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Repository Citation

James A.R. Nafziger, *Circumstantial Evidence of Doping: BALCO and Beyond*, 16 Marq. Sports L. Rev. 45 (2005)
Available at: <http://scholarship.law.marquette.edu/sportslaw/vol16/iss1/5>

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CIRCUMSTANTIAL EVIDENCE OF DOPING: BALCO AND BEYOND

JAMES A.R. NAFZIGER*

I. INTRODUCTION

The use by athletes and others¹ of performance-enhancing substances and methods that are undetectable or difficult to detect has greatly complicated efforts to ensure a level playing field of sports competition. Until recently, anti-doping efforts depended almost entirely on physical testing of athletes and public education. Unfortunately, a patchwork of regulatory systems, sport by sport and nation by nation, has suffered from a lack of uniformity and enforcement measures. Great effort therefore has been put toward harmonizing rules, procedures for testing, and sanctions on a global basis of zero tolerance for doping.² In particular, the World Anti-Doping Code (Code) and the International Convention Against Doping in Sport³ provide a more uniform, stable system of control.

If, however, some performance-enhancing substances or methods defy detection in physical testing, what can be done to protect ethical athletes and the integrity of competition from the corruption of undetectable doping? The

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1. As to "others," doping of horses in equestrian competition is also a continuing issue. On September 5, 2005, the Court of Arbitration for Sport turned down an appeal from a decision of the International Equestrian Federation that had disqualified Ludger Beerbaum from the 2004 Olympic Games and thereby denied the German show jumping team a gold medal. The result was to re-award the gold medal to the United States, the initial silver medalist, and re-award the silver medal to Sweden and the bronze to Germany. *Beerbaum v. FEI*, CAS 2005/A/829 (Sept. 5, 2005).

2. WORLD ANTI-DOPING CODE (2003), [hereinafter CODE]. For a description of the Code, see JAMES A.R. NAFZIGER, INTERNATIONAL SPORTS LAW 162-64 (2d ed. 2004).

3. UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION (UNESCO), INTERNATIONAL CONVENTION AGAINST DOPING IN SPORT, ED/2005/CONV-DOP rev.2, adopted Oct. 19, 2005 [hereinafter UNESCO Convention]. The Convention was adopted unanimously by the UNESCO General Conference at its 33rd Session. See UNESCO Press Release No. 2005-125, Oct. 20, 2005. The Convention requires States Parties to comply with the principles of the Code, *supra* note 2; to support the World Anti-Doping Agency, which administers the Code; and to undertake educational programs against doping. The Code, however, is not an integral part of the Convention nor does it create binding obligations under international law for States Parties except as specifically provided in the text of the Convention.

problem became serious when the analytical laboratory at the University of California at Los Angeles (UCLA), charged with examining a substance in the opening phase of the BALCO controversy, detected a previously undetectable anabolic steroid, tetrahydrogestrinone (THG). This drug was thought to have been available for some time to many athletes, including, notably, several world-class track-and-field champions and baseball stars. Other drugs that have been undetectable or difficult to detect include anabolic and other designer steroids (such as what is called “the cream”), modafinil, certain insulin agents, erythropoietin (EPO), and human growth hormone. These and other types of doping have stained the reputation of several sports—especially cycling, track and field, baseball, and swimming—but the problem is more extensive. Although the full extent of the potential problem is unclear in terms of both the number of substances that may escape detection and the difficulty of detection, it became clear that some kind of a response was needed.

The blood booster EPO, which improves endurance by expanding the oxygen-carrying capacity of blood, has been troublesome in such sports as cycling and distance running, particularly in the way its testing has been handled, stored, and documented. Although French scientists developed a test for it in 2000, the validity of the test is controversial.⁴ For example, a controversy in 2005 concerned an exposé by the French media about 1999 blood samples attributed to the cyclist Lance Armstrong. The exposé deliberately raised issues of compliance with WADA rules and of due process but also provoked controversy among readers of the exposé concerning the validity of the test itself and related testing procedures and safeguards of athletes.⁵ Of particular note to this article was the apparent origins of suspicions about Armstrong in the form of oral testimony, much of which was hearsay, as circumstantial evidence presented in a commercial book.⁶ Testing for human growth hormone is also controversial, having been intended for the 2004 Olympic Games but later withdrawn from the 2005 Tour de France because of questions about the validity of the test.⁷

4. See Elisabeth Rosenthal, *Antidoping Agency Seeks Test for EPO That is Definitive*, N.Y. TIMES, Sept. 5, 2005, at D1.

5. *Id.* After a storm of protests about the public revelations of the samples by the French sports daily, *L'Équipe*, the International Cycling Union announced that it would take no action against Armstrong but would undertake an investigation into the circumstances by which the controversial blood samples attributed to Armstrong were tested and the coded (but decodable) results of the testing revealed, contrary to assurance of anonymity. INT'L HERALD TRIB. (Paris), Sept. 10-11, 2005, at 21.

