

**Better, Stronger, Faster**  
**Explaining the Variance Between**  
**Professional and Amateur Anti-Doping**  
**Policies**

A thesis submitted in fulfilment of the requirements for a  
Degree of Master of Arts in Political Science  
At the University of Canterbury

August "Gus" Kashiwa Brakeley  
University of Canterbury  
December 2007

# Acknowledgements

Firstly, I would like to thank John Henderson and Alex Tan for the opportunity and support to write this paper. I would also like to thank my peers from Honours and Masters years at the University of Canterbury; especially my office-mates Amanda, Hamish, Dave, and Dan. Thank you for allowing me to vocalize my thoughts, and being patient with my incessant questions and ideas. Thanks to Mum and Dad for your moral support; thank you Mum for your insights, and thank you Dad for instilling me with basic athletic morals. I would like to thank sports in general, which ensure I maintain balance in my life. Finally, thanks to New Zealand for broadening my perspective.

# Table of Contents

<b>Acknowledgements.....</b>	<b>2</b>
<b>Table of Contents.....</b>	<b>3</b>
<b>List of Acronyms.....</b>	<b>7</b>
<b>Tables and Figures.....</b>	<b>8</b>
<b>Abstract.....</b>	<b>9</b>
<b>Chapter I: Introduction.....</b>	<b>10</b>
1.1    Political Science and Anti-Doping Policy	
1.1.1    Economics	
1.1.2    Politics	
1.1.3    Health	
1.1.4    Moral Influence	
1.1.4.1    Aspirations / Social Mobility	
1.1.4.2    Ethics	
1.2    Why is Anti-Doping Policy Important to Political Science?	
1.3    Literature Review	
1.3.5    Media Sources	
1.3.6    US Senate	
1.3.7    British Medical Association	
1.3.8    Ellis Cashmore	
1.3.9    Andy Miah	
1.3.10    Will Carroll	
1.3.11    Purpose / Chapter Outline / Boundaries	
<b>Chapter II: The Field of Anti-Doping Policy.....</b>	<b>23</b>
<b>Section I: Sport.....</b>	<b>23</b>
2.1    Definitions	
<b>Section II: Doping.....</b>	<b>26</b>
2.2    Definitions	
2.3    The History of Doping	
2.4    Doping In American Athletes	
2.5    The Prevalence of Doping	
2.6    Perpetuates of Doping	
2.11.1    The Commercialisation of Sport	
2.11.2    The Politicalisation of Sport	
2.11.3    The Increased Competitiveness of Sport	

## 2.11.4 The Medicalisation of Sport

**Section III: Doping Regulation..... 37**

- 2.12 History
- 2.13 Anti-Doping Policy: An Emerging Public Issue
- 2.14 Anti-Doping Policy Versus Public Policy
  - 2.14.1 Common Justifications of Regulatory Fields
  - 2.14.2 Sport Regulation and Health Regulation
- 2.15 The Justifications for Regulation PESs
  - 2.15.1 PESs Are Contrary to the Nature of Sport
  - 2.15.2 PESs Undermine the Nature of Sport
  - 2.15.3 PESs Are Contrary to, and Do Not Promote, the Internal Goods of Sport
  - 2.15.4 PESs Harm the Extended Members of the Sporting Community
  - 2.15.5 PESs Are Unnatural
  - 2.15.6 PESs Are Unfair
  - 2.15.7 PESs Create An Unearned Advantage
  - 2.15.8 PESs Are Coercive
  - 2.15.9 PESs Are Harmful to Economics
  - 2.15.10 PESs Are a Health Risk to Society
  - 2.15.11 PESs Are a Form of Rule-Breaking, Cheating, and Disrespect
  - 2.15.12 PESs Are a Violation of Contract
  - 2.15.13 PESs Makes Athletes Poor Role Models
  - 2.15.14 The Justifications for Regulation
- 2.16 The Justifications for Not Regulating PESs
  - 2.16.1 PESs are a Health Risk to Society: Revisited
  - 2.16.2 PESs Do Not Promote the Internal Goods of Sport: Revisited
  - 2.16.3 Testing is Too Expensive
  - 2.16.4 Testing is Psychologically Oppressive
  - 2.16.5 Technology is More Threatening to Sport Than PESs
  - 2.16.6 Strength Versus Hand-Eye Coordination
  - 2.16.7 The Regulation of PESs Creates Double Standards
    - 2.16.7.1 Athletes Versus Artists
    - 2.16.7.2 PESs Versus A Performance Enhanced Society
  - 2.16.8 Athletes are Genetic Freaks
  - 2.16.9 Regulating PESs Makes the Playing Field Uneven
  - 2.16.10 Doping is Good for Sport
  - 2.16.11 Nobody Cares if Athletes Dope
  - 2.16.12 Regulation is Futile
- 2.17 Comparing Existing Anti-Doping Policies
  - 2.17.1 The Professional Golfers' Association: No Policy
  - 2.17.2 The International Olympic Committee & World Anti-Doping Agency: Rigorous Policy
  - 2.17.3 Major League Baseball: Ineffective Policy
  - 2.17.4 United States Federal Anti-Doping Policies
    - 2.17.4.1 Proposed The Amateur Sports Integrity Act of 2003 [S.1002]

- 2.17.4.2 The Anabolic Steroids Control Act of 2004 [S.2195]
- 2.17.4.3 The Drug Free Sports Act of 2005 [H.R. 1862]
- 2.17.4.4 The Clean Sports Act of 2005 [H.R. 2565]
- 2.17.5 The Implications of US Federal Anti-Doping Policies
- 2.18 The Difficulties of Implementing Anti-Doping Policy
  - 2.18.1 Sluggish Adoption of Policy: the Cold War
  - 2.18.2 Reluctance of Professional Sports to Adopt Anti-Doping Policy
  - 2.18.3 Conflicting Legal Status of PESs
  - 2.18.4 Dietary-Supplement Industry
  - 2.18.5 Cost
  - 2.18.6 Staying Ahead of the Cheaters
  - 2.18.7 Defining Boundaries
- 2.19 Conclusion: Literature Review

### **Chapter III: Theory and Method..... 70**

- 3.1 Purpose
- 3.2 Cases
- 3.3 Method

### **Chapter IV: Analysis and Discussion..... 75**

- 4.1 Professional and Amateur Sport: A Mostly Similar System
- 4.2 Independent Variables
  - 4.2.1 Perception: Amateur Sport
  - 4.2.2 Perception: Professional Sport
  - 4.2.3 Management: Amateur Sport
  - 4.2.4 Management: Professional Sport
  - 4.2.5 Finance: Amateur Sport
  - 4.2.6 Finance: Amateur Sport
  - 4.2.7 Conclusion
- 4.3 Philosophical Approaches to Anti-Doping Policy
  - 4.3.1 Existing Method: Negative List
- 4.4 Alternatives and Addenda of Anti-Doping Policy
  - 4.4.1 Harmonization
  - 4.4.2 Positive List
  - 4.4.3 Drug Diary
  - 4.4.4 Split Divisions
  - 4.4.5 Deregulation or No Regulation
  - 4.4.6 De-Professionalising Sport
- 4.5 A New Approach to Anti-Doping Policy
  - 4.5.1 Goals
  - 4.5.2 Implementers
  - 4.5.3 Target Groups
    - 4.5.3.1 Creators and Dealers
    - 4.5.3.2 Athletes

- 4.5.3.3 Society
- 4.5.4 Instruments
  - 4.5.4.1 The Policy: A Focused, Harmonized Drug Diary and Negative List
  - 4.5.4.2 Education
  - 4.5.4.3 Stigmatisation
  - 4.5.4.4 Clinics
- 4.5.5 Conclusion: A New Anti-Doping Policy

**Chapter V: Conclusion..... 94**

**Appendix..... 96**

- A.1 Muscle Physiology
- A.2 Existing Performance Enhancing Substances
  - A.2.1 Muscle Rehabilitators
  - A.2.2 Muscle Builders
    - A.2.2.1 Androgenic-Anabolic Steroids (AAS)
    - A.2.2.2 Tetrahydrogestrinone (THG)
  - A.2.3 Oxygen Boosters
  - A.2.4 Mental Modifiers
    - A.2.4.1 Stimulants
    - A.2.4.2 Narcotic Analgesics
    - A.2.4.3 Beta-Blockers
  - A.2.5 Not Otherwise Specified (NOS): Diuretics and Masking Agents
  - A.2.6 Unknown Substances
- A.3 Genetic Performance Enhancement
  - A.3.1 How Genetic Enhancement Works
  - A.3.2 Alpha-actinin-3 (ACTN3)
  - A.3.3 Types of Treatment
  - A.3.4 Testing Genetically Enhanced Athletes
- A.4 Conclusion

**Bibliography..... 110**

# List of Acronyms

AAS	Androgenic-Anabolic Steroids
ACTN3	Alpha-Actinin-3
ATLAS and ATHENA	Athletes Targeting Health Exercise and Nutrition Alternatives
BALCO	The Bay Area Laboratory Cooperative
DISCUS	The Drugs and Sport Clinic and Users Support Clinic
EPO	Erythropoietin
hGH	Human Growth Hormone
IGF-1	Human-like Insulin Growth Factor - 1
IOC	International Olympic Committee
MADD	Mothers Against Drunk Driving
MLB	Major League Baseball
MSS or MSSD	Most Similar Systems Method of Design
MVP	Most Valuable Player
NBA	National Basketball Association
NFL	National Football League
NHL	National Hockey League
NOS	Not Otherwise Specified
PCBE	President's Council on Bio-Ethics (United States)
PES	Performance Enhancing Substance
PGA	Professional Golfers' Association
THG	Tetrahydrogestrinone
USADA	United States Anti-Doping Agency
WADA	World Anti-Doping Agency
YRBSS	Youth Risk Behaviour Surveillance System

# Tables and Figures

Table 2.1:	Barry Bonds Daily Intake of Nutritional Supplements in 2003.....	35
Table 2.2:	The Evolution of Major League Baseball's Anti-Doping Policy.....	63
Table 2.3:	Doping Suspensions of the Major American Sporting Associations	63
Table 4.1:	Most Similar System of Design.....	72
Table 4.2:	Most Different System of Design.....	72
Figure A.1:	Sarcomere At Rest and Contracted.....	97
Figure A.2:	Normal Muscle Repair.....	98
Figure A.3:	Genetic Muscle Enhancement.....	106



# Abstract

The world of sport has recently been inundated by stories of doping. These reports are not limited to a select few individuals or sports, but seemingly are spread across sports. At first, it was mostly members of the sports community voicing their discontent, but soon actors outside of the sports community, such as government committees, became interested. Anti-doping policies were created to reduce doping; however, these policies were created independently of government and vary in effectiveness. The most visible variances are between professional and amateur sports.

