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ARE WE ALL DOPES? A BEHAVIORAL LAW & ECONOMICS APPROACH TO LEGAL REGULATION OF DOPING IN SPORTS

SHAYNA M. SIGMAN*

INTRODUCTION

You should care about the prevalence of performance-enhancing drugs (PEDs) and doping methods currently being used and abused within elite sports. You should care, not because teenagers and youth are harmed by this, even though they most likely are.¹ You should care, not because elite athletes or those attempting to become elite athletes are harmed by this, even though they most likely are.² Whether you are a recreational athlete or a couch potato, whether you are a serious sports fan, a casual fan, or not a fan at all, you should care about the fact that it is highly likely that you have been harmed by doping in sports.

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1. See, e.g., *Steroid Use in Sports: Hearing on H.R. 1862 Before the H.R. Gov't Reform Comm.*, 109th Cong. (2005); Joshua H. Whitman, Note, *Winning at All Costs: Using Law & Economics to Determine the Proper Role of Government in Regulating the Use of Performance-Enhancing Drugs in Professional Sports*, 2008 U. ILL. L. REV. 459, 477-80 (2008) (noting that "there is strong evidence linking the troubling increase in teen PED use to the prevalent use of these substances by professional athletes," even if such evidence "is not empirical in nature"); Hector Del Cid, *Winning at All Costs: Can Major League Baseball's New Drug Policy Deter Kids from Steroids and Maintain the Integrity of the Game?*, 14 SPORTS LAW. J. 169, 170-71 (2007) (arguing in favor of more education aimed toward youth regarding performance-enhancing drugs); Colin Latiner, *Steroids and Drug Enhancements in Sports: The Real Problem and the Real Solution*, 3 DEPAUL J. SPORTS L. & CONTEMP. PROBS. 192, 210 (2006) (identifying the real problem with steroids as amateur and youth use); Denise A. Garibaldi, *The Challenge and the Tragedy*, 40 NEW ENG. L. REV. 717, 717-21 (2006) (detailing the suicides of two young athletes, Rob Garibaldi and Taylor Hooton, who each took steroids); Charles A. Palmer, *Drugs vs. Privacy: The New Game in Sports*, 2 MARQ. SPORTS L.J. 175, 191-93 (1992) (describing the government interest in testing high school students for the use of anabolic steroids).

2. See, e.g., Whitman, *supra* note 1, at 492-95 (describing the "winner's bias" as a cognitive failure among athletes that causes them to act "socially suboptimally"); Shi-Ling Hsu, *What is a Tragedy of the Commons? Overfishing and the Campaign Spending Problem*, 69 ALB. L. REV. 75, 95-99 (2005) (identifying the incentive each athlete has to "cheat" and labeling the use of PEDs as a tragedy of the commons); Edward J. Bird & Gert G. Wagner, *Sport as a Common Property Resource: A Solution to the Dilemmas of Doping*, 41 J. CONFLICT RES. 749, 752 (1997) (arguing that the incentive to dope is a common pool resource problem that athletes face and offering informal norm encouragement as one solution to this problem).

You are probably not even aware that you have been harmed; when it comes to the cognitive failings that stem mostly from a lack of information, misinformation, and the heuristics we rely upon within our neurological framework,³ if you were more aware of this harm and why you should care, the damage would probably not be as significant.⁴ The problem is that your entire reality about that which is elite and humanly possible has been altered, and this might be one steroid-ripped genie that will not fit back in the lamp.

This Article begins by leading with its conclusion—that the unidentified and unquantified yet prevalent use of PEDs and other doping methods has changed the way in which we understand elite human achievement and how we relate to that, and it has changed us for the worse. It focuses on this harm because we live in a society where we have been oversaturated with reports and discussions of drugs within sports.

Call it steroid-fatigue, if you will. We are living in the Steroid Era, the Age of the Asterisk. Day in, day out, the news on the sports pages features stories of the juicers, the dopers, and the cheats. When we hear the names of elite athletes, such as Barry Bonds,⁵ Roger Clemens,⁶ Floyd Landis,⁷ Marion

3. Research into cognitive biases and heuristics stems back to Kahneman and Tversky's Nobel Prize-winning contribution to economics identifying prospect theory, i.e., the curious differences in how people perceive risk based on whether loss or gain is involved. See Daniel Kahneman & Amos Tversky, *Prospect Theory: An Analysis of Decision Making Under Risk*, 47 *ECONOMETRICA* 263 (1979). Heuristics and biases, such as the representativeness heuristic (linking objects that appear similar, but are not, together) or the availability heuristic (skewed bias toward that which is memorable or extreme) are further explored in DANIEL KAHNEMAN ET AL., *JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES* 3 (1982).

4. Christine Jolls & Cass R. Sunstein, *Debiasing Through Law*, 35 *J. LEGAL STUD.* 199, 200 (2006) (explaining how "legal policy may respond best to problems of bounded rationality not by insulating legal outcomes from its effects, but instead by operating directly on the boundedly rational behavior and attempting to help people either to reduce or to eliminate it"). For examples of how people respond once they are shown a specific cognitive bias, see Neil D. Weinstein & William M. Klein, *Resistance of Personal Risk Perceptions to Debiasing Interventions*, in THOMAS GILOVICH ET AL., *HEURISTICS AND BIASES: THE PSYCHOLOGY OF INTUITIVE JUDGMENT* 313-23 (2002) (how to—and how not to—debias "optimism bias"); Baruch Fischhoff, *Debiasing in KAHNEMAN ET AL.*, *supra* note 3, at 422-44 (noting that merely telling someone about a bias is insufficient to overcome it). See also Gregory Besharov, *Second-Best Consideration in Correcting Cognitive Biases*, 71 *S. ECON. J.* 12 (2004) (noting that the best forms of correcting cognitive biases come from those who are bias free, and, in the alternative, warning that some forms of correction may make people worse off, because there might be an unrecognized offsetting bias).

5. The most comprehensive account of Barry Bonds' use of performance-enhancing drugs is MARK FAINARU-WADA & LANCE WILLIAMS, *GAME OF SHADOWS* (2006). For a perspective on the personality of Bonds, see JEFF PEARLMAN, *LOVE ME, HATE ME: BARRY BONDS AND THE MAKING OF AN ANTIHERO* (2006).

6. Roger Clemens was perhaps the "biggest" name to appear in the *Mitchell Report*, the culmination of former Senator George Mitchell's year and a half long investigation into the use of performance-enhancing drugs in MLB. GEORGE J. MITCHELL, *REPORT TO THE COMMISSIONER OF BASEBALL OF AN INDEPENDENT INVESTIGATION INTO THE ILLEGAL USE OF STEROIDS AND OTHER*

Jones,⁸ and countless others, our minds immediately associate the athletes with the use of PEDs, such as anabolic-androgenic steroids (AAS) rather than actual athletic achievement. To speak solely of steroids ignores the veritable medical cabinet treasure trove of substances available to the millennial athlete, including: various hormones, notably human growth hormone (hGH) and erythropoietin (EPO); stimulants; diuretics; and beta blockers, along with masking agents to avoid detection of any of these substances.⁹ Designer drugs are being created specifically to enhance performance while still remaining under the radar of increasingly aggressive drug testing that many athletes face.¹⁰ And some modern doping methods do not involve ingesting drugs at

PERFORMANCE ENHANCING SUBSTANCES BY PLAYERS IN MAJOR LEAGUE BASEBALL 167-174 (Dec. 13, 2007) available at <http://files.mlb.com/mitchrpt.pdf> [hereinafter MITCHELL REPORT]. Perhaps concerned about the appearance that someone else had “scooped” him on the Clemens-steroid connection, Jose Canseco, the self-proclaimed “juicer,” recounts how when he wrote *Juiced*, his original tell-all book about the prevalence of steroid use in MLB, the publisher requested that he delete his suspicions about Roger Clemens. JOSE CANSECO, VINDICATED: BIG NAMES, BIG LIARS, AND THE BATTLE TO SAVE BASEBALL, 3 (2008).

7. On September 20, 2007, the North American Court of Arbitration for Sport/AAA Panel found that despite the testing lab’s failure to follow proper procedure, the evidence still showed that Floyd Landis had violated the World Anti-Doping Code (WADC) by taking synthetic testosterone during his yellow-jersey winning 2006 Tour de France campaign. Landis received a two-year suspension from cycling. The Court of Arbitration for Sport (CAS) upheld the suspension dating back to January 30, 2007, and also ordered Landis to pay \$100,000 in legal fees to contribute to the expenses incurred during the arbitration of his case, due to the nature of how he mounted his defense and the hardships he imposed on the United States Anti-Doping Agency (USADA). See *United States Anti-Doping Agency and Floyd Landis*, Arbitration Award Case No: 30 190 00847 06, award of Sept. 20, 2007, available at [http://www.usantidoping.org/files/active/arbitration_rulings/Landis%20Final%20\(20-09-07\)%20\(3\).pdf](http://www.usantidoping.org/files/active/arbitration_rulings/Landis%20Final%20(20-09-07)%20(3).pdf); *Landis v. USADA*, CAS 2007/A/1394/1394, award of June, 30, 2008, available at [http://64.233.169.132/search?q=cache:FSomLqPDW4J:www.tas-cas.org/d2wfiles/document/1418/5048/0/Award%2520Final%2520Landis%2520\(2008.06.30\).pdf+%22landis+v.+usada%22&hl=en&ct=clnk&cd=3&gl=us](http://64.233.169.132/search?q=cache:FSomLqPDW4J:www.tas-cas.org/d2wfiles/document/1418/5048/0/Award%2520Final%2520Landis%2520(2008.06.30).pdf+%22landis+v.+usada%22&hl=en&ct=clnk&cd=3&gl=us) (CAS decision). For those interested in the Landis side of the account, see FLOYD LANDIS & LOREN MOONEY, POSITIVELY FALSE: THE REAL STORY OF HOW I WON THE TOUR DE FRANCE (2007).

8. Yet another athlete implicated by the BALCO scandal, Jones took performance-enhancing drugs to fuel her multi-medal track & field performance. See FAINARU-WADA & WILLIAMS, *supra* note 5, at 234-35. Jones lied about her use of steroids, hGH, and EPO to federal agents, and subsequently pled guilty to a charge of obstruction of justice, for which she received a six month prison sentence. Lynn Zinser & Michael S. Schmidt, *Jones Admits to Doping and Enters Guilty Plea*, N.Y. TIMES, Oct. 6, 2007, at B12; Erwin Seba, *Disgraced Sprinter Jones Reports to Prison*, REUTERS.COM, Mar. 7, 2008, <http://www.reuters.com/article/topNews/idUSN0736370220080308>. Jones has since asked President Bush to pardon her or commute her sentence. See Martha Neil, *Sprinter Marion Jones Seeks Pardon; US Track Program Head Objects*, ABA JOURNAL, July 22, 2008, http://www.abajournal.com/news/sprinter_marion_jones_seeks_pardon_us_track_program_head_objects.

9. All of these substances are in 2008 WADC Prohibited List, WORLD ANTI-DOPING CODE, available at http://www.wada-ama.org/rtecontent/document/2008_List_En.pdf [hereinafter 2008 WADC Prohibited List].

10. See, e.g., SHAUN ASSAEL, STEROID NATION: JUICED HOME-RUN TOTALS, ANTI-AGING

all, such as transfusion blood doping.¹¹ “Gene doping”—the modification of genes to facilitate genetic variations that produce advantages for athletic competition—likely represents the next frontier for doping in sports.¹²

We have gone from an era of blissful ignorance of doping to one of media bombardment and drug alphabet soup, and our minds have struggled to make this adjustment. Indeed, the cloud of doping casts a wide shadow over many athletic events and professional sports leagues, challenging the legitimacy of elite sport as a bastion of fair competition and threatening the image of even the most frequently tested—and heretofore clean—athletes and sports.¹³ The debates over regulation of doping within elite sports have been played out in the media,¹⁴ the court system,¹⁵ legal scholarship,¹⁶ and even the halls of

MIRACLES, AND A HERCULES IN EVERY HIGH SCHOOL: THE SECRET HISTORY OF AMERICA’S TRUE DRUG ADDICTION 192-226 (2007) (explaining how insiders helped drug testers learn about the development of THG, a designer steroid); FAINARU-WADA & WILLIAMS, *supra* note 5, at 53 (noting the connection between chemist Patrick Arnold and Victor Conte of BALCO fame).

11. Shannon Sovndal, *A Doctor Explains Blood Doping*, VELONEWS.COM, July 24, 2007, available at <http://velonews.com/article/12924> (describing the difference between autologous and homologous blood transfusion doping—namely, whether an athlete is transfusing his own blood or someone else’s). See also World Anti-Doping Agency, *Blood Doping*, WADA-AMA.ORG, <http://www.wada-ama.org/en/dynamic.ch2?pageCategory.id=626> (last visited Oct. 22, 2008).

12. See DR. H.J. HAISMA, GENE DOPING (2004), available at <http://www.genedoping.com/docs/Gene%20Doping.pdf> (publication by the Netherlands Centre for Doping affairs describing how athletes might use gene therapy to achieve better performance, the risks of such behavior, and recommendations for how to prevent gene doping). The World Anti-Doping Agency has been convening conferences and meetings with geneticists to determine the extent to which genetically-enhanced athletes might replace drug-enhanced ones. See e.g., Brian Alexander, *Sports Authorities Fear Gene Doping Not Far Off*, MSNBC.COM, Feb. 26, 2006, <http://www.msnbc.msn.com/id/10628586>. WADA’s concerns may not have come too soon. A German documentary broadcast this summer uncovered the possibility in China for an athlete to receive a stem cell treatment to enhance performance. *German Documentary Reveals Possible Genetic Doping in China*, DEUTSCHE WELLE, July 23, 2008, available at <http://www.dw-world.de/dw/article/0,2144,3505381,00.html>.

13. See, e.g., Greg Cote, *In My Opinion: Steroids Sully Sports with Suspicion*, MIAMI HERALD, July 10, 2008, available at 2008 WLRN 12956072 (“We can’t but wonder who might be the next great athlete unmasked as a cheat and a liar.”); DAVID WALSH, FROM LANCE TO LANDIS: INSIDE THE AMERICAN DOPING CONTROVERSY AT THE TOUR DE FRANCE (2007) (a comprehensive look at doping in cycling that casts serious doubts into Lance Armstrong’s constant assertion that he competed drug-free, a claim supported by his consistent failure to produce a valid positive test).

14. Media coverage of steroids and other performance-enhancing drugs in sports abounds, whether it is in the movie theater, see, e.g., BIGGER, STRONGER, FASTER*: *THE SIDE EFFECTS OF BEING AMERICAN (BSF Film 2008) (Sundance Film Festival documentary narrating the tale of steroid use by the brothers of one American family as it fits in the context of steroid use in general); on television, see, e.g., *MTV’s True Life: I’m on Steroids* (MTV television broadcast Jan. 12, 2006) (a serious look at four young men who take steroids); *South Park: Up the Down Steroid* (Comedy Central television broadcast Mar. 24, 2004) (a not-so-serious look at steroid use in the special Olympics); on the internet, see, e.g., Steroid Nation, http://grg51.typepad.com/steroid_nation/ (“an online journal looking at the use of anabolic steroids (and performance enhancing drugs PEDs, HGH, doping) in sports, youth, and society”); *Baseball’s Steroid Era*, <http://thesteroidera.blogspot.com/> (featuring “news, lists, timelines, quotes, statistics”); in books, see, e.g., ASSAEL, *supra* note 10;

Congress.¹⁷ Even those who may prefer that the government devote vigilant attention to stop the use of steroids and other PEDs in elite athletics suffer from overload-induced apathy. It is hard to recall the extensive discussion considering whether Roger Clemens received an injection in his buttocks¹⁸ without asking: Isn't it enough? Don't we have more pressing concerns for the leaders of our nation?¹⁹ And for so many others, ranging from those who

FAINARU-WADA & WILLIAMS, *supra* note 5; and, last but not least, in the old-fashioned news. A Westlaw search for news articles published within the past three years for articles with the word "steroids" in the title and sports in the article body produces several thousand documents. Recent articles range the gamut of the "ordinary" reports of positive drug test results or high school drug testing programs, the "extraordinary" tales of murder and crime and even a few sports reporters noting (without intended irony) the remarkable absence of steroids in the media, see e.g., Paul Hagen, *Selig in Good Spirits with Steroids out of Headlines*, PHILA. DAILY NEWS, July 16, 2008, at 72.

15. See, e.g., *United States v. Comprehensive Drug Testing, Inc.*, 513 F.3d 1085 (9th Cir. 2008) (consolidation of three cases arising from the BALCO investigation and the distribution of steroids to MLB players, upholding subpoena for drug testing records and specimens of professional baseball players who tested positive for steroids); *United States v. Shortt*, 485 F.3d 243, 253 (4th Cir. 2007) (upholding the one-year prison sentence for doctor found to have prescribed and dispensed anabolic steroids and human growth hormone to professional athletes, including NFL players affiliated with the Carolina Panthers); *Weber v. Oakridge Sch. Dist.* 76, 56 P.3d 504, 508 (Or. Ct. App. 2002) (noting that "nearly 10 percent" of Oakridge student-athletes had used steroids and upholding constitutionality of drug-testing for student-athletes).

16. See articles cited *supra* note 1 and *infra* notes accompanying text in Section II.A.

17. In January and February of 2008, the House Committee on Oversight and Government Reform held hearings on the *Mitchell Report*. *The Mitchell Report: The Illegal Use of Steroids in Major League Baseball: Hearing Before the H. Comm. on Oversight & Gov't Reform*, 110th Cong. (2008), available at <http://oversight.house.gov/story.asp?ID=1722#> (video of hearings). The same committee held hearings on the subject of steroids in baseball in 2005 as well. In the aftermath of those hearings, Sen. John McCain, Rep. Henry Waxman, and Rep. Tom Davis proposed the Clean Sports Act of 2005 (H.R. 2565). This bill is discussed *infra* in Section I.B.iv.a.

18. One source of contention at the committee hearings was an abscess on Clemens's buttocks, which Clemens attributed to B-12 injections, not steroids, as McNamee and others claimed. See Bryan Hoch, *Clemens, McNamee Face Off in D.C.*, MLB.COM, Feb. 13, 2008, available at http://mlb.mlb.com/news/article.jsp?ymd=20080213&content_id=2371946&vkey=news_mlb&fext=jsp&c_id=mlb (describing the testimony and providing specific video links to each section of the hearings).

19. Various members of Congress have been asking this question as well. For example, Rep. Michael C. Burgess, a doctor who represents the 26th District of Texas, who asked this very question on the house floor several months ago in a debate concerning Medicare cuts and health care:

So last December we passed a 6-month delay on phasing in the Medicare cuts. We have to deal with that before the end of June. It is the first of April. Half of that time has been consumed. Half of that time has been squandered, and have we seen any meaningful effort in my committee, the Committee on Energy and Commerce, which has jurisdiction over Part B in Medicare? No, we haven't. We did steroid hearings, for crying out loud, on baseball players. This is the work we should be doing.

154 CONG. REC. H2003-01, (daily ed. Apr. 3, 2008) (statement of Rep. Burgess), available at 2008 WL 897754.

At the end of February, when the baseball-steroids hearings had just happened, Sen. Kit Bond noted,

believe that adult drug usage ought not to be regulated at all to those who simply do not care one bit about sports, the underlying question remains: Why should I care about legal regulation of doping in sports? Why should I care at all?

This Article relies on behavioral law and economics to make the case that you—and everyone else—should care. It explains how legal regulation must work hand-in-hand with private ordering to minimize the existing harms and prevent future damage caused by doping in sports. It offers the unique argument that our beliefs about what is humanly possible, expected, and even desired for our athletic elite are now a tainted mess, and that this influences our appreciation for the human body and spirit, as well as how we view ourselves and our own relative performance. It is important that we recognize and acknowledge this harm in our search for answers within the debate about the laws and ethics of doping in elite athletics, because the nature of the harm points in the direction of the appropriate remedy; informational harms need information-based solutions, such as mandatory-disclosure laws.

This Article is not the first to consider the question of legal regulation of doping within sports. Nor is it even the first to consider how theories from law and economics,²⁰ game theory,²¹ or even behavioral law and economics²² might apply to this issue. This Article, however, presents arguments that are

What is most distressing, and quite frankly the most insulting factor in this situation, is that within the same week the House chose not to take up and make permanent essential provisions from the Protect America Act, the House Committee on Oversight and Government Reform found time to conduct a hearing on steroids in professional baseball that amounted to nothing more than a media circus. It is for reasons such as these that Congress has some of the lowest approval ratings in history.

Requiring a Report Setting Forth the Global Strategy of the United States to Combat and Defeat Al Qaeda and Its Affiliates, 154 CONG. REC. S1334-02, (daily ed. Feb. 28, 2008) (statement of Sen. Bond), available at 2008 WL 538570.

20. See, e.g., Whitman, *supra* note 1, at 473-90; Wolfgang Maennig, *On the Economics of Doping and Corruption in International Sports*, 3 J. SPORTS ECON. 61, 75-82 (2002) (discussing the incentives athletes have to dope and how penalties need to be increased and tailored to sanction athletes found doping if they are expected to deter this behavior).

21. See, e.g., Nicolas Eber, *The Performance-Enhancing Drug Game Reconsidered – A Fair Play Approach*, 9 J. SPORTS ECON. 318 (2008) (arguing that the inclusion of fair play norms into the game theory analysis of athletes switches them from a prisoner's dilemma model to a stag hunt model); Soren Holm, *Doping Under Medical Control – Conceptually Possible but Impossible in the World of Professional Sports?* 1 SPORT, ETHICS AND PHIL. 135, 140 (2007) (presenting a game theoretic analysis of the openness of legitimate doping); Kjetil K. Haugen, *The Performance-Enhancing Drug Game*, 5 J. SPORTS ECON. 67 (2004) (game theory model with suggestions of the hurdles that anti-doping implementation may face); Simon Eassom, *Playing Games with Prisoners' Dilemmas*, 22 J. PHIL. SPORT 26 (1995) (describing the history of prisoners' dilemma as applied to doping in sports and discussing various game models as applied to the issue).

22. See, e.g., Whitman, *supra* note 1, at 491-95.

unique and novel, relevant and timely, because it (1) relies on recent innovations in behavioral law and economics and cognitive psychology to identify a harm not previously recognized with this debate; (2) incorporates understandings from the literature in history, philosophy, sociology, and psychology of sport that have been largely ignored by the legal academy; (3) reflects the widespread changes in how doping in sports has been treated both by national governments and sporting organizations within the past two decades; and (4) draws upon other legal fields with mandatory disclosure provisions, notably securities law, to find solutions to a problem that has heretofore been dealt with—often unsuccessfully—through criminal laws and investigations.

As an introductory matter, this article first lays out the various forms of doping that occur in elite athletics. It explains how different drugs or methods enable athletes to gain a benefit or advantage that may enhance performance, and how doping seeped into elite athletics over the course of the second half of the twentieth century. Section I then untangles the various legal and extra-legal regimes governing the use of PEDs in athletic competition. The core of this background subsection features the World Anti-Doping Agency (WADA), the World Anti-Doping Code (WADC), and the role of the Court of Arbitration for Sport (CAS) in forming the *lex sportiva* regarding the treatment of athletes found to have doped. This subsection also presents an explanation how professional sports leagues falling outside the ambit of WADA have acted (or not acted) to combat this problem. It also explains the new concept of testing via the biological passport system—physiological profiling of athletes, as opposed to searching for particular substances using a one-size fits all definition of what is “abnormal.” Last, Section I explains the legal prohibitions on controlled substances, the gaps remaining in law enforcement, and how government raids and investigations have interacted hand-in-hand with the efforts of sporting officials to spearhead recent efforts to clean up doping from sports.

Section II of this Article begins with a brief overview of the arguments advanced by scholars and policy-makers for why government should or should not be involved in regulating PEDs. Classic arguments in favor of such regulation have focused on (1) the role model effect that elite athletes have on society, particularly on children and teenagers; (2) protecting the health and welfare of the athletes themselves; (3) preventing fans and consumers of sport from being “cheated” in some way; or (4) upholding the integrity of sport as an independent matter.

The Section next presents the policy arguments that have been offered against regulation. One key reason rests in the theoretical framework of liberalism or libertarianism that supports general drug deregulation. Others

focus on the constitutional privacy rights implicated by government-mandated drug testing of athletes. Another approach premised in group rights rather than individual rights advocates that as a matter of private ordering, the best and most appropriate parties to be regulating doping in sports are the sporting bodies themselves, rather than the government. A recent argument to gain traction posits that perhaps there is a positive externality from the use of PEDs, because society enjoys seeing the accomplishments that are produced by doping in sports.

Section II then launches into the heart of this Article, the core argument that the use of PEDs and other doping methods in top level athletics creates harm that stems from the artificially-created reality regarding what elite achievement truly is. Rooted in the literature on the history, sociology, philosophy, and psychology of sports participation and spectatorship, this section demonstrates how drug-aided achievement changes expectations in such a way that can never fully be restored, even once the presence or prevalence of prior doping is revealed.

The Section demonstrates and explains (1) the importance of sports within society as a socio-cultural phenomenon; (2) how record-breaking and record-setting behavior establishes a focal point in how people understand and appreciate the boundaries and limitations of the human mind and spirit; (3) that “average” performance at the elite level creates a relative baseline for standard-setting that flows downward to influence all levels of sport; and (4) how elite athletes affect body image attitudes among the general populace. As a result, the spread of unquantifiable doping in sports produces a societal distortion effect, damaging these nuanced perceptions and expectations.

This Section then offers a solution for how legal regulation can stop the continuation of this harm, and perhaps repair some of the existing damage, by turning to a disclosure-based model for elite sporting organizations and athletes. The Article relies on securities regulation laws as a conceptual analogy to demonstrate that just as government provides investors with laws to ensure that they can get information that would otherwise not be provided, either due to market failures or due to processing errors that stem from human heuristics and cognitive biases, government ought to treat society at large as “investors” in sport, facilitating full disclosure of information to the public that would not otherwise happen through private ordering, because it is not to the benefit of the various sporting organizations and the insiders of the sports industry.

This Article concludes with a brief discussion regarding the challenges and hurdles that the global and international nature of sport creates for any such disclosure-based model. It asserts that any efforts to regulate doping in sports—whether through this model or an alternative—must seriously consider

the widespread societal harms that doping in sports has already caused and, absent any targeted remedy, will continue to foster in the future.

I. What Is Doping in Sports and Who Regulates It?

There have always been those who seek to gain an advantage in elite athletic competition.²³ From one vantage point, there is no bright line to define what constitutes allowable “natural” efforts to enhance performance versus that which is considered doping, or in other words, an impermissible “artificial” attempt to alter the physiology of the human body.²⁴ Athletes train and eat a specialized diet, which may include dietary supplements. Training can consist of unusual methods, such as training in high altitudes or sleeping in an oxygen tent. Extreme choices in training and diet are not only accepted, they are expected. Elite athletes are permitted—and expected—to seek treatment, take prescribed medications, and undergo surgeries and procedures as needed, such as those repairing injured tendons, ligaments, and bones. Not all procedures are limited to injury repair or necessity. For example, some athletes undergo laser eye-corrective surgery (LASIK).²⁵

Beyond that, technological advancements have introduced new sporting gear and new competition venues that can lead to better performance results. It is a slippery slope descent from the vitamins found at any supermarket or drugstore to the contents of the medicine cabinet, from corrective surgery and special clothing, shoes or equipment to enhancements.²⁶

23. A list of ancient civilizations that used performance enhancements is contained in Woodburne O. Levy, M.D., *Substance Use in Athletes*, ALCOHOLMEDICALSCHOLARS.ORG, <http://www.alcoholmedicalschemolars.org/athletes-out.htm> (last visited Oct. 22, 2008) (a lecture identifying the PEDs of choice for the Greeks, Romans, ancient Egyptians, and indigenous South African tribes).

24. An “April Fools” piece written about the “Hyper Games” mocks the hypocrisy of traditionalism in sports, particularly related to doping, seeing as athletes gain various advantages from technology and also face elevated nondoping risks from participation in elite sports. Editorial, *Let the Games Begin*, 298 SCIENTIFIC AM. 38 (2008).