6. See Samuel Abt, *Book Has Suspicions On Lance Armstrong*, INT'L HERALD TRIB. (Paris), June 15, 2004, at 6.

7. See *Tour de France to Skip Hormone Test*, GLOBE AND MAIL (Toronto), June 24, 2005, at S3; CHRISTIAN SCI. MONITOR, Sept. 20, 2004, at 12.

Two alternative responses to the problem of undetectable or difficult-to-detect agents have attracted considerable attention. Both of them depart from current norms of doping control by relying on circumstantial evidence. The first alternative involves the use of *non-analytical positive evidence*. In particular, the BALCO controversy in the United States, on the eve of the Athens Games, led to investigation of several world-class athletes. Resulting charges against several athletes relied on non-analytical positive evidence. Instead of the results of urinalysis or blood tests, the evidence took the form of documentation that allegedly indicated purchase or use of undetectable or difficult-to-detect drugs by the athletes. Arguably, the circumstantial nature of the evidence, because of its indirectness, may be unreliable and unfair.

A second approach to the problem of undetectable or difficult-to-detect drugs is *athletic profiling*. This approach marshals extensive physical examination of athletes to produce a broad range of physical information that would form biological profiles. A proposed identity card for each athlete incorporating this information could then be monitored by anti-doping agencies for suspicious deviations from the base profiles. Both the intrusiveness and reliability of this approach are, of course, highly controversial.

These remarks on such circumstantial evidence of doping are not intended to be definitive, but rather to provoke critical thinking about the alternatives to a reliance on hard, laboratory evidence when it is not available in the anti-doping process. In the future, as gene therapy and other new techniques become available to athletes, we need to think carefully about whether it will even be feasible to police sports competition for the use of performance-enhancing substances and methods; and, if so, how to do so and on the basis of what forms of evidence.

II. THE WORLD ANTI-DOPING CODE

A. Rule Violations

Under the emerging international sports law, whatever approach is taken in response to the problem of undetectable or difficult-to-detect drugs must conform to the World Anti-Doping Code. It is therefore important to understand a few of its pertinent provisions before turning to the BALCO controversy.

The World Anti-Doping Code relies on a process of doping control that is defined to include test distribution planning, sample collection and handling,

laboratory analysis, results management, hearings, and appeals.⁸ As such, the Code would not seem to apply to prohibited substances or methods that, by definition, are not susceptible to laboratory analysis or, at best, are very difficult to detect by such analysis. And, indeed, it has to be acknowledged that the problem of undetectable or difficult-to-detect agents burst forth in the sports arena largely after the Code was drafted.

The Code is nevertheless forward-looking. It therefore provides a set of rules and principles that are, in fact, applicable to the problem at hand. These include, first and foremost, eight anti-doping rules violations, namely: the presence of a prohibited substance or its metabolites or markers in an athlete's bodily specimen; the use or attempted use of a prohibited substance or a prohibited method; refusing, failing to submit to, or evading sample collection; violations of requirements regarding athlete availability for out-of-competition testing, including missed tests and failures to provide required out-of-competition information about an athlete's whereabouts; tampering or attempted tampering with any part of doping control; possession of prohibited substances and methods; trafficking in them; and administration or attempted administration of them.⁹ Each of these rules is further elaborated and qualified. Most of them apply, if only indirectly, to the problem of undetectable or difficult-to-detect doping. As a matter of evidence and standards of proof, however, four of the prohibitions—use or attempted use, possession, trafficking, and administration of prohibited substances or methods—merit particular attention.¹⁰

1. Use or Attempted Use

The *use* of prohibited substances or methods is defined to include the “application, ingestion, injection or consumption by any means whatsoever.”¹¹ This definition is limited to the physical intake of prohibited substances or employment of prohibited methods and does not seem to contemplate other practices such as the purchase of substances. Accordingly, it is therefore

8. *Id.*, Definitions: Doping Control, app. 1, at 73.