Accordingly, this paper investigates why there is variation between professional and amateur anti-doping policies. This investigation is done in a qualitative fashion and employs the Most Similar System of Design (a comparative method) to identify that factors result in the differences. The paper also contributes to the field by creating and organizing the ethics of doping. Furthermore, it compares the various existing approaches to anti-doping policy by analysing the anti-doping policies of the PGA, IOC, WADA, and the MLB. Subsequently, the paper identifies seven obstacles facing anti-doping regulators and identifies new policy tools that could aid anti-doping policies. Finally, it closes with policy recommendations for the future. This paper is comprehensive: it introduces the topic of anti-doping, the subsequent definitions, explains the ethical considerations, answers why there is variation between professional and amateur anti-doping policies, and provides policy recommendations.

# Chapter I: Introduction

The influence of sport can be illustrated in many different ways. Financially, sport is mega-business; for example, elite baseball players in MLB earn over US\$20 million a year (as is the case with Alex Rodriguez). Furthermore, endorsement contracts can further add to a player's income, thereby allowing the most marketable players to earn in excess of US\$100 annually<sup>1</sup> (Forbes 2007). Socially, sport is so influential that its terminology has worked its way into our vernacular. Phrases like “coming down the home-stretch” and “swinging for the fence” are commonly used as metaphors. Furthermore, sport has the power to influence societies' ethics, morals and behaviour. One only needs to look as far as their local playground to see a child emulating their favourite sports hero. Since sport has this power, regulators both public and private, must ensure it is a positive influence on society.

What is interesting with regard to political science is that sport has largely been left to self-regulate. Self-regulation has had some positive effects with the construction of international governing bodies that oversee competition. These international bodies typically function with a chivalrous or romantic ethical code, where sportsmanship and fair play is paramount. However, self-regulation has also provided the opportunity for private sports associations to overlook some ethical concerns in order to increase profits. Perhaps the most dangerous of these concerns is doping.

Although some perceive doping as a problem localized among a few rogue elite athletes, this is not the case. Due to the pressure to remain competitive, doping has worked its way down into the college and high school levels. It is reported that 3.5% of all high school seniors in the US have at least tried performance enhancing substances

---

<sup>1</sup> For example, Tiger Woods reportedly earns US\$90 million annually in tournament winnings and endorsement deals (Forbes 2007).

(PESs) (US Senate [108-814] 2004: 11). What is even more frightening is many of these athletes are using them secretly with no monitoring. This has led to many health problems and deaths of young athletes. We are now living in a society where young athletes are literally dying to improve their athletic performance.

Exacerbating the problem is conflicting information of PESs; some substances that are used to increase the performance of athletes also have application in medicine. For example, steroids are used in medicine to treat AIDS patients; and, EPO (a red-blood cell booster) is used to treat anaemia (Sokolove 2004: 32). Furthermore, society is plain and simply ignorant about PESs. In a recent study, it was found that 45% of all 12<sup>th</sup> graders did not believe that steroids posed a great health risk (University of Michigan in Senate Hearing 108-814 2004: 11).

Not only does society not understand the risks of PESs, but the legal status of PESs has created a sinister black market. Former body-builder and D-I athlete Curtis A. Wenzlaff testified in front of Congress that users are rarely getting high quality steroids. Wenzlaff, who received a comprehensive education of steroids when working-out in Southern California Gyms, estimates that 95% of anabolic steroids are fake (Wenzlaff in US Senate [108-814] 2004: 38). Other experts warn that many of these “fake steroids” are contain questionable substances such as sesame and motor oil. Wenzlaff paints an accurate portrait of PESs in his testimony: PESs such as steroids can be used with relative low risk when taken in low doses and controlled conditions. The problem is most PES use is unmonitored and behind closed doors.

The policies that have been created to control these policies vary in approach and effectiveness. Most amateur and international sports associations conduct random testing, research emerging doping techniques, and have substantial penalties (at least a year, typically two) for doping infractions. On the other hand, professional sports associations, such as the major sports associations of the United States (the National Football League (NFL), the National Basketball Association (NBA) and Major League Baseball (MLB)) are more lenient with doping penalties. For example, MLB has only had a formal anti-doping policy since 2003 and a first time offence results in a 50 game suspension (roughly 1/3 of a season). This is in contrast to the Olympic standard, which is 2 years for a first infraction (Bodley 2005; WADA 2005).

## Political Science and Anti-Doping Policy

Since anti-doping policy is a new field of political science, it is useful to examine why it is a worthy area of study. The following section explains the connections between political science and anti-doping policy: these connections become more obvious as the paper progresses. There are four main ties between anti-doping policy and political science: economics, politics, health, and moral influence.

### **Economics**

Sport has obvious economic implications. The estimated value for some professional sports franchises in the US has passed the US\$1 billion (Forbes 2007)<sup>2</sup>. Secondly, the advertising in sport has grown to extraordinary heights over the past decades. For example, “the global television fees for the 1980 Moscow games were US \$101 million, increasing to US\$287 million for the 1984 Los Angeles Games. The fee has increased substantially at every subsequent summer Olympics, and the estimated fee for the TV rights for the 2004 Athens Olympics is US\$1,498 million” (BMA 2002: 83). Another example is the cost of a 30-second commercial at the 2005 Super Bowl (NFL) was US\$2.4 million (Crawford 2005). Not only are franchises valuable, but also athletes themselves are getting paid an extraordinary amount. Most professional athletes in the United States get paid several million of dollars a year. An extreme case is Tiger Woods, who is paid US\$97.6 million a year in winnings and endorsements (Freedman 2006).

Also relating to anti-doping policy, the sports nutritional supplement market is booming. It is estimated that last year Americans spent more than US\$4 billion on dietary supplements designed for sport performance (Carroll 2005: 80). At an individual level, it is estimated that top college athletes spend US \$1,000 a month on dietary supplements (ibid: 80). In order to combat the spread of PESs, anti-doping associations spend between US\$80,000 to \$400,000 per instrument to test for dopers (Black in Carroll 2005: 103). When all of equipment is added, the cost of an anti-doping testing facility is approximately US\$3 million (Cashmore 2000: 203). Because of the human and financial

---

<sup>2</sup> For example, the New York Yankees (MLB) are valued at US\$1.2 billion (Forbes 2007).

capital involved in sport, it is important for federal regulators and sports associations to ensure that sports remain economically viable.

### **Politics**

The link between politics and sport occurs in three ways: governments use sport to promote nationalism; governments use sport as leverage in international relations; and there are now governmental policies that control doping. Firstly, sport is a tool that politicians use as political leverage. For example, the President of the United States customarily throws the first pitch of the MLB season. Internationally, King Chulalongkorn of Thailand adopted soccer as the national sport in an effort to boost nationalism, solidarity, and promote his position of power (Ockey 2004). In New Zealand, the national rugby team (the All Blacks) is so influential that it has been proposed that New Zealand's national flag be replaced with the All Blacks' silver fern logo ([www.nzflag.com](http://www.nzflag.com) 2007). Secondly, sport has been used as political leverage in international relations; for example, Jimmy Carter and the United States Olympic Committee decided to boycott the 1980 Summer Olympics in Moscow because of a Soviet presence in Afghanistan. Eventually 44 other nations joined the United States in the boycott. The USSR responded by boycotting the 1984 Summer Olympics in Los Angeles citing "a hostile and anti-communist environment" (The History Channel: 2005). Finally, sport and politics are directly linked via Acts of Congress. Traditionally, anti-doping policy was under the complete jurisdiction of the independent sporting associations; however, that has since changed; for example, in October of 2004, President Bush signed into law the Anabolic Steroid Control Act (of 2004). Ratified by the US Congress, the bill expanded the steroid law of 1990. The new law also provides "US\$15 million for education programs for children about the dangers of anabolic steroids, and directs the U.S. sentencing commission to consider revising federal guidelines to increase the penalties for steroid possession and distribution" (Collins in Carroll 2005: 180-1).

### **Health**

Sport is unique because it combines exercise (a means of combating preventable diseases) with socializing (each sport typically has its own community and ethos). To

pick an example, aerobics provides both exercise and a place to socialize for participants. Since sport combines these two forms of wellness, it is important that regulators monitor sport so society does not become disenfranchised and stop using this valuable resource.

Relating to doping, there are many severe health consequences associated with PESs. There are many PESs related fatalities in both professional and amateur athletics that draw the attention of political scientists and regulators. For example, there is the death of Tyler Hooton, a high school baseball player who committed suicide due to a steroid-related depression; and, the premature death of former NFL-All Pro Lyle Alzado who attributed his career-ending Achilles tendon injury and subsequent death to brain cancer to steroids; and finally, there is the premature death of Florence Joyner-Kersey, also a steroid related death (Carroll 2005: 7,110). The health benefits associated with sport and the health risks associated with PESs certainly validate the attention of regulators and political scientists.

### **Moral Influence**

The final area that political science, sport and anti-doping policy overlap is morality. This takes place on two levels. Firstly, sport has the power to morally influence society, as illustrated by younger athletes mimicking the behaviour of professionals. Secondly, sport provides an avenue of social mobility and is the aspirations of many individuals. These criteria make it important to regulate sport so it remains virtuous in the eyes of the sporting community. The following two sections illuminate these characteristics of sport:

#### *Aspirations / Social Mobility*

Dreaming of success is important because it gives an individual purpose and direction. Although not everyone aspires to be a career athlete, sport provides a community that many seek to belong. Sport also is an environment where people can combine talent and determination to achieve success, thus relating to the Heratio Alger myth and the “American Dream”<sup>3</sup>. Miah (2004) states that the reason why sports are appealing and interesting is because of “the non-elitism of many sports, which appear to

---

<sup>3</sup> Simply put, the Heratio Alger myth embodies the rags to riches myth.

be an accessible opportunity to succeed and receive rewards, regardless of social class” (Miah 2004: 60). Because of the aspirations that are associated with sport, it is important that policy makers and political scientists ensure that society does not become disillusioned with sport.

### *Ethics*

The argument over whether or not sport is ethical is long and heated. On one hand, there are those who believe that sport is unethical and would agree with George Orwell who said, “Serious sport has nothing to do with fair play. It is bound up with hatred, jealousy, boastfulness, and disregard of all the rules” (Ratcliffe 2001). On the other end of the spectrum are supporters who would agree with the philosopher Albert Camus, who said, “What I know most surely about morality and the duty of man, I owe to sport” (Ratcliffe 2001). These two quotations demonstrate the scope of appreciation for sport: it may be seen as a positive or negative moral influence. Advocates of sport would typically argue that discipline, teamwork and respect are three examples of positive sports morals. This could be countered by arguing that corruption and greed have tarnished those lessons.

Although the question of athletics being an appropriate source of ethical and moral teachings is contestable, sport certainly has moral influence over society. Because of this influence, regulators and political scientists need to address sport.