25. Tiger Woods is one of the most prominent names among the many golfers, baseball players, football players and other athletes who have undergone LASIK surgery to improve their vision to better than 20/20. William Saletan, *The Beam in Your Eye: If Steroids Are Cheating, Why Isn't LASIK?*, SLATE.COM, Apr. 18, 2005, <http://www.slate.com/id/2116858/>. The National Eye Centre of Ireland advertises for the procedure by offering a “Look who has had laser eye surgery done” list of celebrities, including athletes. *Look Who Has Had Laser Eye Surgery Done*, NATIONAL EYE CENTRE.COM, <http://www.thenationaleyecentre.com/Who.html> (last visited Oct. 31, 2008) (showing advertisement).

26. Indeed, the recent controversy regarding world-class runner and double-amputee Oscar Pistorius confronts the question of performance-enhancement from the technical side. See *Pistorius v. IAAF*, CAS 2008/A/1480, award of May 16, 2008 (granting the athlete eligibility to compete in IAAF events against able-bodied athletes while wearing the Ossur Cheetah Flex-Foot prosthesis model). I will be addressing the Pistorius CAS decision and its broader implications in a forthcoming essay.

While many people have a sense that doping is somehow unfair or cheating and that it relates to the introduction of “foreign substances,” it is unclear what makes something cross that line.²⁷ After all, many Americans take some form of drug as a routine matter. In the course of watching the television coverage of an ordinary Sunday National Football League (NFL) game, the viewers are bombarded with advertisements urging them to seek prescriptions for drugs to battle depression, high cholesterol, anxiety, baldness, diabetes or erectile dysfunction.²⁸

There are two criteria often used to judge whether something should be considered doping. The first factor is the nature and degree of the advantage an athlete can gain. The second, and perhaps the more important part, is the risk or potential damage to the athlete from the practice.

WADA is an organization whose mission is tied up in defining exactly what behavior is even considered doping.²⁹ Sports organizations, including, but not limited to, WADA, are faced with the task of determining what substances and methods create impermissible forms of performance enhancement and, thus, are prohibited. The ethics of doping are murky;³⁰ to some, it’s only doping if you have broken the rules. Various government entities, usually at the national level, have criminalized the nonmedical use

27. Compare Michael D. Burke & Terrence J. Roberts, *Drugs in Sport: An Issue of Morality or Sentimentality?* 24 J. PHILO. SPORT 99 (1997) (there is nothing inherently “bad” in drug use under a social-practice theory), and Stuart P. Green, *Cheating*, 23 LAW & PHILO. 137, 161 (2004) (suggesting that if the referee or judge is intentionally not enforcing the rule against cheating by doping, a subsequent competitor may not be cheating as a matter of ethics if he too dopes to even out the advantage), with Debra Shogan & Maureen Ford, *A New Sport Ethics: Taking Konig Seriously*, 35 INT. REV. SOC. SPORT 49 (2000) (suggesting that sports ethics dictates greater concern for unhealthy practices of athletes, including, but not limited to, doping).

28. In 2003, the NFL ended its ban on allowing pharmaceutical companies to be official corporate sponsors and introduced a deal with Bayer and Glaxo Smith Kline to market the erectile dysfunction drug, Levitra. Melody Petersen, *A New Rival to Viagra Enlists the N.F.L. to Put a Masculine Face on a Sensitive Subject*, N.Y. TIMES, July 18, 2003, at C5. Yet as the NFL and MLB discovered, over time, these partnerships became more challenging, due to changes in the regulations of how pharmaceuticals can be advertised directly to consumers as well as the need to match the “family friendly” sports product with drugs that affect sexual performance. Terry Lefton, *ED Era Wanes as Viagra Exits MLB Deal*, SPORTS BUS. J. 3, Mar. 12, 2007, available at <http://www.sportsbusinessjournal.com/article/54095>.

29. “The World Anti-Doping Agency (WADA) is the international independent organization created in 1999 to promote, coordinate, and monitor the fight against doping in sport in all its forms.” World Anti-doping Agency, *Mission & Priorities*, WADA-AMA.ORG, <http://www.wada-ama.org/en/dynamic.ch2?pageCategory.id=255> (last visited Oct. 22, 2008).

30. See, e.g., Nicholas Dixon, *Performance-Enhancing Drugs, Paternalism, Meritocracy, and Harm to Sport*, 39 J. OF SOC. PHILO. 246 (2008) (reviewing the literature on the morality of PEDs in sports); Bengt Kayser, M.D. et al., *Viewpoint: Legalisation of Performance-Enhancing Drugs*, 366 LANCET S21 (2005) (advocating legalizing performance-enhancing drugs so they can be better studied and because the current system does not accurately nor fairly reflect actual risks to athletes).

and distribution of some of these substances as well, adding a different benchmark for what behavior constitutes doping.

This Section first describes the different ways that athletes might dope and organizes its presentation based on the general framework of the substances and practices that the WADC prohibits. It briefly outlines what the substance or method is, how it enhances performance, what the most common or riskiest side effects are, and in which sporting events this type of doping is most common. While one purpose of this Section is to demonstrate that doping is not just about steroids, and indeed there are many substances used by different athletes other than anabolic-androgenic steroids (AAS), greater detail is given to the rise of AAS in elite sport during the latter half of the twentieth century because it is the history of steroids and the corresponding legal debate regarding these substances that has so captured American attention.

After a rudimentary discussion of what doping is, this Section describes the basic manner by which WADA, other sports organizations, statutes, and law enforcement regulate and police the use of drugs in sports. This part describes the core aspects of the strict liability centric WADC, and the role that the CAS plays as supreme arbitrator of the WADC regime. It also features a brief discussion of anti-doping policy among the American professional sports leagues to explain these major outliers from the control of WADA. In addition, this Section identifies the rise of the “biological passport” method of drug testing, a recent development that has grown out of the doping-plagued world of professional cycling. The biological passport is a form of baseline physiological profiling that represents the most comprehensive and promising form of anti-doping policy to date. Last, this Section comments on the interaction between government and legal authorities with private drug testers and organizers, both in the United States and abroad, particularly focusing on two notable federal investigations—BALCO and Operacion Puerto—and their ramifications for doping in sports.

A. The Many Facets of Performance-Enhancing Drugs and Doping Methodology

Canadian snowboarder Ross Rebagliati won the Olympic gold medal in Nagano in 1998, the first year to feature snowboarding in the Olympic Winter Games.³¹ When he tested positive for marijuana, his performance was

31. Associated Press, *Snowboarder Tests Positive for Marijuana*, MILWAUKEE J. SENTINEL, Feb. 11, 1998, <http://graphics.jsonline.com/sports/oly98/pot21198.stm>.

automatically disqualified.³² Fortunately for Rebagliati, the CAS upheld his appeal of the disqualification, and he was able to keep the gold. While there was no genuine concern that Rebagliati's performance was enhanced by marijuana, the basis for the ruling rested not on this factor, but, rather, on the International Olympic Committee's (IOC) lack of jurisdiction in the matter, since the International Ski Federation (FIS) never banned marijuana and had never agreed with the IOC to do so.³³

Sixteen-year-old Romanian gymnast Andreea Raducan was not so fortunate. Raducan won the women's all-around competition Olympic gold medal in 2000 in Sydney. However, she was forced to forfeit this medal and was disqualified from that competition when she tested positive for pseudoephedrine, a stimulant contained in over-the-counter cold medication.³⁴ Subsequent appeals noted the unfortunate circumstance, yet required her to surrender the gold. She was permitted to keep the gold medal she won for the team competition and the silver medal she won for her performance on the vault, each occurring on different days during the Olympics, days on which she did not produce a positive drug test result, a sign that the IOC did not believe that Raducan received any performance-enhancing benefit from her violation of the rules against doping.³⁵

In 2006, prior to the Olympic Winter Games in Turin, Italy, athletes in three different winter sports tested positive for finasteride, an anti-androgen used to treat male-pattern baldness, BPH, and prostate cancer.³⁶ Until hair-growing becomes an Olympic sport, Propecia, like other drugs with finasteride, may not help an athlete do anything better, but it can change the

32. Chris Dafoe, *Whistler's Chairman of the Board*, THE GLOBE & MAIL (Canada), Dec. 28, 1998, at A1 ("For those who spent last February under a rock, a recap: The day after winning the gold, Mr. Rebagliati's urine test turned up traces of marijuana.").

33. *Canadian Snowboard is Allowed to Keep His Medal*, NYTIMES.COM, Feb. 12, 1998, <http://www.nytimes.com/specials/olympics/nagano/sno/021298oly-sno-drugs.html> (noting that the International Skiing Federation had a different rule than the IOC, and quoting the opinion of the CAS secretary general that, "It's a clear message that if the international sports body wants such rules, it has to specify clearly that marijuana is a forbidden substance."); Urvasi Naidoo & Neil Sarin, *Dispute Resolution at Games Time*, 12 FORDHAM INTELL. PROP., MEDIA & ENT. L. J. 489, 513 (2002) (describing the *Rebagliati* decision).

34. Peter Lalor, *Tablets Can Leave Athletes out in Cold*, AUSTRALIAN, Jan. 19, 2005, at 16 (noting several athletes who found trouble with drugs testers after taking cold medication).

35. *Raducan v. IOC*, CAS OG 00/0011, award of Sep. 28, 2000. See also JANWILLEM SOEK, THE STRICT LIABILITY PRINCIPLE AND THE HUMAN RIGHTS OF ATHLETES IN DOPING CASES 257 (2006), available at <http://publishing.eur.nl/ir/repub/asset/7548/DISS%20INTEGRAL.pdf> (quoting from section 9.1 *Disqualificaiton* on CAS recognition that disqualification as opposed to suspension can be appropriate for an athlete who innocently ingested a prohibited substance).

36. See *Finasteride*, MEDLINE PLUS, <http://www.nlm.nih.gov/medlineplus/druginfo/medmaster/a698016.html> (last visited Oct. 22, 2008).

composition of an athlete's urine such that drug-testers can not detect the presence of nandrolone, a synthetic steroid that most certainly can help athletes.³⁷ Starting in 2005, the WADC prohibited finasteride, due its ability to act as a masking agent in tests for steroids.³⁸ In 2005, Sebastien Gattuso, a multi-sport athlete from Monaco, tested positive for finasteride. His six-month suspension kept him from competing in the four-man bobsled in Turin, an event he had competed in at the 2002 Salt Lake City Winter Games.³⁹

Though the circumstances surrounding Gattuso's positive test are less clear, the story for similarly suspended U.S. skeleton racer, Zach Lund, was deemed unfortunate, even by the CAS. Prior to his suspension, Lund had been taking Propecia for seven years, and he had declared this substance on his medical forms. Though the CAS knew that Lund was "not a cheat," it still found that he had failed to check the WADC prohibited drug list to notice the change in policy concerning finasteride, as is required of athletes. Thus, it upheld his post-event disqualification from the 2006 World Cup, as well as his one-year suspension from IOC sanctioned competition, which included the Turin Games.⁴⁰

Ice hockey goaltender Jose Theodore was also barred from international competition for two years due to a positive test result for finasteride.⁴¹ Like Lund, Theodore was a long-term user of Propecia to combat male-pattern baldness. Unlike Lund, though, this sanction hardly affected the Canadian goalie. Theodore was unlikely to make the Canadian ice hockey team chosen to compete in the 2006 Olympics,⁴² and since he had listed this drug usage

37. Richard Sandomir, *Skin Deep; Fighting Baldness, and Now an Olympic Ban*, N.Y. TIMES, Jan. 19, 2006, available at <http://query.nytimes.com/gst/fullpage.html?sec=health&res=9F02E2DB153FF93AA25752C0A9609C8B63&n=Top%2FReference%2FTimes%20Topics%2FSubjects%2FO%2FOlympic%20Games> (explaining that "at the end of 2004 the World Anti-Doping Agency added finasteride to its list of banned drugs in international sports. The agency calls finasteride a masking agent that hides the use of more nefarious drugs like the steroid nandrolone").

38. U.S. Anti-Doping Agency, *Summary of Significant Information for 2005*, 2005 GUIDE TO PROHIBITED SUBSTANCES AND PROHIBITED METHODS OF DOPING (2005) available at <http://www.usantidoping.org/files/active/athletes/2005%20USADA%20Prohibited%20Substances%20Guide%5B7%5D.pdf> ("Finasteride (Propecia, Proscar) and other 5-alpha reductase inhibitors have been added as prohibited substances.").

39. Mike Dodd, *Zack Lund Gets One-Year Ban, Will Miss Torino Games*, USA TODAY, Feb. 10, 2006, available at http://www.usatoday.com/sports/olympics/torino/sliding/2006-02-10-lund-ban_x.htm (noting suspension of Sebastien Gattuso).

40. *Id.* See also Lynn Zinser & Bill Pennington, *Another Suspension Hits U.S. Skeleton Team*, N.Y. TIMES, Jan. 11, 2006, at D1.

41. *Theodore's Hair Tonic Causes Positive Test*. TSN.CA, Feb. 10, 2006, <http://www.tsn.ca/nhl/story/?id=154231>.

42. The three goalies on the Canadian roster in 2006 were Martin Brodeur, Marty Turco, and Roberto Luongo. Though Theodore had been a back-up goalie for Team Canada during the 2004

and obtained permission from the National Hockey League (NHL), he remained free to compete for his NHL team, the Montreal Canadiens.⁴³ At the worst, he had to endure jokes about his hair.⁴⁴

Castle Forbes Maike tested positive for etoricoxib in May 2007.⁴⁵ This drug is a non-steroidal anti-inflammatory agent that is classified as a “medication substance,” not a “doping substance.” Nonetheless, the presence of this drug violated the rules set out by the governing sport body, the International Equestrian Federation (FEI). Castle Forbes Maike has not been banned as a result of this minor infringement, which is good news for the mare. That is right: the athlete is a horse. Irish show jumper Jessica Kurten, on the other hand, is responsible for her equine partner and received a two-month suspension for her role in the matter.⁴⁶

The incidents described above demonstrate the broad scope of behaviors that have been captured by the recent efforts to ratchet up the fight against doping in sports. They feature one of the biggest challenges created by comprehensive strict liability rules for doping: athletes who are not attempting to gain an advantage and who likely have not received one may face draconian penalties as a result of a positive test.⁴⁷ These examples also demonstrate the vast discrepancies in how athletes might be treated, depending on the sport and

World Cup (and had played for Team Canada in 2001 and for the Junior Team in 1996), his performance was inconsistent during the post-lockout NHL season of 2005-06 and was easily surpassed by the players chosen ahead of him.

43. It is noteworthy that although American ice hockey player Bryan Berard tested positive for anabolic steroids, and while Berard, who like Theodore was not chosen to represent his country at the Olympics, was suspended for two years from international competition, the NHL did not sanction him at all, since the test was not an NHL issued drug test. *See Berard Still Eligible to Play in NHL*, ESPN.COM, Jan. 21, 2006, <http://sports.espn.go.com/nhl/news/story?id=2299474>. That same week, WADA's chairman, Dick Pound, spoke out against the use of performance-enhancing drugs in the NHL and claimed that as many as one-third of the league's players were using some form of PED. *Dick Pound Slams NHL's Drug Policy*, CBC SPORTS, Jan. 19, 2006, http://www.cbc.ca/sports/story/2005/11/24/dick_pound051124.html.

44. As one sports blogger commented, “I think it's safe to say that Theodore's beauty will forever more have an asterisk next to it, if not officially, at least in the minds of his fans.” *Jose Theodore's Performance-Enhanced Hair*, JAPERS' RINK, Feb. 9, 2006, <http://japersrink.blogspot.com/2006/02/jose-theodores-performance-enhanced.html>.

45. *Kurten Gets Two-Month Suspension*, BBC SPORT, May 8, 2008, <http://news.bbc.co.uk/sport2/hi/olympics/equestrian/7389717.stm>.

46. Due to the timing of the suspension, Kurten would have been eligible to compete in Beijing, but chose not to for a variety of reasons. One reason? The best possible horse for the competition, Castle Forbes Maike, had been sold. *Kurten Turns down Olympic Place*, BBC SPORT, May 27, 2008, <http://news.bbc.co.uk/sport2/hi/olympics/equestrian/7422316.stm>.

47. *See, e.g.*, ASSAEL, *supra* note 10, at 195 (describing USADAUSADA's first positive test catch as “an overachieving 16-year old fencer who was also studying cello, cooking, and Latin,” who “had fallen behind on her schoolwork and had taken her sister's attention deficit disorder medication so she could pull an all-nighter.”).

organization responsible for the competition.

Ask most people about doping in sports, and they will immediately think of anabolic-androgenic steroids that make athletes bigger, faster, and stronger. This image has shifted over time. Perhaps today we replace the images of bulked up Eastern European weight-lifters and East German swimmers⁴⁸ with the physiques of a Barry Bonds or a Mark McGwire.⁴⁹ Anabolic-androgenic steroids, however, represent only one category of performance-enhancing drug, and increasing strength and speed is only one of the benefits that athletes seek when they take these drugs.

Some may query whether a particular form of doping should be taken seriously, because it is not likely to have enhanced performance.⁵⁰ While questions about the effectiveness of any one doping method are certainly legitimate, particularly in discussions regarding how anti-doping policy is set in the first place, it is impossible to have a coherent discussion about legal regulation of PEDs without a broader and deeper understanding of the science of the methods that athletes employ to gain an advantage in competition. After all, there is even a placebo effect for doping.⁵¹

Accordingly, this subsection identifies the various general classes of performance-enhancing drugs or enhancement techniques that are prohibited in athletic competition. It offers a brief description of how the drug or method has been used to gain an advantage or is thought to provide one, which sporting fields have produced either positive results or significant suspicions of doping, and a quick glance at the side effects that athletes might face from this abuse. This subsection leads off with the history and effects of steroids

48. Jim Thurston, *Chemical Warfare: Battling Steroids in Athletics*, 1 MARQ. SPORTS L. J. 93, 93 (1990) ("Prior to Johnson, the myth surrounding steroid use was that only large, bulky, lethargic men and Eastern Bloc women used them.").

49. See, e.g., *Tortoise Beats Hare: Sosa Fades as Giambi Paces Himself to First Derby Title*, SI.COM, July 8, 2002, http://sportsillustrated.cnn.com/baseball/2002/allstar/news/2002/07/08/homerun_derby_ap/ ("This year's Derby has lost its innocence after months of talk about steroid use. Major league baseball has even contributed to the cloud hanging over the game's sluggers with an ad that depicts players as puffed-up cartoon characters, who look like they're on steroids.").

50. Responding to fans "who argue that it takes hand-eye coordination to hit home-runs, and that steroids (PEDs) will not improve this athletic skill," see Gary Gaffney, *Barry Bonds and the "Urban Myths" About Steroids*, BRITANNICA BLOG, Aug. 7, 2007, <http://www.britannica.com/blogs/2007/08/barry-bonds-and-the-urban-myths-about-steroids/> (explaining precisely how an increase in bat speed spurred from steroid use would have helped Bonds significantly).

51. Media reports have cited to a recent WADA funded study demonstrating the placebo effect of purported hGH use. See, e.g., Katherine Leitzell, *Are a Popular Doping Drug's Effects All in the Mind*, SCIENTIFIC AM., July 24, 2008, available at <http://www.sciam.com/article.cfm?id=are-a-popular-doping-drugs-effects-mental>; Alan Mozes, *Sports Doping's Effects May Be in the Mind*, WASH. POST, June 17, 2008, available at <http://www.washingtonpost.com/wp-dyn/content/article/2008/06/17/AR2008061701032.html>.

and related anabolic agents, before moving on to other, less infamous, but equally as important, forms of doping.

i. Anabolic-Androgenic Steroids (and Other Anabolic Agents)

a) How Elite Sports Became “Steroid Nation”

Development of synthetic anabolic-androgenic steroids (AAS) began as early as the 1930s, though mass production did not start until after World War II. “Modern” doping in sport through steroid use traces its roots back to the Soviet weightlifting team in the 1950s, which injected its athletes with testosterone and saw record-breaking, gold medal winning performances. It is an American myth that doping was a phenomenon occurring solely behind the Iron Curtain, though one that has been shattered by the recent influx of books and other media detailing the history of steroids in America.⁵²

A Soviet doctor with that team shared this information with Dr. John Ziegler, the doctor of the USA weightlifting team in that era, who began efforts to develop a steroid that would enhance performance, yet minimize the androgenic effects. In 1958, Dr. Ziegler developed the oral AAS known as methandrostenolone, which was given the name Dianabol. Thanks to Ziegler, by 1962, the American weightlifters had caught up and surpassed the Soviets. The next year, Ziegler developed injectable stanozolol, known as Winstrol, a testosterone-derived substance that used an oil base to carry the drug directly to the muscle.

During the 1960s and 1970s, steroid use spread throughout the bodybuilding community and began to find a niche within certain Olympic sports, such as weightlifting, track and field, swimming, as well as in the NFL. New records were constantly being set, and the average elite performance leapfrogged prior achievement.⁵³ Mary Peters, a pentathlete from Britain who won gold at the 1972 Summer Games, commented in her memoirs that medical researchers in the United States could not even study the effects of steroids on weightlifters or throwers, because there weren’t enough nondopers in the elite ranks to create a control group.⁵⁴

52. The recounting of the history of steroids relies most heavily on a few main works and the sources referenced within them, particularly ASSAEL, *supra* note 10; FAINARU-WADA & WILLIAMS, *supra* note 5; and the documentary film BIGGER, STRONGER, FASTER*: *THE SIDE-EFFECTS OF BEING AMERICAN, *supra* note 14.

53. See, e.g., Lalith Munasinghe et al., *Globalization and the Rate of Technological Progress: What Track and Field Records Show*, 109 J. POL. ECON. 1132, 1140 (2001) (identifying the 1950s, 1960s, and 1970s as the periods of greatest growth in terms of track and field world record setting, particularly after 1958 in the United States).

54. MARY PETERS, MARY P 52 (1976) (autobiography of the British track and field athlete).

Essentially, within the inner circle of elite sport, doping was no secret. However, the testers lagged significantly behind. In the late 1960s, the IOC first began drug testing, but since there was no test at the time for AAS, steroids were not even on the IOC prohibited list until 1976. Not that the athletes would have been detected if tested for steroids given that the crude drug testing in existence was not capable of ferreting out the presence of AAS. The East German state-sponsored athletic regime imposed mandatory doping in the mid-1970s. From a performance enhancement perspective, the program was highly successful. The East Germans brought home the medals and evaded the testers. From the viewpoint of the athletes or the “fairness” of competition, it was an unmitigated disaster, one that brought long-term health consequences, lawsuits, and ruined lives.⁵⁵

Throughout the 1980s, as awareness increased in how to use AAS to enhance performance in different ways other than merely for sheer brute strength, along with how to minimize the particularly bothersome androgenic side effects, AAS infiltrated much of elite athletic competition. Steroids were not just limited to the athletic elite either. Members of the bodybuilding community began to spread their wings from the centralized area of Gold’s Gym in Venice, California, and develop ways to cash in on their new wonder drugs. In 1982, the “Underground Steroid Handbook for Men and Women” was born, and tens of thousands of copies were sold both domestically and abroad. Steroids were beginning to trickle their way down from the top athletes, bodybuilders and gym rats in the world to the local gyms and locker rooms of America.

For much of this time, the American public remained in the dark. Prominent athletes, bodybuilders, and actors may have been suspected of taking steroids, but their denials and assurances that they were clean were readily believed. Steeped in decades of the Cold War mentality, the average American viewpoint was that doping was how Russians and East Germans cheated to win, not a prominent feature of elite sports in America that the United States Olympic Committee (USOC) was deliberately burying underneath the carpet.

During the 1983 Pan American Games, police in Caracas, Venezuela, raided the athletes’ dorms in response to tips regarding performance enhancing drugs. Athletes from ten different countries were disqualified, and several American track and field athletes snuck out under the cover of night.

Peters would later serve as the British Athletic Federation president from 1996-98.

55. The sordid history is laid out in STEVEN UNGERLEIDER, *FAUST’S GOLD: INSIDE THE EAST GERMAN DOPING MACHINE* (2001) (describing the trial of the East German sporting officials and the detrimental health effects on the athletes themselves).

Embarrassed by media coverage of the event, and faced with the political issues surrounding hosting the 1984 Summer Games in Los Angeles (including the Soviet boycott), the USOC announced a new “strict” random testing process. However, since the pre-Olympics test results were to be kept confidential and carried no sanction, it merely enabled athletes an extra penalty-free opportunity to try out their latest drug regimen on testing to see if it would pass muster when it really counted.

The USOC was not alone in its desire to whitewash the implications that its own athletes were doping. At the conclusion of the 1984 Olympic Games, Dr. Don Catlin, who headed the lab at UCLA responsible for drug testing at the Summer Games, reported nine additional positive drug tests that had occurred, other than those previously reported and dealt with. Mysteriously, the codes to the samples, which were held by the chairman of the IOC’s Medical Commission—and would enable the doctor and anyone else to match an athlete to a sample—were stolen.

Then, in 1988, something happened that would blow the lid off the benign neglect toward doping within the upper echelons of sport. Jamaican-born Canadian sprinter Ben Johnson defeated Carl Lewis in the 100 meter sprint to win the gold medal in Seoul. In the years prior, the two sprinters had been battling for the title of the world’s fastest man, and Johnson had already surpassed Lewis by the time the games began. When Johnson tested positive for the AAS stanozolol, he was stripped of the medal, disqualified, and suspended from competition. While Johnson’s positive test may have come as no great shock to those in the track and field community, it did surprise Johnson’s coaches and Johnson himself, who insist to this day that while he was using AAS, he never took the particular drug that was allegedly found in his sample.

In the aftermath of the positive drug test, a Canadian national committee of inquiry, known as the Dubin Commission, issued subpoenas to investigate the Ben Johnson matter. Charlie Francis, Johnson’s coach, testified that Johnson had been using AAS throughout the entire decade, and that he had the “tacit approval” of the Canadian Track and Field Association, the national governing body for the sport. Beyond that, though, Francis named names and pointed fingers, describing the various ways that elite Canadian athletes—and their competitors—were doping.

Thus, by the end of the decade, the prevalence of doping, at least in some sports, was something that could not be ignored. For the American professional sports leagues, the story was somewhat different. Throughout the 1980s, the main sports leagues—the NFL, Major League Baseball (MLB), and the National Basketball Association (NBA)—battled image problems stemming from the use of drugs other than AAS, namely cocaine. Through the

early 1980s, the NBA battled this substance, and the death of Celtic draft-pick Len Bias in 1986, who collapsed from a cocaine overdose, suggested that the war was far from won.⁵⁶ In 1988, former NFL Most Valuable Player and perennial All-Pro linebacker Lawrence Taylor failed two drug tests and entered league mandated rehab for his cocaine addiction.⁵⁷ And in 1985, baseball players on the Pittsburgh Pirates were subpoenaed to appear before a grand jury and ultimately testified in the context of the trials of several drug-dealers about the widespread use of cocaine in MLB.⁵⁸

At the end of the decade, as the federation-based steroid world reeled from the aftershocks of the Johnson disqualification, MLB was busy dealing with a non-steroidal new scandal of its own, namely the discovery that Pete Rose had bet on baseball. The NFL, on the other hand, was increasingly faced with attacks that drugs were a real problem even though it did have the most stringent substance abuse and testing policy of all the American professional leagues, testing for cocaine and marijuana as well as dealing with alcohol abuse. In 1987 and 1988, the league began testing for steroids, but without issuing a penalty for a positive result. Then in 1989, as the Johnson incident increased the political and public attention to the issue, the league announced that players testing positive would receive a four game suspension. Yet the league only tested players once, during the pre-season, so it was easy for dopers to beat the system.⁵⁹ It was more than any other professional league was doing at the time, though it is nearly certain that the NFL had the greatest number of steroid users in its population compared to other sports, seeing as AAS had been freely given out in NFL locker rooms in the 1970s.

The 1990s are best understood as a transitional era from the 1980s to the millennium age, an era of ambivalence about the role that AAS had played, were playing, and should play in sports and society. Since AAS had been legally deemed a Schedule III controlled substance at the end of the prior decade, steroid manufacturers were driven further underground and even more

56. For a look into the life of Len Bias, see LEWIS COLE, *NEVER TOO YOUNG TO DIE* (1989), which explores the Len Bias tragedy through the lens of race and the socio-economics of life where Bias grew up and then went to college.