9. *Id.* §§ 2.1-8.

10. The definition of a fifth violation, “tampering of attempting to tamper,” also might seem applicable in part: “Altering for an improper purpose or in an improper way; bringing improper influence to bear; interfering improperly to alter results *or prevent normal procedures from occurring.*” *Id.*, Definitions: Tampering, app. 1, at 78 (emphasis added). In context and in the light of other provisions in the Code, however, the term seems to be confined to laboratory testing and management. The phrase “or prevent normal procedures from occurring” is therefore best interpreted to refer, restrictively, to actions related to physical testing, laboratory analysis, and physical results management.

11. *Id.* § 2.2.

questionable whether circumstantial evidence alone of use or attempted use—for example, receipts for the purchase of a prohibited substance—would provide an adequate basis for sanctions under the Code. Moreover, proof of an attempted use requires a showing of intent on the athlete's part. On the other hand, the official Comment to the Code makes clear that proof of use may rely on “admissions, third-party testimony, or other evidence.”¹² It should also be noted that the Code allows all test samples to be kept eight years for later analysis and possible sanctioning of athletes.

2. Possession

The term *possession*, as used in the Code, includes actual physical possession or constructive possession of a prohibited substance or substances. The official Comment establishes that steroids found in an athlete's car or home medicine cabinet under the joint control of an athlete and spouse would constitute *prima facie* violations of the Code.¹³ The definition further provides, however, that any person who, “prior to receiving notification of any kind”¹⁴ of an anti-doping rule violation, takes concrete action to relinquish possession and renounce previous possession is not subject to an anti-doping rule violation based solely on possession.

3. Trafficking

One might suppose that *trafficking* in a prohibited substance or method would be the most obvious basis for proving a violation of the Code in the absence of analytic proof from a laboratory. Surprisingly, however, the term is defined restrictively as an activity to “sell, give, administer, transport, send, deliver or distribute [an agent] to an athlete either directly or through one or more third parties.”¹⁵ Apparently, the other side of trafficking—the purchase or receipt of a prohibited substance by an athlete—is not a violation. In view of the problem of undetectable or difficult-to-detect agents, it may be advisable, therefore, to amend the Code to clarify that trafficking is a two-way street or back alley in which the purchase or receipt of a prohibited substance also constitutes trafficking. The International Convention Against Doping in Sport, which will operate as an international treaty binding on States Parties, offered a particularly good opportunity to make such a change, but it, too, refers to trafficking in terms of activity directed to athletes.

12. *Id.* § 2.2.1 Comment.

13. *Id.*, Definitions: Possession Comment, app. 1, at 76.

14. *Id.*, Definitions: Possession, app. 1, at 76-77.

15. *Id.*, Definitions: Trafficking, app. 1, at 78 (emphasis added).

4. Administration or Attempted Administration

The definition of *administration or attempted administration* of prohibited substances or methods is left undefined except as it includes “assisting, encouraging, aiding, abetting, covering up or any other type of complicity”¹⁶ in violating an anti-doping rule. Arguably, any athlete who is involved in administering a prohibited substance or method for his or her benefit would constitute a violation. On the other hand, the more explicit provisions for possession and use of a prohibited substance or method would seem to cover the same practices.

We are left, then, with a set of four rules that either individually or, more effectively, in the aggregate can be cited as bases for the imposition by responsible organizations of any of these basic sanctions: disqualification, provisional suspension, and ineligibility.¹⁷ Given the potential severity of any of these sanctions, however, the Code’s prescriptions for burdens and standards of proof are critical.

B. Burdens and Standards of Proof

The Code relies on Anti-Doping Organizations, as defined, to initiate, implement, and enforce the doping control process. These organizations include all Signatories of the Code, namely, the IOC, IFs, the International Paralympic Committee, National Olympic Committees, National Paralympic Committees, Major Event Organizations, National Anti-Doping Organizations, and the World Anti-Doping Agency (WADA).¹⁸

In carrying out its responsibilities,

[t]he Anti-Doping Organization shall have the burden of establishing that an anti-doping rule violation has occurred. The standard of proof shall be whether the Anti-Doping Organization has established an anti-doping rule violation to the *comfortable satisfaction* of the hearing body bearing in mind the seriousness of the allegation which is made. This standard of proof in all cases is greater than a mere balance of probability but less than proof beyond a reasonable doubt. Where the Code places the burden of proof upon the Athlete or other Person alleged to have committed an anti-doping rule violation to rebut a presumption or establish specified facts or circumstances, the

16. *Id.* § 2.8.