### Why is Anti-Doping Policy Important to Political Science?

Before moving on, one must explain why anti-doping policy is important to political science. As previously discussed, sport has the ability to influence many of the cornerstones of society, such as economics, politics, and physical and psychological health. Although it is unclear what effect the permeation of PESs might have on sport, one would suspect that any change experienced in sport will resonate through society. In a best-case scenario, doping in sport would have little effect on how the aforementioned fields function; however, this scenario is unlikely in sport-fixated countries like the United States. In this case, where society relies on sport economically, politically, physically (in regard to health) and psychologically, an increase of doping in sport could

potentially have catastrophic effects. If doping reached a point where citizens became disenchanted with sport, societies could lose a principle source of income, entertainment, mode of exercise, and code of ethics. It is because of these implications that regulators and political scientists need to analyze the impact of doping on society and develop methods to control the problem.

## Literature Review

In order to identify how this paper contributes to the field of anti-doping policy, the key works within the field must be discussed. Interestingly, little has been written on anti-doping from a policy perspective. Reasons such as, the recent emergence of the topic and the history of token anti-doping policies have left the policy surrounding doping largely and undiscussed topic. However, now that anti-doping policies are getting more media and governmental attention, one would suspect that the topic should experience an increase in publications. To date, most of the literature written on anti-doping has discussed the ethics of doping rather than critiquing the methods of policy. With this in mind, the following introduces key authors and titles in the field of anti-doping. This provides a reference point for where anti-doping places in relation to other public policy fields and highlights where there are gaps in the literature.

## **Media Sources**

Unlike most subjects of political science, the group that has been most interested in anti-doping policy is the media. This is expected considering the media's close relationship with sport. Although the media had certainly mentioned doping previously, anti-doping policy was really driven to the forefront with the believed relationship between homeruns and steroids during the early 2000s.

During this time, popular sports magazines, such as *Sports Illustrated*, started conducting a number of features on doping. One of these features was Gary Smith's *Steroids and Baseball: What Do We Do Now?* (2005) In this article, Smith interviews a number of members of the baseball community (including fans, players, and regulators). Although it is mainly anecdotal, the article highlighted some interesting arguments. For



example, Dr. Greg Scott argues that just because elite baseball players take steroids does not mean they will automatically hit more homeruns. Scott argues that the hardest part of hitting homeruns is reading the pitch and making contact (Scott in Smith 2005: 48).

Another interesting argument was made in reference to a fans perception of the credibility of the records made by doped athletes. Michael Barnes (the broker for McGwire's Homerun ball No. 62) argues that the most memorable characteristic of those summers when McGwire and Sosa were hitting all those homeruns was the joy he experienced watching the games with his adolescent son (Barnes in Smith 2005: 44-5). This opinion supports the argument that the entertainment and record-breaking is more important than the methods used to break those records. There are countless other media sources that discuss doping, and because of the medias tight relationship with sport, some of them are insightful.

### **US Senate**

United States Senate also contributed to the field with a string of hearings and Federal Subpoenas. On July 13, 2004, the Senate Caucus on International Narcotics Control held a hearing titled: *Abuse of Anabolic Steroids and Their Precursors By Adolescent Amateur Athletes*. The hearing is highlighted by the testimonies by a NCAA D-I football player, a convicted steroid user, a father whose son committed suicide after using steroids, and a Professor of Molecular and Medical Pharmacology. These testimonies revealed that 95% of steroids used on the black market are "bad"<sup>4</sup> and that 3.5% of high school seniors have tried steroids (US Senate [108-814] 2004: 3, 11); this statistic, and venue which it was stated, certainly accredits anti-doping policy as an academic discipline.

In 2005 the government issued a federal subpoena to MLB in order to get a better understanding of the use of PESs in baseball. The individuals that were being questioned included former and current baseball players, such as Sammy Sosa, Curt Schilling, and Mark McGwire. The most interesting part of these testimonies was what was *not* said. McGwire in particular seemed to carefully dodge questions with pre-rehearsed responses.

---

<sup>4</sup> "Bad" steroids are characterised by substances that are ineffective or excessively damaging to ones health.

Due to the unsettling information uncovered during these hearings, the US has been constructing new policies to help control doping. Although the government has allowed professional sports associations to continue to self-regulate, they have created new policies such as the Anabolic Steroid Control Act [S. 2195], the Drug Free Sports Act [H.R. 1862], and the Clean Sports Act [H.R. 2565].

### **The British Medical Association (BMA)**

Another state-funded organization that has shown an interest in doping is British-run BMA. In 2002, the BMA organized the publishing of text titled *Drugs in Sport*, which collects the knowledge of many experts and predictably uncovers some fascinating information. One chapter in particular, titled *Policy Instruments to Prevent the Use of Drugs In Sport* skilfully outlines the ethical, legal and financial obstacles that hinder effective anti-doping policy. The chapter continues by outlining some policy instruments that could be used to improve policy. Although they list some of the obvious policy tools like deterrence, education, and cutting off supplies (via barriers), they also have some progressive ideas. One example is providing athletes with financial rewards for not doping. Another is harm reduction policy, which works by providing athletes who choose to dope with safe houses that have the resources for doping more healthfully (BMA 2002: 96-110).

### **Ellis Cashmore**

Notable sport sociologist and anthropologist Ellis Cashmore has also made contributions to the field of doping. Cashmore is significant because he thoroughly discussed doping before it became visible to the public eye. In his 2000 book, *Making Sense of Sport*, he outlines history, introduces the substances, and discusses doping ethics.

In the history section, Cashmore highlights some of the most interesting doping case studies. He discusses the cases of Thomas Hicks (an Olympic marathoner who in 1904 was doping with strychnine and brandy), Tommy Simpson (a 29 year-old cyclist who died after taking amphetamines during the Tour de France in the 1960s), and Ben

Johnson (a Canadian sprinter who was disqualified from the 1988 Olympics for using Stanozolol) (Cashmore 2000: 191-5).

Cashmore also contributes by organizing PESs and discussing their ramifications: *Making Sense of Sport* contains the interesting history of the development of steroids. The text also explains the implications of substances such as stimulants, diuretics, EPO, and hGH.

Cashmore's final and perhaps more interesting contribution discusses the dubious nature of testing for PESs. Cashmore discusses several cases, some where justice was served, others where athletes were wrongly accused are rewarded with large settlements. Also discussed is the ethics of Ben Johnson's suspension for using Stanzolol in the 1988 Olympics. Interestingly, Johnson was suspended for using a dose that was less than what the World Health Organization found safe for medicinal use as a male contraceptive. (Cashmore 2000: 210). Cashmore continues his role of devil's advocate by pointing out that some sports (such as boxing) are more dangerous than PESs.

### **Andy Miah**

Dr. Andy Miah of the University of Paisley in Scotland has been looking at the ramifications of futuristic genetic doping techniques. In his 2004 book *Genetically Modified Athletes*, Miah discusses three main topics: first, he discusses why his book is topical and why anti-doping policies exist; second, he discusses, what are the possibilities of genetic performance enhancement; and third, he uses established ethical paradigms to interpret the ethical status of gene doping.

Gene doping allows athletes to surpass current, crude forms of doping (where an athlete typically increases overall muscle mass). Instead, gene doping allows the possibility to only create virtuous fast-twitch muscle fibre. Also, genetic technology allows owners of professional sports franchises to genetically screen for injury proneness. Conversely, stem-cell therapy also allows athletes the possibility to repair or even enhance injuries. This "Gattica-like" possibility has certainly caught the attention ethicist. Finally, using germ-line therapy techniques, medicine could not only enhance one individual but also could enhance all of the individual's offspring. Finally, genetic PESs allow an athlete to target specific areas of the body with little risk of side effects. The

repercussions of genetic PESs make Miah an interesting contributor to the field of doping.

### **Will Carroll**

An informative source specific to MLB is Will Carroll's, *The Juice: The Real Story of Baseball's Drug Problems* (2005). Carroll's close relationship to MLB players (he writes for *Sports Illustrated* and *Baseball Prospectus*) allows him to get unique insights from dopers, regulators, and producers of PESs who traditionally remain quiet. The most interesting of these interviews is with the creator of THG named Patrick Arnold. Arnold explains that THG is an ingestible steroid that breaks down quickly when removed from the body, which of course is the characteristic that made it undetectable. Arnold's name has been associated with BALCO, Victor Conte, Barry Bonds, Bill Romanowski, and Marion Jones.

Carroll also writes about the abuse of amphetamines in MLB. Carroll states that because of the hectic schedule of MLB, players often turn to "uppers" to maintain performance. The problem is that amphetamines alter an athlete's sleep-cycle, thus perpetuating health problems. Many experts believe that the misuse of amphetamines is a much larger problem in baseball than steroids.

Perhaps the most interesting debate that Carroll attacks is the relationship between PESs and MLB statistics. Although Carroll acknowledges that homeruns certainly climbed during the "steroid-era", he also argues that some other changes occurred in MLB that could be equally responsible for the increase in homeruns. For example, Carroll notes that many of the newer MLB stadiums have been producing more homeruns due to altering boundaries (and a climb in elevation – à la Rockies). Furthermore, Carroll explains that changes in the construction of baseballs could also be responsible for affecting homeruns. Unsurprisingly, there is a low tolerance on the dimensions of MLB baseballs; however, there is a surprisingly large tolerance for rebound: when MLB baseballs are tested for quality (by being fired from a pitching machine at 85mph), they must rebound 43.69 between 49.13mph (Carroll 2005: 222). That translates into 49.1 feet of variance. Additionally, a number of MLB players and umpires have stated that the texture, hardness, and seam-height of MLB baseballs have changed in recent years

(Carroll 2005: 222-6). The bats used by MLB players have also changed: many players are now using maple bats rather than the traditional ash. Maple is more dense and harder than ash, therefore maple bats are lighter with the same size sweet-spot (Carroll 2005: 227).

### **Purpose / Chapter Outline / Boundaries**

The purpose of this thesis is to explain why anti-doping policies vary between amateur and professional sport. In doing so, the *Most Similar Systems Method of Design* (MSS or MSSD) is used to establish amateur and professional sport as similar regulatory fields. Subsequently, factors such as sport philosophy, sport finance, and sport management are used as independent variables to explain why such different anti-doping policies result from similar regulatory fields.

To date, little has been written on why there is variance among anti-doping policies. This could be for a number of reasons: firstly, although anti-doping policy has been apart of Olympic sport since 1961, it has only been within the past decade that it professional sports have had anything more than token anti-doping policies. Therefore, it has been impossible to compare professional and amateur anti-doping policies until a few years ago.