57. LAWRENCE TAYLOR & STEVE SERBY, *LT OVER THE EDGE: TACKLING QUARTERBACKS, DRUGS, AND A WORLD BEYOND FOOTBALL* (2004) (autobiography that not only discusses the long-standing drug problems, but also explains how Taylor attempted to hide the extent of his difficulties from the league).

58. James Lincoln Ray, *The Pittsburgh Baseball Drug Trials – The 1985 Baseball Cocaine Scandal*, MAJORLEAGUEBASEBALLSUITE101.COM, July 6, 2008, http://major-league-baseball.suite101.com/article.cfm/the_pittsburgh_baseball_drug_trials; Steve Beitler, *This Is Your Sport on Cocaine: The Pittsburgh Trials of 1985*, 26 NAT'L PASTIME: R. BASEBALL HISTORY 119 (2006) (publication of the Society for American Baseball Research).

59. Thirteen players still failed.

so into Mexico. Meanwhile, an entire supplement industry sprung up to replace the void, cashing in on billions of dollars from Americans wanting to bulk up, lose weight, or otherwise improve their performance or appearance. This juxtaposition and ambivalence is best reflected by contrasting the seemingly-prohibitive Anabolic Steroids Control Act of 1990⁶⁰ with the permissiveness of the Dietary Supplement Health and Education Act of 1994.⁶¹

Testers began to catch up to the users, and the type and nature of AAS, as well as the other performance enhancing drugs used, grew to new levels of sophistication. State-sponsored doping had shifted from the now-fallen Iron Curtain to the Great Wall of China.⁶² Members of the "old guard" of steroid users began to come clean, including ex-NFL player Lyle Alzado, who was dying from cancer at the time he told the world that he had lied about his AAS use, and former bodybuilder-turned-actor, now California governor, Arnold Schwarzenegger, who came "clean," yet defended his choice to use the drugs.⁶³

The IOC tightened its methods for finding the old standby AAS favorites, splitting the ranks of athletes between those who knew how to dope and get away with it, those who did not, and those who were not doping at all. Though it is unclear what percentage of athletes belonged to each group, the assumption in the face of very few positive results was that the sweeping majority of athletes fell in the latter category; they were clean. In hindsight, it seems more likely that many athletes simply got better about how to dope. The IOC was also split between having the technology to catch more dopers and having the political will to rely on the science to do something about positive test samples. In 1996, once again, results found at the Summer Games were tossed out by the IOC's subcommittee on doping and biochemistry. This time the assertion was that the high-resolution mass spectrometer used to produce the results was "too new to be trusted," and the claim came from the very same parties who had approved the use of these machines. Distrust of the science used to catch cheaters became an increasing claim on the part of athletes who tested positive, a tactic that continues to this

60. Anabolic Steroids Control Act of 1990, Pub. L. No. 101-647 § 1902, 104 STAT. 4851 (1990).

61. Dietary Supplement Health and Education Act of 1994, Pub. L. No. 103-417, 108 STAT. 4325 (1994).

62. See, e.g., James Riordan & Dong Jinxia, *Chinese Women and Sport: Success, Sexuality and Suspicion*, 145 CHINA QUART. 130, 131, 149 (1996) (from 1988 through 1996, forty-seven Chinese athletes tested positive for anabolic steroids, thirty-eight in 1994, including eleven swimmers and many others had elevated levels of an AAS that were not quite high enough to be deemed a positive test result).

63. Lyle Alzado, "I'm Sick and I'm Scared," SPORTS ILLUSTRATED, July 8, 1991, at 20.

very day, perhaps rightfully so.

The latter part of the 1990s has also been tagged the Steroid Era of Major League Baseball. While AAS had not previously been a stranger in the sport, the 1994 players' strike had two notable effects on the sport. First, in their efforts to train and keep in shape during the strike, players had greater opportunities to be exposed to new methods of doping that could help. Second, MLB limped out of the gates, facing decreased attendance and revenue. Many have credited the power explosion that ensued, particularly the race between Sammy Sosa and Mark McGwire in 1998 to see who would break the single season home-run record, as having "saved" baseball after the strike.

Though there is certainly room for debate about just how damaged baseball was prior to the McGwire and Sosa showdown, it is clear that MLB had very little interest in looking too deeply into what might be fueling its athletes. Though MLB had officially banned steroids earlier in the 1990s, neither athlete was actually being tested for AAS. The public and media focused on supplements the athletes used, namely focusing on the discovery that McGwire was taking androstenedione (Andro), a steroid precursor that is converted into testosterone in the body, but which has limited—if any—anabolic effect. Andro was legal in the United States at the time, and not prohibited by MLB, though it was on the IOC's prohibited substance list.

The millennium ushered in an era of more sophisticated doping. One notable achievement for dopers was the introduction of "designer" steroids—synthetic substances created for the dual purposes of performance enhancement in specific sports and evading detection. The Bay Area Laboratory Co-operative (BALCO) was created by Victor Conte precisely for this purpose, though it operated "officially" as a lab that would screen athletes for vitamin and mineral imbalances and provide supplements to correct them.⁶⁴ Through BALCO, athletes in MLB, track and field, the NFL, and cycling were given AAS and other enhancing substances, including "The Clear," a steroid known as tetrahydrogestrinone (THG) created by chemist Patrick Arnold.⁶⁵ Dr. Catlin at UCLA was able to develop a test for THG when USADA received a syringe containing traces of the drug, sent to it anonymously. The whistle-blower was track and field coach, Trevor Graham.⁶⁶

The most famous athlete implicated in the BALCO scandal was Barry

64. Bob Kimball & Beau Dure, *BALCO Investigation Timeline*, USATODAY.COM, Nov. 27, 2007, <http://www.usatoday.com/sports/balco-timeline.htm>.

65. *Id.*

66. *Id.*

Bonds.⁶⁷ In the aftermath, Congress launched its own series of hearings into the subject of steroids in baseball, leading to the investigation that produced the *Mitchell Report*, and the subsequent hearings regarding Roger Clemens, steroids, and hGH that emerged after Mitchell's findings turned into a he said-he said between former trainer Brian McNamee and Clemens.⁶⁸ As the Beijing Olympic Games approached, the question seemed to be not *if* someone would test positive for steroids or other performance enhancements, but rather *who* would test positive, *how many* athletes would test positive, and *how many* were still doping yet would remain undetected.⁶⁹

b) The Effects of Anabolic-Androgenic Steroids

Anabolic-androgenic steroids (AAS) lie at the core of doping in sports and are prohibited in nearly every professional or elite sports organization, system, or league throughout the world. These synthetic substances when taken orally or injected into the body mimic the effects of male sex hormones (particularly testosterone). The WADC prohibited substance list separates AAS into two categories: exogenous and endogenous.⁷⁰ Exogenous AAS are those steroids that do not normally occur in the body. Their presence is indicative of doping.⁷¹ Endogenous AAS are those steroids that do naturally appear in the body. Thus, tests for endogenous AAS doping look for a ratio or marker between the presence of that hormone to others that would not normally occur in the body, even taking into account hormonal variances and fluctuations within the human populace.⁷²

Steroids increase lean muscle mass, helping athletes get bigger, faster, and

67. *Id.*

68. *Id.*

69. *Id.*

70. 2008 WADA Prohibited List, *supra* note 9, § S1(1).

71. M. Thevis & W. Schänzer, *Mass Spectrometry in Doping Control Analysis*, 9 CURRENT ORGANIC CHEMISTRY 825 (2005) ("Extensive studies regarding the metabolic pathways of AAS as well as mass spectrometric behavior of target compounds after EI with or without derivatization have been conducted allowing the unambiguous identification of respective xenobiotic agents.").

72. On the history of hormone ratio use, Thevis and Schänzer wrote,

In 1979, the use of hormone ratios as determined by gas chromatography and mass spectrometry was suggested to identify artificially elevated steroid concentrations in athletes' urine samples, and on the basis of numerous endocrinological studies a urinary "steroid profile" was introduced providing a detailed insight into natural and unnatural variations of steroid concentrations and ratios. Thus, a possibility was given to reveal administrations of endogenous steroids, e.g. by the comparison of concentrations of testosterone and epitestosterone or metabolites such as androsterone and etiocholanolone.

stronger.⁷³ They also produce psychological effects, such as increased competitiveness, higher pain threshold, greater alertness, and more self-confidence.⁷⁴ Legitimate medical uses of AAS include treating hypoplastic anemia,⁷⁵ managing chronic wasting from AIDS or cancer,⁷⁶ or inducing male puberty in cases of extreme delay or gender dysmorphia.⁷⁷

While most focus on the “bigger, stronger, faster” effects of steroid usage, these gains are only one part of the equation. AAS increase protein synthesis, which means that they are able to help athletes heal faster.⁷⁸ This is

73. Fred Hartgens & Wouter D. Van Marken Lichtenbelt, *Androgenic-Anabolic Steroid-Induced Body Changes in Strength Athletes*, 29 *PHYSICIAN & SPORTSMEDICINE* 49, 54 (2001) (“Experienced strength athletes who use a self-composed course of AAS for 8 weeks exhibited increased total body weight and total lean body mass compared with those who did strength training alone.”).

74. A.C. Parrott et al., *Anabolic Steroid Use by Amateur Athletes; Effects upon Psychological Mood States*, 34 *J. SPORTS MED. & PHYSICAL FITNESS* 292, 292 (1994).

Twenty-one male amateur athletes attending a Welsh needle-exchange clinic, were asked to complete the Buss-Durke Inventory on feelings of hostility/aggression, and a feeling state questionnaire. All were weight training in local gyms in order to increase their body mass. They were also using high doses of anabolic steroids during 6-14 week cycles, while between these cycles they were steroid free. Subjects reported significantly higher feelings of aggression, aggression towards objects, verbal aggression, and aggression during training (but not physical aggression towards people), during the on-steroid periods. Other changes on-drug, included significantly higher feelings of alertness, irritability, anxiety, suspiciousness, and negativism.

Id.

75. Mamta Manglani et al., *Diamond-Blackfan Anemia: Report of 6 Cases*, 40 *INDIAN PEDIATRICS* 355, 355 (2003) (“Diamond-Blackfan anemia is a rare congenital hypoplastic anemia. We report 6 children diagnosed as Diamond-Blackfan anemia at our clinic . . . All of them were treated with oral steroids with a good response.”).

76. Joseph Cofrancesco, Jr., *Treatment of HIV Related Weight Loss*, *HOPKINS HIV REPORT* (Jan. 1999), available at <http://www.aegis.com/pubs/jhopkins/1999/jh990106.html>.

77. J. Pozo & J. Argente, *Ascertainment and Treatment of Delayed Puberty*, 60 *HORMONE RESEARCH* 38 (2003) (“One alternative to testosterone that has been widely used for many years is synthetic steroids. The majority of these are 17 α -alkylated androgens (e.g. methyltestosterone, fluoxymesterone, oxymetholone, oxandrolone) and can be administered orally.”).

78. John M. Beiner et al., *The Effect of Anabolic Steroids and Corticosteroids on Healing of Muscle Contusion Injury*, 27 *AM. J. SPORTS MED.* 2, 8 (1999).

The effect of an anabolic steroid (nandrolone decanoate, 20 mg/kg) and a corticosteroid (methylprednisolone acetate, 25 mg/kg) on healing muscle injured with a drop-mass technique in a reproducible muscle contusion injury model in the rat was studied. Healing was determined by measuring active contractile tension in each muscle and histologic analysis. At day 2, the corticosteroid group showed significant improvement in both twitch and tetanic strength relative to the controls. At day 7, this effect was reversed and the corticosteroid muscles were significantly weaker than the control muscles, but there was still no significant effect seen in the anabolic steroid group. At day 14, the corticosteroid muscles were totally degenerated, with disorganized muscle fiber architecture. The anabolic steroid muscles were significantly stronger in twitch, and a

increasingly important as athletes face significant demands to compete at extremely high intensities with great frequency and notwithstanding both pain and injury. Professional sports leagues and organizations demand that athletes be ready to play day in and day out over the course of many months. The training regimen and competition schedule for athletes participating in federation or professional association events is likewise grueling. A drug that can aid in the battle against fatigue and wear and tear on the body represents a major performance enhancement, even if it can not be measured in a one-shot peak performance episode.

AAS give the greatest performance-enhancement boost for many types of athletes, yet they also come with significant risks and side-effects. Long-term risks include liver damage (including cancer, failure, or both),⁷⁹ jaundice,⁸⁰ renal failure,⁸¹ hypertension, elevated LDL (bad cholesterol) and decreased

similar trend was seen in tetanus relative to control muscles. The results indicate that in an animal model corticosteroids may be beneficial in the short term, but they cause irreversible damage to healing muscle in the long term, including disordered fiber structure and a marked diminution in force-generating capacity. Anabolic steroids may aid in the healing of muscle contusion injury to speed the recovery of force-generating capacity.

Id.

79. Luis D. Boada et al., *Evaluation of Acute and Chronic Hepatotoxic Effects Exerted by Anabolic-Androgenic Steroid Stanozolol in Adult Male Rats*, 73 ARCHIVES OF TOXICOLOGY 465, 465 (1999).

Stanozolol (ST) is a 17 α -alkyl anabolic-androgenic steroid (17 α -AAS) often misused by athletes and bodybuilders. The use of anabolic-steroids by sportsmen and teenagers has increased dramatically, thus raising the question about their hepatotoxicity, specially those such as ST which are orally administered. Previously, we have reported diverse in vivo effects exerted by this steroid and published the existence of a highly specific ST-binding site in male rat liver microsomes. . . . These findings taken together clearly show that this steroid is capable of altering the liver capacity for metabolizing xenobiotics and indicate that high doses of ST could exert a proliferative effect on liver cells. Such data should be considered in risk evaluations for this compound.

Id.

80. W. Jean Hogwarth, *Jaundice Associated with Methandrostenolone (Danabol) Administration*, 88 CAN. MED. ASSOC. J. 368, 368 (1963).

81. Ryan Modlinski & Karl B. Fields, *The Effect of Anabolic Steroids on the Gastrointestinal System, Kidneys, and Adrenal Glands*, 5 CURRENT SPORTS MED. REPS. 104 (2006).

It has been shown that high-dose anabolic steroids have an effect on lowering high-density lipoprotein, increasing low-density lipoprotein, and increasing the atherogenic-promoting apolipoprotein A. Steroid abuse can also be hepatotoxic, promoting disturbances such as biliary stasis, peliosis hepatis, and even hepatomas, which are all usually reversible upon discontinuation. Suppression of the hypothalamic adrenal axis can also lead to profound adrenal changes that are also reversible with time. Although rare, renal side effects have also been documented, leading to acute renal failure and even Wilms' tumors in isolated cases. Much of our knowledge of these potentially severe but

HDL (good cholesterol),⁸² damage to the heart's left ventricle⁸³ and acne.⁸⁴ Steroid use can also bring about mood swings, including manic phases and euphoria, periods of extreme aggression or violence (often referred to as 'roid rage), paranoia, anxiety, and depression.⁸⁵ In addition, there are sport-specific injury risks that also stem from continual AAS use, such as cramps and torn muscles and the like.

Since AAS are sex hormones, they affect each sex differently. Synthetic testosterone suppresses natural production of the hormone, and, thus, over the long-term, men often experience shrunken testicles,⁸⁶ infertility,⁸⁷ diminished libido,⁸⁸ baldness,⁸⁹ and gynecomastia (enlarged breast tissue).⁹⁰ Women, on the other hand, experience masculinizing traits such as disruption of the menstrual cycle, increased body hair, deepening of the voice, enlarged clitoris, and infertility.⁹¹ AAS may stop proper bone maturation in adolescents,

usually limited side effects is confounded by use of combinations of different steroid preparations and by the concomitant use with other substances. Physicians must target their efforts at counseling adolescents and other athletes about the potential harms of androgenic anabolic steroids and the legal options to improve strength and performance.

Id.

82. *Id.* at 105-06.

83. Rob D. Dickerman et al., *Left Ventricular Wall Thickening Does Occur in Elite Power Athletes with or Without Anabolic Steroid Use*, 90 *CARDIOLOGY* 145, 147 (1998) ("In conclusion, left ventricular wall thicknesses ≥ 13 mm do occur in athletes with or without anabolic steroid use. Anabolic steroids may increase left ventricular wall thicknesses indirectly through their ability to increase strength, thus allowing a greater overall pressor response with weight lifting.").

84. Graham Bolding et al., *Use of Anabolic Steroids and Associated Health Risks Among Gay Men Attending London Gyms*, 97 *ADDICTION* 195, 199 (2002).

Over half the steroid users reported testicular atrophy, aggressive behaviour, or increased sex drive, nearly half reported insomnia and just over a third had experienced pain at injection sites. A quarter of the men who used steroids had suffered depression between cycles, one in five reported hypertension and headaches; less common were gynecomastia and liver/kidney problems.

Id.

85. *Id.*

86. *Id.*

87. Fred Hartgens & Harm Kuipers, *Effects of Androgenic-Anabolic Steroids in Athletes*; 34 *SPORTS MED.* 513, 535 (2004) ("The administration of suprathreshold doses of AAS will reduce the quantity and quality of semen production in male athletes and may lead to infertility within months.").

88. *Id.*

89. *Id.*

90. *Id.* at 536.

91. Pertaining to the effects of AAS in women, Hartgen and Kuipers wrote:

Data relating to female athletes are very scanty. Strauss et al. interviewed ten females who all reported lowering of the voice brought on by AAS use. Furthermore, nine of ten

causing stunted growth.⁹²

Though AAS do not affect the brain's neurotransmitters for serotonin or dopamine, recent studies have also demonstrated that AAS use has addictive properties as well.⁹³ Individuals attempting to stop using AAS suffer withdrawal symptoms, including depression.⁹⁴

There are techniques that can minimize the likelihood or severity of some of these side effects and, like with any drug, not every steroid user will experience every side effect.⁹⁵ Nonetheless, AAS pose significant risks, and it is impossible to know what the true long-term effects will be.⁹⁶ Despite all that, they really do enhance performance,⁹⁷ and for many athletes, that's enough to make it all worth while—or even deemed necessary.

females admitted increased growth of facial hair, enlargement of the clitoris and an increase in aggressiveness and appetite. Recently, in the study by De Boer et al., nine of ten interviewed female athletes had experienced side effects due to steroid use. The side effects reported were acne (50%), fluid retention (40%) and alteration of libido (50%). Other side effects were only mentioned by <20% of the women. The discrepancy between the reported side effects in both studies can, at least in part, be attributed to the difference in substances and dosages used. The subjects in the study of Strauss et al. self-administered more androgenic agents and used much higher doses than the female bodybuilders of DeBoer et al.'s study which may be responsible for the masculinising effects.

Id. at 535 (internal citations omitted).

92. Nora D. Volkow, *Steroid Abuse Is a High-Risk Route to the Finish Line*, 21 NIDA NOTES 1, 1 (2006) ("Boys and girls who abuse these drugs before reaching their full natural height may prematurely halt bone growth, resulting in permanently shorter stature.").

93. Simon J. Midgley et al., *Dependence-Producing Potential of Anabolic-Androgenic Steroids*, 7 ADDICTION RESEARCH 539, 544 (1999) ("Of the 50 AAS users given the Structured Diagnostic Interview, 31 (62%) met at least one DSM-III-R criterion for dependence and 13 (26%) met three or more criteria sufficient for a diagnosis of psychoactive substance dependence.").

94. *Id.* at 547 (Table VI: "*Withdrawal Symptoms Experienced by AAS Users*").

95. *Id.*

96. John S. O'Connor et al., *Blood Chemistry of Current and Previous Anabolic Steroid Users*, 155 MILITARY MED. 72, 72 (1990).

While the use of anabolic-androgenic steroids appears to be increasing, little is known about the long-term effects of these drugs. This study compared selected blood profiles of current and former steroid-using athletes to expected values for non-drug-using populations. The results are consistent with previous research findings that steroids can have acute negative effects on liver function, lipoprotein fractions, and testosterone production. The results suggest that side-effects vary widely among individuals and are drug and dose dependent. Normal function appears to return after drug use is discontinued. These data emphasize the difficulty physicians have interpreting clinical tests when dealing with those who use or have used anabolic steroids. Clearly more research is needed regarding the effects of these drugs.

Id.

97. Hartgens & Lichtenbelt, *supra* note 73.

ii. Hormones and Hormone Releasing Substance

a) EPO

Erythropoietin, better known as EPO, is a hormone that regulates the production of red blood cells. Red blood cells carry oxygen throughout the body. EPO stimulates the bone marrow to increase the production of red blood cells. Conventional medical use of EPO combats anemia in patients that are typically suffering from an anemia-inducing ailment, such as chronic kidney disease or cancer.⁹⁸

If an athlete can increase the number of red blood cells in his or her body or can increase the amount of oxygen carried by these cells, the end result is more oxygen being carried to and from the heart. This can increase an athlete's VO₂ max, which lies at the core of his or her ability for aerobic capacity, the bedrock of endurance sport.⁹⁹ In addition, increased oxygenation may also increase the body's ability to prevent the build-up of lactic acid, which otherwise acts as a limiting factor on muscle performance in endurance sports. The ability to detect exogenous EPO through drug testing is a new innovation. Drug testing used as recently as 2000 was highly suspect, and the procedures followed to make allowances for these difficulties allowed a large number of EPO users to remain undetected.¹⁰⁰

As a result, EPO usage has been extremely popular among professional cyclists and has been a major feature of the doping scandals that have plagued the sport, particularly in the past decade.¹⁰¹ Other endurance sports that have been tainted by EPO doping include, but are not limited to: running,¹⁰² cross-country skiing,¹⁰³ biathlon,¹⁰⁴ triathlon,¹⁰⁵ and rowing.¹⁰⁶ EPO was one of

98. Amy Williams, *Erythropoietin Drugs: What to Know About Anemia-Fighting Medications*, MAYOCLINIC.COM, <http://www.mayoclinic.com/health/erythropoietin/DA00137> (last visited Oct. 29, 2008).

99. Mark S. Juhn, *Popular Sports Supplements and Ergogenic Aids*, 33 SPORTS MED. 921 (2003) (citing M. Audran, et al., *Effects of Erythropoietin Administration in Training Athletes and Possible Indirect Detection in Doping Control*, 31 MED. SCI. SPORTS EXERC. 639 (1999)).

100. Michael J. Ashenden et al., *Effect of Altitude on Second-Generation Blood Tests to Detect Erythropoietin Abuse by Athletes*, 88 J. HAEMATOLOGICA 1053 (2003).

101. *Third Cyclist Tests Positive for EPO at Tour*, NBCSPORTS.COM, July 17, 2008, <http://nbcsports.msnbc.com/id/25716067/>.

102. Amy Shipley, *M. Jones Failed Drug Test in June*, WASH. POST, Aug. 19, 2006, at E01, available at <http://www.washingtonpost.com/wp-dyn/content/article/2006/08/18/AR2006081800926.html>.

103. *Report: Backup Test Confirms EPO in Shiriaev's Blood*, INT'L HERALD TRIB., Mar. 6, 2006, available at <http://www.iht.com/articles/ap/2007/03/06/sports/EU-SPT-SKI-CRO-Shiriaev-Doping.php>.

104. *Finnish Biathlete Kaisa Varis Given Lifetime Ban for EPO Use*, USATODAY.COM, Feb. 11,

the drugs to make the BALCO cocktail chart. In 2008, in a first for the sport, the German national champion for billiards, Axel Buescher tested positive for a masking agent for EPO.¹⁰⁷

EPO thickens the blood, which presents both short-term and long-term risks for athletes who dope with this method. Generally speaking, EPO increases the risk for heart-disease, stroke, and embolism.¹⁰⁸ Elite endurance athletes have lower heart rates than the average population, and sleep further lowers heart rates. In lay terms, an abnormally high red blood cell count makes blood that would otherwise be liquid turn viscous, and when the athlete stops competing and rests, movement of these goopy, sluggish cells slows down significantly and their presence produces a greater strain on the heart. Within the one-year span of 2003-04, eight cyclists died from heart attack or heart failure, either in their sleep or after collapsing and falling into a coma.¹⁰⁹ The likely culprit? EPO.

b) Growth Hormones

Growth hormones (GH) stimulate growth and cell reproduction.¹¹⁰ They increase protein synthesis and increase the development of lean muscle mass.¹¹¹ GH also stimulates the body to produce insulin-like growth factor 1 (IGF-1), another hormone that has anabolic effects, such as muscle growth.¹¹² For many years a manufactured form of GH has been used to treat children with hormone deficiencies or of an unusually short stature, though studies

2008, http://www.usatoday.com/sports/olympics/2008-02-11-3255439928_x.htm.

105. *Kraft Loses Ironman Title After EPO Test*, NBSPORTS.COM, Nov. 16, 2004, <http://nbcsports.msnbc.com/id/6462513/>.

106. *IOC Pleased with Testing*, SI.COM, Sept. 7, 2000, http://sportsillustrated.cnn.com/olympics/2000/rowing/news/2000/09/05/china_doping_ap/.

107. *Suspension in German Billiards*, NYTIMES.COM, Mar. 18, 2008, http://www.nytimes.com/2008/03/18/sports/othersports/18sportsbriefs-billiards.html?_r=1&ref=sports&oref=slogin.

108. Juhn, *supra* note 999, (citing G. Singbart, *Adverse Effects of Erythropoietin in Long-Term and in Acute/Short-Term Treatment*, 72 CLIN. INVEST. S36 (1994); Gare Sunder-Plassmann & Walter H. Horl, *Effect of Erythropoietin on Cardiovascular Diseases*, 38 AM. J. KIDNEY DISEASE S20 (2001)).

109. Charlie Henderson, *Pantani Death Raises Questions*, BBC.COM, http://news.bbc.co.uk/sport2/hi/other_sports/cycling/3495967.stm. According to one account, between 1988 and 1990, when EPO usage was less well-known, at least eighteen European cyclists died from heart failure related to EPO. R. PARISOTTO, *BLOOD SPORTS: THE INSIDE DOPE ON DRUGS IN SPORT* (2004).

110. Nat'l Inst. of Health, *Growth Hormone Stimulation Test Series: Normal Anatomy*, NIH.COM, http://www.nlm.nih.gov/medlineplus/ency/presentations/100146_1.htm (last visited Oct. 30, 2008).

111. *Id.*

112. *Id.*

have called into question the effectiveness of this treatment.¹¹³ In the past two decades, GH has emerged with the tag of being an “anti-aging” wonder drug. And within that same timeframe, GH has emerged as a performance-enhancing wonder drug for professional athletes.¹¹⁴

It is unclear to what extent hGH actually enhances athletic performance directly in competition.¹¹⁵ It does increase the size of muscle cells, increase metabolism, and promote weight loss.¹¹⁶ More important is its healing effects, aiding athletes in their recovery from training, competition, and injury.¹¹⁷ Part of the BALCO drug cocktail, hGH is credited with increasing

113. Robert J. Ferry, Jr., *Short Stature*, EMEDICINE.COM, May 23, 2007, <http://www.emedicine.com/ped/topic2087.htm>.

Currently, only 1 of the 10 largest reported clinical studies has demonstrated that therapy can increase final adult height in patients with normal variant short stature. This most recent NIH-funded study was randomized, placebo controlled, and took place over 14 years. Investigators demonstrated average gain in height did not exceed 4 cm when rhGH treatment of normal variant short stature began prior to puberty and continued through completion of puberty. They did not identify any clinical feature that, prior to start of therapy, could predict whether an individual patient would respond to rhGH and to what degree. Whether several years of daily injections are worth the potential, but not promised, relatively small increase in final adult height remains a personal and individual decision involving the patient, patient’s family, and physician.

Id.

114. “The strong endorsement bestowed upon HGH in the notorious publication ‘The Underground Steroid Handbook’ helped solidify the place of HGH in the elite athlete’s mind, despite no evidence to support the aforementioned theories.” Juhn, *supra* note 999, at 930.

115. Hau Lui et al., *Systematic Review: The Effects of Growth Hormone on Athletic Performance*, 148 ANNALS INTERNAL MED. 747, 747 (2008).

Claims that growth hormone enhances physical performance are not supported by the scientific literature. Although the limited available evidence suggests that growth hormone increases lean body mass, it may not improve strength; in addition, it may worsen exercise capacity and increase adverse events. More research is needed to conclusively determine the effects of growth hormone on athletic performance.

Id.