17. *Id.*, Definitions: Consequences of Doping Violations, app. 1, at 73.

18. *Id.*, Definitions: Signatories, app. 1, at 72.

standard of proof shall be by a balance of probability.¹⁹

The Code confirms that “[f]acts related to anti-doping rule violations may be established by any reliable means, including admissions.”²⁰ Two other rules on methods of establishing facts and presumptions address international standards for laboratory analysis and departures from them.

Of greatest interest is the standard of “comfortable satisfaction”²¹ that is defined to be “greater than a mere balance of probability but less than proof beyond a reasonable doubt.”²² Thus, the Code adopts a standard whose rigor lies somewhere between what is normally applied in private law and what is applied under public (penal or criminal) law. The official Comment notes that this standard of proof “is comparable to the standard which is applied in most countries to cases involving professional misconduct.”²³ The Comment, citing a Court of Arbitration for Sport (CAS) decision,²⁴ also observes that the standard “has been widely applied by courts and tribunals in doping cases.”²⁵ It is therefore a rule of custom in international sports law.

III. NON-ANALYTICAL POSITIVE EVIDENCE

A. The BALCO Controversy

The Bay Area Laboratory Co-Operative (BALCO) became the focus in 2004 of a major controversy involving an apparently widespread use of undetectable or difficult-to-detect agents in sports competition.²⁶ BALCO’s role came to light as a result of an anonymous tip to the United States Anti-Doping Agency (USADA) on June 5, 2003. The tipster claimed that he had evidence of an undetectable anabolic steroid that BALCO had distributed. The next day the USDA received an anonymous syringe containing a clear liquid. After several weeks of testing the liquid, chemists at the Olympic Analytical Laboratory at UCLA announced that they had identified a new, difficult-to-detect steroid, which they named tetrahydrogestrinone (THG).

19. *Id.* § 3.1 (emphasis added).

20. *Id.* § 3.2.

21. *Id.* § 3.1.

22. *Id.*

23. *Id.* § 3.1 Comment.

24. *N.J.Y.W. v. FINA*, CAS 98/208 (1998).

25. *Id.* § 3.1 Comment.

26. See generally Liz Robbins, *Even When They Can Run, They Surely Cannot Hide*, N.Y. TIMES, Aug. 8, 2004, at Sports 4; Jere Longman & Liz Robbins, *Top U.S. Sprinter Barred as Drug Scandal Grows*, N.Y. TIMES, May 20, 2004, at 1. For running commentary on the BALCO Controversy, see MERCURY NEWS (San Jose, Cal.), 2003-04, *passim*.

The federal Department of Justice and the State of California, where BALCO is headquartered, launched investigations that culminated on September 3, 2003 in a raid of BALCO facilities by federal and county agents. Analysis of documentary and other material seized during the raid led to a determination by USA Track & Field that four athletes had used THG before or during the national championships earlier in 2003. Reports also circulated that four National Football League (NFL) players had tested positive for THG. It was during this period of time, as the BALCO scandal widened, that MLB announced that 5-7% of the tests of baseball players were positive, under MLB's first-ever anti-doping program, which had been established in 2002.

In early 2004 a federal grand jury indicted four persons on charges of distributing illegal drugs to athletes and money laundering, including BALCO's president and chief executive officer, its vice-president, a professional trainer and alleged distributor of prohibited drugs, and a track-and-field coach.²⁷ All four pleaded not guilty to distributing steroids to athletes.²⁸ Federal indictments were based on some 31,000 pages of evidence. Congressional hearings in the BALCO controversy also followed. Additionally, the State of California fined BALCO about three-quarters of a million dollars for its operation of a licensed clinical lab without proper personnel, submission of false statements on licensing documents, and authorization of an unlicensed person to conduct complex testing.²⁹

Records that had been subpoenaed by the United States Senate Commerce Committee from the Department of Justice were delivered to the USADA. On the basis of the records, USADA, in turn, launched its own investigations. These investigations were based not on urinalysis or other physical techniques of doping control but on non-analytical positive evidence of e-mail communications, calendars, drug schedules revealing evidence of the use by particular athletes of performance-enhancing substances, personal checks from athletes to BALCO, and other extrinsic paper evidence.³⁰

This evidence, which was generally coded and therefore cryptic, indicated sales by BALCO of doping substances to several prominent athletes,

27. Indictment, *United States v. Conte*, (N.D. Cal. 2004), available at <http://news.findlaw.com/hdocs/docs/sports/usconte21104ind.pdf>.

