of hearsay evidence would be highly beneficial. It is further suggested that while such a Panel may indicate that all testimonial evidence is admissible, more weight will be placed on evidence that is not hearsay, or is at least only first-hand hearsay.

Overall, however, the testimonial evidence against Armstrong was very strong, even when analysed from the perspective of the rules of evidence, particularly as it was all corroborated by other evidence. The documentary evidence linking Armstrong to De Ferrari over a 10 year period is particularly strong corroborative evidence, given his clear involvement in doping violations. There is an argument too, that perhaps analytical evidence (lacking the supportive B sample for proof under Article 2.1 of the WADA Code) should be accepted as part of 'any reliable means' when it is corroborated by strong testimonial evidence; as it was in the case against Armstrong.

Thus, the most important aspect of the Armstrong case, from a broader doping in sport perspective, is that it shows a strong case can be built up without the need for acceptable positive results. This then provides anti-doping agencies a much better chance of proving drug cheats in sport. But, another question that has to be asked is - just how did Armstrong manage to get away with it for so long? One obvious answer is the limitations of relying solely on actual positive tests. Another factor is that during Armstrong's career, athletes did not have to inform testers of their whereabouts, with Tyler Hamilton stating that the US Postal team had a 'time honoured strategy for beating the testing - we hid.'¹⁴¹

The Armstrong case therefore highlights that important additions to the WADA Code are the requirement that all athletes inform the relevant testing organisation of their whereabouts, and the ability to prove cases by 'any reliable means.'

In its final statement, USADA stated that it had:

[F]ound proof beyond a reasonable doubt that Lance Armstrong engaged in serial cheating through the use, administration and trafficking of performance

¹⁴⁰ Ibid 32.

¹⁴¹ Ibid 131.

enhancing drugs and methods and that ... Armstrong and his co-conspirators sought to achieve their ambitions through a massive fraud now more fully exposed. So ends one of the most sordid chapters in sports history.¹⁴²

The use of the term 'beyond a reasonable doubt' was an interesting choice by USADA, because as noted above, within sport all that it is required is the lower 'comfortable satisfaction' standard. The main reason for using this term is undoubtedly that USADA simply wanted to make a clear and bold statement as to how strong its case was. But, this perhaps also sends a message to the relevant authorities that the case against Armstrong satisfies the criminal burden. While there have been suggestions that perhaps perjury charges could be laid against Armstrong for lying under oath, it would appear he only made comments such as 'I never tested positive' which, under the terms of the WADA Code, is a true statement. However, there have also been suggestions Armstrong could be charged with the intimidation of witnesses and it is clear he is going to face civil action in regards to money he accumulated from cycling. Thus, while USADA may have stated in its report that '[s]o ends one of the more sordid chapters in sports history'; from a legal perspective the matter is perhaps only just beginning for Lance Armstrong.

It is also suggested that a possible remaining issue for cycling and the Tour de France is to decide what to do with the seven Tours originally won by Armstrong. So far, unlike the 2006 and 2010 Tours, no-one has been awarded these races. The main reason is likely that, as USADA pointed out, nearly all the podium finishers during these seven years have been tainted by doping violations. In fact, for the period in question, (in regard to Armstrong 1999 to 2005), 20 of the 21 podium finishers 'have been directly tied to likely doping through admissions, sanctions, public investigations or exceeding the UCI hematocrit threshold.'¹⁴³ Thus, there are valid reasons for not awarding these Tours to anyone. However, it is suggested that while no official winner exists, Armstrong, in his own mind at least, can still see himself as the winner since he was only competing on what he might consider a level playing field.

¹⁴² Ibid 164.

¹⁴³ Report on Proceedings Under the World Anti-doping Code and the USADA Protocol: United States Anti-Doping Agency v Lance Armstrong, 7. USADA also noted that from the period 1996 to 2010, 36 of the 45 podium finishers were likewise 'tainted by doping.'

V CONCLUSION

The CAS cases involving both Floyd Landis and Alberto Contador were classic doping cases arising from positive A and B samples with the athletes involved unable to either rebut the presumption the test results were not accurate, or prove they were the result of contamination. USADA's case against Lance Armstrong, meanwhile, was a non-analytical one, relying mainly on testimonial evidence to prove the various doping violations it brought against the seven times Tour winner. As Armstrong's later public confession clearly indicates, the evidence collated was overwhelming, even for the athlete concerned. What this shows is that results can be obtained by anti-doping organisations, despite the lack of acceptable positive tests, thus indicating that the 'any reliable means' clause in Article 3.2 of the WADA Code is now a potentially powerful tool in the prevention of doping violations in sport.