116. Hau Lui et al. also wrote that

Lean body mass increased significantly in growth hormone–treated groups compared with groups not treated with growth hormone. . . . One study evaluated 7 other muscle groups for change in maximum strength and assessed 4 measures of change in muscle circumference (70)—none of these changes significantly differed between growth hormone–treated and non–growth hormone–treated groups Daily basal metabolic rate was higher in growth hormone–treated participants than in those not treated with growth hormone.

Id. at 751.

117. S. Doessing & M. Kjaer, *Growth Hormone and Connective Tissue in Exercise*, 15 SCANDINAVIAN J. MED. & SCI. IN SPORTS 202, 207 (2005).

the effectiveness of AAS.¹¹⁸ In other words, hGH alone may not do very much, but it acts as a performance-enhancement enhancement!¹¹⁹ Much of the *Mitchell Report* is devoted to hGH use in MLB rather than to AAS use.¹²⁰

It is difficult to estimate how widespread hGH use has been in athletics, because for many years, there was no reliable test for exogenous use of the substance.¹²¹ WADA introduced a test for hGH in 2004, which requires a blood sample.¹²² Thus, it has only been implemented on a limited basis. There is currently no test for analyzing urine samples.¹²³

hGH use can exacerbate the likelihood of diabetes or heart disease for

Tendons heal faster in GH-supplemented animals, and anecdotal reports from bodybuilders and baseball players suggest that GH prevent tendon and muscle rupture, especially in those with a concomitant abuse of anabolic androgenic steroids (AAS). Tendon and especially the myotendinous junction are considered a "weak link in the chain" in those with fast-growing muscles (AAS and/or heavy strength training) and in athletes training at high intensities. Thus, it is possible that rhGH supplementation allows the athlete to train at a higher intensity and/or reduce the necessary recovery time between exercise bouts, without running the risk of getting injured.

Id. (internal citations omitted).

118. T.A.M. Karila et al., *Anabolic Androgenic Steroids Produce Dose-Dependent Increase in Left Ventricular Mass in Power Athletes, and this Effect is Potentiated by Concomitant Use of Growth Hormone*, 24 INT'L J. OF SPORTS MED. 337, 337 (2003).

Twenty healthy male power athletes using massive doses of AAS without ($n = 16$) or with ($n = 4$) GH volunteered for the study. The controls were 15 sedentary male non-users of hormones. LV mass, geometry and filling were studied using standard echocardiographic methods. We found a significant association between LV mass and AAS dose ($r = 0.54$, $p < 0.015$). In contrast to the controls, LV mass (274 g in the athletes, 167 g in the controls) among the AAS abusers did not correlate with body weight or height. Concomitant use of AAS and GH further increased LV mass and associated with concentric remodelling of LV. Multiple regression analysis indicated that the mean AAS dose accounted for 29 %, age for 14 % and systolic blood pressure for 17 % of the variance in LV mass. We concluded that AAS abuse associates dose-dependently with myocardial hypertrophy and that concomitant use of GH associates with concentric remodeling of the LV. Our findings suggest that AASs and GH have a direct effect on the myocardium.

Id.

119. Michael R. Graham et al., *Recombinant Human Growth Hormone in Abstinent Androgenic-Anabolic Steroid Use: Psychological, Endocrine and Tropic Factor Effects*, 4 CURRENT NEUROVASCULAR RESEARCH 9 (2007).

120. MITCHELL REPORT, *supra* note 6.

121. M. Bidlingmaier et al., *Problems with GH Doping in Sports*, 26 J. ENDOCRINOLOGICAL INVESTIGATION 924 (2003).

122. Christian Strasburger, *The Researcher's Perspective*, 2 PLAY TRUE 15 (2007), available at http://www.wada-ama.org/rtecontent/document/PlayTrue2007_SummerResearch_En_15-18.pdf.

123. Antorello E. Rigamonti et al., *Growth Hormone Abuse: Methods of Detection*, 16 TRENDS IN ENDOCRINOLOGY & METABOLISM 160 (2005).

those who already meet risk factors.¹²⁴ It can also lead to hypertension, abnormal growth of organs, joint or muscle pain, and accelerated osteoarthritis.¹²⁵ In addition, hGH that originates from cadavers (an older method of obtaining the drug) can transfer disease and cause Creutzfeldt-Jakob disease, a fatal neurological disease akin to a human version of “mad cow” disease.¹²⁶

c) Insulin

Insulin is the hormone that the body uses to convert glucose in the blood and store it as glycogen in the liver and in muscles.¹²⁷ Insulin has been used in conjunction with growth hormones to increase muscle mass.¹²⁸ Insulin was one of the drugs offered in the cocktail by BALCO. There are also reports that doping with insulin is common within the bodybuilding community.¹²⁹ Though the WADC has banned the use of insulin in non-diabetics, it wasn't until 2007 that scientists developed a test that could find exogenous insulin use in urine.¹³⁰

The most common side effect of insulin therapy or abuse is hypoglycemia.¹³¹ “Symptoms of hypoglycemia include confusion, nausea,

124. Lui et al., *supra* note 115 (citing Kevin Mathias, *Human Growth Hormone (HGH) Side-effects*, BUZZLE.COM, Mar. 24, 2007, <http://www.buzzle.com/articles/human-growth-hormone-hgh-side-effects.html>).

125. *Id.*

126. Paul Brown et al., *Potential Epidemic of Creutzfeldt-Jakob Disease from Human Growth Hormone Therapy*, 313 NEW ENG. J. MED. 728 (1985).

127. P.H. Sonksen, *Insulin, Growth Hormone and Sport*, 170 J. ENDOCRINOLOGY 13, 14 (2001) (“Through stimulating the translocation of ‘Glut 4’ glucose transporters from the cytoplasm of muscle and adipose tissue to the cell membrane it increases the rate of glucose uptake to values greater than the uptake that takes place in the basal state without insulin.”).

128. *Id.* at 18 (“Through this therapeutic regime it is almost certainly possible to increase muscle bulk and performance not only through increasing muscle glycogen stores on a ‘chronic’ basis but also by increasing muscle bulk through inhibition of muscle protein breakdown.”).

129. P. J. Evans & R. M. Lynch, *Insulin as a Drug of Abuse in Body Building*, 37 BRIT. J SPORTS MED. 356, 356 (2003)

To help to appreciate the magnitude of drug abuse in body builders, Tricker et al. identified that 54% of male and 10% of female body builders admitted to using steroids on a regular basis, and Rich et al. stated that in excess of one million elite and recreational athletes use performance enhancing drugs in the United States and that as many as 25% of anabolic androgenic steroid abusers concurrently abuse insulin.

Id.

130. Am. Chemical Society, *First Urine Test To Detect Insulin Doping In Athletes*, SCIENCE DAILY, Mar. 5, 2007, available at <http://www.sciencedaily.com/releases/2007/03/070305092152.htm>.

131. MedicineNet, *Insulin*, MEDICINENET.COM, Mar 26, 1998, <http://www.medicinenet.com/>

hunger, tiredness, perspiration, headache, heart palpitations, numbness around the mouth, tingling in the fingers, tremors, muscle weakness, blurred vision, cold temperature, excessive yawning, irritability, and loss of consciousness.”¹³²

d) Hormone Antagonists, Modulators, and Regulators

Beta blockers, also known as beta-adrenergic antagonists, block the body’s receptors for epinephrine (adrenaline) and norepinephrine (noradrenaline), hormones that are part of the sympathetic nervous system.¹³³ Essentially, they help control the body from triggering its “fight or flight” reflex, inducing a calming effect. These drugs reduce blood pressure and improve the heart’s ability to relax and pump blood more effectively over time.¹³⁴ Traditionally, they have been used to treat hypertension, angina, and cardiac arrhythmias.¹³⁵

One might wonder how beta blockers would be helpful to elite athletes given that slowing the heart rate is not usually associated with performance enhancement.¹³⁶ Nonetheless, beta blockers have been used in sports that require steadiness for success, such as archery, rifle shooting, or darts.¹³⁷ In recent years, some have suggested that professional golfers are relying on

insulin/page2.htm.

132. *Id.*

133. Mayo Clinic, *Beta Blockers*, MAYOCLINIC.COM, Dec. 22, 2006, <http://www.mayoclinic.com/health/beta-blockers/HI00059#>.

Beta blockers reduce blood pressure. Beta blockers work by blocking the effects of the hormone epinephrine, also known as adrenaline. As a result, the heart beats more slowly and with less force, thereby reducing blood pressure. Beta blockers also help blood vessels relax and open up to improve blood flow.

Id.

134. *Id.*

135. *Id.*

136. In contrast, musicians have reportedly relied on these drugs to control fine motor tremors. *See, e.g.*, Claudio M. Tamburrini & Torbjorn Tannsjo, *Transcending Human Limitations*, 1 SPORT, ETHICS & PHIL. 113, 113 (2007) (“While for instance, the concert violinist may use beta blockers in order to enhance his or her performance, this cure is proscribed in the world of sports.”).

137. E. Davis et al., *The Rush to Adrenaline: Drugs in Sport Acting on the Beta-Adrenergic System*, 154, BRIT. J. PHARMACOLOGY, 584, 584 (2008).

Beta-AR antagonists (beta-blockers) are used in sports that require steadiness and accuracy, such as archery and shooting, where their ability to reduce heart rate and muscle tremor may improve performance. They have a deleterious effect in endurance sports because they reduce physical performance and maximum exercise load.

Id.

these drugs as well.¹³⁸

Common side-effects of beta blockers include: fatigue, cold hands, dizziness, and weakness. Less common side-effects include shortness of breath, trouble sleeping, loss of sex drive, and slow heartbeat. Beta blockers can also affect lipid levels, causing a slight increase in triglycerides and a modest decrease in HDL (good cholesterol).¹³⁹

iii. Masking Agents

Masking agents are drugs that are capable of hiding the presence of other impermissible substances. They may not enhance performance directly, but they enable athletes using other drugs or forms of doping that do act to enhance performance. The most common class of masking agents is diuretics. Diuretics cause the body to shed water excessively through urination, which acts to dilute urine samples to such a degree that would render testing for other compounds difficult or impossible. Diuretics are also used by athletes competing in weight class sports to drop water weight and maintain eligibility to compete against lighter athletes. Side-effects from using diuretics include dehydration, electrolyte imbalance, and heart arrhythmias.

Other masking agents act specifically to hide exogenous anabolic steroids from drug testing. One traditional testing method for ingestion of testosterone looks at the T:E ratio, the ratio of testosterone to epitestosterone, since the latter is a natural steroid found in the body whose presence is not affected when an athlete takes exogenous testosterone. The typical ratio in the average person is 1:1, though the limit allowed for athletes is 4:1 (due to the natural variance in ratio among individuals). Mary Decker and Floyd Landis are two notable American athletes who have unsuccessfully contested a positive test results from an impermissibly high T:E ratio.

Since testosterone is only half of the comparison, an athlete can use epitestosterone to lower his or her T:E ratio to the allowable limits. Thus, epitestosterone operates as a masking agent and taking it is considered to be doping. Probenecid and alpha-reductase inhibitors are other drugs that can

138. Bruce Selcraig, *Golf's Bitter Pill*, GOLF DIGEST, Sept. 1997, at 76.

Beta-blockers have been in use since the 1960s but first gained the golf world's attention on the eve of the 1994 Masters, when tour maverick Mac O'Grady charged that seven of the top 30 golfers in the world, most of them supposedly Europeans, were using the drugs. 'Some of the guys are starting to make all of the putts,' O'Grady was quoted saying, 'and they didn't used to make all of the putts, and there's one reason why. It's called beta-blockers.'

Id.

139. *Beta Blockers*, *supra* note 133.

hide or obstruct the detection of anabolic steroids in urine. Finasteride, described in the introduction to this Section, is one such drug. Plasma volume expanders aid athletes by elevating blood volume, obstructing the ability to detect EPO with blood tests.

Anti-doping violations that involve masking agents perhaps draw the greatest sympathy from the public as well as the authorities regulating doping in sport. Because the substances themselves do not enhance performance, punishing unintentional use can appear to be, or actually be, draconian. This is one of the "side effects" of a strict liability anti-doping policy that aims to avoid getting bogged down in proving an athlete's intent. The flipside is that masking agents really do work to hide doping, and it is important that they be included in any comprehensive anti-doping policy. It is easy for an athlete who is found to have used a masking agent to play on sympathies by citing a nondoping purpose for the positive result, and the very nature of masking agents is such that they eliminate the possibility of a positive test for a "real" PED.

iv. Stimulants

Stimulants are drugs that stimulate the sympathetic nervous system or the central nervous system, in other words "uppers." They increase alertness, counter fatigue, increase competitiveness, and suppress appetite.¹⁴⁰ This class includes substances such as amphetamines, ephedrine, and cocaine, which are all highly addictive.¹⁴¹ Caffeine and nicotine are both stimulants as well.¹⁴² It should be noted that pseudoephedrine, the drug contained in Sudafed and similar cold medications, and the drug that was responsible for Andreea Raducan's positive drug test,¹⁴³ is no longer a prohibited substance under the WADC.¹⁴⁴

Stimulant use and abuse in elite athletic competition is probably the oldest form of doping in sport, and quite possibly has the widest reach across sporting fields as well. They have been readily available, often legally so, and provide a performance enhancement that cuts across many sporting

140. Karen Schroeder, *Stimulants*, SWEDISH.ORG, <http://www.swedish.org/14905.cfm> (last visited Oct. 26, 2008).

141. *Id.*

142. THOMSON GALE, GALE ENCYCLOPEDIA OF CHILDHOOD AND ADOLESCENCE (1998), available at <http://www.healthline.com/galecontent/stimulant-drugs>.

143. *Request Denied: Arbitrators Uphold Decision to Strip Raducan of Gold*, SI.COM, Sept. 28, 2000, http://sportsillustrated.cnn.com/olympics/2000/gymnastics/news/2000/09/27/raducan_decision_ap/.

144. 2008 WADC Prohibited List, *supra* note 9.

disciplines.¹⁴⁵ Before Dr. Ziegler even introduced Dianabol, the death of an athlete from an amphetamine overdose reached the world stage of the 1960 Olympics in Rome.¹⁴⁶

The ambivalence that Americans may face when it comes to steroids or anabolic substances is even more pronounced when it comes to stimulants. The vast majority of the population relies on caffeine, at a minimum, in the ordinary course of life.¹⁴⁷ In the first half of the century, military issue of amphetamines introduced them into American society on a large scale.¹⁴⁸ Today, treatment of ADD and ADHD forms the foundation for the widespread availability of stimulants. Methylphenidate, better known under the brand name Ritalin, and dextroamphetamine, better known under the brand name Adderall, are now routinely prescribed to adults and children to treat ADD or ADHD, a disorder that affects approximately three to five percent of children and four percent of adults.¹⁴⁹ Yet another stimulant gaining in popularity among athletes is modafinil (Provigil), a drug that is used to treat narcolepsy and can suppress the need for sleep. There is evidence that these medications are being abused to enhance academic performance, as well as athletic performance.¹⁵⁰

145. Levy, *supra* note 23.

146. "The competition also included the first confirmed use of doping in the Olympics, when a Danish bicyclist, Knud Enemark Jensen, passed out during a road race in the scorching Italian sun. Jensen died hours later, the cause eventually traced to a blood-circulation drug." Todd Leopold, *Author: '60 Olympics Brought Games into Modern World*, CNN.COM, July 23, 2008, available at <http://www.cnn.com/2008/SHOWBIZ/books/07/23/maraniss.rome/> (reviewing DAVID MARANISS, *ROME 1960* (2008)).

147. Johns Hopkins Bayview Medical Center, *Information About Caffeine Dependence*, CAFFEINDEPENDENCE.COM, http://www.caffeinedependence.org/caffeine_dependence.html (last visited Oct. 26, 2008).

148. Ccenter for Substance Abuse Research, *Amphetamines*, CESAR.UMD.EDU, <http://www.cesar.umd.edu/cesar/drugs/amphetamines.asp> (last visited Oct. 26, 2008) (citing R. CARSON-DEWITT, *ENCYCLOPEDIA OF DRUGS, ALCOHOL & ADDICTIVE BEHAVIOR* vol. 1(A-D) (2nd ed., 2001)).

149. *Attention-Deficit Hyperactivity Disorder: ADHD in Adults*, WEBMD, <http://www.webmd.com/add-adhd/guide/adhd-adults> (last visited Oct. 26, 2008).

150. Richard Monastersky, *Some Professors Pop Pills for an Intellectual Edge*, 54 CHRON. HIGHER ED., 2008, at A1 (discussing a survey in *Nature* in which 20% of respondents said they had taken methylphenidate or modafinil for "nonmedical reasons to improve concentration or cognition"); Sean Esteban McCabe et al., *Nonmedical Use of Prescription Stimulants Among US College Students: Prevalence and Correlates from a National Survey*, 99 ADDICTION, 96 (2004), available at http://www.hsph.harvard.edu/cas/Documents/stimulants/McCabe_2005.pdf.

To what extent nonmedical use of stimulants or other performance-enhancements in academic settings is comparable to doping in sports is a matter of debate. See, e.g., M. Schermer, *On the Argument that Enhancement Is 'Cheating'*, 34 J. MED. ETHICS 85 (comparing education to sports under theories of cheating as rule breaking or as "practices," that is systems with internal goods and standards of excellence).

The risks of stimulant use are heat stroke, dehydration, heart attack, hypertension, palpitations, and tremors.¹⁵¹

v. Narcotics, cannabinoids and alcohol

This category includes drugs that are not particularly known for performance-enhancing effects. Prohibited narcotics include heroin, morphine, and oxycodone.¹⁵² Cannabinoids covers marijuana and hashish.¹⁵³ Alcohol is only prohibited in-competition for certain events, particularly those that include shooting or operating motor vehicles.¹⁵⁴ This category of prohibited items is meant to protect the safety of competitors from the effects of impairment, rather than address concerns of impermissible doping, though the pain-masking effects of narcotics can lead to performance enhancement in certain contexts.¹⁵⁵ Some athletes have developed addictions to narcotics after obtaining them in the context of “playing through pain.”¹⁵⁶ Though the Rebagliati positive drug test garnered a lot of attention, reports of elite athletes testing positive for any of these substances are quite rare. When these violations do occur, marijuana does seem to be the drug implicated, like in Rebagliati’s case, as opposed to narcotics.

vi. Oxygen enhancements (blood doping)

Blood doping refers to the practice of using transfused blood or red blood cells to increase the number of red blood cells available to carry oxygen from the lungs to the muscles. This is possible both from taking blood from a donor

151. Schroeder, *supra* note 140.

152. 2008 WADC Prohibited List, *supra* note 9, § S7.

153. *Id.* § S8.

154. *Id.* § P1.

155. Peter King, *Bitter Pill*, SPORTS ILLUSTRATED, May 27, 1996, available at http://sportsillustrated.cnn.com/football/nfl/features/favre/flashbacks/bitter_pill/ (“At halftime the doctors said, ‘It’s your choice, but we can shoot it up [with Novocain] without further injury.’ I said, ‘Let’s do it.’ They had to pull my shoulder out, and they stuck the needle way down in my shoulder. In a little while I didn’t feel any pain. I played well, and we won the game. I thought, damn, that was easy.”).

156. King also related that,

Despite the heavy use of painkillers, Favre was playing the best football of his life, and that complicated Tynes’s efforts to get him to quit taking the pills. He was also working out like a madman with strength coach Kent Johnston. “I’m in the best shape of my life,” he said in October. When Tynes would beg him to stop – she flushed down the toilet countless pills she found in his hiding places – he would reply, “Why should I stop what’s helping me get through this?”

(homologous) or from the athlete in advance for future use (autologous). In 2000, a test was found to discover homologous transfused blood, but there is no current test for autologous blood doping.¹⁵⁷

Like EPO, this form of doping can help endurance athletes,¹⁵⁸ such as professional cyclists, the athletic population most found to have engaged in this practice. Blood doping poses the same risks as EPO use—thicker blood increases the chance of blood clots, heart attack, stroke, and pulmonary embolism.¹⁵⁹ In addition, transfusion blood doping also bears the risk that blood will be contaminated during storage and lead to infection in the recipient. Homologous blood doping carries the extra risk that a new disease or infection will be introduced from the transfusion.¹⁶⁰

vii. IV, Gene Doping, and Beyond

Athletes and coaches are always looking for an upper hand, and WADA has led the charge in battling new forms of doping. In 2008, the WADC banned intravenous (IV) infusions, except for those needed for a legitimate medical purpose.¹⁶¹ This came in response to reports that athletes were relying on IV infusions to aid in recovery from training. One such standard practice involves the “Myers’s cocktail”—an infusion of vitamins and minerals.¹⁶² It is unclear whether this prohibition is aimed primarily at

157. Wolfgang Jelkmann, *Novel Erythropoietic Agents: A Threat To Sportsmanship*, 11 *MEDICINA SPORTIVA* 32 (2007), available at http://www.medicinasportiva.pl/new/pliki/ms2007_02_01_jelkmann.pdf.

158. *Id.* (citing F.J. Buick et al., *Effect of Induced Erythrocythemia on Aerobic Work Capacity*, 48 *J. APPL. PHYSIOL.* 636 (1980)).

159. *Id.* (citing D.J. Thomas et al., *Effect of Haematocrit on Cerebral Blood-Flow in Man*, 2 *LANCET* 941 (1977)).

160. Sovndal, *supra* note 11.

161. 2008 WADC Prohibited List, *supra* note 9, § M2 (2).

162. Alan R. Gaby, *Intravenous Nutrient Therapy: The “Myers’ Cocktail,”* 7 *ALTERNATIVE MED. REV.* 403 (2002), available at http://www.mcguffmedical.com/Custom_Knowledge/myers_cocktail_iv.htm

It was not clear exactly what the “Myers’ cocktail” consisted of, as the information provided by patients was incomplete and no published or written material on the treatment was available. It appeared that Myers used a 10-mL syringe and administered by slow IV push a combination of magnesium chloride, calcium gluconate, thiamine, vitamin B6, vitamin B12, calcium pantothenate, vitamin B complex, vitamin C, and dilute hydrochloric acid. The exact doses of individual components were unknown, but Myers apparently used a two-percent solution of magnesium chloride, rather than the more widely available preparations containing 20-percent magnesium chloride or 50-percent magnesium sulfate.

targeting the practice due to the risks of infection or disease from nonmedical IV infusion or because a blanket prohibition on the practice makes it easier to monitor and detect the infusion of impermissible substances.

The newest and next frontier in the battle against doping in sports targets gene doping.¹⁶³ Gene therapy is a nascent medical field that refers to the insertion of a new gene—a functional one—into human cells to correct the DNA for some defective, malfunctioning, or absent gene.¹⁶⁴ This can be facilitated by introducing a virus into the cells through injection or delivery to the lungs by aerosol.¹⁶⁵ Sometimes, cells are removed from the body, treated outside the body in a lab, and then reintroduced into the body.¹⁶⁶ Gene therapy has shown promise in patients with immuno-deficiencies or hemophilia.¹⁶⁷ Researchers are developing pharmaceuticals that can switch on the genes responsible for protein synthesis as well.¹⁶⁸

Gene doping is defined by the WADC as “the non-therapeutic use of cells, genes, genetic elements, or of the modulation of gene expression, having the capacity to enhance athletic performance” and has been prohibited since 2004.¹⁶⁹ Performance enhancement through gene manipulation is no longer simply a fiction found in books, movies and television.¹⁷⁰ Testing for gene doping is nearly impossible.¹⁷¹

163. Andy Miah, *Genetically Modified Athletes: Biomedical Ethics, Gene Doping and Sport* 166 (2004) (advocating in favor of allowing modified athletes to compete, though raising the idea that these athletes should compete separately from non-modified ones); Dick Pound, *WADA Forms Gene Doping Panel*, PLAY TRUE, Mar. 2005, at 8.

164. HAISMA, *supra* note 12, at 17 (“Gene therapy may be defined as the transfer of genetic material to human cells for the treatment, or prevention of a disease or disorder. Genetic materials can be DNA, RNA or genetically altered cells.”).

165. “The encapsulated genetic material is mostly referred to as a vector and is introduced into the body by direct injection into the target organ or administered by aerosol for lung delivery.” *Id.*

166. “Also, it is possible to isolate cells from a patient and treat these cells with the vector in the laboratory and then reimplant these into the patient.” *Id.*

167. “Clinical data showed encouraging gene therapy results in patients with x-linked severe combined immune deficiency disease and patients with haemophilia B.” *Id.* at 20 (internal citations omitted).

168. “Currently, there is only one registered pharmaceutical product based on gene technology, several other products are experimental and are administered in a research setting in hospitals.” *Id.* at 18. See also Nicholas Wade, *Coach Mouse to Mr. Mighty by Pills Alone*, N.Y. TIMES, Aug. 1, 2008, available at <http://www.nytimes.com/2008/08/01/science/01muscle.html>.

169. 2008 WADC Prohibited List, *supra* note 9, § M3.

170. One fictitious—and humorous—example of “genetically enhanced” creatures are the cartoon mice Pinky & the Brain, depicted in the Warner Brothers cartoon shows of *Animaniacs* (WB Television Network television broadcast starting June 21, 1993) and *Pinky and the Brain* (WB Television Network television broadcast starting Sept. 9, 1995), which aired in the mid-1990s.

171. HAISMA, *supra* note 12, at 25

Gene doping will be delivered by a vector containing DNA, with or without chemicals to

The performance-enhancing properties of gene doping are similar to those advantages gained from substance ingestion. The risks of gene therapy are mostly unknown.¹⁷² They include the same risks that would occur from exogenous introduction of PEDs to the body, only an additional threat would be even less precision in hormone regulation or delivery. The risks also include viral reactions, such as flu-like symptoms, as well as the ability to transmit viruses to others. Gene therapy could increase cell changes, including cancers. It is entirely unknown what the effects of gene therapy would be on the children of any person treated.

B. The Who's Who of Doping Control

Multiple tiers of rules, laws and enforcement efforts regulate doping in sports. There is private ordering within sports governance—organizations, leagues, associations, federations and agencies creating doping rules, establishing mechanisms for testing, and sanctioning athletes who violate an underlying policy. This world can best be divided into two camps: those that fall under the ambit of the World Anti-Doping Agency and those that do not. The first part of this section describes the major features of the WADA system and contrasts it with the various alternatives, particularly the drug policies in the major American professional sports leagues, such as MLB and the NFL.

On top of this, and often assisting in the process of ferreting out doping, are legal regimes that criminalize the misuse of certain substances and practices, bringing the arm of law enforcement into the anti-doping picture. Without government involvement, there would have been no investigation of BALCO to shine the light on steroid and hGH use in Major League Baseball and track and field, or no Operacion Puerto to demonstrate how widespread and emblematic EPO use had become within professional cycling. The second part of this Section describes the laws and legal systems prohibiting the

enhance gene transfer or by a viral vector. Muscle based therapies will be confounded to the injection site or tissue in the direct vicinity. Therefore, many of the muscle based gene technologies are unlikely to be detected by urine or blood testing as is currently done in elite athletes. The detection of associated chemicals or viral particles may be of use but this would involve tissue sampling. It will be unlikely that athletes can be forced to give consent to this procedure given the invasive nature of the biopsies.

Id.

172. Mehmet Unal & Durisehvar Ozer Unal, *Gene Doping in Sports*, 34 SPORTS MED. 357, 360 (2004) (“Integration of viral vectors into the host genome carries the risk of insertional mutagenesis. Abnormal regulation of cell growth, toxicity from chronic over-expression of the growth factor and cytokines, and malignancy are all theoretically possible dangers. Scientists emphasize that it is not the few detectable risks that are the most dangerous aspects of gene therapy, but the risks that are totally unknown.”).

various behaviors encapsulated by doping, the method and degree of law enforcement, and recent government activity and proposals to change this landscape.

i. The World Anti-Doping Agency

In the wake of the doping scandal in the 1998 Tour de France, the IOC, the body that governs the Olympic movement, the Olympic Games, and the multitudes of sport-specific international federations that comprise this system, hosted a “World Conference on Doping,” hoping to find a unified approach to combat doping in sports. The solution that came forth from this conference was the creation of an independent international agency “to promote and coordinate the fight against doping in sport.” And so, in November 1999, the WADA came to fruition.¹⁷³

WADA is a private foundation, officially located in Lausanne, Switzerland, and headquartered in Montreal, Canada. It is “the international, independent monitoring watchdog of the global fight against doping in sport and the custodian of the World Anti-Doping Code.”¹⁷⁴ As a private foundation, WADA only covers its own signatories—those who choose to be bound by it.¹⁷⁵

Organizations that have pledged to abide by the WADC include: the twenty-eight international federations included in the Summer Olympics, the seven international federations included in the Winter Olympics, thirty-one IOC-recognized international federations of non-Olympic sports, all two hundred and five national Olympic committees (NOCs), the International Paralympic Committee, the international federations for disabled athletes, the National Paralympic Committees, some of the Commonwealth Games, twenty of the twenty-four international federations of the General Association of International Sports Federations (these are non-IOC recognized international federations), and a handful of other professional sporting organizations, such as the WTA tour (women’s tennis), the Tennis Grand Slam, and the Tour de France. The World Cup uses a variant of the WADC for its competition.¹⁷⁶

173. World Anti-Doping Agency, *WADA History*, WADA-AMA.ORG, <http://www.wada-ama.org/en/dynamic.ch2?pageCategory.id=253> (last visited Oct. 26, 2008).