Secondly, private professional sports associations have historically been secretive about their anti-doping policies. In fact, when the government subpoenaed MLB in 2005, they had to request MLB's anti-doping policy because they could not locate it. Even to date, it is difficult to MLB's anti-doping policy: when I tried to locate it during the course of this paper, they requested that I formally apply, then my application would be subject to review, and then they would send me the document if it was approved. However, to be fair, some of the major sports associations are upfront with their anti-doping policies, and those policies of the NFL and NBA can be found in the player's collective bargaining agreements on the Internet. Because some professional sports association have been secretive with their anti-doping policies, it has been difficult to investigate the area.

A final reason why there exists this gap in the literature of anti-doping policy is many authors are still familiarizing themselves with the subject. Most of the literature that was discovered in the course of the paper was factual. In other words, most current

literature focuses on what anti-doping policies state or the weaknesses of the policies; however, few sources explain what factors influence the shaping of anti-doping policies. This is the aim of this paper.

In order to be able to achieve the purpose, one must explain the context in which the field operates. Accordingly, the second chapter explains definitions, describes history, and outlines ethical considerations. This exercise grants the reader the ability to interpret and analyze the field of anti-doping policy. Chapter Three progresses by introducing the theory and method. Chapter Four discusses factors that create variance in anti-doping policy and proposes alternatives and addenda to current policy. Chapter Five provides a conclusion to the paper and an appendix is added to provide additional information

As for boundaries, the paper is written qualitatively and largely founded on peer-reviewed works and government documents. The topic focuses on American anti-doping policy since most existing literature is focused in this area; however, many of the conclusions can be broadened to fit other contexts.

# Chapter II: The Field of Anti-Doping Policy

## Section 1: Sport

Before discussing anti-doping policy, it is worthwhile to briefly discuss what separates the activity of “sport” from “play”. One needs to understand what defines a sport before being able to analyse the policies that influence it.

### Definitions

The word “sport” is derived from the Latin root “desporto”, meaning “to carry away” (Leonard II 1980:12). As for definitions of sport, there are a number of theories that distinguish sport from games and play. Coakley defines sport by three factors: the types of activities involved; the structure of the context in which the activities take place; and, the participants orientations (Leonard II 1980:12). Conversely, McPherson et al. (1989) defines sport by five characteristics: sport is structured, goal-oriented, competitive, contest-based, and a ludic physical activity. Although discrepancies exist between these definitions and other definitions, sport is typically distinguished by structure and the orientations of its participants. The following introduces the concept of sport using McPherson’s (et al.) template and is supplemented with the thoughts of additional theorists.

Firstly, sport is structured: sport has written and implied rules that control how sport is managed. All participants in sport are constrained by the rules of sport; these are either self-imposed or forced upon them by an official (Leonard II 1980: 13). If these rules are broken, the participant faces a penalty that ranges in severity depending on

which rule was broken. Furthermore, the rules state that sport is usually confined to a small area, such as a cricket pitch or basketball court. There are varying degrees of organizational structure in sport, ranging from virtually none at a sandlot level, to a formal level in the professional ranks. It is common at the highest level for sport to have mission statements, unions, and divisions of labour (McPherson et al. 1989: 15).

Sport is goal-oriented: The goals of sport range from individual goals, to team goals, to league goals. This is illustrated by coaches, fans, players and the media's interest in an athlete's attributes of "ability, competence, effort, degree of difficulty, mastery and performance" (McPherson et al. 1989: 15). The previous characteristics are often summarized by statistics, which provide an easy and simplified account of a player's ability. In addition to the overall score, the goals of sport also serve as targets for a team to aim. For example, many teams have a checklist of sub-goals they aim to achieve in order to achieve a higher goal.

Leonard's interpretation of the orientations of sport is more extensive than McPherson's. Leonard breaks them down into two categories: intrinsic and extrinsic orientations. Intrinsically, he mentions the internal motivators in sport, such as pride and self-satisfaction. Extrinsically, he discusses the tangible rewards associated with sport, such as money. Relevant to this paper, he uses these two orientations to define the key differences between professional and amateur sport. He states that amateur sport is founded on intrinsic orientations, while professional sport is founded on the extrinsic orientations (Leonard II 1980: 13).

Sport is competitive. Similar to the previously described category, there are often many layers of competition within a sports match. Competition in sport can occur in three ways: there is direct competition where two or more athletes compete against each other; there is parallel competition, where athletes take turns competing against each other (i.e. golf and bowling); and there is competition against a standard, such as archery, diving, and gymnastics (McPherson et al. 1989: 16). The level of competitive intensity ranges from little at a social level, to supreme at the professional level.

Sport is contest-based. Sport usually takes place in two forms: sports can be contests, as illustrated by sports such as golf and track. Sport can also exist as games, such as baseball, rugby, cricket. As implied by the previous category, sports contests



involve the three aforementioned forms of competition. Weiss (1969) states sport contests are “occupied with demonstrating their relative superiority in five areas – speed, endurance, strength, accuracy and coordination” (p 100 in McPherson 1989: 16). Another interesting aspect of sporting contests is that they are often representative of a much larger group than the individual athletes and coaches competing. For example, during the Olympics, athletes not only represent themselves but also their country, therefore giving athletes the power to influence national pride (McPherson et al. 1989: 16-7).

Sport is ludic. The term ludic stems from the Latin word *ludus*, which means play or game; therefore, the term “ludic activity” implies that sport is based on play and games. Although not all sport is based on play (professional sport), not all sports are games (i.e. swimming, running, archery), and not all contests are playful (i.e. war). McPherson (et al. 1989) argues that sport (as defined as a playful contest) “shares at least two elements with all ludic activities: an uncertain outcome and sanctioned display” (1989: 17). Goffman (1961) states that the combination of an uncertain outcome and sanctioned display are the criteria that make sport fun: the uncertain outcome makes the game interesting to the closing moments. Furthermore, the sanctioned display gives athletes the ability to “exhibit attributes valued in the wider social world, such as dexterity, strength, knowledge, intelligence, courage, and self-control” (Goffman 1961: 68 in McPherson et al. 1989: 17).

Further supplementing McPherson and Leonard, Lushen (1972) argues that sport lies between work and play on the continuum of activity; this makes perfect sense, since sport can feel like either to an athlete (Lushin 1972: 119 in Leonard II 1980: 14). Despite the definitions used to define sport in the previous section, there remain those who feel that sport is indefinable, such as Slusher (1967): “Sport, like religion, defies definition. In a manner it goes beyond definitive terminology. Neither has substance which can be identified. In a sense both sport and religion are beyond essence” (Slusher 1967: 141 in Leonard II 1980: 14).

Regardless of one’s interpretation of sport, it can be stated that it is a complicated phenomenon. Since sport incorporates elements of fun, competition, simple objectives, war and national-pride, it is easy to see why it is so popular. However, because sport is so encompassing, it is important that it positively influences society.

## Section II: Doping

Before discussing anti-doping policy, one obviously needs to define doping and explain its history. As illustrated, anti-doping policy hinges on definitions of doping.

### Definitions

Inadequate definitions of doping have been a serious problem for regulators. Gary Wadler (2003) of WADA points out that doping definitions are plentiful and continually shifting; therefore, it is logical that regulators are having trouble controlling doping when they are not in agreement in what constitutes doping (Wadler 2003: 4). Currently, the most respected definition of doping is the IOC's; however, even the IOC's definition is open to criticism, since it is relatively young and has been modified during its existence.

The history of the definitions of doping encompasses multiple shifts in anti-doping strategy. The Council of Europe established the first definition of doping in 1963. It defined doping as:

The administration of, or use by, a competing athlete of any substance foreign to the body, or any physiologic substance taken in abnormal quantity, or taken by an abnormal route of entry into the body with the **sole intention** of increasing in an artificial and unfair manner his/her performance in competition. When necessity demands medical treatment with any substance which, because of its nature, dosage, or application is able to boost the athlete's performance in competition in an artificial manner, this too is regarded as doping (Wadler 2003: 4).

The aspect that makes this definition unique is that it accounts for the suspected doper's intentions; that is, by this definition, if an athlete mistakenly takes a performance enhancer, they are not doping. This definition has its advantages: if an athlete mistakenly ingests a PES, he or she is not penalized. On the other hand, it is problematic since athletes can avoid suspension by claiming that they did not know they were using a PES.

Due to the problems created by the use of the word "intention", the Olympic Movement Anti-Doping Code modified its definition of doping in February 2003:

The use of an artifice, whether substance or method, potentially dangerous to an athlete's health and/or capable of enhancing their performances, or the presence in that athletes' body of a substance, or the ascertainment of the use of a method on the list annexed to the Olympic anti-doping code (Wadler 2003: 4).

Although it was created to remedy the shortcoming of the former definition, the 2003 definition also has its inadequacies. Because the word "intention" was removed, an athlete can be suspended for unintentionally taking a banned substance; this was arguably the case of Alain Baxter, who used an over-the-counter cold remedy (to treat the flu) at the Winter Olympics in Salt Lake (2002) and was banned for doping (Miah 2004: 96). However, because of the pressures to improve performance, many regulators feel (and perhaps rightly so) that if intention is included in the definition of doping, that it provides too great a loophole for those who wish to exploit it. It is also worth noting that the phrasing "use in competition" is often used in anti-doping policy and has been described as problematic by lawyers (BMA 2002: 90).

## The History of Doping

Doping has been around as long as sport itself. Depending on the source, the earliest traces of doping can be traced back to between 800-300 BC (Carroll 2005: 30; BMA 2002: 5). The ancient Greeks hosted gladiatorial festivals that generated enormous pride for the regions. These gladiators experimented with substances such as ginseng root, hemp, kava, opium, hallucinogenic mushrooms, and animal testes in order to increase performance (ibid: 5). According to Carroll (2005), the Greek union between sport and politics foreshadowed the substance-enhanced win-at-all-costs ideology promoted by many twentieth-century governments.

Perhaps the first dope dealer and supplier is the Roman physician Flavius. He was a noble with a medical education and had connections with the military, which supplied him the knowledge of what other cultures used to enhance performance. Between his medical knowledge and information supplied by the military, Flavius experimented with unusual substances (such as coca leaves, hemlock, thistle, and lotus) on the gladiators he treated. Predictably, Flavius's gladiators were extremely popular with fans of the Coliseum (Carroll 2005: 31-2).

The next major advancement of PESs occurred in the 19<sup>th</sup> century when athletes learned how to harness the performance-enhancing effects of substances like caffeine, alcohol, ether, oxygen, cocaine, heroin, morphine, and strychnine. During the latter part of the 19<sup>th</sup> century, there were a number of endurance cycling races where athletes would administer one or numerous of the aforementioned substances and then race for 144 continuous hours (Voy 1991: 7). The Welsh cyclist Andrew Linton is credited as the first person to die from taking PESs; he died in the Paris-to-Bordeaux bicycle race after taking trimethyl in 1896 (Carroll 2005: 32).