28. See *BALCO Chemist Is Subject of Federal Raid, Paper Says*, N.Y. TIMES, Oct. 1, 2005, at B17. BALCO's President, Victor Conte, was sentenced to four months in prison and four months more in home confinement. CHRISTIAN SCI. MONITOR, Oct. 20, 2005, at 20. Further law enforcement measures, grand jury investigations, and indictments were continuing as of the date of this news item.

29. See MERCURY NEWS (San Jose, Cal.), July 13, 2004.

30. See Jere Longman, *Jones's Lawyers Challenge Evidence*, INT'L HERALD TRIB. (Paris), May 27, 2004, at 22.

particularly in baseball and track and field. One of them, Kelli White, promptly admitted her use of prohibited substances and was suspended from competition for a period of two years.³¹ Before the Athens Games in August 2004, five other athletes—four Americans (Michelle Collins, Chryste Gaines, Alvin Harrison, and world-record sprinter Tim Montgomery) and one British sprinter—were charged by USADA with violations of the anti-doping rules and faced suspensions from competition for a minimum of two years each. One of the Americans, Alvin Harrison, who subsequently admitted to doping, received a four-year suspension of eligibility, effectively ending his competitive career.³² A second athlete, Tim Montgomery, admitted that he had used human growth hormone and THG. Three of the athletes appealed the USADA actions to the Court of Arbitration for Sport (CAS), with inconclusive outcomes. Several other athletes subsequently received suspensions from competition for using THG or modafinil, both of which are drugs closely identified with BALCO as a source, and nikethamide, a stimulant. WADA's investigations continued, casting suspicion on several athletes, especially 2000 Olympic champion Marion Jones, and a shadow over the entire sports arena.

Although the BALCO controversy centered on track-and-field athletes, it extended to football and baseball players as well. In particular, testimony by baseball stars Barry Bonds, Jason Giambi, and Gary Sheffield highlighted the mounting controversy.

B. The Sanctioning Process and Its Discontents

The World Anti-Doping Code, despite its impulse of harmonization, does not require anti-doping organizations to adopt a single results management and hearing process.³³ Each signatory organization can design its own process so long as it satisfies the Code's general requirements. The USADA sanctioning process involves four steps: notification to an athlete of a potential violation; examination of the alleged violation and recommendation after a hearing by an independent review board of whether USADA should proceed with a formal charge; acceptance or rejection by the athlete of any USADA-imposed sanction; and an opportunity for the athlete to contest the sanction before, according to his choice, either the American Arbitration Association (AAA) or CAS.³⁴

31. See Longman & Robbins, *supra* note 26; Dick Patrick, *Runner to Help in Drug Probe*, USA TODAY, May 20, 2004, at 1A.

32. See Elliott Almond, *Alvin Harrison Accepts Ban*, MERCURY NEWS (San Jose, Cal.), Oct. 20, 2004, at 4D.

33. CODE, *supra* note 2, Introduction Comment.

34. UNITED STATES ANTI-DOPING AGENCY, PROTOCOL FOR OLYMPIC MOVEMENT TESTING

The BALCO-related sanctions have been challenged along four lines. First, as a factual matter, it is claimed that the often deliberately coded and otherwise cryptic communications that constitute the primary evidence against the athletes does not explicitly mention them by name or confirm their actual possession, use, or attempted use of prohibited substances. Even large checks to BALCO from implicated athletes have been controversial. Second, it is claimed that during the BALCO controversy USADA unfairly changed its standard of proof of doping from the strict “beyond a reasonable doubt” standard that is identified with penal law to the more relaxed “comfortable satisfaction” standard that is found in the World Anti-Doping Code. Also, it is claimed that the “comfortable satisfaction” standard of proof is too new to be applicable to activity and performances before the Code became effective. Third, it is claimed that in any event the “comfortable satisfaction” standard is too relaxed to protect athletes’ rights of due process. Although the USADA process is not a criminal one, the consequences of a doping infraction are essentially of a penal nature and therefore merit a high standard of proof.