174. *Global Anti-Doping Organization Chart*, WADA-AMA.ORG, Jan. 2008, http://www.wada-ama.org/rtecontent/document/Insert_03_GADOCchart_en.pdf.

175. One economist has noted the significance of keeping WADA independent from the IOC. See Nicolas Eber, *Credibility and Independence of the World Anti-Doping Agency: A Barro-Gordon-Type Approach to Antidoping Policy*, 3 J. SPORTS ECON. 90, 95 (2002) (concluding that modeling demonstrates how a non-independent WADA would not have sufficient incentive to treat anti-doping violations seriously).

176. For a list of the signatories, see *WADC Code Acceptance*, WADA-AMA.ORG,

The WADC provides a comprehensive framework for the regulation of doping in sports, paving the way for standardization in how athletes are treated, no matter the sport or home country. This responds to the two specific problems under the prior ad hoc regime: different sporting federations issued widely different penalties for the same offense, and some countries seemed more willing to penalize their own athletes than others.¹⁷⁷ The United States developed a reputation in the international community for talking tough about doping in sports, but then believing the “mitigating circumstances” of its own athletes and refusing to sanction them in any meaningful way.

The forty-four page WADC covers the substance of what constitutes an anti-doping violation, the process for dealing with such violations, and the sanctions for various anti-doping violations.¹⁷⁸ One prominent feature of the WADC is its strict liability treatment of anti-doping violations. An athlete is deemed responsible for any substance found in his body, whether it was prepared by a coach, a spouse, or any other party. Essentially, the only acceptable reason for “no fault” is proof of actual sabotage by another party.¹⁷⁹ A first positive test result triggers a presumptive disqualification in the event in which the test took place as well as a two-year ban from all international competition in the sport.¹⁸⁰

Besides creating the WADC and maintaining the prohibited substance list, WADA also accredits laboratories that are considered to meet the appropriate criteria for analyzing doping tests.¹⁸¹ To date, thirty-three labs worldwide have been certified.

The WADC is implemented at both the international and national level of federation sport. The IOC, which provides WADA with half of its budget, is responsible for testing at the Olympic Games. All international federations—these are the sport-specific organizations, such as FIG (gymnastics), FIFA (soccer), or IAAF (track and field)—must implement the WADC, test its own athletes both within and outside of competition, and sanction athletes in accordance with the WADC. NOCs are also responsible for making sure that the WADC is enforced at the national federation level as well. Many countries also maintain national level anti-doping organizations to ensure appropriate

<http://www.wada-ama.org/en/dynamic.ch2?pageCategory.id=270> (last visited Oct. 26, 2008).

177. See, e.g., JAMES A.R. NAFZIGER, *INTERNATIONAL SPORTS LAW* 151-52 (2004) (describing problems in the pre-WADA system).

178. WORLD ANTI-DOPING AGENCY, *WORLD ANTI-DOPING CODE* (2003), available at http://www.wada-ama.org/rtecontent/document/code_v3.pdf.

179. *Id.* at 29-32 (Article 10.5 and 10.5.2 Comment).

180. *Id.* at 26-27 (Article 10.2).

181. WORLD ANTI-DOPING AGENCY, *INTERNATIONAL STANDARD FOR LABORATORIES VERSION 4.0* (2004), available at http://www.wada-ama.org/rtecontent/document/lab_aug_04.pdf.

testing and compliance with the WADC. USADA is one such organization.

Testing outside of competition is a major aspect of this comprehensive doping control, because it requires that athletes notify testers in advance of their whereabouts.¹⁸² This is the only way that athletes can be found for random drug testing outside of competitive events. Athletes are allowed two free “no shows”; beyond that, failure to produce a sample counts as a positive test result.¹⁸³ Athletes who have been implicated for failure to provide suitable information to testers or show up for a random test include Marion Jones during high school¹⁸⁴ (pre-Olympics, pre-BALCO) and professional cyclist Michael Rasmussen.¹⁸⁵ In a doping first, several Russian track and field athletes were recently caught because they were too available when the testers came calling. Seven athletes triggered IAAF suspicion and investigation, because they were always ready for random testing outside of competition. Athletes have an hour to show up from the time of notification to produce a sample. These athletes were always ready, a sign that they were being tipped off and receiving an opportunity to doctor their samples.¹⁸⁶

The Court of Arbitration for Sport (CAS), which is also headquartered in Lausanne, acts as the supreme arbitrator of disputes that fall under the WADC. The CAS was established by the IOC in 1984, and it underwent institutional reform in the mid-90s, after a Swiss court ruled that while the CAS was a legitimate arbitration panel, it needed to separate itself to a larger extent from IOC control.¹⁸⁷ Since then, the CAS has emerged as the leading juridical source for dispute resolution on the international sporting arena. Though much of its newfound power rests in the pre-eminence granted to it by the

182. WORLD ANTI-DOPING AGENCY, GUIDELINE FOR OUT-OF-COMPETITION TESTING VERSION 2 (2004), available at http://www.wada-ama.org/rtecontent/document/guidelines_ooc.pdf.

183. See, e.g., Paul Gains, *Drug-free Olympics? Dream On*, CBC.CA, May 23, 2008, <http://www.cbc.ca/olympics/story/2008/05/21/f-olympics-feature-doping.html> (quoting Victor Conte explaining how easy it is for athletes to use the free “no show” opportunities to circumvent doping controls).

184. Marion Jones allegedly never received notice of an out-of-competition drug test in 1992 and was successfully represented by Johnnie Cochran in the proceeding against her. Dick Patrick, *Until Now, Jones Had Been Steadfast in Doping Denials*, USA TODAY, Oct. 5, 2007, available at http://www.usatoday.com/sports/olympics/2007-10-05-jones-analysis_N.htm.

185. Edward Wyatt, *Doping Accusations Again Dominate Cycling*, N.Y. TIMES, July 21, 2007, at D6 (discussing Rasmussen’s missed tests and the warning he received from the UCI).

186. *Russian ‘Dopers’ Were Tipped off*, BBC SPORT, Aug. 7, 2008, <http://news.bbc.co.uk/sport1/hi/olympics/athletics/7538731.stm>.

187. Court of Arbitration for Sport, *General Information: Important Dates in the CAS History*, TAS/CAS.ORG, <http://www.tas-cas.org/statistics> (last visited Oct 26, 2008); see also A. & B. v. IOC, Tribunal Federal Suisse [TFS] [Federal Court] May 27, 2003, *Arrets du Tribunal Federal Suisse [ATF] II* (Switz.) (CAS arbitration over disqualified skiers who failed doping tests in which Swiss tribunal recounts history of the CAS and its 1994 reforms).

WADC, the CAS decision making is not solely limited to issues of doping.¹⁸⁸ The CAS has acted to standardize the penalties issued by the various national anti-doping agencies and the various sporting federations across all sports.¹⁸⁹

ii. American Professional Leagues and Others Outside of WADA

While the list of sporting organizations and athletes that fall under the WADC is quite significant, the most major exceptions are the American professional sports leagues. This includes the four primary leagues (MLB, NFL, NBA, and NHL) as well as the NCAA, which governs the vast majority of elite collegiate athletics.

Professional sporting leagues abroad typically fall under the auspices of the governing international federation, and, thus, they are signatories to the WADC. Take, for example, the Barclays Premier League, which is one of the most elite professional leagues in the world. The Premier League, no different from any other league in England, answers to the Football Association (FA), that country's national governing body for the sport of football. The FA participates in the Union of European Football Associations (UEFA), along with its other European national governing body counterparts. And all these organizations are governed by the rules of the Federation of International Football Associations (FIFA). FIFA, as noted above, is a sport-specific International Federation (IF) covered within the general IOC movement.

The fact that American professional sports leagues generally fall outside the reach of the Olympic arm has created an anomaly where an athlete can violate the WADC's anti-doping provisions and yet remain perfectly eligible to compete at the most elite level within his or her sport. The example noted above regarding NHL goalie Jose Theodore's positive test for finasteride may seem to have produced the more "fair" result. On the other hand, when American ice hockey player Bryan Berard tested positive during a USADA test for 19-norandrosterone, an exogenous AAS, he received the standard WADC two-year ban from International Ice Hockey Federation (the ice hockey IF) competition. At the same time, there was no sanction from the NHL, even though the steroid was prohibited by the league's drug policy, since the positive result did not come from an NHL-administered test.¹⁹⁰

The actual drug policies in each professional league differ one from the next. One issue in the implementation of the policy is the role that collective

188. NAFZIGER, *supra* note 177, at 154-61 (CAS decisions concerning eligibility, nationality and commercial aspects of Olympic sport are all part of the *lex sportiva*).

189. Darren Kane, *Twenty Years on: An Evaluation of the Court of Arbitration for Sport*, 4 MELBOURNE J. INT'L L. 611, 615-17 (2003).

190. See *Berard Still Eligible to Play in NHL*, *supra* note 433.

bargaining plays in American sports. The NFL maintains a comprehensive list of prohibited substances that is similar to the IOC's. However, testing under the NFL regime is far less frequent—all athletes are tested in the pre-season, but far fewer random tests occur throughout the season. Athletes who test positive receive a four game ban for a first offense. To some extent, no one bats an eye when an NFL player receives such a suspension. In 2007, the NFL and NFL Players' Association announced an expansion in the league's drug-testing policy.¹⁹¹ EPO was added to the prohibited substance list, the frequency of random testing both during and in the off-season was increased, the carbon isotope ratio testing for testosterone would be used as a matter of course (rather than to test positive samples), and players suspended after a positive test would forfeit the proportion of their signing bonus related to the games missed due to the suspension.¹⁹² The league also gave a grant to help develop a test for hGH and will help create a "steroids education fund" as well.¹⁹³

MLB athletes were not randomly tested at all prior to recent changes in the policy. One myth that is often repeated is that steroids were not even prohibited by MLB in 1998 or even 2001.¹⁹⁴ However, besides questions of legality, MLB actually did prohibit AAS throughout the 1990s and beyond; lax testing may have given the illusion that it did not.¹⁹⁵ In the aftermath of congressional attention in 2005, the MLB Players' Association and Commissioner Bud Selig agreed to the Joint Drug Prevention and Treatment Program.¹⁹⁶ This anti-doping policy provides a more comprehensive list of

191. *NFL to Test for More Performance-Enhancing Drugs*, ESPN.COM, Jan. 24, 2007, <http://sports.espn.go.com/nfl/news/story?id=2741136>.

192. *Id.*

193. *Id.*

194. See, e.g., Joseph Sirprut, *The Uproar Concerning Steroids in Baseball: A Slippery Slope With No Clear Answers*, 23 WTR ENT. & SPORTS L. 13, 14 (2006) ("[S]teroid use was not illegal in baseball until 2003.").

195. Gaffney, *supra* note 50

In a well-documented 1991 policy memo, MLB Commissioner Fay Vincent told all MLB clubs that steroids were prohibited in baseball. Current Commissioner Bud Selig reiterated that policy in 1997 This myth exists because, with the interference of the MLB Player's Association, a steroid testing policy with teeth was not implemented until 2003."'). The 1991 and 1997 memos are contained in ESPN The Magazine *Special Report: Who Knew?*, ESPN.COM, <http://sports.espn.go.com/espn/eticket/story?page=steroids&num=3> (last visited Oct. 26, 2008) ("This prohibition applies to all illegal drugs and controlled substances, including steroids or prescription drugs

Id.

196. Major League Baseball, *Joint Drug Prevention and Treatment Program*, MLB.COM,

prohibited substances, institutes random in-season and off-season testing, and multi-game suspensions, depending on the substance used.¹⁹⁷ Steroids are treated more harshly than stimulants; for the latter, a positive drug test triggers more often random follow-up testing before any suspension is issued.¹⁹⁸

The NHL tests athletes only during the season—one-third of the players are tested once, one-third twice, and a last third are tested three times.¹⁹⁹ This replaces the prior system where each athlete was tested twice. While the suspension time frames are high (twenty games for a first positive test, sixty for a second), only one player has ever tested positive under this system.²⁰⁰ The NCAA has an involved anti-doping policy, but testing outside of college football is extremely infrequent. The vast majority of college athletes are never tested.

iii. Stricter than the WADC – The “Gold” Standard for Doping?

No sport has been beleaguered more by doping scandals than professional cycling and the Tour de France lies at the epicenter of this black mark against the sport. Operation Puerto and the Landis positive test result suggested that not much had changed in the decade that followed the Festina affair, the discovery on the eve of and during the 1998 Tour de France revealing the systematic doping in cycling.

Prior to the 2008 season, weary from doping scandals, the high-profile cycling sponsors T-Mobile and CSC announced their intention to discontinue

<http://mlbplayers.mlb.com/pa/pdf/jda.pdf> (last visited Oct. 26, 2008).

197. Press Release, Major League Baseball, Statement of Allan H. Selig, Commissioner of Baseball, Hearing Before the H. Comm. on Government Reform 109th Cong. 1, Mar. 17, 2005, available at http://mlb.mlb.com/news/press_releases/press_release.jsp?ymd=20050317&content_id=969657&vkey=pr_mlb&fext=.jsp&c_id=mlb.

198. Interestingly, in the wake of this new policy, the number of MLB players who received a “therapeutic use” exemption for amphetamines to treat ADD grew from 28 to 103. “[S]uddenly, 7.6 percent of the 1354 players on major-league rosters had been diagnosed with ADD.” Charles Euchner, *Baseball’s Other Drug Problem: Are Players Using an ADD Diagnosis to Evade the Amphetamine Ban?*, NEWSWEEK, Feb. 6, 2008, available at <http://www.newsweek.com/id/108730>.

199. Scott Burnside, *Debate over NHL’s Drug-Testing Policy Rages on*, ESPN.COM, Aug. 6, 2007, http://sports.espn.go.com/nhl/columns/story?columnist=burnside_scott&id=2963703 (discussing whether the lack of positive test results from two years of NHL drug testing indicates that there is no real issue of doping in the NHL or if the testing itself lacks rigor).

200. For an overview of the various drug policies, see Mike Reiss, *NFL Strengthens Drug Policy: Stiffer Penalties, More Frequent Tests*, BOSTON GLOBE, Jan. 25, 2007, available at http://www.boston.com/sports/articles/2007/01/25/nfl_strengthens_drug_policy/ (“In the NBA, random tests are conducted four times per season. A first offense for steroids or performance-enhancing drugs results in a 10-game suspension, followed by a 25-game suspension for a second offense, a one-year suspension for a third offense, and a lifetime ban for a fourth offense.”).

sponsorship of the sport altogether.²⁰¹ And then an unlikely source for improved drug testing came forward to attract the sponsors' attention—the athletes themselves, who wanted to demonstrate that they were riding clean and devoted to cleaning up the sport.

The team formerly known as T-Mobile took on the name of its new ownership, Team High Road (now Team Columbia), and officially moved from Germany to the United States.²⁰² The cyclists on the team announced their commitment to fight doping in cycling, backing up the pledge with a new comprehensive drug testing program managed by the Agency for Cycling Ethics that requires, at a minimum, bi-weekly blood and urine tests that can establish a biological passport for each athlete on the team.²⁰³ Rather than collecting samples and looking for known doping substances and methods, testers collect samples to establish a baseline profile for each particular athlete.²⁰⁴ Unexplained changes justify further testing or examination to determine the reason for physiological differences.²⁰⁵ The biological passport method avoids the problem of cheaters who are able to stay one step ahead of what the testers are looking for, because it is not premised upon looking for any specific artificial substance or marker in urine or blood.

Two other teams adopted the same protocol. One was another American team, Team Garmin-Chipotle (formerly known as Slipstream).²⁰⁶ The other was CSC-Saxo Bank, the notable team from Denmark, which ultimately would dominate the 2008 Tour de France and produce its champion.²⁰⁷

While the testing policy and methodology of these three teams are perhaps the most stringent among all competitive sport, the Tour de France only lags slightly behind. In 2008, due to a conflict between the company that organizes the Tour, the Amaury Sport Organization (ASO) and the federation for the sport, the International Cycling Union (UCI), testing at the Tour was

201. Detlef Hacke, *Doping Whistleblower Jaksche Left out in the Cold*, SPIEGEL ONLINE, Dec. 7, 2007, <http://www.spiegel.de/international/germany/0,1518,522031,00.html>; CSC News Release, *CSC Announces It Will Not Renew Pro Cycling Sponsorship*, CSC.COM, Mar. 13, 2008, available at <http://www.csc.com/newsandevents/news/12909.shtml>.

202. Ian Austen, *Cycling's Drug Problem Leads T-Mobile to End Sponsorship*, N.Y. TIMES, Nov. 28, 2007, at D1, available at <http://www.nytimes.com/2007/11/28/sports/othersports/28cycling.html>.

203. *High Road Sports Introduces Comprehensive Anti-Doping Program*, CANADIANCYCLIST.COM, Dec. 10, 2007, <http://www.canadiancyclist.com/dailynews/December/12.10.075.14AM10.shtml>.

204. *Id.*

205. *Id.*

206. *ACE-ing the Test: New Frontiers in Drug Testing*, CYCLINGNEWS.COM, Feb. 25, 2008, http://www.cyclingnews.com/features.php?id=features/2008/ace_feb08.

207. *Id.*

ceded to the French Anti-Doping Agency (AFLD), which relied upon a variation of the biological passport method of testing, along with the standard methods for doping control.²⁰⁸ The testers were able to target “suspicious” athletes based upon the passport profile, and of the 190 initial riders, four tested positive for prohibited substances, three for EPO, and one for a stimulant.²⁰⁹ Some debate exists as to whether the EPO drug manufacturer had left a deliberate marker in the substance that would be visible in doping controls.

While some may view these results as an indication that cycling is still not doping-free, Tour Director Christian Prudhomme believes that the 2008 Tour “will be seen as the year ‘when the balance shifted the other way’ in the fight against doping.”²¹⁰ Indeed, rather than rallying around a suspected athlete or attempting to cover things up, the responses to the positive results from sponsors, teammates, and the Tour itself were immediate and negative. The entire Saunier Duval team immediately withdrew from the tour at the discovery of a positive result from one of its riders, and the sponsorship was terminated.²¹¹

WADA has considered how to implement the passport system of testing, but has not done so yet. Significant concerns about adoption include the costliness of such a method, the availability of sufficiently certified labs to process the extensive samples collected, and the privacy of the athletes involved.²¹² Nonetheless, it is clear that while the logistics of the biological passport need to be ironed out before mass proliferation of the system, this form of testing holds real promise as the new “gold” standard within the anti-doping world, because it avoids the cycle of dopers constantly trying to stay one step ahead of the testers.²¹³

208. *WADA Slams UCI Legal Action*, CYCLINGNEWS.COM, Mar. 26, 2008, <http://www.cyclingnews.com/news.php?id=news/2008/mar08/mar26news>.

209. *Stefan Schumacher also Tests Positive for EPO According to L'Equipe*, BICYCLE.NET, Oct. 6, 2008, <http://www.bicycle.net/2008/stefan-schumacher-also-tests-positive-for-epo-according-to-lequipe>.

210. *Sastre Wins Doping-Scarred Tour de France*, USATODAY.COM, July, 28, 2008, http://www.usatoday.com/sports/cycling/2008-07-28-743844943_x.htm (quoting Christian Prudhomme).

211. Charles Pelkey, *Riccardo Ricco Tests Positive; Saunier Duval Team Withdraws from Tour de France*, VELO NEWS, July, 17, 2008, <http://tour-de-france.velonews.com/article/80269/riccardo-ricco%3B-tests-positive-saunier-duval-team>.

212. Laura Weislo, *Independent Testing to Continue Alongside UCIs “Biological Passports,”* CYCLINGNEWS.COM, Jan. 18, 2008, <http://www.cyclingnews.com/news.php?id=news/2008/jan08/jan18news>.

213. E.J. Bird & G. Wagner, *Sport as a Common Property Resource*, 41 J. CONFLICT RESOL. 749, 754 (1997) (describing the vicious cycle that is created by the prohibited list system where cheaters aim to innovate and find new substances not banned and testers work to discover them).

iv. The Role of Government in the Anti-Doping Effort

Law and law enforcement have played an important part in the regulation and elimination of doping in sports. There are two sides to these efforts. First is the assistance and legitimacy that nations bestow upon WADA. Governments provide WADA with half of its funding. At the international level, UNESCO adopted the International Convention Against Doping in Sports in 2005. Compliance with the WADC mandated that countries make substantial progress toward ratifying this treaty, which “allows the practical implementation of the Code into domestic policy.”²¹⁴ The United States Senate recently ratified the Convention.

The second and more significant contribution to the fight against doping is laws prohibiting the nonmedical use of many of the prohibited substances and enforcement efforts targeting violators of these laws.

a) Federal Anti-Doping Efforts in the United States

While some American politicians have advocated in favor of sport-specific anti-doping statutes, there are no specific federal laws about doping in sports.²¹⁵ However, that hardly means that Congress has paid no attention to the issue. Nonmedical use of anabolic-androgenic steroids was first prohibited in 1988. Amphetamines, on the other hand, have always been listed as a controlled substance from the time of the Comprehensive Drug Abuse Prevention and Control Act of 1970,²¹⁶ though they have been “demoted,” from being considered a Schedule II substance to Schedule III (the lower the number, the less harmful, the more useful, and the less regulated the substance). After the Ben Johnson scandal created a political storm about steroid use in sports, Congress enacted the Anabolic Steroid Control Act of

214. WORLD ANTI-DOPING AGENCY, GLOBAL ANTI-DOPING ORGANIZATION CHART (2003), available at http://www.wada-ama.org/rtecontent/document/Insert_03_GADOCart_en.pdf.

215. This article focuses on the federal laws regulating doping. Congress has enacted its comprehensive drug laws in accordance with its commerce clause power. While states are free to create laws and policies regarding steroid usage, particularly in the context of education and student-athletes, any system must be consistent with the federal one. See, e.g., TEX. EDUC. CODE § 38.008 (2006) (requiring posting in physical education area in Texas schools of notice concerning illegality of AAS); *Chapter 673: Addressing the Use of Steroids and Performance Enhancing Dietary Supplements by High School Athletes*, 37 MCGEORGE L. REV. 239 (2006) (describing a law enacted by the California legislature but subsequently vetoed that would have expanded the rules and responsibilities on student-athletes, coaches, and parents concerning both steroids and dietary supplements).

216. Comprehensive Drug Abuse Prevention and Control Act of 1970, Pub. L. No. 91-513, 84 Stat. 1236 (codified as amended throughout 21 U.S.C.).

1990 (ASCA).²¹⁷ The statute deemed anabolic steroids to be Schedule III controlled substances, introducing criminal penalties for nonmedical use and distribution.²¹⁸

Enforcement of this provision of the Act has had a rocky history due to the interaction and coordination of drug enforcement across governmental agency lines. When Congress passed the Dietary Supplement Health and Education Act of 1994,²¹⁹ it was viewed as a step backwards in the fight against doping in sports. This act exempts nutritional supplements from the testing regime that drugs face within the Food and Drug Administration (FDA) system, and it shifts the burden onto the FDA to prove that a substance is unsafe.

The ASCA of 1990 was amended by the Anabolic Steroid Control Act of 2004.²²⁰ It expanded the definition of what is a steroid to include the new designer steroid THG and steroid precursors, such as Andro. It also authorized \$15 million per year for high school educational programs to prevent steroid use.

Besides enacting these laws, Congress has held hearings on steroid use in baseball in 2005, commissioned the independent and investigative *Mitchell Report*, and then followed up with further hearings in 2008. In 2005, Sen. John McCain proposed the Clean Sports Act,²²¹ a statute that would standardize testing procedures for the professional sports leagues and mandate tougher penalties, though it did not seek to place the leagues under the WADA standards. The bill was introduced in Congress, but it never reached a vote in either house. It is clear that even without any such bill, congressional involvement has likely had an effect on the leagues' determination to upgrade their own anti-doping policies.

The most significant American federal contribution in the war against doping has probably been its BALCO investigation, a case that owes much of its lifeblood to the dumpster diving efforts of one relentless IRS special agent, Jeff Novitzky. For the past two decades, there have been numerous

217. Anabolic Steroid Control Act of 1990, Pub. L. No. 101-647, 104 Stat. 4789 (codified as amended throughout 21 U.S.C.).

218. While the purpose of the act was to respond to nonmedical use of steroids, particularly in sports, at least one commentator has noted that the ASCA of 1990 may have the unintended consequence of deterring physicians from using AAS and other performance-enhancing drugs in treating the elderly, even where the benefits might outweigh the risks. Jeffrey Hedges, *The Anabolic Steroids Act: Bad Medicine For the Elderly*, 5 ELDER L.J. 293, 294 (1997).

219. Dietary Supplement Health and Education Act of 1994, Pub. L. No. 103-417, 108 Stat. 4325 (codified as amended throughout 21 U.S.C.).

220. Anabolic Steroid Control Act of 2004, Pub. L. No. 108-358, 118 Stat. 1661 (codified as amended at 21 U.S.C. §§ 801-02, 811 (2004)).

221. Clean Sports Act of 2005, H.R. 2565, 110th Cong. (2005).

prosecutions of dealers and distributors of PEDs. However, the criminal penalties have not been significant enough to deter the widespread use of PEDs. When one manufacturer is shut down, another springs up. The international reach and jurisdictional hurdles complicate the matter further. The BALCO case was unique because of the extensive evidence discovered that could be and was used by USADA to sanction athletes who have doped.

b) Other Notable Governmental Efforts

Literally speaking, Operacion Puerto means Operation Mountain Pass. To those who follow doping scandals in sports, Operacion Puerto means something else. At the center of the case is one Spanish doctor, Eufemiano Fuentes, though his name is typically lost amidst the sea of famous athletes implicated.

When Spanish professional cyclist Jesus Manzano was fired by his team Kelme-Costa Blanca in 2003 for violating team rules by hosting a woman in his bedroom, no one could foresee what this dismissal would lead to. Manzano provided one interview with the press detailing the blood doping practices of his team, which he alleged proved nearly fatal in his case, and yet another interview that detailed the list of performance enhancements used: EPO, the steroid nandrolone while training, hGH and so forth.²²² Dr. Fuentes was the Kelme team doctor at that time.²²³

The Central Operating Unit, the anti-drug trafficking arm of the Spanish Guardia Civil (SGC) launched its investigation in 2006, and in May of that year, the SGC issued arrests and raided the residences of its suspects.²²⁴ At a home belonging to Dr. Fuentes, the SGC found a personal stockade of steroids, blood products, and machines for transfusions. Also found in the raid? A list with the name of athletes involved.²²⁵

The list of cyclists was leaked to a newspaper. This discovery produced cataclysmic results in the cycling world, as a number of top riders were implicated, such as Jan Ullrich and Ivan Basso. Some of these riders, including Ullrich and Basso, would later be cleared by Spanish courts, though other evidence (including a confession in Basso's case) would prove that they

222. *Bad Blood Between Manzano and Kelme*, CYCLINGNEWS.COM, Mar. 24, 2004, <http://www.cyclingnews.com/news.php?id=news/2004/mar04/mar24news2>.

223. *Manzano Investigation Widens*, CYCLINGNEWS.COM, Apr. 16, 2004, <http://www.cyclingnews.com/news.php?id=news/2004/apr04/apr16news2>.

224. Les Clark, *Spanish Cycling Speaks out over Saiz*, CYCLINGNEWS.COM, May 24, 2006, http://www.cyclingnews.com/news.php?id=features/2006/saiz_doping.