Testosterone was introduced in 1921 by the University of Chicago chemist Fred Koch. By adding chemicals to castrated bulls' testicles, Koch was able to isolate the male hormone. Koch verified his findings by injecting neutered chickens with testosterone, the result being the castrated chickens began to display definite male characteristics such as the ability to crow and comb coloration (Carroll 2005: 33). Ten years later, Adolf F. J. Butenandt discovered the exact chemical formula of testosterone, and using those findings, Leopold Ruzicka was able to transform chemical cholesterol into synthetic testosterone in 1935. Butenandt and Ruzicka were rewarded for their achievement by receiving the 1939 Nobel Prize for chemistry (Carroll 2005: 33-4).

Ironically, it was Butenandt's and Ruzicka's Nobel Prize winning work that spawned the modern-doping era. The Nazis were the pioneers in developing and administering injectable steroids. Initially, steroids were used to help with the recovery of starvation victims and help those who had a testosterone deficiency (Wadler 2003: 2). Furthermore, it was thought that steroids could also help 'cure' homosexuality (Lenehan 2003: 6-7). However, it did not take long for scientists to realize that the characteristics of steroids, such as aggression and stamina, had applications in the military and athletics. There are rumours that even Hitler used steroids (Taylor in Lenehan 2003: 6). In addition to steroids, amphetamines also became popular among both soldiers and athletes during WWII.

After WWII, the doping problem worsened. The 1964 Olympics became known as the "Steroid Olympics" (BMA 2002: 76). This was due to the apparent steroid problem and because the IOC was developing a banned substance list; therefore, it was a popular topic among athletes. The IOC did implement their banned-substance list in 1968;

however, it was a cosmetic policy since they had not developed a method for distinguishing synthetic and naturally occurring testosterone (BMA 2002: 76). Even though the IOC eventually improved their testing procedures and expanded their banned-substance list, dopers seemingly stay one step ahead by making improvements in the concealment and potency of PESs.

### Doping in American Athletes

The doping of American athletes started with the weight-lifting team trying to remain competitive with the Soviets; the United States won 4 of the 6 gold medals in 1948 and 5 of the 7 in 1952. However, in 1956, the Soviets won the three medals (tied for one of them). This is remarkable since the Soviets had not competed in the previous three Olympic games (Carroll 2005: 36).

The team physician of the US weight-lifting team began to suspect that the Russians were using something that the American team was not. His suspicions were confirmed when he witnessed the Russians with a substance believed to be injectable testosterone, and when one of the Soviet coaches admitted it after one too many drinks (Carroll 2005: 36-7). Although this revelation certainly exposed the secret of the Russian athletes, it did not threaten their achievement since there was no banned substance list at the time.

Upon his return to America, Dr. Zeigler worked with the Ciba Pharmaceutical Company to develop an oral anabolic steroid; it resulted in *methandrostenolone*, which appeared on the market in 1960. The product was allowed to exist because it had a legitimate medical use: the treatment of hypogonadism (the under-production of male hormones).

When it came to testing the oral steroid, Zeigler experimented by dispensing the daily-recommended dose of methandrostenolone to weightlifters; however, it was soon discovered that his athletes had found another source for the drug and were abusing it. The athletes soon started experience both the positive and negative effects of steroids Zeigler stopped his experiments once he discovered the abuse of the new steroid; however, he is often regarded as the Father of Anabolic Steroids in the United States. When questioned about his goal of level the playing field with the Russians, Zeigler

responded, “I wish I’d never heard the word ‘steroid’...these kids do not realize the price they’ll pay” (Carroll 2005: 37).

## The Prevalence of Doping

The official prevalence rates among US athletes range depending on the sport. When MLB did an investigation in 2003, they found that between 5-7% players were doping (Bodley 2005). On the other hand, of the 6,890 drug tests conducted by the U.S. Anti-Doping Association in 2003, only 22 (0.3 percent) were positive (McCloskey & Bailes 2005: 38). However, Penn State professor Dr. Charles Yesalis is quick to point out, “These results do not measure the use of performance-enhancing strategies for which no tests are currently available ... including ... substances like human growth hormone, insulin, insulin-like growth factor, sodium bicarbonate and creatine, as well as techniques of blood doping” (ibid: 38).

Supporting this claim is testimony of Dr. Robert Karr. Karr is a California sports physician who said there was a time where at least 70 physicians in the Los Angeles area were prescribing steroids to athletes. He said that he personally prescribed steroids to approximately 20 *medallists* at the 1984 Olympics. What is even more significant is that none of the athletes Dr. Karr help dope tested positive for using steroids, which leads one to believe that the prevalence rates of doping is much higher than the sub-10% mark (McCloskey & Bailes 2005: 38).

According to other accounts, the use of anabolic steroids has increased steadily since WWII. It is estimated that by 1968, one third of the United States track and field team had used steroids at the pre-Olympic training camp (BMA 2002: 76). A few years later in the mid-1970s, many athletes considered steroids a necessary assistant. Backing these claims is the former US woman’s track and field coach, Pat Connolly. Coach Connolly estimates that 15 of the 50 members of the US track team used steroids at the 1984 Los Angeles Olympics (BMA 2002: 76). Connolly also said that doping became more prevalent at the 1988 Seoul Olympics, where an estimated 40% of the woman’s track team had used steroids in their preparation for the games (BMA 2002: 76). Around the same time, the Australian government launched a similar inquiry. It was reported that

70% of Australian athletes who competed internationally had taken illicit drugs (BMA 2002: 76).

In 1995, a survey of 448 British athletes stated that 48% felt that drug use was a problem in international competition the figure was 86% among track & field athletes). This statistic is cemented by another study that discovered that 29% of members of “hardcore” gym members used steroids<sup>5</sup> (BMA 2002: 77).

Perhaps the most serious concern when discussing the prevalence of doping, are the statistics surrounding high school athletes. McCloskey & Bailes (2005) state: “Almost every modern survey conducted on steroid use arrives at the same conclusion: anywhere from 3.5 percent of teenagers (athletes and non athletes) to 12 percent (athletes only) are using these drugs (2005: 14). Furthermore, Dr. Charles Yesalis (Penn State Professor and world-renowned steroids experts) stated in 2004 that nearly one million high school athletes used steroids (he cited the Youth Risk Behaviour Surveillance System (YRBSS) conducted by the National Institute on Drug Abuse) (Yesalis in McCloskey & Bailes 2005: 7-8). Adding to concern is these statistics account for only steroids and not other types of performance enhancement.

Doping at the high school level is more dangerous than at other levels for a couple of reasons: firstly, professionals have trainers, physicians, and dietitians to help them monitor their use; adolescents do not have these resources. This forces high school dopers to use under dubious circumstances. Secondly, using PESs is far more dangerous at puberty because the body is not fully developed; thus magnifying the negative effects of doping.

### Perpetuates of Doping

Since doping is becoming gradually more visible, many hypotheses of why doping is becoming more prevalent are being suggested. These reasons include factors such as: the commercialisation of sport, the politicisation of sport, the increased competitiveness of sport, and the medicalisation of sport. The following explains each in further detail:

---

<sup>5</sup> A “hardcore” gym is defined as having predominately heavy weight-training equipment, competitive body builders, and relatively few female members.

### **The Commercialisation of Sport**

The two main perpetuates of the commercialisation of sport are the development of sports sponsorship, and the increasing global audience of sport through television. Corporate sponsorship of athletes and sports advertising hardly existed before the 1970s. However, now athletes are commonly paid multi-million dollars to endorse products.

The result of the increase in endorsements is a huge flux in the amount of money involved in sport. In addition to large salaries, athletes are now receiving income from corporate sponsorship, television commercials and product endorsements. A problem with this model is that the distribution of these rewards are skewed; that is, most of the rewards go to the ultra-elite athletes. This model encourages doping.

### **The Politicalisation of Sport**

Although sport has always had some influence over the politics, it really became obvious during WWII and the Cold War. During this time, sport was added to the established competitive arenas of international politics, military and economics. Unsurprisingly, due to strong rivalries, countries began to look to new technologies to increase the performance of their athletes. The success of these athletes (doped or undoped) was used to fuel propaganda. This was the case when Hitler aimed to promote his superior race propaganda with the 1936 Olympics in Berlin; however, the African-American Jesse Owens won four Gold medals to counter Hitler's claim (Hart-Davis 1986: 247-9). Presently, the competition between countries has steadily hardened to the point where medal-count-per-country is one of the primary focuses of the Olympics rather than the more classic objective of diplomacy.

### **The Increased Competitiveness of Sport**

Due to factors such as the increased monetary incentives, commercialisation, media influence, and the politicalisation of sport, sport is becoming increasingly competitive. Traditionally, participation was seen as the primary objective of sport, as modelled by the classic "English public school elite" (Dunning in BMA 2002: 81). These English schools were opposed to competing for cups and medals because they felt it



placed an overemphasis on victory and eroded the virtues of sport. Furthermore, these schools believed that sport should be played for the intrinsic pleasure that sport provided, not the extrinsic pleasure of cups and medals (ibid: 81).

On the other end of the philosophical spectrum is contemporary sport. Athletes are now encouraged to not only compete, but win, and in some cases win by as much as they can (due to the “differential” ranking system). The following quotation is made by Roger Miller (Tour de France cyclist) who describes the amount of discomfort athletes endure to win:

The riders reckon that a good Tour takes one year off your life, and when you finish in a bad state, they reckon three years....

You can't describe to a normal person how tired you feel . . . In 1987, when I finished in a really bad way it took me until the end of November to recover; by that I mean I could not wake up and not feel tired as if I had already done a day's work.

The fatigue starts to kick in on the Tour after 10 days if you're in good shape, and after five days if you're not in your best condition physically. Then it all just gets worse and worse, you don't sleep so much, so you don't recover as well from the day's racing, so you go into your reserves, you get more knackered, so you sleep less . . . It's simply a vicious circle.

The best way of describing how you feel is that it's as if you were a normal person doing a hard day's work, you've got the flu, and you can just about drive home and fall into bed. By the end of the Tour, you need sleeping tablets.

You can't divide the mental and the physical suffering; you tend to let go mentally before you crack physically. . .

Riding up one of the mountains in the Tour if you're feeling bad is like being sick. Physically, your body has a limit every day, there's only a set speed you can go at and it might not always be good enough.

The pain in your legs is not the kind of pain you get when you cut yourself, it's fatigue, and it's self-imposed. . .

It takes two weeks to recover from a good Tour, three months to recover from a bad one.

(Robert Miller in Waddington 2000: 161)

A final source that describes the level of competitiveness among elite athletes is a survey of over 100 top American athletes that took place in the late 1970s. The survey revealed “nearly 55% of them reported they would be willing to take a drug which would kill them within a year if it could assure them of an Olympic gold medal. A follow-up to this study in 1984 of 198 world-class athletes found that 52% of them would take a wonder drug that would probably kill them within five years, if it guaranteed success”

(BMA 2002: 11). As illustrated, elite sport is insanely competitive, therefore, it is not surprising that athletes use PESs to gain an advantage.