Finally, as a constitutional matter, it is claimed that the records that Congress had subpoenaed from the Justice Department and delivered to USADA were fruit of a poisoned tree. The argument is that the federal raid of BALCO and other law-enforcement actions that produced the damaging records violated the Fourth Amendment to the United States Constitution, which protects all persons against unreasonable searches and seizures.³⁵ To be sure, the Federal Rules of Criminal Procedure do authorize judges to release grand jury testimony under limited circumstances, normally to facilitate another federal or state investigation. As a non-governmental body, however, USADA would not qualify as a basis for such inter-governmental cooperation. The Rules and judicial precedent have also established that courts may release grand jury information whenever there is “particularized need” for the testimony that is greater than the protection of a grand jury’s secrecy. In evaluating this constitutional challenge, it might be argued that the integrity of sport created such a particularized need for the BALCO-related communications. On the other hand, Congress seems to have supplied the information to USADA on a *carte blanche*, or generalized rather than

(2004).

35. See U.S. CONST. amend. IV. On a related issue, Representative John Conyers has called for an investigation by the Inspector General of the Department of Justice to determine the nature of USADA’s involvement in the BALCO criminal investigation and what documents it received; why federal agents did not use a government facility to analyze lab reports and materials taken during the raid of BALCO; and whether the Justice Department sought a government lab for analysis to confirm UCLA’s findings that THG is an anabolic steroid (and if not, why not). *MERCURY NEWS* (San Jose, Cal.), Sept. 17, 2004.

particularized, basis.

The debate about appropriate standards of proof highlights the general issue of reliance on circumstantial evidence within the anti-doping process. The difficult question is: in the interest of a level playing field for all athletes, to what extent should we run the risk of abandoning a traditional reliance on hard laboratory data to justify the imposition of essentially penal sanctions against athletes?

IV. ATHLETIC PROFILING

A more radical approach to the problem of undetectable or difficult-to-detect drugs would be to require profiling of all athletes as a basis for their eligibility in international competition.³⁶ Accordingly, it has been suggested that all aspiring athletes should undergo detailed physical examinations periodically. On this basis, each athlete would receive an identity card or computer file that would include an index of physical strength, capacity to absorb oxygen and eliminate lactic acid, red blood-cell count, hormone level, and other physical characteristics. Significant deviations over time would then trigger specific investigations of suspected drug use, although it is unclear to what extent a changed profile might in itself constitute valid evidence of doping or at least a presumption of doping.

The concept of athletic profiling appears to have been inspired by a response to a doping crisis within the Tour de France of cycling. The embarrassed French government responded by requiring comprehensive annual examinations of cyclists seeking to compete in the annual competition. This requirement subsequently was extended by the International Cycling Union to all cyclists for certification of eligibility in international competition. Initially, the resulting data were to have been used only for the statistical purpose of revealing the extent of the problem, overall, and trends related to it. The data were not intended to be used to provide evidence against particular cyclists. An individualized compilation and broader use of such data as an integral part of the anti-doping process, with sanctions against alleged violators, might seem highly intrusive. But it is likely that such measures are inevitable in all sports, contributing as they do to both the “comfortable satisfaction” of reviewing bodies and, temporarily, the uncomfortable dissatisfaction of the athletes themselves until testing becomes fully uniform and routine.

36. See, e.g., Ian Austen, *Athletic Profiling*, N.Y. TIMES, Sept. 12, 2004, § 6 (Magazine), at 24.

V. CONCLUSION

The new specter of undetectable or difficult-to-detect doping, highlighted by the BALCO controversy in the United States, serves as a reminder that we have entered a Brave New World of doping and doping control in sports.

In responding to old as well as new threats to the integrity of sports competition, the World Anti-Doping Code, as newly incorporated into the International Convention Against Doping in Sport, provides a process and set of rules for harmonizing and enforcing a global regime. It is difficult, however, for the legal imagination to keep up with scientific ingenuity. The problem of circumstantial evidence of anti-doping rule violations is a current example of this dilemma for the legal profession. The feasibility of gene therapy³⁷ and other cutting-edge techniques for enhancing athletic performance underscores the need to achieve a more detailed global consensus, consistent with international sports law, on the appropriate elements of the evolving anti-doping process. In the modern era, the rules of the process, if they are fair, can best protect the rules of the game.

37. See H. Lee Sweeney, *Gene Doping*, SCI. AM., July 2004, at 63.