225. *Id.*

doped.²²⁶

Cycling may have received the lion's share of the attention regarding Operacion Puerto, but Fuentes worked with other high-profile athletes, including tennis and football players. Manzano alleged to have seen players from La Liga (the top Spanish football league) at Fuentes's, and the French newspaper *Le Monde* claimed that documents found in the raid included plans for FC Barcelona and Real Madrid, two elite teams in that league.²²⁷

The scope of the investigation remains unknown. FIFA has attempted to obtain the records from the investigation. Spanish prosecutors did tell the IAAF that no track and field athletes were involved.

c) Interaction Between Government Investigation and WADA Anti-Doping

In some ways, government efforts to stop the manufacture and distribution of performance enhancements are unlikely to affect elite athletics. In the globalized world of internet access, it is simply too easy to obtain chemicals, process them in a lab, and spread them around, or to find medical personnel willing to dispense drugs more freely. The budget for enforcement is too small, the cost of catching the cheats too high, and the penalties for successful prosecution too low even to deter.

There is no denying, however, that government has played an instrumental role in aiding the anti-doping fight. The pressures of the subpoena and the threat of jail time (no matter how minimal) may not particularly deter future doping, but it has most certainly triggered dopers to turn on one another and provide evidence.

Sometimes, government and WADA-based entities work in tandem on the same case. A key break in the BALCO case came when USADA realized that a syringe that had been sent to the agency in 2003 with the new designer steroid THG was linked to that lab, which was already under federal investigation.²²⁸ USADA was able to obtain the evidence from this investigation via a subpoena from the Senate's Commerce Committee to the Department of Justice.²²⁹

226. Mark Kreidler, *Ullrich May Be Free, but Damage Is Done*, ESPN.COM, Oct. 27, 2006, <http://sports.espn.go.com/oly/cycling/columns/story?id=2639744>.

227. *Le Monde Ordered to Compensate Barcelona*, REUTERS.COM, Jan. 15, 2008, <http://www.reuters.com/article/sportsNews/idUSL1533032120080115>.

228. Bob Kimball & Beau Dure, *BALCO Timeline*, STEROIDSINBASEBALL.NET, <http://www.steroidsinbaseball.net/balco.html> (last visited Oct. 29, 2008).

229. Liz Robbins, *Committee Subpoenas Balco Case Documents*, N.Y. TIMES, Apr. 9, 2004, at D5, available at <http://query.nytimes.com/gst/fullpage.html?res=9805EEDA1238F93AA35757C0A9629C8B63&sec=health>.

USADA's case against sprinter Michelle Collins, who was implicated in the BALCO scandal, was the first of its kind: suspension based on a "non-analytical positive."²³⁰ A non-analytical positive means that the athlete never actually tested positive for any prohibited substance. Nonetheless, she is deemed to have committed a doping violation on the basis of other evidence—documents such as drug calendars and schedules, canceled checks for substances, and the like.²³¹ Tim Montgomery was also suspended based on a non-analytic positive.²³²

At the international level, customs agents and border guards have played an unlikely role in the war against doping. The fact that professional cycling teams, including their entourage, cross national borders so frequently has contributed in the discovery of doping within that sport.

In conclusion, there is no private anti-doping in elite sports that operates wholly without the help and assistance of both the national and international legal community. Many successful anti-doping measures have required at least public funding, as well as the diligence of law enforcement. The extent to which government involvement has contributed to fighting doping, though, varies widely depending on both the country and sport involved.

II. How Doping in Sports Affects Everyone and What We Can Do About It

What do lawyers, scholars, and policy-makers have to say about legal regulation of doping in sports? The short answer is both a lot and not enough. Scholarship on this subject has been robust, ranging from recommendations on particular government statutes²³³ or doping cases²³⁴ to more comprehensive discussions and solutions aimed at attacking the global problem of doping in sport.²³⁵ Thus far, the debate has centered on the well-being of athletes,²³⁶

230. Vicki Michaelis, *No Positive Test, No Penalty, Lawyer for Collins to Argue*, USA TODAY, Dec. 13, 2004, at C13, available at http://www.usatoday.com/sports/olympics/summer/track/2004-12-13-collins-lawyer_x.htm.

231. *Id.*

232. *Id.*

233. *See, e.g.*, Lindsay J. Taylor, *Congressional Attempts to "Strike Out" Steroids: Constitutional Concerns About the Clean Sports Act*, 49 ARIZ. L. REV. 961 (2007) (discussing the constitutionality of the proposed Clean Sports Act); Joseph M. Saka, *Back to the Game: How Congress Can Help Sports Leagues Shift the Focus from Steroids to Sports*, 23 J. CONTEMP. HEALTH L. & POL'Y 341 (2007) (suggesting that Congress should mandate arbitration by sports leagues to reach better drug policies).

234. *See, e.g.*, Paul C. McCaffrey, *Playing Fair: Why the United States Anti-Doping Agency's Performance-Enhanced Adjudications Should Be Treated as State Action*, 22 WASH. U. J. L. & POL'Y 645 (2006) (arguing that USADA should be classified as a state actor and be required to meet due process standards in the context of doping cases).

235. *See, e.g.*, Eoin Carolan, *The New WADA Code and the Search for a Policy Justification for*

youth²³⁷ or the integrity of “sport” itself²³⁸ as an independent entity as well as the nature of the role of government.²³⁹ The first part of this Section provides a quick overview of the main policy arguments offered both in favor and against legal involvement and regulation of doping in sports.

This Section next identifies one specific harm that has been lost in the shuffle of the analysis: the societal harm caused by artificially created norms of achievement. It introduces the socio-cultural significance of sports, and then discusses the particular significance of record-setting and record-breaking achievement as a good with inherent societal value, due to its representation of the potential and best of humanity. The subsection then uses two notable examples, baseball’s single season home-run record and the battle to be the world’s fastest man, to illustrate the way that “false” records created through unknown doping damages this precious concept of elite achievement in sport, and that this harm is exacerbated by cognitive biases related to anchoring and the endowment effect.

The Article then continues to explain two other harms that stem from doping in sports, namely the establishment of a false baseline for elite achievement that distorts the goals of everyday recreational athletes, and the false baseline for body image that distorts the ideal physique attainable through health and fitness.

Last, this Section provides a solution for a mandatory disclosure mechanism for sporting organizations to provide information and prevent future harms of this nature. Drawing upon the analogy to securities regulation laws, society is treated as investors in elite athletics who have been defrauded thus far, and for whom market difficulties and cognitive biases have prevented

Anti-Doping Rules, 16 SETON HALL J. SPORTS & ENT. L. 1, 3 (2006) (suggesting the need for a comprehensive system to deal with doping in sports).

236. See *supra* note 2 (and accompanying text).

237. See *supra* note 1 (and accompanying text).

238. See, e.g., Whitman, *supra* note 1, at 482 (quoting NFL Hall of Famer, and current Minnesota Supreme Court Justice, Alan Page on the integrity of sports); Steven O. Ludd, *Athletics, Drug Testing and the Right to Privacy: A Question of Balance*, 34 HOW. L. J. 599, 616 (1991) (“[P]roponents suggest that random mandatory drug testing is essential to preserve the integrity of sport.”).

239. See, e.g., Matthew J. Mitten, *Drug Testing of Athletes – An Internal, Not External, Matter*, 40 NEW ENG. L. REV. 797, 808 (2006)

[T]he differing regulatory roles of private sports governing bodies and the government should be complementary and consistent with their respective objectives, rather than overlapping and potentially conflicting. Drug testing and sanctioning of athletes should be an internal matter that is best handled by sports governing bodies, with the federal government having the exclusive authority to impose external criminal and/or economic penalties on athletes for doping offenses.

Id.

a full understanding of the reality of doping in sport. This Section concludes with a discussion of the difficulties that any such effort may face.

A. Background Scholarship

A body of legal scholarship has slowly emerged in the two decades since Ben Johnson's positive test for steroids and the subsequent enactment of ASCA of 1990. In recent years, the literature has grown significantly as commentators have responded in the wake of notable episodes, such as the BALCO investigation or the Congressional hearings on steroids in baseball in 2005.²⁴⁰ This subsection outlines the main policy arguments that have been proffered in the debate surrounding the law and ethics of doping in sports.

i. Policy Arguments for Strong Government Regulation of Doping

The majority of commentators and policy makers have come down in favor of strong government regulation of doping in sports. There are essentially four main reasons given for this viewpoint. They are the need to protect (1) teenagers and children, (2) athletes, (3) fans as consumers, and (4) the integrity of sports. This subsection briefly explains each argument.

a) Protecting the Nation's Youth

Advocates in favor of stronger government action to achieve comprehensive anti-doping policies in sports often focus on the harmful effects to children and adolescents that stem from drug abuse. This argument typically links the prevalence of doping among elite athletes to the percentage of youth who attempt to use steroids, since athletes serve as role models in society.

Restricting the access that teenagers and children have to doping substances and methods seems like an obvious area of governmental interest, much as government aims to prevent minors from purchasing alcohol or tobacco. There is essentially no scholar or policy-maker in favor of legalizing AAS or other performance-enhancing drugs for children. On the other hand, some scholars have noted the tenuous connection between doping by elite athletes and the substance abuse found at the high school or middle school levels, suggesting the need for a bifurcated approach that treats drug use by minors separately from that of professionals.²⁴¹

240. See, e.g., Symposium, *From Grand Slams to Grand Juries: Performance-Enhancing Drug Use in Sports*, 40 NEW ENG. L. REV. 705-850 (2006).

241. Eoin Carolan, *supra* note 235, at 30-31.

b) Protecting Athletes

The people most harmed by the prevalence of doping in sports are quite often the athletes themselves. Scholars have noted the incentives that athletes have to dope, the cognitive biases that cause them to do so, and the need for collective action if a solution to the doping problem is ever to be found.²⁴²

The question then remains whether this collective action can be obtained through private ordering as opposed to through laws and law enforcement. The comprehensive WADA system, independent though not entirely free from government agency, represents the private type of model. The behaviors of the sponsors and athletes seeking to incorporate the biological passport system of drug testing likewise indicate the ability for private ordering to improve upon standards of dealing with doping in sports. Accordingly, it seems as though the best form of government assistance for these athletes ought to be bolstering the efforts and effectiveness of these private measures.

Some athletes remain outside of this WADA system, particularly those competing within the American major professional sports leagues. It is not the case that these athletes cannot act collectively. Indeed, the complicated collective bargaining process has hampered efforts to introduce more effective anti-doping policies.²⁴³ Ownership, that is the leagues themselves, do not appear to have an incentive to want strong anti-doping provisions. They benefit from blissful ignorance, which occurs when most fans do not believe that a critical mass of athletes in the sport is doping. It is labor—that is, the athletes—that would most benefit from enacting anti-drug policies that are more stringent. However, the current landscape of labor relations has viewed drug testing as a bargaining chip. The players' associations have been fearful of the implication and precedent that could come from unilateral implementation of league anti-doping policies. Instead, they have attempted to leverage agreement to a new drug policy, a position of questionable basis, given that they are the party that would benefit from such a change. Thus, it may be the case that the ability of these athletes to act collectively to protect their own interests is illusory, and government intervention would be warranted.

242. See, e.g., Lewis Kurlantzick, *Is There a Steroids Problem? The Problematic Character of the Case for Regulation*, 40 NEW ENG. L. REV. 789, 791-92 (2006) (discussing the coercive effect of steroid use in competitive athletics and explaining it as a coordination problem that the athletes could not serve without collective action).

243. *Id.* at 795 (“It is unlikely that any legal obstacle stands in the way of union consent to a steroid ban . . . that agreement would be rooted in business concerns.”).

c) Protecting Fans as Consumers

Sport is a multi-billion dollar industry. The consumers? The fans. They attend the games, watch the events (and accompanying advertisements) on television, and purchase merchandise. There is a policy argument that these consumers of sport are devoting their time and money on the belief that what they are seeing are clean and fair bouts of competition.²⁴⁴ Just as there is an outcry when the results of a sporting event are “fixed,” doping can be viewed as a form of cheating that taints the entire product.

This harm appears to be one of information. It is not the presence of doping that ruins sports for fans. It is the hidden nature of doping that presents the problem. Fans as consumers are only cheated if they are unaware. There are those who may support the efforts of athletes, whether drug-fueled or not.

If doping control is important to consumers, they do have the power—through their money, time, and attention—to be heard. However, since fans are a large, diffuse group, and since they have many different interests when it comes to sports, it is unlikely that they have the characteristics that would enable them to overcome the transaction costs needed to influence the organizations that control doping. Accordingly, this suggests a greater need for government, at least to induce greater sharing of information.

d) Protecting the Integrity of the Game

The need to protect the integrity of the game lays in the foundational belief that sports matter in society.²⁴⁵ This claim is couched in the romantic terms with which we associate sports and link athletics to concepts about human ability, spirit, and achievement. Indeed, this belief forms the basis for the core thesis of this Article, and is detailed below. Yet unlike this Article, which focuses on the harm to actual people that stems from a corruption of these beliefs, the contention traditionally offered to justify government regulation of doping in sports is that there is a need to protect sports as its own entity, or in other words, as though it were a person itself. The argument is that since sports matter to society as a socio-cultural phenomenon, the government, as the elected representatives of society, owes a duty to uphold the integrity of sports. The difficulty with this position is that in the name of protecting sport, it allows government and law enforcement to co-opt the role that sports organizers and society itself can play as arbitrators in the murky

244. See generally, Carolan, *supra* note 235, at 17.

245. Andrew M. Holowchak, “Artesim” and Pharmacological Ergogenic Aids in Sport: Taking a Shot at the Use of Steroids, 27 J. PHIL. SPORT 35, 46 (2000) (suggesting that the use of drugs elevates victory and individual performance ahead of notions of sport).

debate of what the “integrity of sports” is or should be.²⁴⁶

ii. Policy Arguments Against Strong Governmental Regulation of Doping

Some scholars have voiced concerns about strong governmental regulation of doping in sports. Their main arguments are that (1) adults should be free to choose the substances they wish to ingest without government interference; (2) government involvement in drug testing violates privacy rights; (3) government interference usurps the existence and effectiveness of private ordering within groups; and (4) fans as consumers may prefer to see enhanced performances, even if they are drug-induced.

a) The Case Against Paternalism

Under a libertarian framework, regulating the use of drugs in sports is simply not a legitimate intrusion of government into the private sphere of athletics and the private lives of adult athletes.²⁴⁷ Furthermore, prohibition does not act to deter usage, but rather drives the manufacture and distribution of drugs underground, creating more negative externalities than would be found merely from the legal usage of the substance and chilling legitimate medical oversight or study of the actual affects of these substances. This argument has been offered for deregulation of other drugs and applied in the sports context.

Another strand of this argument is that many of the substances themselves are not genuinely harmful to athletes or that the actual risks have been exaggerated. Advocates point to the general risks that elite athletes incur as being even more significant, and, thus, the disproportionate concern about doping could not honestly be about protecting the athletes themselves.²⁴⁸ Several scholars have argued that the obsession with drug testing links to the fear of athletes crossing gender boundaries.²⁴⁹

246. The move from “a normative description of sport to a sociological description of professional sport” introduces payment, internationalism, and other aspects also damaging the integrity of sport, depending on how that is defined. Michael Burke, *Beware of Greeks Bearing Gifts: A Foucauldian Response to Holowchak*, 31 J. PHILO. SPORT 226, 232 (2004). “The point of a liberal’s sport’s society is not to create the virtuous sport’s practice, but to allow practitioners of sport to choose amongst the many descriptions of sport, their most attractive description.” Michael D. Burke, *Drugs in Sport: Have They Practiced Too Hard? A Response to Schneider and Butcher*, 24 J. PHILO. SPORT 47, 54 (1997) [hereinafter Burke, *Response*].

247. Burke, *Response*, *supra* note 246, at 51 (analogizing legislation against doping as “in imposition on private practice of sport” that “would be like all other Olympic Basketball teams saying they don’t want to play against the American Dream Team because the players jump too high”).

248. Carolan, *supra* note 235, at 24.

249. C. L. Cole, *Testing for Sex or Drugs*, 24 J. SPORT & SOC. ISSUES 331 (2000) (arguing that

The counter to this viewpoint is that when drug usage produces negative externalities outside the bounds of sports and harms the athletes themselves,²⁵⁰ it should trigger a governmental reaction.

b) Protecting the Privacy Rights of Athletes

The provisions of the constitution protecting citizens from impermissible search and seizure extend to the privacy of the body. This includes suspicionless drug testing. Government-mandated drug testing must meet the standards imposed by Fourth Amendment²⁵¹ jurisprudence.

Drug testing in sports can be an invasive process. Collecting urine or blood samples is only one part of the intrusion. Creation of a biological passport takes this privacy intrusion one step further, as those who process and analyze the athlete's physiological profile are creating a "file" for the athlete akin to a medical record, something one expects to be kept private. Beyond the biological information produced by comprehensive drug testing, the WADA out-of-competition testing requires athletes to report their whereabouts so that testers can find them for random tests.²⁵²

In *Vernonia School District 47J v. Acton*,²⁵³ the United States Supreme Court upheld mandatory drug testing for student-athletes within a particular high school district, because there was evidence that athletes were the leaders in a general "drug culture." Other courts have upheld this decision. However, there is a difference between the constitutional rights afforded students and those afforded the general public. It is unclear to what extent Congress may enact laws mandating drug testing among elite athletes.²⁵⁴

Other scholars have focused on the quasi-governmental status of USADA, questioning whether that agency sufficiently protects the privacy and due process rights of athletes. Since the USOC is not a state actor, USADA operates outside the framework of constitutional law, a tenuous legal

drug testing has replaced sex testing for dealing with conceptions of muscular females); Burke & Roberts, *supra* note 27.

250. Holowchak, *supra* note 245, at 35 (advocating against drug use in sport, even from a libertarian perspective, because athletes who dope harm others—namely other athletes coerced to dope and the *aretic* of sport).

251. U.S. CONST. amend. IV.

252. See Sarah Teetzel, *Respecting Privacy in Detecting Illegitimate Enhancements in Athletes*, 1 SPORT, ETHICS, & PHIL. 159 (2007).

253. *Vernonia Sch. Dist. v. Acton*, 515 U.S. 646 (1995).

254. See, e.g., Tiffany D. Lipscomb, *Can Congress Squeeze the "Juice" Out of Professional Sports? The Constitutionality of Congressional Intervention into Professional Sports' Steroid Controversy*, 69 OHIO ST. L. J. 303 (2008) (arguing that Congressional strict testing policies for professional athletes would likely not pass Fourth amendment muster).

interpretation of that body's status, given the current WADA regime.

c) Protecting the Providence of Private Ordering

Scholars have explored private ordering, or in other words, the ability of groups to regulate and police themselves across an ever growing number of industries. In the process, they have discovered that government action can crowd out the development and existence of healthy non-legal efforts to self-regulate.

The organizational structures for sports governance are complex and possess many of the characteristics indicative of a robust private ordering regime. They are able to overcome some areas that remain outside the bounds of any national government, such as the norms and culture among athletes or even the global coordination of anti-doping efforts across jurisdictional lines. Indeed, it is through predominantly private efforts that WADA emerged, though as noted above, it is not as though WADA could operate without some cooperation from the international and national legal community.

d) Protecting the Presence of Drug-Fueled Accomplishments

Bart: But why, Mr. McGwire?

Mark McGwire: Do you want to know the terrifying truth or do you want to see me sock

a few dingers?

Everyone: Dingers! Dingers!²⁵⁵

There is an argument that some prefer doping in sports. That is, people want to see the achievement accomplished through performance-enhancement, even if they know that doping lies at the root. Thus, doping produces a positive externality and anti-doping regulation creates a negative externality to this group.

A variant argument is that people want to see the accomplishments of doping without actually knowing that doping was involved. They would rather believe that most elite athletes are clean. Regulatory solutions based on sharing and spreading information, then, particularly harm this group that prefers willful ignorance.

255. *The Simpsons: Brother's Little Helper* (FOX Television Broadcast Oct. 3, 1999).

B. Doping in Sports –Why It’s Harmful to You and Me

i. The Socio-Cultural Significance of Sport

“Do you believe in miracles???” YES!”²⁵⁶ In 1980 at Lake Placid, the USA hockey team, comprised of college hockey players, defeated the USSR, the state-sponsored and far more talented “Red Army” machine, paving the way for the USA to win the gold medal. Thanks to the above referenced exclamation by sports announcer Al Michaels, that victory has been dubbed “The Miracle on Ice.”²⁵⁷

Sports matter in society. The phrase “It’s only a game” is patently false. To be more accurate, it might be true when applied to the particularized instance of any one particular sporting competition or event. It is, however, clearly a myth on a meta-level. Athletic competition is not “merely” a game. Archeological findings suggest that sports have existed since the dawn of society, and modern sports competition is rooted in how concepts of leisure and play emerged in society after the industrial revolution. The systematic structure of sports is a socio-cultural phenomenon that has historically had significance in the realm of religion, geo-politics, economics, and, of course, law.²⁵⁸

The Miracle on Ice was not only a game.²⁵⁹ The 1980 Olympic Winter Games did not take place in a sports bubble. It came on the heels of diminished American morale stemming from domestic economics troubles (inflation and shockingly high gas prices), and international woes, namely the Iranian hostage crisis. This hockey game was not just any hockey game. It was a competition that took place during the resurgence of the Cold War in the

256. For the final fifteen seconds of the broadcast call, see *1980 Miracle on Ice*, YOUTUBE.COM, <http://www.youtube.com/watch?v=QTev5pSuYLk> (last visited Aug. 18, 2008).

257. *Miracle on Ice* has been featured in film on three separate occasions. A made-for-TV-movie *Miracle on Ice* (ABC television broadcast 1981) uses game footage and commentary. A 2001 HBO documentary entitled *Do You Believe in Miracles?* (HBO television broadcast Feb. 5, 2001) revisited the game. Then in 2004, *MIRACLE* (Walt Disney Pictures 2004), a Disney movie was released in the theaters. *Miracle* relied on Al Michaels to “recreate” his commentary from the game, with the exception of the famous last ten seconds of the game, for which the movie used the original broadcast. See also WAYNE COFFEY, *THE BOYS OF WINTER: THE UNTOLD STORY OF A COACH, A DREAM, AND THE 1980 U.S. OLYMPIC HOCKEY TEAM* (2005).

258. See, e.g., Bob Stewart & Aaron C.T. Smith, *Drug Use in Sport: Implications for Public Policy*, 32 J. SPORT & SOC. ISSUES 278, 282 (2008) (quoting Waddington that “sport is played for . . . higher stakes, whether these be economic, political-national, personal or a combination of all three”).

259. Kevin Allen, *College Kids Perform Olympic Miracle*, ESPN CLASSIC, Dec. 23, 2007, available at http://espn.go.com/classic/s/miracle_ice_1980.html (reprinting article that originally appeared as a chapter in KEVEN ALLEN, *USA HOCKEY: A CELEBRATION OF A GREAT TRADITION* (1997)).

wake of the Soviet invasion of Afghanistan, an event that later would provide the impetus for the United States to boycott the 1980 Summer Games in Moscow. Though there is some debate about the significance of this particular victory as it was viewed at the time that it took place, the narrative of the “underdog” USA defeating the USSR “machine” in the Miracle of Ice, even more so than the actual game itself, represents the socio-cultural influence of elite athletic competition.²⁶⁰ Of course, this narrative is an American one.²⁶¹ For Canadians, the socio-cultural significance is far greater for the 1972 Summit Series, an eight-game tournament played in both Canada and the USSR between leading NHL players and the Soviet Central Red Army team.²⁶²

The Miracle on Ice was voted the *Sports Illustrated* Greatest Moment of the twentieth century.²⁶³ Other list-makers and experts have disagreed, selecting moments such as Jackie Robinson breaking baseball’s color barrier, or Jesse Owens’s multi-gold performance at the 1936 Summer Olympics, also known as the “Nazi Games.” Other notable moments in sports often mentioned include Joe Louis defeating Max Schmeling in 1938, Muhammad Ali’s protest of the draft, which caused him to lose his heavyweight title, and Billy Jean King’s defeat of Bobby Riggs in the “Battle of the Sexes.” What makes these moments remarkable is not so much a particular athletic accomplishment or performance involved. They reflect the interplay of sports within the context of major global or national issues—race and segregation in

260. K. Riggs et al., *Manufactured Conflict in the 1992 Olympics: The Discourse of Television Politics*, 10 CRIT. STUD. MASS COMM. 253 (1993) (noting the non-political nature of the 1992 Olympics as markedly different from the years prior).

261. Dave Anderson, *The Other Side of the Miracle on Ice*, N.Y. TIMES, Feb. 22, 2005, at D2 (describing the Soviet reaction to the loss, blaming it on overconfidence, poor execution, and, notably, Soviet Coach Viktor Tikhonov’s decision to bench arguably the best goalie in the world, Vladislav Tretiak after he let in a weak goal).

262. See “Henderson Has Scored For Canada!”, 1972SUMMITSERIES.COM, <http://www.1972summitseries.com/index2.html> (last visited Oct. 26, 2008) (describing Paul Henderson’s game-winning goal in Canada’s comeback victory in game eight of the series, which gave the NHL Canadian players a 5-3 game lead over the USSR).

As Foster Hewitt’s ghostly words described “the goal heard around the world” millions of Canadians danced and hugged in a scene that was reminiscent of the celebrations at the end of World War II. Never has a single sporting moment meant so much to so many Canadians a sense of unparalleled nationalism.

Id.

263. Jamie Fitzpatrick, *Miracle on Ice: American Hockey’s Defining Moment: How the 1980 US Olympic Hockey Team Created Its “Miracle On Ice,”* ABOUT.COM, http://proicetohockey.about.com/cs/history/a/miracle_on_ice.htm (last visited Oct. 26, 2008) (noting that most surveys declared the Miracle on Ice to be America’s greatest sports achievement of the 20th century and quoting to Sports Illustrated on the matter).

America, the rise of the Third Reich, the Vietnam War and the draft, gender and the Equal Rights movement.

Yet not every remarkable sports moment is noteworthy in quite the same way. Some other great sports moments were selected simply because they reflect an athlete's ability to overcome the "impossible" and set new records from what has ever been accomplished before, whether it was Roger Bannister running a sub-four minute mile in 1954, Mark Spitz winning seven Olympic gold medals in 1972, Nadia Comaneci receiving the first perfect 10 in an Olympic gymnastic event in 1976, or Michael Phelps breaking Spitz's record by winning eight gold medals in one Olympic Games in Beijing in 2008.

Some remarkable sports achievements may have only been significant within the context of their own sport. When the Colts defeated the Giants in the 1958 NFL Championship Game in overtime, it drew the label of "The Greatest Game Ever Played." This televised game has been credited with marking the emergence of the NFL, which subsequently rose to become the top grossing professional sports league in America. Other memorable sports moments reflect the humanity and competitive spirit of an athlete, rather than an achievement, such as Lou Gehrig's farewell address or Joe Namath's guarantee of victory in Super Bowl III.

While a full history of modern sports is well beyond the scope of this article, it is important to recognize the extent to which elite athletic competition has influenced and shaped our understandings of humanity, competition and fairness, achievement, the limitations of the human body, and the connection between mind, spirit, and soul with the physical.

ii. "Citrius, Altius, Fortius" - The Importance of Records

The motto of the Olympic Games, "Citrius, Altius, Fortius," means "Faster, Higher, Stronger." Records have long captivated the human imagination.²⁶⁴ People want to know who is the fastest, the strongest, who has done the most of anything, who represents the best of the best. Even for those who believe that winning is not everything, trying one's best is still a major component of athletic competition and participation. Anything less is somehow shirking a duty owed to oneself.²⁶⁵

Record-keeping affords humanity the ability to measure established

264. JOHN MARSHALL CARTER & ARND KRUGER, RITUAL AND RECORD: SPORTS RECORDS AND QUANTIFICATION IN PRE-MODERN SOCIETIES (1990) (describing evidence of sports records from ancient Egypt, Greece, Rome, medieval England, the Renaissance, Tudor and Elizabethan England, pre-modern Hawaii and pre-modern Japan).