### **The Medicalisation of Sport**

Since WWII, sport has become medicalised in two ways: firstly, there have been vast improvements in pharmacology, which has led to more potent drugs with less side-effects. Secondly, there has been an increase of sports trainers, physicians and medical specialists working with athletes. Finally, society has become increasingly medicalised, therefore it is a small wonder that athletes have as well.<sup>6</sup>

Also fostering doping is the creation of sports medicine, which exists on the premise the athletes need special attention to compete at the elite level. The objective of sports medicine extends well beyond the treatment of injuries to maximizing performance. Brown and Brenner (2002) point out that an “increased importance has been placed on winning and in order to do so, athletes have turned to ‘mechanical (exercise, massage), nutritional (vitamins, minerals), psychological (discipline, transcendental meditation), and pharmacological (medicines, drugs) methods’. [Furthermore], a major emphasis has been placed on the non-medical use of drugs, particularly anabolic steroids, central nervous system stimulants, depressants and analgesics” (Brown & Brenner in BMA 2002: 79). In order to illustrate how many substances professional athletes ingest, the following is Barry Bonds Daily Intake of Nutritional Supplements:

---

<sup>6</sup> “Medicalisation of society / sport” is defined as the permeation of medical practices in these respective fields.

**Table 1: Barry Bonds Daily Intake of Nutritional Supplements in 2003**


---

Morning:	Afternoon:
50 g special whey protein blend	10 mg iron (glycinate)
25 g complex carbohydrates	200 mcg selenium (as selenomethionine)
5 g glutamine peptides	10,000 IU Vitamin A
5 g New Zealand colostrums	500 mg Vitamin C
	800 IU Vitamin E
Pre-workout:	400 IU Vitamin D
1,000 mg phenylalanine	25 mg Vitamin [B.sub.1]
1000 mg tyrosine	25 mg Vitamin [B.sub.2]
10 mg Vitamin [B.sub.6]	25 mg Vitamin [B.sub.6]
200 mcg chromium (as polynicotinate)	500 mcg Vitamin [B.sub.12]
2 mg copper (as sebacate)	400 mcg folic acid
	500 mg omega-3 fatty acids
Post-Workout:	250 mg d-glucosamine sulfate
50 g whey protein isolates	350 mg n-acetyl d-glucosamine
50 g dextrose	200 mg omega-6 fatty acids
5 g glutamine peptides	150 mg chondroitin sulfate
2 g arginine	
200 mcg chromium (as polynicotinate)	Evening:
1.5 g magnesium creatine	50 g special whey protein blend
1.5 g creatine monohydrate	25 g complex carbohydrates
5 g New Zealand colostrums	5 g glutamine peptides
	5 g New Zealand colostrums
	Before Bedtime:
	3 capsules ZMA, which contain 30 mg zinc (as monomethionine/aspartate)
	450 mg magnesium (as aspartate)
	10.5 mg of Vitamin [B.sub.6]
	200 mg L-theonine
	50 mg 5-HTP

---

(McCloskey & Bailes 2005: 71-72).

Finally reinforcing the medicalisation of sport is the widespread use of recreational drugs in sport. Recreational drugs have a long history in sport: Alcohol has a long-standing tradition in many sports; Chewing tobacco has a history of use in baseball. There are also cases of professional athletes using illicit recreational drugs, such as Ricky Williams (NFL) who was suspended from football for using marijuana (Carroll 2005: 114). The slippery-slope argument applies here: if athletes are using legal recreational

drugs and legal vitamins, one can see how they might not struggle ethically to take PESs, especially if they think it will increase performance.

**Conclusion: Doping**

In summary, the previous section explained the history, prevalence, and perpetuates of doping, so that the reader has an understanding of mechanisms that regulators are facing. The following section continues by explaining how regulators have historically handled doping.

## Section III: Doping Regulation

### History

After WWII, upon hearing rumours of athletes using substances to enhance performance, the IOC created a banned-substance list. Anti-doping polices and testing formally began in 1968 in response of the 1964 Olympics that were submerged with PESs, especially steroids. However, at that point the IOC was limited to testing for mainly amphetamines since scientists where unable to distinguish between synthetic (or doped) testosterone and naturally occurring testosterone (Carroll 2005: 39).

As PESs started to infiltrate into other sporting arenas, additional anti-doping policies were created. In 1983, the National Basketball Association (NBA) began testing for PESs. The National Collegiate Athletic Association (NCAA) followed by beginning testing 1986, although it only targeted specific sports. The National Football League (NFL) began its testing in 1987. Finally and most interestingly, Major League Baseball (MLB) did not begin testing until 2003 (35 years after the IOC began testing) (Bodley 2005). At the international level, a separate body was created to control PESs called the World Anti-Doping Agency (WADA). WADA was created in 1999 and had a starting budget of US \$15 million in 2002 (Haugen 2004: 67). Most international sports bodies have adopted WADA's anti-doping policy with the most notable exceptions being the major professional sports associations in the United States.

Currently anti-doping testing is getting more complicated. Regulators are struggling to keep up with new PESs and prosecute the dopers who use them. Also complicating the matter is athletic associations are not united about what constitutes a PESs; therefore, confusing all the actors of sport. Although an increasing number of international sports bodies are adhering to WADA's standard, there are still many visible and high profile professional sports associations that remain independent with significantly more relaxed interpretations of doping, such as the NBA, the NFL, and MLB.

## Anti-Doping Policy: An Emerging Public Issue

It is difficult to pinpoint exactly when doping became a public issue; therefore, this section identifies four occurrences that contributed to its appearance: the Ben Johnson scandal of the 1988 Olympics; the premature deaths of famous American athletes; the unusual statistics in baseball; the potency and covertness of new PESs. These factors eventually contributed to the federal government intervening by issuing federal subpoenas to the major American sports associations in 2005 (Committee on Energy and Commerce – US House of Representatives 2005).

Although Olympic athletes had previously been disqualified for doping, the stripping of Ben Johnson's Gold medal in the 100m sprint at the 1988 Olympic games really brought the issue of doping to the forefront<sup>7</sup>. Due to the rivalry between Johnson (Canada) and Carl Lewis (USA), there was much media attention placed on the match-up. Johnson went on to win the competition with a world record time of 9.79 seconds. After the race, Lewis stated that numerous established sprinters had a sudden improvement in performance: Lewis blamed it on doping. As it turned out, Johnson was disqualified a few days later for using the banned steroid *stanozolol* (Toohey & Veal 2000: 144; McCloskey & Bailes 2005: 11-2)<sup>8</sup>.

A second factor that pushed doping into the media spotlight is the premature deaths of professional athletes. The most famous case was the 1992 death of NFL defensive lineman Lyle Alzado. Although doctors never proved a link between his brain cancer and steroids, Alzado was certain that there was a connection between his steroid use and his brain cancer; Alzado died at the age of 43<sup>9</sup>.

Another causality of doping that propelled the awareness of doping is the case of Tyler Hooton. Hooton was a high school pitcher who took steroids to increase performance; however, he suffered from steroid-related depression and eventually

---

<sup>7</sup> Johnson was the 39<sup>th</sup> athlete disqualified from the Olympics Games (Toohey & Veal 2000: 144).

<sup>8</sup> Interestingly, the doses of anabolic steroids taken by Johnson were lower than what the World Health Organization found safe to administer as a male contraception (Cashmore 2000: 210).

<sup>9</sup> Also propelling the public awareness of PESs were the premature deaths of professional athletes, Ken Caminiti (MLB) and Steve Bechler (MLB) (Carroll 2005: 7).

committed suicide. Hooton's father has been outspoken about the risks of steroids and wants to make it clear that the use of PESs are not exclusive to professional or elite athletes (Longman 2003; Carroll 2005: 7; US Senate [108-814 2004]: 41-5).

Another factor that created public attention was the strategic changes in professional sport. Although it is not as visible in other sports, baseball experienced a definite change in strategy around the late 1990s. The strategies changed from 'small-ball', which is characterized by such plays as bunting and stealing baseballs, to 'power-ball', which emphasizes hitting homeruns. During this period in time, three major leaguers surpassed Roger Maris's homerun record of 61 that had lasted for nearly forty years. Although some critics argue that factors such as juiced balls and shorter fences also contributed to a boost in homeruns, there was a noticeable physical difference in the physiques of many players (Carroll 2005: 222-7). A common example is the physique of Barry Bonds, who morphed from a lean placement-hitter early in his career, to a colossus power-hitter.

A final occurrence that popularised the interest of doping is the potency and covertness of contemporary PESs. When the story broke on THG, many people were intrigued at how a disgruntled individual had to bring doping monitors a sample and *tell* them it was a steroid before regulators could identify it. An undetectable, ingestible steroid was certainly revolutionary and captivating in the minds of the public. Furthermore, the substance was linked to many elite athletes such as Marion Jones (US Sprinter) and Barry Bonds (MLB) (Dohrmann 2006: 66).

### Anti-Doping Policy Versus Public Policy

In order to legitimise anti-doping policy as worthy of the attention of political science, an explanation of how anti-doping policy fits under the umbrella of public policy is needed. This exercise is important because it dictates whether doping should be regulated publicly or privately. In order to do this, a collection of existing justifications for public policy is used to theorize why anti-doping policy is a legitimate public policy field. This question can be broken down further by addressing the two internal elements of anti-doping policy: sports regulation and drug regulation. This section addresses these questions and places anti-doping policy in the wider field of public policy.

### **Common Justifications of Regulatory Fields**

In western-styled democracies, governments usually allow privately owned industries to function with little regulation; however, there are certain circumstances where governments intervene. Lane (in Mitchell) concludes that the following entities are most likely to be influenced by governmental controls:

- i. The industry is a natural monopoly (transportation, utilities).
- ii. The industry deals with matters critical to the defence of a nation (atomic energy, shipping, aircraft production).
- iii. The industry receives a substantial share of its patronage from the government (road building, munitions).
- iv. The industry is particularly subject to foreign competition (copper, wool, meat, shipping).
- v. The industry depends upon natural resources under governmental control (lumber, hydro-electric and all extractive industries).
- vi. The industry is 'sick,' i.e., cannot achieve conditions of competition in which a substantial portion of the industry operates profitably (dry cleaning, coal mining).
- vii. The industry is composed of some large efficient firms considered threatening by many small independent firms (drug and grocery stores).

(Lane in Mitchell & Mitchell 1969: 218-219).