265. Burke, *Response*, *supra* note 246, at 55 (describing the literature referring to sports as "perfectionist" practices).

boundaries of achievement, aim to leap-frog them, set new limits, and demonstrate that even the seemingly impossible is attainable.²⁶⁶ The progress evinced within record-setting and record-breaking demonstrates the evolution of modern society, the triumph of body and spirit. Thus, athletic elite achievements themselves produce value in society.²⁶⁷

The fascination with records is exemplified by the *Guinness Book of World Records*, a best-selling reference book (a record-setting book,²⁶⁸ even!) that has been translated and published around the globe at a rate that is perhaps only rivaled by the Bible.²⁶⁹ Nowhere is the significance of record-keeping more prominent than in sports.²⁷⁰ There is a tremendous amount of record-keeping and attention paid to statistics in sports, fueling not just the billion-dollar sports industry, but also the ever increasing in popularity sub-industry of fantasy leagues—which allow fans to focus on particular accomplishments and achievement of athletes independent from the performance of an existing sports team.²⁷¹

Then there is the excitement and the attention surrounding record-

266. Gunter Gebauer, *Citrius-Altius-Fortius and the Problem of Sport Ethics: A Philosopher's Viewpoint*, in *SPORT: THE THIRD MILLENNIUM* 467, 471 (1991) (“It is the aspiration of all athletes to act according to their imagination, internal scenarios and wishes for immortality They can be judged trivial but also enrich the image of human being.”).

267. “What moves us most about sport is not our bestial, unshakeable thirst for victory, but rather our appreciation of the values involved in superior or peak performance: the passion, sedulousness, focus, drive, planning and patience involved in working by oneself or with others toward a worthwhile, but seemingly unattainable goal.” Holowchak, *supra* note 245, at 45.

268. With sales of more than 100 million copies in 100 different countries and twenty-five languages, Guinness World Records is the world's best ever selling copyright book. *About Guinness World Records*, GUINNESSWORLDRECORDS.COM, http://www.guinnessworldrecords.com/corporate/about_us.aspx (last visited Oct. 26, 2008).

269. *The Bible* tops the list of the best-selling books of all time; Chairman Mao Tse-tung's *Little Red Book* is next in line, aided by the fact that it was compulsory for every Chinese adult to own a copy from 1966-1971. Number four on the list is *The Guinness Book of Records* (though there is a significant gap between books #2 and #3 on the list in terms of the number of copies sold. See *All-Time Bestselling Books and Authors*, INTERNET PUBLIC LIBRARY, <http://www.ipl.org/div/farq/bestsellerFARQ.html> (last visited Oct. 26, 2008) (citing RUSSELL ASH, *THE TOP 10 OF EVERYTHING* 112-113 (1997)).

270. “Sports requires records to legitimate progress in an easily understood way. Only in a written culture of comparison is a public language important, a language that allows an uninformed public to grasp some meaning from an athletic event.” Burke, *Response*, *supra* note 246, at 60.

271. See, e.g., Paul R. La Monica, *Fantasy Football . . . Real Money: Yahoo!, Disney and CBS Should Score Financial Touchdowns Thanks to the Increased Popularity of Fantasy Football*, CNNMONEY.COM, Aug. 11, 2006, <http://money.cnn.com/2006/08/11/news/companies/fantasy-football/>. According to the demographic data released by the Fantasy Sports Trade Association (FSTA) approximately nineteen million people in the United States and Canada actively participating in fantasy sports leagues. Press Release, *Fantasy Sports Conference Demographic Surveys Show Continued Growth*, FSTA.ORG, Aug. 2, 2008, <http://www.fsta.org/news/pressreleases/PRWeb-FantasySportsConference0807.pdf>.

breaking. Fans of sport debate which records are “unbreakable.”²⁷² The media focuses its attention on an athlete poised to break a significant record, and it is this possibility that keeps viewers on the edge of their seats.²⁷³ Yet not all record-breaking is equally captivating.

For example, Soviet pole vaulting champion Sergey Bubka dominated that sport for a decade beginning from the mid-1980s. Within that timeframe, he broke the men’s world-record for pole vaulting on thirty-five separate occasions (split evenly between outdoor and indoor records).²⁷⁴ However, this was not always met with unfettered enthusiasm. When Bubka became the first athlete to clear six meters in 1985 (having missed a chance at the 1984 Games, due to the Soviet boycott) or twenty feet (6.096 meters), that was something. Nearly every record-breaking event after, though, was a minor height increase from the prior record. The problem with Bubka’s performance is that he was so dominant, the competitions became boring, and it became evident that Bubka was deliberately not vaulting for the maximum he could perform. Record-breaking is a lucrative side of federation sport, and Bubka was cashing in every time he broke a record.²⁷⁵ In other words, even though he was breaking records, he was not actually doing the best that he could.

272. See, e.g., *Reader’s List: Greatest Career Records*, ESPN.COM, 2001, <http://espn.go.com/page2/s/list/readers/greatest/careerrecords.html>; *Readers’ List: Greatest Single-Season Records*, ESPN.COM, 2001, <http://espn.go.com/page2/s/list/readers/records/indivseason.html>; “Unbreakable” *Sports Records*, WORLD ALMANAC, Jan. 5, 2007, available at http://www.worldalmanac.com/blog/2007/01/unbreakable_sports_records.html; Jason Major, *Unbreakable Modern Era Records*, JOESPORTSFAN.COM, May 9, 2008, <http://www.joesportsfan.com/column.php?postid=1840>.

273. For an interesting discussion of how recent Olympic Games “live excitement” issues have been affected by the need to create “plausibly live” events, see Nancy K. Rivenburgh, *The Olympic Games: Twenty-First Century Challenges as a Global Media Event*, 5 CULTURE, SPORT, SOC’Y 31, 36-38 (2002).

274. *Sergey Bubka: The Vaulteur Who Raised the Bar*, OLYMPIC.ORG, http://www.olympic.org/uk/athletes/profiles/bio_uk.asp?PAR_I_ID=38618 (last visited Oct. 26, 2008).

275. See Sergey Bubka, *An Athletes View of Limits and Possibilities*, COACHR.ORG, <http://www.coachr.org/bubka.htm> (last visited Oct. 26, 2008) (citing Bubka’s remarks at IAF “Human Performance in Athletics: Limits and Possibilities” in Budapest, (Oct. 11-12, 1997)).

When I set world records I was already thinking of the next one. But it is not easy. I am not a robot. If I vault 6.13 for a world record and then later 6.14, some people think: “he has improved a record by one centimeter; he is playing games.” But I don’t see a world record as just an improvement but as something brand new. Each record is special in its own way. Each takes place on a different day, under different conditions, with different emotions. You must find the psychological and physical keys. I have never recognized the concept of limits. Never. I think an athlete who accepts limits is dead. Even now, when I am almost 34 years old, I believe in new levels.

Id. See also *Sergei Bubka – “Bubka Does Not Jump, He Flies.”* <http://sports.jrank.org/pages/694/Bubka-Sergei--Bubka-Does-Jump-He-Flies.html> (last visited Oct. 26, 2008) (describing the money Bubka earned in his record-setting process and the notoriety he achieved).

Bubka was violating a major ethos of elite competition inherent in the value of record-breaking.²⁷⁶

This subsection explains how record-keeping and record-breaking produce a certain cognitive bias known as focalism or anchoring, and then uses two examples from sports—the single season home-run record and the “world’s fastest man” competition—to show how the fascination with records combined with the cognitive bias involved lead to greater harm when record-breaking efforts are fueled by doping that is unrecognized at the time.

a) Not All Records Are Created Equal

Scholars have distinguished between different kinds of sport records. The most “pure” record occurs within a “standardized spatio-temporal framework.”²⁷⁷ A “record sport” is one in which records can be measured in meters, seconds, or kilograms and are produced under identical or similar conditions.²⁷⁸ Weightlifting, running, or swimming all have the potential to be record sports. “Quasi-record sports” have standardized distances and timing requirements, but differences in venue or terrain can produce different results.²⁷⁹ Record sports, and even quasi-record sports, can be fascinating because they allow for the most precise determination of progress, evaluating who really is best, and what really is possible.

These two categories of sport records, however, exclude the vast majority of athletic competition. Any sport that is a competitive effort pitting one athlete or team against another cannot produce standardized records. Baseball, American football, futbol (soccer), basketball, hockey, tennis, and so many other sports all depend on the interaction of the competitors, e.g., offense vs. defense, player A draws a seed against player B, quality of a goaltender, and so forth. These sports do rely on quantifiable results—measuring goals, runs, baskets, touchdowns, points, and victories as well as other sub-components, such as aces, free-throw shots, or home-runs.²⁸⁰

The lack of a standardized framework for judging performance does not deter record-keeping in these sports; on the contrary, it lends to robust debate

276. Interestingly, in his retirement, Bubka became a major sports executive, serving as President of the Ukrainian National Olympic Committee, Senior Vice President of the IAAF, and as a Member of the IOC Executive Committee.

277. Sigmund Loland, *The Record Dilemma*, PHIL. OF SPORT, <http://www.bu.edu/wcp/Papers/Spor/SporLola.htm> (last visited Nov. 6, 2008).

278. Sigmund Loland, *Record Sports: An Ecological Critique and a Reconstruction*, 28 J. PHIL. OF SPORT 127, 128 (2001).

279. *Id.*

280. Loland deems non-record sports to be “games.” *Id.*

seeking to compare athletes and teams despite the data limitations in doing so.²⁸¹ Baseball is the sport that has generated the most sophisticated statistical forms of evaluating individuals in the context of team or both individuals and teams in the context of time. This is due both to a culture within baseball circles that reveres records and statistics as well as the ability to isolate performance, namely the one-on-one aspect of pitcher versus batter.²⁸²

Some sports present an even greater hurdle for record-keeping and comparison, as they rely on a more significant element of judging to evaluate performance. Boxers, wrestlers, fencers, and martial artists may compete against one another, but without judges to score punches, hits landed, or take downs, there is no determination for victory. Gymnasts and figure skaters compete as individuals in standardized venues, but receive their scores from a panel of judges.

While the nature of the records capable of being established might differ, given the right conditions, each form of elite sport is capable of demonstrating something about the limits and potential of humanity.²⁸³

b) Focal Points and Anchors – Not All Record-Breaking Is Equal

The concept of the focal point was originally introduced in the game theory work of Nobel Prize-winning economist, Thomas Schelling.²⁸⁴ Though Schelling's thesis about focal points involved finding equilibrium within coordination games, subsequent scholars have demonstrated the cognitive bias that occurs when people "anchor" around an existing, fixed piece of information, even when it is irrelevant to some future determination.²⁸⁵ Anchoring has been demonstrated in a variety of contexts,

281. James A. Crone, *Toward a Theory of Sport*, 22 J. SPORTS BEHAV. 321, 333 (1999) ("With the keeping of records, individual and team performances can be compared, with ensuing, and many times heated, discussions on who was better.").

282. There is even an organization with thousands of members, the Society for American Baseball Research (known as SABR), devoted to programs "1) To encourage the study of baseball, past and present, as a significant athletic and social institution; 2) To encourage further research and literary efforts to establish and maintain the accurate historical record of baseball; 3) To encourage the preservation of baseball research materials; and 4) To help disseminate educational, historical and research information about baseball." Soc'y for Am. Baseball Research, *About SABR*, SABR.ORG, June 4, 2003, <http://www.sabr.org/sabr.cfm?a=cms,c,110,39>. The term "Sabr-metrics" refers to the statistical analysis of baseball.

283. See, e.g., Tamburrini & Tannsjö, *supra* note 136, at 113 (describing the role of sports medicine as helping professional elite athletes "to surpass the limits of what hitherto has been considered as possible for the species to achieve in a sport arena.").

284. THOMAS C. SCHELLING, *THE STRATEGY OF CONFLICT* 57 (1960) (using the coordination game of meeting someone in New York City in Grand Central Station as a potential focal point).

285. Gretchen B. Chapman & Eric J. Johnson, *Incorporating the Irrelevant: Anchors in*

including mock jury awards, financial reporting, and creating estimates to predict existing data or future events.²⁸⁶

There are two different ways in which records and record-keeping are influenced by this cognitive bias. The first is the obsession with certain “targeted” numbers as marked signs of achievement, because of the symmetry or roundness of the number. Round numbers serve as cognitive anchors because they are more easily remembered than other numbers.²⁸⁷ Breaking the ten-second barrier in sprinting,²⁸⁸ the 100 point mark in basketball,²⁸⁹ fifty goals in fifty games in hockey,²⁹⁰ or achieving a “Perfect Ten” in gymnastics²⁹¹ are all examples of sport focal points that lend themselves

Judgments of Belief and Value, in THOMAS GILOVICH ET AL., *HEURISTICS AND BIASES: THE PSYCHOLOGY OF INTUITIVE JUDGMENT* 120-38 (2002) (describing the necessary conditions for anchoring, its causes and effects, and ways to overcome the bias).

286. *Id.* For legal applications, see, e.g., Arthur B. Laby, *Differentiating Gatekeepers*, 1 BROOK. J. CORP. FIN. & COM. L. 119 (2006) (anchoring among dependent gatekeepers in the context of issuers and securities lawyers); Chris Guthrie, et al., *Inside the Judicial Mind*, 86 CORNELL L. REV. 777, 788 (2001) (“wholly absurd anchors can affect judgment”); Joseph W. Rand, *Understanding Why Good Lawyers Go Bad: Using Case Studies in Teaching Cognitive Bias in Legal Decision-Making*, 9 CLINICAL L. REV. 731, 747 (2003) (“Even unreasonable, ridiculous anchors still burrow deep.”).

287. See, e.g., Robert M. Schindler & Alan R. Wiman, *Effect of Odd Pricing on Price Recall*, 19 J. BUS. RES. 165 (1989). There is a robust literature on prices ending in 9 and how that affects consumer behavior. Karen Gedenk & Henrik Sattler, *The Impact of Price Thresholds on Profit Contribution – Should Retailers Set 9-Ending Prices?* 75 J. OF RETAILING 33 (1999); George Y. Bizer & Robert M. Schindler, *Direct Evidence of Ending-Digit Drop-off in Price Information Processing*, 22 PSYCH. & MKT’G 771 (2005) (reviewing literature).

288. JON ENTINE, *TABOO: WHY BLACK ATHLETES DOMINATE SPORTS AND WHY WE’RE AFRAID TO TALK ABOUT IT* 34-35 (2001) (describing and providing a table to show that “dozens of blacks [but no Asians or whites] have cracked the 10-second barrier”).

289. Wilt Chamberlain is the only NBA player to have scored 100 points in a game, an accomplishment he achieved in March of 1962. Second-most is eighty-one points, achieved by Kobe Bryant in 2006. *Top Single-Game Scorers (60-Plus)* NBA CLASSIC MOMENTS, http://www.nba.com/history/60_040311.html (last visited Oct. 26, 2008).

290. Five different hockey players have accomplished this. They are: Maurice “Rocket” Richard, Mike Bossy, Wayne Gretzky (three times), Mario Lemieux, and Brett Hull (twice). Several others have scored fifty goals within the first fifty games that they have played; however, the official rule is that the goals must be scored within the team’s first fifty games. NAT’L HOCKEY LEAGUE, 2007 NATIONAL HOCKEY LEAGUE OFFICIAL GUIDE & RECORD BOOK 116 (2007).

291. The “Perfect Ten,” notably achieved by Nadia Comaneci in 1976 and Mary Lou Retton in 1984, had fallen into disuse and disappeared after 1992. *Gymnastics Back in Search of Elusive Perfect*, NBCSPORTS.COM, Aug. 17, 2004, <http://nbcsports.msnbc.com/id/5651379/>. In 2006, the International Gymnastics Federation (FIG) changed its scoring to a new system. Under the prior system, a gymnast with a flawless or near flawless routine could achieve a 10 and deductions began downward from 10. The new system adds two scores together—an A score rating the difficulty of a routine (maximum value is 7) and a B score rating the technical execution of a routine (on a 10 point scale). Accordingly, the new “perfect” score is the rather “unattractive” 17. Jordan Ellenberg, *Down with the Perfect 10! A Mathematician Explains the Genius of the New Gymnastics Scoring System*,

specifically to the “beauty” of an anchored number. When pole vaulter Sergey Bubka cleared 6.00 meters or twenty feet, those achievements were celebrated.²⁹² These numbers are not wholly independent of actual achievement. For example, note that no one chose the 100 second barrier for a 100 meter race (something most can achieve) or the 1000 point mark for basketball (something impossible), and the perfect gymnastic 10 no longer even exists (no gymnast wants to score a 10 under the system introduced in 2006).

The second, and more significant, effect of anchoring is that the record itself establishes a standard of what is truly remarkable or humanly possible. Subsequent performance is judged by how far ahead—or behind—it falls from this record. Athletes, the media, and fans all anchor around existing records.²⁹³ As a matter of sports psychology, goal-setting, which is often linked to besting existing records, can spur greater results. There is a flipside—the negative psychological aspect—that limitations of what has been sometimes can prompt an athlete to question whether he or she can do any better.

This is also the reason that people care more about some records than others, and the “unbreakable” records garner special attention. A constantly moving and lowering record line might be interesting, but the record does not “stick” long enough for anchoring to happen.

c) The Connection to Doping in Sports

Accomplishments that are achieved through unknown-at-the-time doping damage society because they both remove the positive value that had been produced from the elite achievement and additionally establish a focal point by which past and future endeavors will be judged.

The endowment effect is a cognitive bias under which people give greater value to a good that they already possess as opposed to one they do not.²⁹⁴

SLATE, Aug. 12, 2008, <http://www.slate.com/id/2197336/pagenum/2/>.

292. See *supra* notes 27474-76 (and accompanying text).

293. “With such records to refer to and to use as a standard of excellence, future athletes have a goal to reach for and even surpass . . . the breaking of records will become an integral part of organized sport.” Crone, *supra* note 273, at 333 (relying on D.S. EITZEN & G.H. SAGE, *SOCIOLOGY OF NORTH AMERICAN SPORT* (1997)).

294. See, e.g., Owen D. Jones & Sarah F. Brosnan, *Law, Biology, and Property: A New Theory of the Endowment Effect*, 49 WM. & MARY L. REV. 1935 (2008) (arguing that biological studies demonstrate that the endowment effect may be a result of evolutionary salience); *It’s Mine, I Tell You*, *ECONOMIST*, June 19, 2008, available at http://www.economist.com/science/displaystory.cfm?story_id=11579107 (describing the basic background for the endowment effect).

Elite achievement produces a good with positive value.²⁹⁵ Society, once it has seen a particular accomplishment, values that achievement and all it represents to a larger extent than it would have, if the achievement had never been reached. Or in other words, there is an endowment effect, in which people value record-setting performance. This subsection presents two concrete examples of drug-tainted records to show the harm caused by doping, due to the combination of the anchoring effect of records and the greater attachment to these achievements once they occur.

1. *The Single Season Home-Run Record*

Baseball's single season home-run record has garnered a lot of attention over the years.²⁹⁶ Baseball, as noted above, has a long standing culture of record keeping and statistical analysis. And while purists may appreciate the beauty of a pitching duel or a hitter "going the other way" on an outside pitch, what gets the most attention is the home-run.²⁹⁷ What makes the single season home-run record especially interesting is the fact that since the establishment of MLB's older league, the National League, over one hundred years ago, the record for who has hit the most home-runs in a season has only been held by seven different people, and no one typically pays attention to the first three on the list who predated Babe Ruth. When Babe Ruth hit sixty home-runs in 1927, it was a record-breaking performance. Ruth had already re-set the record several times, including when he hit fifty-four in 1920 and fifty-nine in 1921. For thirty-four years, the record stood, until in 1961, when Roger Maris hit sixty-one.

Maris's pursuit of the record was not without controversy. Maris was less popular with the media than fellow Yankee teammate, Mickey Mantle, whose efforts chasing the same record fell short that season due to both a late season slump and an injury. The more reserved Maris felt extreme stress from all the media fanfare surrounding the record chase to the point where his hair began to fall out. Meanwhile, baseball purists objected to Maris having eight more

295. While philosophers and sociologists might note this value, economists find it extremely challenging to quantify it and employ cost-benefit analysis to determine the proper role for public finance and promotion of sport. See, e.g., Eric Barget & Jean-Jacques Gouguet, *The Total Economics Value of Sporting Events Theory and Practice*, 8 J. SPORTS ECON. 165, 166 (2007) (trying to demonstrate how to calculate the positive and negative externalities of sport and why it matters).

296. Allen R. Sanderson, *The Many Dimensions of Competitive Balance*, 3 J. SPORTS ECON. 204, 206 (2002) (describing "the desire to see long-standing records broken" as a component of fan demand that is "absolute").

297. For a statistical analysis of the "significant but not particularly strong" correlation between home-runs and attendance, see David Gassko, *Do Chicks Dig the Long Ball?*, *HARDBALL TIMES*, Jan. 31, 2008, available at <http://www.hardballtimes.com/main/article/do-chicks-dig-the-longball/>.

games in which to accomplish his feat, as the baseball season had been lengthened since the time of Ruth.²⁹⁸ This concern gave rise to the purported asterisk, a mark alleged to be affixed to the record, indicative of the fact that Maris had not actually beaten Ruth within the same number of games.²⁹⁹ In reality, no such mark existed in the record books. Yet the debate itself gives rise to precisely the kinds of questions that people have when dealing with a non-standardized framework for record keeping.

As time passed by and no slugger topped the sixty-one mark, its significance as a focal point grew. Hitters who began a season on a home-run tear were compared to whether they were “on pace” to break the record. Until the 1990s, all fell short. One “casualty” of the 1994 baseball strike, which ended that season prematurely in mid-August, is that San Francisco Giant Matt Williams had already hit forty-three home-runs by then, and was on pace to break the home-run record.³⁰⁰ As controversial as Maris’s effort had been, his record would stand longer than Ruth’s.

Then in 1998, thirty-seven years after Maris hit “61 in ‘61,”³⁰¹ two sluggers blasted their way past sixty-one and beyond. As the eyes of the nation watched, Mark McGwire reached sixty-two on September 8, and a ballyhooed celebration followed, as MLB paid tribute to Maris and his shattered record. At that point, there were still three weeks remaining in the season. Sammy Sosa, though, did not trail far behind. The media frenzy of the summer continued into the fall, as each bomb seemingly triggered a response from the other. At the end of the season, McGwire emerged as the new record-holder, having not just beaten sixty-one, but obliterating that record, with a grand total of seventy home-runs on the season.

Both McGwire and Sosa broke sixty yet again in 1999, though neither made it to seventy. But this single season record would not last long. In 2001, Barry Bonds produced what has been touted as the greatest statistical hitting performance by a major league baseball player. Included in the onslaught was seventy-three home-runs and a new single-season record. The media and public attention was significant, though noticeably less pronounced than during the McGwire-Sosa showdown. Some, including Bonds, would

298. The Baseball Crank, *The Seventh Inning Stretch: A Modest Plan to “Save Baseball,”* THEDIAMONDANGLE.COM, Jan. 9, 2001, <http://www.thediamondangle.com/crank/20010109.html>.

299. *Id.*

300. Ray Sobczyk, *Baseball Is on Rebound Again*, TIMESCALL.COM, July 3, 2008, <http://www.timescall.com/print.asp?ID=9714>.

301. The catchphrase “61 in ‘61” gave further anchoring credence to this achievement. See Marisa Scolamiero, **61 in ‘61: Remembering the Day Roger Maris Passed Babe Ruth*, BLEACHERREPORT.COM, Oct. 1, 2008, <http://bleacherreport.com/articles/64226-61-in-61-remembering-the-day-roger-maris-passed-babe-ruth>.

attribute this to race, others to personality. There were whispers about drugs. Some explained that the duel between McGwire and Sosa made the race more interesting than an individual pursuit, just as the Mantle-Maris dynamic had elevated interest in the race in 1961.

Nonetheless, there is a clear sense that one reason that the Bonds performance was not embraced quite as whole-heartedly was that there was nowhere near the attachment or anchoring to the McGwire record as to the Maris one. Sixty-one home-runs was a focal point; seventy was not. Prior to 1998, only two men had ever hit sixty homeruns. By 2001, two men had hit over sixty home-runs each in consecutive years in addition to what Bonds had accomplished. Simply put, when Bonds hit seventy-three home-runs in one season, it was remarkable and set a new record, but it was not nearly as *special* in an overall humanistic sense as McGwire's achievement had been three years prior.

While McGwire's record-breaking performance may have been more celebrated than Bonds's, both power explosions captivated the public imagination. It is linked directly to everything about why sports matter in society and the fascination with records. Someone being able to hit a ball so high, so far is a positive reflection on humanity, one that fits the narrative of human progress and achievement. Home and opposing fans could only cheer in the face of this elite accomplishment, with the exception of those who wanted to protect the legacy of the athletes whose records were being broken.

Hindsight, though, informs us that the records were false. The athletes providing these glimpses into the limitations of the body and spirit were taking substances that are prohibited by the government and their own sport. Enter BALCO, the 2005 Congressional hearings in which Mark McGwire refused to talk about the past, and the *Mitchell Report*.³⁰²

So what is to become of seventy or seventy-three? Society can no longer accept the performance as showing the strength of man overcoming prior bounds. The celebrations of the past were not legitimate because the athletes were not. If the presence of doping was generally known and accepted in 1998 or 2001 by society at large, then it would be different. Had it been known, the public could have chosen to view these achievements as the frontiers obtainable with performance enhancement. Contrast those single season home-run races with those who chose to follow and celebrate the Bonds pursuit and breaking of Hank Aaron's all time home-run record, perhaps an even more celebrated record. Only willful deniers would doubt the

302. Siprut, *supra* note 186, at 13 ("Of course Bonds is not the only big name to be implicated by this controversy: Mark McGwire, Sammy Sosa, Rafael Palmeiro and other prominent players continue to be dogged by allegations of steroid abuse.").

role that steroids, hGH, and other enhancements played in that record-setting accomplishment, leading to general ambivalence when Bonds finally reached that mark.

Any positive value inherent in the record-setting has been lost. Worse, though, now that the truth about doping has been exposed, it does not eliminate the anchoring effects of knowing that sixty-one has been bested. Anything shy of seventy-three does not register, even if an athlete were to hit a new “record” for most single season home-runs by an athlete who is not violating anti-doping policy. Having seen seventy and seventy-three, people have grown attached to those numbers. In an unusual twist on the endowment effect, anything less falls disappointingly short. Placing an asterisk next to 73 will never bring back the world of 61, and while there is a decent chance another athlete will break the overall home-run record, it seems unlikely that a clean baseball player could even hit 73 in a single season and re-set that anchor.

2. The Title of the “World’s Fastest”

The 100-meter sprint is a record sport. It measures how fast one man or woman can run 100 meters. The winner of the 100-meter sprint is often dubbed “the fastest in the world” (though the average speed in the men’s 200 meters is actually faster). Both Marion Jones and Tim Montgomery, each of BALCO fame, have held this title in the past.

To keep the race as a record sport and not a quasi-record sport, the most tailwind allowed for the results to count as records is two meters per second, and any races occurring at 1000 meters above sea level are also marked with an “A” for altitude. This allows for comparison across different meets. Some races, simply because of the conditions, are not eligible to produce an official record.

There is a difference in the ability a record sport has to invoke the notions of progress and development among society. On the one hand, record sports are pure—there is no concern about comparing who has run faster in the sense that 100 meters today is the same 100 meters as yesterday, though time-keeping methods have become more precise. If one were to compare elite sprinting today to sprinting one-hundred years ago, the notable differences would be the expansion and globalization of the pool of track athletes and technological improvements in shoe design, track surface, and training techniques.

One hundred years ago, the fastest man could run 100 meters in 10.6 seconds. Athletes today are approximately ten percent faster, but this represents less than a one-second difference between Don Lippincott, who ran

10.6 in 1912 and Jamaican runner Usain Bolt, who recorded a time of 9.72 just this past May and broke that record in Beijing with a time of 9.69.³⁰³ In the era between World War I and World War II, sprinters shaved 0.4 seconds off this record, or nearly half the difference. When Jesse Owens became the “world’s fastest man,” he was running a 10.2.³⁰⁴ It was not until 1960 that athletes reduced that time to under the ten second mark. By the time the IAAF switched to automated electronic timing (down to the hundredth of a second) in 1976, a number of elite runners were turning in times in the 9.9 seconds.

Ben Johnson was the first runner to hit 9.8 seconds, with his 9.83 performance in Rome in 1987.³⁰⁵ A year later, he “ran away” from the competition with his 9.79 time at the Olympic Games in Seoul.³⁰⁶ Runner-up Carl Lewis posted a time of 9.92.³⁰⁷ The difference between Lewis and Johnson, though, is a mere one percent. After Johnson tested positive for steroid use, both his 9.83 and 9.79 times were disqualified.³⁰⁸ Lewis would manage to break under 9.90 in 1991.³⁰⁹ After fellow American Leroy Burrell broke his record with a 9.90 performance, Lewis responded two months later with a race time of 9.86.³¹⁰ Lewis and several other sprinters exchanged new world record times throughout the decade until Maurice Greene logged the first sub-9.80 time, running a 9.79 in 1999.³¹¹

Several years later, in 2002, Tim Montgomery, who would later be implicated in the BALCO investigation, set a new record at 9.78, though that result was invalidated several years later.³¹² By then, though, Jamaican runner

303. Ian O’Riordan, *Records Go up in Flames as Plying Bolt Sets Bird’s Nest on Fire*, IRISHTIMES.COM, Aug. 18, 2008, <http://www.irishtimes.com/newspaper/sport/2008/0818/1218868021044.html>.

304. Mike Rowbottom, *The Big Question: As the 100m World Record Falls Again, How Much Faster Can Humans Run?*, INDEPENDENT.CO.UK, June 3, 2008, <http://www.independent.co.uk/extras/big-question/the-big-question-as-the-100m-world-record-falls-again-how-much-faster-can-humans-run-838899.html>.

305. *Carl Lewis – Lewis and Ben Johnson*, JRANK.COM, <http://sports.jrank.org/pages/2808/Lewis-Carl-Lewis-Ben-Johnson.html> (last visited Oct. 22, 2008).

306. *Id.*

307. *Id.*

308. *Id.*

309. Frank Litsky, *TRACK AND FIELD: Greene Breaks World Record in the 100 Meters*, N.Y. TIMES, June 17, 1999, at D1, available at <http://query.nytimes.com/gst/fullpage.html?res=9C03E7DA163BF934A25755C0A96F958260>.

310. Mike Rowbottom, *Athletics: “No One Knows How Fast a Man Can Run,”* INDEPENDENT, June 15, 2005, http://findarticles.com/p/articles/mi_qn4158/is_/ai_n14668214.

311. *Id.*

312. *Who’s Who*, NEWS & OBSERVER, Oct. 5, 2007, <http://newsobserver.com/sports/story/727230.html>.

Asafa Powell had broken the record with a 9.77 performance anyway.³¹³ For a few days in 2006, American Justin Gatlin was credited with running a 9.76, but that was based on a rounding error of a 9.77 score.³¹⁴ Gatlin jointly held the record with Powell until he too failed a doping test, and his record was invalidated.³¹⁵

After posting several 9.77 times, just last year Powell ran a 9.74 and in May of 2008, his record was broken by another Jamaican runner, Usain Bolt. His mark? A new record of 9.72, achieved with an allowable 1.7 m/s tailwind, which he beat at the Olympics by .03 seconds.³¹⁶ American sprinter Tyson Gay ran a time of 9.68 at the 2007 world championships, but that performance is not a record, because the tailwind was 4.1 m/s, double what is permissible.³¹⁷ In other notable news, Gay announced a “guarantee” that he would never test positive for a prohibited substance.³¹⁸ All eyes were on Gay, Powell, and Bolt at the Beijing Games of 2008 to see who really was the world’s fastest man, but Gay, hampered by injuries, failed to qualify for the finals. Meanwhile, prior world record holder Asafa Powell came up short as well in the final race and suggested after the fact that he was weakened by the constant drug testing at the Games.³¹⁹ For now, though, his countryman, Bolt is the world’s fastest. Remarkably, in setting the 9.69 world record time, Bolt stopped running his fastest prior to crossing the finish line and his shoelace was untied.³²⁰ It stands to reason that a new world record does not trail far behind.

The biggest controversy concerning Bolt was not about doping, but rather his showmanship. IOC President Jacques Rogge criticized Bolt for not showing sufficient respect to his rivals. This critique echoed the remarks of

313. Rowbottom, *Athletics: “No One Knows How Fast a Man Can Run,”* *supra* note 302.

314. *Oops! Track Group Says Gatlin’s Time 9.77 Seconds*, ESPN.COM, May 18, 2006, <http://sports.espn.go.com/oly/trackandfield/news/story?id=2447985>.

315. Andrew Culf, *Sprinter’s Test Deepens Doping Crisis*, GUARDIAN.CO.UK, July 31, 2006, <http://www.guardian.co.uk/world/2006/jul/31/tourdefrance2006.usa>.

316. Jo Atkinson, *Bolt Towers Above Rest as the World’s Fastest Man*, SCOTSMAN, June 2, 2008, <http://thescotsman.scotsman.com/athletics/Bolt-towers-above-rest-as.4140458.jp>.

317. Philip Hersh, *Gay Takes Express Lane in 9.68 Seconds*, LATIMES.COM, June 30, 2008, at D10, available at <http://articles.latimes.com/2008/jun/30/sports/sp-track30>.

318. *Notes: Sprinter Gay Vows to Never Test Positive*, USATODAY.COM, Feb. 5, 2008, http://www.usatoday.com/sports/olympics/2008-02-05-sprinter-guarantee_N.htm.

319. Ashling O’Connor, *Asafa Powell Claims He Has Been Weakened by Drug Tests*, TIMESONLINE.CO.UK, Aug. 13, 2008, <http://www.timesonline.co.uk/tol/sport/olympics/article4515784.ece>.

320. Scott Gullan, *Usain Bolt Wins 100m Gold at the Beijing Olympics*, AUSTRALIAN, Aug. 17, 2008, http://www.theaustralian.news.com.au/beijing_olympics/story/0,27313,24188957-5017607,00.html.

NBC television host Bob Costas and track and field commentator Ato Bolden, who latched onto the fact that Bolt pulled up early. They argued that fans deserved to see Bolt's best and were denied that opportunity. The comments also suggested that Bolt did so to keep the possibility of breaking the record again within reach. To summarize, Bolt was not acting within the ethic of sport that mandates an athlete compete the hardest, no matter what, to push the limits of what is humanly possible, and he was criticized for it.

As for Bolt, his goal was to win the race and set a record. Existing record times may have served as a focal point in his mind and the minds of his competitors. They knew what they needed to beat to win, and they wanted the world record.³²¹ However, most people in society have no idea about the particular numbers. Certain fixed points may have garnered attention at the time it happened—such as hitting a new limit as measured in tenths of seconds. The real anchor, however, is not with the number but with the title: the World's Fastest.

Setting new limits as the world's fastest is no easy feat. Track performance, like other record sports, is asymptotic. In other words, while the theoretical potential for progress is infinite, there is a logical limit to how fast someone can run, and as time elapses, the record-breaking will occur in smaller and smaller increments approaching that point. The fastest elite male athletes can run 100 meters in roughly 9.5 to 10 seconds. The fastest elite female athletes take between 10.5 to 11 seconds. No one expects to see male athletes post times under nine seconds or women under ten seconds. For thirty years, change has been measured by hundredths of a second. New records will be measured in thousandths of a second and beyond.

Thus, it makes perfect sense that no one wants to deal with the limitations these numbers represent. As one scholar has noted, "The continuous quest for new records is built on the impossible quest for unlimited growth in limited growth systems."³²² So long as there is a way to label who is the fastest and provide a mechanism for how that title is switched over from one person to the next, then the value of the record is preserved.

But what about doping? It has been estimated that the vast majority of elite sprinters over the past two decades have been doping. Ben Johnson, Tim Montgomery, and Marion Jones have each achieved the title of "World's Fastest" before their times and records were disqualified. One scholar has argued that Carl Lewis's performance in the Olympics was unaffected by

321. O'Connor, *supra* note 311 ("There are a number of things I want to accomplish and that includes getting back the title of fastest man in the world.").

322. Loland, *Record Sports: An Ecological Critique and a Reconstruction*, *supra* note 27870, at 130.

Johnson's. Lewis may not have won until the disqualification, but his performance itself—the time recorded—was identical.³²³ Thus, assuming that the value of sports participation is not solely “winning,” it would be hard to fathom how Lewis was worse off.³²⁴

Unknown doping damages the focal point of what it means to be world's fastest, to show what the body and spirit are capable of because you cannot really take it back. You can disqualify the time from the record books and ask for the medals to be returned and re-issued. But when Ben Johnson or Marion Jones were disgraced by testing positive, they did not “stop” being the world's fastest people. Carl Lewis lost an opportunity to be the world's fastest as that anchor was understood at the time.

Because the title—and what it means—is the focal point and is divorced from the record itself, it presents a complication when it becomes time to “undo” the effects of doping after the fact. Reversal can be achieved, though, once a clean athlete resets the record and obtains the title of “world's fastest” not by forfeit, but from a legitimate anchoring standpoint. There is reason to think that this has already happened for men, though it would be naïve to ignore the fact that maybe there are dopers who are still ahead of the testers.

As for the female elite sprinters, the waters are even murkier. The 100-meter record today stands at 10.49, accomplished by Florence Joyner Griffith (Flo-Jo) in 1988.³²⁵ That's right—a glance at the record books for the 100-meter sprints over the past two decades shows tiny continual leaps in the record-setting progress for the men and absolutely nothing for the women. Many have questioned whether the late Flo-Jo, who has since passed away, received an impermissible wind boost that was allowed due to a faulty wind reading at that event. Even at her drug-fueled best in 1998-1999, Marion Jones, the world's fastest woman at the time, ran 10.65 at altitude and 10.70 at sea level.³²⁶ Christine Arron, a French sprinter, holds the second fastest 100-meter time ever recorded at a time of 10.73, a full two percent slower than Flo-Jo.³²⁷ Arron has been deemed perhaps the fastest ever clean woman of all

323. Burke, *Response*, *supra* note 238, at 63.

324. The psychology of the claim seems debatable. It is plausible that an athlete competing against a known doper would be disheartened and prevented from competing at his or her best. On the other hand, being pushed by Johnson and being able to run against him in another lane may have allowed Lewis to run faster than if Johnson never had existed at all. *Id.*

325. Kris Schwartz, *FloJo Sets 100 Record at 1988 Olympic Trials*, ESPN.COM, Feb. 5, 2002, http://sports.espn.go.com/espn/classic/news/story?page=add_griffith_joyner_florence.

326. Christopher Clarey, *TRACK AND FIELD; Greene Surges as Jones Cruises to U.S. Double Gold at 100 Meters*, NYTIMES.COM, Aug. 28, 1999, <http://query.nytimes.com/gst/fullpage.html?res=9505E3DE1138F930A1575BC0A96F958260>.

327. *Stuck Records*, TIMESONLINE.CO.UK, Dec. 23, 2007, <http://www.timesonline.co.uk/tol/>

time. But many have never heard of Arron; after all, she has never been the world's fastest.

The same issue exists with the women's 400-meter record, the longest "sprint" distance. The record, 47.6 seconds, was set in 1985 by Marita Koch of East Germany.³²⁸ As noted earlier in this article, that country adopted a state-sponsored program of doping. Current sprinter Sanya Richards, who has run the 400 meters in 48.7 seconds has explained how disheartening and unfair it is to have no chance of breaking the world record in this event.

How pervasive are the effects of doping in determining who is the world's fastest? Statisticians are trying to figure out the best methods for approximating the legitimate bounds for ultimate performance based on extreme value techniques. For example, one 1995 study analyzed women's track times in the 3000-meter (3K) race to see if Chinese athlete Wang Junxia, who set a new record for that race in 1993, was such an outlier as to suggest performance enhancement. The results were inconclusive, and that is without even taking into account the fact that the data set for comparison, women's track results from 1972-92, were likely corrupted by widespread doping in the first place! At least Olympic athletes today are no longer "suffering" by comparison. Though racing in the 3K continues and Wang's mark remains a record, in 1995, the 3000 meter distance was replaced in the Olympics with the 5000-meter (5K) race for women in elite middle distance running.

In 1999, Germany proposed a "bifurcated" record system to begin a new record book for the millennium.³²⁹ Or in other words, it was a compromise for establishing a "do over." Though the IAAF has rejected that idea, reformers over the past few years have renewed the request for some new form of record keeping, in recognition of the difficulty in knowing that no new record is likely to ever be set in certain fields and that unknown doping in the past likely taints some of the records (and there is seemingly no definitive way to know which ones are affected). Though this idea has gained some traction, it has not been embraced, perhaps because anchors such as "world's fastest" are not so easily forgotten, destroyed, and reset with the waving of a magical wand over the record books.

The problem of doping plaguing the focus on the world's fastest runner is similar to the challenges facing the single-season home-run record, though not identical. Interest in track and field tends to spike every four years with the

sport/more_sport/athletics/article3087427.ece.

328. Mark Rosenbaum, *Women's Track & Field World Records*, ABOUT.COM, <http://trackandfield.about.com/od/worldrecords/tp/Women-s-world-records.htm> (last visited Oct. 22, 2008).

329. *Tainted or Untainted? Double records in Track Discussed*, STEROID NATION, June 21, 2007, http://grg51.typepad.com/steroid_nation/2007/06/double-records-.html.

Olympic Games, and because sprinting has been so mired in doping for the past few decades, many have lost interest in who the “world’s fastest” actually is. Just as the harm of an unbreakable doping-fueled single-season home-run record may be worse for future competitive baseball, it might be that doping has destroyed the positive value in the “world’s fastest” anchor as a representation of the strength and speed of humanity altogether.

iii. Elite Baselines & Trickle-Down Norms of Performance

Millions of Americans participate in some form of recreational sport or activity. This is widely viewed as socially beneficial activity.³³⁰ Very few of them are elite athletes. What the elites do, however, affects all other athletes down the ladder, from those who barely fall short of the top tier to the most casual recreational athlete. In fact, some of these participants would laugh at being called athletes. And many of them do not consider themselves as “competing” in any sense of that term. Some of them merely engage in a sporting activity. Or in other words, they “play.” Others only “work out”; they exercise.

How do non-elite athletes evaluate performance? As a first matter, some do not. Over fifty million Americans go swimming at least once a year. The same amount reports “exercising with equipment” at least six times per year. Some thirty-five million plus lift weights. Most do not compete in Olympic-style weightlifting or power-lifting. Nearly thirty million Americans run or jog. Many of them never enter a race or timed-event.

On the other hand, many recreational sport enthusiasts do keep score, track their own accomplishments, and assess their own progress (or regression). Some sports allow for easier opportunities to compete or judge performance level, particularly those that are record or quasi-record sports at the elite level. Those who lift weights typically know how much they are lifting, even if they never compete. Those who are more sophisticated quantify key lifts as a coefficient of bodyweight. Runners and cyclists are generally aware of how much distance they cover in a specific amount of time, and many know how to track their speed as a matter of pace. They talk in terms of how fast a mile they can run or cycle over short, medium, or long distance.³³¹

330. Stewart & Smith, *supra* note 250, at 285 (“For most sport officials and policy advisors, the social benefits of physical activity require little justification, having been well established in numerous national and cultural circumstances. Typically, sport is seen to promote psychological well being, reduce stress, anxiety, and depression, improve physical development, diminish risky behaviors, strengthen communities, and decrease government health expenditure.”).

331. Studies have demonstrated that goal achievement is important even for non-competitive

Elite athletic achievements help set the bounds by which people can judge what is outstanding, what is merely good, and what is not particularly remarkable. The four-minute mile was once the unreachable Holy Grail for elite runners. Then Roger Bannister broke the barrier in 1954. Since then, it has become a standard for elite middle distance runners and has been achieved by the top high school runners as well. Perhaps a four-minute mile is still outside the reach of the recreational runner. But the five or six-minute mile is not.

One particularly interesting method of measuring skill and allowing cross-competition among athletes of different abilities or comparison based on different terrain is the golf handicap. It creates a projected score for a particular course that a golfer should be able to attain, if he or she plays to his best abilities. The handicap measures potential as a function of prior performance, taking into account course differences. Since it is not an average, golfers will not achieve their best as represented by a handicap most of the time. The golfing handicap works, because golf, to some measure, is a quasi-record sport.

Yet without knowing the par value of a course, a golfer has no way of setting a handicap. Par is the pre-set number of strokes within which a golfer should be able to complete a course. While different level golfers can play from different tees on a course, which changes the difficulty, the fact remains that the professional tees are determined based on the average baseline of elite golfers. Subsequent tee options or handicap levels are scaled down from this foundational point. Thus, if many elite golfers are doping, the ramifications of this could certainly trickle down the ranks of golfing to the most recreational man or woman on the green.

In conclusion, while the effects are sport- or activity-specific, it is clear that there can be a distortion in the standards by which recreational athletes judge themselves and their performances, simply by the unknown presence of doping at the elite level.

runners and cyclists. See, e.g., Robert G. LaChausse, *Motives of Competitive and Non-Competitive Cyclists*, 29 J. SPORTS BEHAV. 304, 310-13 (2006) (noting that goal achievement and competition was emphasized more by competitive cyclists over non-competitive cyclists, road cyclists of all types over mountaineer bikers, and by male cyclists, even non-competitive ones, more than female cyclists); Benjamin M. Ogles & Kevin S. Masters, *A Typology of Marathon Runners Based on Cluster Analysis of Motivations*, 26 J. SPORT BEHAV. 1 (2003) (noting goal achievement as one motivation for runners); Kevin S. Masters et al., *The Development of an Instrument to Measure Motivation for Marathon Running: The Motivations of Marathoners Scales (MOMS)*, 64 RES. QUART. EXERCISE & SPORT 134 (1993) (developing a metric for judging the various goals of competitive and non-competitive runners).

iv. Body Image Influence of Elite Athletes

One main reason young men give for why they take AAS is to bulk up. Young women, on the other hand, take these and other substances to lose weight, particularly fat.³³² PEDs do more than enhance performance; they enhance appearance. Furthermore, doping in sports is analogous to other technological enhancements for appearance; or as one scholar has explained it, doping is a non-therapeutic measure that aims to make people “more beautiful, more competitive or better adapted to their social environment.”³³³

It's no accident that bodybuilding has been at the forefront in the development of steroids and other enhancing substances in America.³³⁴ Bodybuilding, as opposed to weightlifting and training, maximizes the aesthetic of the body over performance. Training methods are different between athletes who want to use power and strength specifically for some sport and body-builders, who are essentially models. That does not mean that bodybuilders and fitness models are not strong; rather, strength is a byproduct of their training, at times more important, at times less. There is perhaps no one as weak as a bodybuilder on the day of competition!

While looks and ability can be separated, it would be naïve to deny the connection between the two. The desired “look” in America, particularly for men, is an athletic body type.³³⁵ Athletes are celebrities. When Tom Brady appears on the cover of *GQ* or *Men's Health*, it is not solely because of how many touchdowns he has thrown. For female athletes, the attention given to looks over performance is even more striking. Athletic events that contain artistic and aesthetic elements, such as figure skating and gymnastics, have long been rife with causing body image problems. Yet the connection is not so limited. Athletes in sports like tennis, swimming, or softball have garnered more attention for appearance over performance. And as noted above, the attention given to female athletic musculature can stem from concerns about the gender implications of elite sport.³³⁶

332. See Frederick G. Grieve et al., *Healthy and Unhealthy Weight Management Practices in Collegiate Men and Women*, 29 J. SPORT BEHAVIOR 229 (2006).

333. Christian Lenk, *Is Enhancement in Sport Really Unfair? Arguments on the Concept of Competition and Equality of Opportunities* 1 SPORT, ETHICS AND PHIL. 218, 219 (2007).

334. See Evans & Lynch, *supra* note 12921.

335. See, e.g., Anna M. Wroblewska, *Androgenic-Anabolic Steroids and Body Dysmorphia in Young Men*, 42 J. PSYCHOSOMATIC RES. 225 (1997); Stephen S. Hall, *The Troubled Life of Boys: The Bully in the Mirror*, N.Y. TIMES, Aug. 22, 1999, at 6:30 (discussing body image obsession in teen males).

336. See Cole, *supra* note 241; Burke & Roberts, *supra* note 27; see also Jennifer L. Knight & Traci A. Giuliano, *Blood, Sweat, and Jeers: The Impact of the Media's Heterosexist Portrayals on Perceptions of Male and Female Athletes*, 26 J. SPORT BEHAV. 272 (2003) (examining the effects of

The argument in this section is simple: doping produces “fake” ideal bodies, bodies that no one can achieve simply by putting more time in at the gym or by making better nutritional choices.³³⁷ Because people measure looks against others, the presence of these artificial physiques is problematic. The beauty myth is not limited to athletics alone, of course. There is already a major body of literature that revolves around the roles of models, celebrities, magazines, and media in the “ideal.”³³⁸ Muscle dysmorphia is a recognized disease characterized by obsessive preoccupation with an individual’s physique and musculature.³³⁹

What makes doping in sports slightly different is that there is a host of information available about cosmetic surgeries, airbrushing techniques, and other tools of the trade used on the “makeover” track toward obtaining this ideal. Many people recognize that actors and models are paid to look good, and that modern technologies allow for an “unreal” projection. There is also sufficient evidence that actors and models are not necessarily any healthier for all they sacrifice to meet this standard.

However, many still think of athletes as “healthy” or “fit” people. Without knowing that drugs produce the results seen, the image produced seems real. Accordingly, efforts to emulate the drug-produced athletic physique are doomed to fail, leading to dissatisfaction at best, and at worst to body image disorders.

C. How Government Disclosure Models Can Help

Thus far, this article has demonstrated that the prevalence of doping in sports has produced harmful effects to society that were not previously recognized. The question remains: what can be done about this?

Fortunately, legal solutions to societal problems need not be created in a vacuum. There is already an existing analogy to the problem that has occurred because the value of sports performance is artificially-inflated and that bubble is bursting: the market for securities.

Mandatory disclosure is the preeminent characteristic of securities

gender stereotypical roles and implications about sexual orientation in media coverage of athletes).

337. Adrian Wilairat, 8 J. HEALTH CARE L. & POL’Y 377, 383-84 (2005) (discussing the cosmetic use of steroids among adolescents).

338. See, e.g., Chip Dempsey, *Steroids: The Media Effect and High School Athletes*, 40 NEW ENG. L. REV. 731, 731-32 (2006) (“As children grow up, idealistic representations of body image with continue to be reinforced through magazines, television, and movies. Over time, this repeated exposure can lead to a body image disorder in both males and females known as muscle dysmorphia . . .”).

339. H.G. POPE ET AL., *THE ADONIS COMPLEX: THE SECRET CRISIS OF MALE BODY OBSESSION* (2000).

regulation.³⁴⁰ Responding to the widespread fraudulent and unscrupulous behavior that cost investors billions when the market collapsed during the Great Depression, Congress enacted the Securities Act of 1933³⁴¹ and the Securities Exchange Act of 1934.³⁴² These landmark acts would “substitute a philosophy of full disclosure for the philosophy of caveat emptor.”³⁴³

Under the system of securities laws, public companies are required to register with the SEC and then follow-up with disclosure statements and reports to that agency. They also must provide an annual report to shareholders. Other corporate events also trigger disclosure requirements. Private companies issuing securities also must disclose certain information to investors, though the burdens are reduced.

Since securities regulation deals directly with capital markets, it has garnered significant attention from finance theorists and law and economics scholars,³⁴⁴ seeking to demonstrate how mandatory disclosure impacts market efficiency. The current regime in the U.S. faces attacks from both sides, with some scholars arguing that they are unnecessary and inefficient to regulate the market, and others arguing that they do not do enough. Yet a number of strong theories have emerged in favor of mandatory disclosure, and most countries have copied the American model for such regulation.

Applying the analogy, it is as though society invests in athletic performances.³⁴⁵ Given the harms from performance enhancement in sports, it would appear that the best solution should be informational. Elite athletics is not nearly as decentralized as it might appear at first glance, and there is

340. Troy A. Paredes, *Blinded by the Light: Information Overload and Its Consequences for Securities Regulation*, 81 WASH. U. L. Q. 417, 417-18 (2003) (“A demanding system of mandatory disclosure, which has become more demanding in the aftermath of the Sarbanes-Oxley Act of 2002, makes up the core of federal securities laws.”).

341. Act of May 27, 1933, 48 Stat. 74, 15 U.S.C. § 77a et seq.

342. Act of June 6, 1934, 48 Stat. 881, Sec. 4, 15 U.S.C. § 78a. et seq (this act was responsible for the creation of the Securities and Exchange Commission). There are four other major federal securities laws from the pre-World War II era: The Public Utility Holding Company Act of 1935, 15 U.S.C. § 79 (2008); The Trust Indenture Act of 1939, 15 U.S.C. § 77aaa (2008); The Investment Company Act of 1940, 15 U.S.C. § 80a-1 (2008); and The Investment Advisers Act of 1940, 15 U.S.C. § 80b-1 (2008). Two subsequent statutes that have been enacted since that initial post-New Deal timeframe are The Securities Investor Protection Act of 1970, 15 U.S.C. § 78aaa (2008) and the Sarbanes-Oxley Act of 2002, Pub. L. No. 107-204, 116 Stat. 745 (2002). A brief description of each statute is available at the SEC’s website. See generally Security & Exchange Comm’n, SEC.GOV, <http://www.sec.gov/about/laws.shtml> (last visited Oct. 26, 2008).

343. SEC v. Capital Gains Res. Bureau, Inc., 375 U.S. 180, 186 (1963).

344. In recent years, behavioral law and economics has joined in this debate, pointing to cognitive biases, such as investor overconfidence.

345. Burke, *Response*, *supra* note 238, at 56 (describing the attachment to the individual athletes and their achievements).

reason to consider the entire federation system as quasi-state based. Accordingly, one way of solving the problem of the effects of doping in sports is to create a registry system for sporting leagues and organizations in which they must provide their anti-doping policy and regular statistical reports of results under these policies.

Just as securities laws differentiate the responsibilities of private companies versus public ones, this disclosure system could maintain different registration and reporting requirements on sporting organizations based on their size in terms of the pool of competitors or revenue. Furthermore, each organization would not be required to even have an anti-doping policy, other than a pledge not to promote law-breaking activity, to the extent some substances are not legal. If a sporting organization wants to declare itself open to all competitors, it is free to do so on its registered form. This would ensure that all followers of sport, the media, and society presented with the accomplishments can view these events at the time that they occur with the appropriate lens of analysis.

This ambitious solution faces several hurdles, notwithstanding the additional question of political feasibility in its implementation. First, there is the dynamic of internationalism in sports. It is unclear how to implement a national system of disclosure when sporting organizations are headquartered and “legally located” across jurisdictional lines, and it would seem that creating an international mandatory disclosure law to be outside the realm of possibility. Nonetheless, this difficulty presents a hurdle not significantly more unique than other issues of international business and commercial dealing. There is no reason that such a system could not be created via international treaty that then requires creation of nationally based agencies that maintain and implement the system, similar to how the WADA system already operates.

The next major concern is the privacy of the organizations themselves as well as their athletes. Yet no one would mandate that the organizations follow any particular policy or that they must report specific test results that identify individuals. And for those sporting governance bodies choosing to implement the biological passport system, there is no need for the actual contents of these physiological profiles to ever enter the realm of mandatory disclosure. The laws would merely require that sports organizations provide a full and accurate copy of their own anti-doping policies, and then report on their own ability to carry out these provisions.

The last big concern is that a mandatory disclosure system would not make a difference. Too many people would choose not to follow up on this information, and there would be no strong enforcement mechanism to police the accuracy of the reports themselves. This is especially true if the current

legal prohibitions on many performance-enhancing drugs remain unchanged, dis-incentivizing honest reporting about drug usage in sport. The situation of willful ignorance combined with a desire from sporting agencies to sweep doping problems under the rug for commercial purposes would not change. However, this cynical view of the optimism bias with which many refuse to acknowledge the prevalence of anti-doping does not give adequate weight to the role that the media plays in investigating and exposing doping or its contribution toward highlighting potential record-breaking achievements and focusing the public's attention on particular events and athletes. Furthermore, monitoring for compliance fits better within the role and abilities of government than enforcement of mandatory testing regimes.

In conclusion, the concept of mandatory disclosure of sports anti-doping policies is but one attempt to correct existing harms that have not been adequately dealt with by existing private ordering or governmental efforts and is worthy of further exploration and discussion.

CONCLUSION

While extensive discussion and debate has centered on the issue of doping in sport, scholars and policy-makers have not explored the harm of doping that occurs when society loses its ability to gauge what elite performance truly is. This article has demonstrated the reality of this harm, and it has provided one solution for this problem, namely, a comprehensive system of mandatory disclosure laws for sports.