After reading through this list, the argument can be made that sport fits into most of these categories. Firstly, in America, it can be argued that elite sport is a monopoly, since sporting revenues are collected primarily by the big five sports associations (NFL, NBA, MLB, MLS and NHL). Although historically there were multiple leagues within some sports, over the past few decades, the weaker associations either joined the more dominant organizations or were forced out of business. This is illustrated by: the American Basketball Association (ABA) joining the NBA; by the American Football League (AFL) joining the NFL; and, by the Extreme Football League (XFL) shutting down.

In reference to Lane's second criteria, if one takes a liberal interpretation of "national defence" to include national health, sport would fit the category. As previously mentioned, the health risks of doping are three-fold: the health risks to a user who is trying to gain an advantage; the health risks to a user that is trying to remain competitive; and the health risk to those who use drugs to emulate their sports hero(es). What is



interesting about Lane's list is that it does not include a separate category for health; although, national defence could be interpreted as defending against all threats including medical threats.

Although anti-doping policy does not fit in Lane's criteria numbers iii-vi, a case could be made for number vii. Professional athletics are the most visible branch of sport in America and do pose a risk to amateur sports. This risk includes both a health risk and an ethical risk. Therefore, it could be argued that the government should regulate doping in both professional and amateur sport.

### **Sports Regulation and Health Regulation**

In order to get an idea of how involved government should be in regulating doping, it is interesting to break anti-doping policy into two parts (drugs and sport) and see how government has traditionally regulated those two items.

Firstly, the US government has a long history of regulating drugs. There are now two key institutions that are in place to control the drugs. One is the Food and Drug Administration (FDA), which is designed to test new drugs for safety and affectability before they are released to the general public. The other is the Drug Enforcement Agency (DEA), which was created to control the manufacturing, distribution and consumption of illegal drugs (typically recreational drugs). These institutions were created in 1906 and 1973 respectively. The FDA in particular has been the filter and main obstacle that all new drugs have to navigate before they can become legal ([www.fda.gov](http://www.fda.gov) 2007; [www.dea.gov](http://www.dea.gov) 2007).

Switching to sport regulation, the National Collegiate Athletic Association (NCAA) was created in 1906 to combat injuries in football. The "Flying Wedge" was the most popular offence at the time, which was characterized by one solid mass of players on offence and gang-tackling on defence; this often led to serious injury and death. President Theodore Roosevelt summoned the leaders of the major university and told them to make football safer or it would be banned: the result was the creation of the NCAA ([www.NCAA.org](http://www.NCAA.org)). The NCAA is now responsible for regulating all the components of formal inter-collegiate athletics.

Finally, there is the institution that is designed to regulate both drugs and sport: the United States Anti-Doping Agency (USADA). The USADA was created in 2000 to satisfy four objectives: research, education, testing, and results management. Although the education and research aspects of their mission statement apply to sport in general, the testing and results management are geared toward the Olympic program. Furthermore, the USADA have had little to do with the professional sports associations even though they have “full authority to execute a comprehensive national anti-doping program encompassing testing, adjudication, education, and research, and to develop programs, policies, and procedures in each of those areas” ([www.usantidoping.org](http://www.usantidoping.org)). Perhaps with time the USADA will have more power over professional sports teams but presently their power is limited. Currently, there is no authority currently monitoring doping across all professional American sports.

### Ethics of Doping: The Justifications for Regulating PESs

The most interesting aspect of anti-doping policy is the ethical considerations. These considerations are important because they shape the construction of anti-doping policies. In these justifications, “harm” is a principle factor. Harm can be broadly interpreted, because it can range from physical harm (such as the health risk of using PESs) to abstract concepts of harm (such as undermining the nature of sport). The following section is organized using a compilation of Miah’s and Cashmore’s theoretical justifications for regulating drugs in sport (Miah, 2000: 18-19; Cashmore, 2000: 217). Harm is featured under the following headings:

- i. PESs are Contrary to the Nature of Sport
- ii. PESs Undermine the Nature of Sport
- iii. PESs are Contrary to, and Do Not Promote, the Internal Goods of Sport
- iv. PESs Harm the Extended Members of the Sporting Community
- v. PESs are Unnatural
- vi. PESs are Unfair
- vii. PESs Create An Unearned Advantage
- viii. PESs are Coercive
- ix. PESs are Harmful to Economics
- x. PESs are a Health Risk to Society
- xi. PESs are a Form of Rule-Breaking, Cheating, and Disrespect
- xii. PESs are a Violation of Contract
- xiii. PESs Make Athletes Poor Role Models

The following explains these arguments and elaborates on their strengths and weaknesses. The second half of this section approaches the arguments from the opposite perspective.

### **PESs are Contrary to the Nature of Sport**

Simon (1991) and Tamburrini (2000) argue, “Sport has an internal essence that is compromised by the use of drugs. As such, their use is unethical” (in Miah 2004: 18). In other words, sport has a spirit that is harmed by PESs. Due to the abstract nature of this argument, it is not as strong as some of the more material arguments against doping.

### **PESs Undermine the Nature of Sport**

Although no harm can literally occur to sport because it is intangible, harm as undermining the nature of sport is understood as gaining an advantage over sport itself. Therefore, if an athlete has an advantage over sport, they undermine sport’s value. In other words, PESs are unethical because they make sports too easy. Schneider and Butcher (2000) agree: “[PESs are] unfair because they undermine the challenge of competition by providing levels of performance that are not attributable to the athlete” (Miah 2004: 26). This argument is a subtle variation on the previous argument: instead of PESs attacking sport directly (as above), dopers are said to be eroding its foundation. It may be possible to collapse the first and second argument into one; however, this paper defers to Miah (2004), who makes separate distinctions.

### **PESs are Contrary to, and Do Not Promote, the Internal Goods of Sport**

Schneider and Butcher (1994) state that “sports are valued because of their unique, internal goods. The use of drugs does not contribute to, and is contrary to, such goods. As such, it is unethical” (in Miah 2004: 18). The internal goods being referred to in this justification are broad: they can range from physical to ethical goods. Although this justification sounds similar to the previous justifications, it is subtly different because it refers to the goods associated with sport, not sport itself.

### **PESs Harm the Extended Members of the Sporting Community**

Miah (2004) justifies the regulation of PESs by citing the harm that occurs to the sporting community, that is: sports fans, spectators, and enthusiasts (2004: 28-30). This type of harm occurs in two ways: firstly, the sporting community is harmed when community members experience a PES-related health problem that results when they emulate their doped sports hero. Secondly, harm results from the disappointment of spectators when an athlete is linked to doping.

### **PESs are Unnatural**

Hoberman et al. (1992) state that “drugs are unnatural, and for this reason, they are unethical because sporting performances are valued as natural performances” (in Miah 2004:18). In other words, sports are valued because they are perceived as a natural practise; therefore, doping is unethical because it erodes sport’s naturalness. Although the point is understood, there are two faults with this justification. Firstly, the performance of an athlete depends on everything from food, sleep, and mental-state; therefore, it is impossible to identify a natural level of performance or state of being. Furthermore, this argument implies that sporting performance needs to be kept consistent; however, improvements in nutrition, sports-science, and other advancements have already eroded this possibility.

Secondly, the attempt to implement policy on the grounds of being unnatural is problematic. There are many forms of performance enhancement that could be legal depending where the line is drawn. For example, blood doping could be considered legal because an athlete using his or her own oxygen-enriched blood. Also, even though PESs are synthetic, denigrating them on the basis of being synthetic is unjustifiable, in that medicine regularly uses synthetic variants of PESs to cure the unwell. Furthermore, synthetic variants in medicine are often viewed as honourable, not sinister. One can see how ethical ambiguity interferes with this justification.

### **PESs are Unfair**

Gardner et al. (1989) argue that permitting drugs in sport is unfair for one or all of the following: the participating athletes, members of the sporting community, or the sport

itself (Miah 2004: 18). Although Gardner's point is understood, unfairness is abstract and difficult to place in policy. Furthermore, some athletes are born with certain physical or mental traits that place them in an advantaged position. It could also be argued that unfairness adds to the attractiveness of sport; spectators are inspired by how athletes are able to overcome obstacles and achieve success despite their shortcomings. This is illustrated by the admiration for Tyrone "Muggsy" Bogues (NBA) and Daniel "Rudy" Ruettiger (NCAA-Football)<sup>10</sup>.

### **PESs Create an Unearned Advantage**

Carr (1999) states, "because drugs make it possible to achieve better performances without additional training, they are unethical: sporting achievements should be *earned* by athletes" (in Miah 2004: 18). The unearned advantage argument implies that the success of the athlete should be determined not by what an athlete wins, but how he or she win it. Although the point is credible, there are many instances of athletes achieving success without earning it. For example, Manute Bol was a 7'7" basketball player who had little athletic ability; however, he was signed to an NBA contract because of his height. Since height is not earned, it could be concluded that Bol had an unearned advantage. Furthermore, U.S. Olympic track coach Brooks Johnson said that elite athletes are freaks in regards to size, speed, and strength (Johnson in Sokolove 2004:32). Therefore, while champion athletes have to work to earn some of their goals, much of their success is derived from their unearned natural advantages over competitors.

### **PESs are Coercive**

Garner et al. (1989) suggest that if there were no regulation, athletes would have to make a choice between taking PESs and staying competitive; or abstaining from PESs and not being competitive (in Miah 2004:18). In other words, some athletes take PESs

---

<sup>10</sup> Muggsy Bogues, at 5'3" is the smallest player in NBA history. During his 15 season career he averaged 7.7 points per game, 7.6 assist per game, and 1.54 steals per game. (Muggsy Bogues - nba.com 2007). Daniel 'Rudy' Ruettiger wanted to play football at the University of Notre Dame, despite not having many physical talents. He spent his entire career on the practise squad; however, he was able to dress (and play) in the last game of his senior year. His story has been made into a major motion picture (rudymotion.com 2007).

not because they are trying to gain an advantage over the opposition, but because they want to remain competitive. Although this is a good argument, there is also the counter-argument that sports are a naturally coercive environment, as illustrated by athletes having to workout to gain advantage or remain competitive.

The coercion justification is solid but it is based on certain assumptions. Firstly, it assumes that if there was no regulation, that prevalence rates of PESs would escalate; however, most existing PESs have serious risks that potentially jeopardize an athlete's ability to perform. For example, Hank Aaron Jr. says he witnessed steroid abuse first hand when he played football in college: “[athletes using steroids] got crazy...their bodies fell apart. Their knees – they can't even walk now” (Smith 2005: 50)<sup>11</sup>. Another anecdote is that of boxer Bob Hazelton who had both of his legs amputated because of steroid abuse:

I sat back down to raise my tights up to see [why my leg was wet] and that's when I noticed my calf had split down the middle. A grey black liquid was oozing from the opening. The leg had very little circulation and the tissue was breaking down. I knew it was only a matter of time before I would lose my leg. Two weeks later, my first [of many] amputation took place (Hazelton in *Anabolic Steroids Act of 2004*: 19)

Therefore, the health risks involved with many PESs could provide enough of a deterrent to be self-regulating; however, in the future, PESs will be safer, thus making self-regulation unfeasible.

The second assumption of the coercion argument is no way in which athletes could remain competitive without taking drugs. This statement is appropriate when applied to individual sporting events, such as sprinting, because of the emphasis placed on physical performance over strategy; however, in team sports, success hinges not so much on the talents of an individual, but on the team's ability to “gel”<sup>12</sup>. There are countless examples of physically inferior athletes being successful because they work well with others. For example, 2005 and 2006 NBA Most Valuable Player (MVP) Steve Nash won the prestigious honour not because of his physical size (he is 6'3" & 195lbs),

---

<sup>11</sup> Hank Aaron Jr. is the son of the all-time MLB homerun leader – Hank Aaron.

<sup>12</sup> To “gel” is to get all members of the team working well together, so that they are not playing as individuals but as one single entity.

but because of his mastery of basketball. In contrast to Nash, there are numerous examples of athletes with enormous physical potential who never achieve success because they do not have the ability to mould with the team.

### **PESs are Harmful to Economics**

Cashmore (2000) states that since professional sport is a business, it needs to be protected from anything that threatens its ability to generate income, such as PESs (2000: 214). In accordance with this justification is the thought that sports policy should reflect the wishes of the sporting community; since fans financially support athletics, they should decide on what is permissible. Traditionally, it was believed that spectators wanted to see PES-free competitions; however, it seems that this opinion is changing. For example, “During the 2004 baseball season, which was clouded with rumours of steroid use by such top sluggers as Barry Bonds, Jason Giambi and Gary Sheffield, MLB set an attendance record” (Weir 2004). This statistic suggests that the baseball community does not care about PES abuse in baseball; apparently, they are more interested in homeruns.

The problem exists: do sports associations tailor their services to fans’ expectations or do they try to preserve the “dignity” of the game<sup>13</sup>? As previously demonstrated, these objectives do not always coincide. Although there are some individuals who are adamant that drugs should not be allowed in sport, a recent *New York Times* poll indicates that 41% of people under the age of 30 do not care if professional athletes use steroids (Smith 2005: 43). This statistic supports the idea that remaining PES-free is not economically vital for professional sports, and perhaps it is beneficial to allow athletes PESs, since athletes who dope are more capable of record-breaking performances.

In summary, the business argument is important, because sport associations need to listen to the consumer so that they can remain economically feasible; however, also hinging on economic sustainability is dignity. This balance creates many questions: Should sports be tailored to suit the fans? Should sports remain defiant in order to preserve integrity? And, is drug-free sport the best policy? Seemingly, the sports fans are

---

<sup>13</sup> Dignity in this sense is remaining true to the original principles that the sport was founded on, such as sports being a showcase for natural performances.

divided about what role PESs should have in sport, thereby creating problems for regulators.

### **PESs are a Health Risk to Society**

The argument that PESs are a health risk is the most ubiquitous and strongest argument used by anti-doping advocates. There are three parts to the health risk justification: PESs are a health risk to the user; PESs are a health risk to an athlete who is being coerced in taking them in order to remain competitive; and, the societal health risk that results from amateur athletes emulating their doping sports heroes. These arguments are highly objective and are strengthened by statistics and anecdotes. There exists the counter-argument that some sports are more risky than PESs; for example, sports such as boxing are associated with high rates of head trauma, as opposed to the low-health-risk associated with many controlled PESs<sup>14</sup>. However, this argument can be avoided by using the phrase “unnecessary risk”, because risk is built into boxing, and cannot be removed without changing its nature.

### **PESs are a Form of Rule-Breaking, Cheating, and Disrespect**

Arnold et al. (1997) state, “Drug taking is unacceptable because it is against the rules. Breaking the rules is considered to be cheating and so the use of drugs is also cheating. Cheating is also unacceptable because it demonstrates a lack of respect for the other participants and the sport” (in Miah 2004: 18). The rule breaking argument is effective because it is straightforward and objective: doping is against the rules, thus impermissible.

Another aspect of this argument that has potential usefulness is respect. Most members of the sporting community are familiar with the sports cliché of “respect for the game”, which implies that good sportspersons are required to respect the honour code of the game they play. Despite the flamboyant nature of some professionals, there remains a chivalrous characteristic of sport; that is, many athletes desire the respect of their peers

---

<sup>14</sup> The head trauma associated with boxing is so prevalent that it has its own term: “punch drunk”. Punch drunk is characterized by slurred speech, slow reactions and occasional blackouts; it results from extended brain damage due to punches to the head (BBC News 1999).



(as is similar to most professions). However, in an ironic twist, sport favours those competitors who push the balance of cheating / disrespect. For example, when going for a loose ball, soccer advantages the athlete who pushes their opponent out of the way enough to get possession the ball, but not enough to be called for a foul. Perhaps athletes who use PESs view doping in the same way: they are pushing the line but not crossing it. This thought is justifiable, because the lack of harmonized policy has created confusion concerning the legality of PESs.

### **PESs are a Violation of Contract**

Butcher and Schneider et al. (1998) state, “Entering sporting competition entails making a tacit contract with one’s opponent to play under the same conditions. Failure to do this by using means of performance modification that are outside of the agreed means is unethical because it breaks this contract with other participants” (in Miah 2004: 19). Although this is a subtle twist on the cheating argument, it is effective because it is phrased in terms of contract law (as opposed to the abstract concepts of honour and virtue). Due to its objectivity, this argument is effective when placed in policy.

### **PESs Makes Athletes Poor Role Models**

Cashmore (2000) asserts that athletes are role models and their actions will be emulated by young sportspersons; thus, professional athletes have an obligation to society to practise ethical and healthy lifestyles (2000: 212). This argument hinges on the amount of influence that professional athletes have over aspiring sportspersons. If athletes possess the ability to influence the PES-behaviours of children, the case for firm anti-doping policies is strengthened. On the other hand, it could be argued that many young people aspire to be like their parents and coaches rather than their sports idols. Furthermore, blaming professional athletes for the drug use of young athletes is unfair in relation to other influential societal figures: for example, many musicians openly use drugs and some even believe that drug use is beneficial to their practise, yet they are not vilified like doped athletes.

## **The Justifications for Regulation**

In summary, there are numerous justifications for prohibiting PESs. They share two things in common: the desire for sports' regulators to level the playing field and the need for regulation to occur as result of a particular harm. Although these arguments are most visible, it appears that there are many logical reasons to allow doping. The following explains these possibilities.

## **The Justifications for Not Regulating PESs**

The attention given to the justifications for not regulating PESs is relatively limited; however, it appears that there are many logical reasons for no or moderate regulation, as illustrated by the following headings:

- i. PESs are a Health Risk to Society: Revisited
- ii. PESs Do Not Promote the Internal Goods of Sport: Revisited
- iii. Testing is Too Expensive
- iv. Testing is Psychologically Oppressive
- v. Technology is More Threatening to Sport Than PESs
- vi. Strength Versus Hand-Eye Coordination
- vii. The Regulation of PESs Creates Double Standards
  - a. Athletes Versus Artists
  - b. PESs Versus a Performance Enhanced Society
- viii. Athletes are Genetic Freaks
- ix. Regulating PESs Makes the Playing Field Uneven
- x. Doping is Good for Sport
- xi. Nobody Cares if Athletes Dope
- xii. Regulation is Futile

The following section elaborates on these reasons, thus balancing the arguments given previously.

### **PESs are a Health Risk to Society: Revisited**

As discussed above, one of the foremost arguments for banning PESs is that they are harmful to a person's health. However, the health argument is usually proposed in terms of the number of people affected, not by the degree of risk. As previously explained, when comparing the health risk of the average banned substance to the head

trauma experienced by boxers, one could conclude that boxing should be banned ahead of PESs.

Another aspect that twists the health risk argument is that many banned PESs are used therapeutically in medicine (Sokolove 2004: 32). For example, the PES of choice for endurance cyclists, EPO, is also an effective treatment for patients with anaemia. Furthermore steroids, which are currently being scrutinized by MLB, have been used by medicine for treating muscle degenerative diseases, such as AIDS (ibid 32-33). Seemingly, the bad publicity that PESs receive is unwarranted, since the same substances are ethically agreeable in other contexts. This raises the question: how does the morality of a substance change depending on context?

### **PESs Harm the Internal Goods of Sport: Revisited**

Reverting back to the section titled “PESs harm the internal goods of sport”, it is argued that PESs change the way sports are played. However, this argument is countered by stating that sports have changed regardless of PESs. Sport, like other professions, rewards those who improvise: for example, during the early days of the NBA, George Mikan revolutionized basketball with the popularisation of the slam-dunk. Continuing with the example of basketball, the jump shot, the alley-oop, and the no-look pass have all contributed to the progression of basketball and shaped it into its current form.

Furthermore, it has been argued that sport’s record books will become tainted if doping is not eliminated. However, if records were truly comparable, sport would no longer be able to evolve, which is impossible regardless of PESs due to improvements in health, equipment and knowledge. In other words, record books are already askew before factoring in PESs. Perhaps this logic justifies the use of PESs: they could be viewed as the next revolution of sports.

### **Testing is Too Expensive**

The argument that dope testing is too expensive is best suited to amateur sports that have tighter budgets than professional sport. At the high school level, the most basic anti-doping tests costs about US \$95, whereas dope tests appropriate for collegiate and professional level range between US \$200-300 (Black in Carroll 2005: 104; Weir 2005:

3). However, the previous tests do not test for all known PESs, they test for the most prevalent, thus providing loop-holes for experienced dopers.

Another significant cost is the laboratories where samples are tested: at the Soul Olympics, Hewlett-Packard charged the IOC US\$3 million to set up testing facilities in South Korea (Cashmore 2000: 203). Overall, with the progression of PESs, it is suspected that the costs of tests will steadily increase. Although testing can be a budget-crippling expense for many amateur sports associations, there is the alternative of random drug testing as opposed to testing every athlete. The benefit of random drug testing is that it has a similar PES-detering effect as absolute testing at a fraction of the cost. Furthermore, education could potentially have a deterring effect, since most PESs have logical consequences. Even with random drug testing and education, the cost of anti-doping is something that anti-doping advocates have to address.

### **Testing is Psychologically Oppressive**

Another argument against anti-doping regulation is that testing for PESs places an unjustifiable amount of psychological pressure on athletes. Most anti-doping policies require athletes to be accessible all of the time for random testing, which surely is a nuisance. Although random drug testing is not unique to athletics (for example, airline pilots are tested), athletes are perhaps the most superstitious and have the most sensitive psyches in relation to other professional careers. Although, athletes are psychologically susceptible, they are also known to be psychologically resilient when competing, as demonstrated by clutch-plays. Nevertheless, regulators need to remember that confidence is one of the greatest assets to an athlete.

### **Technology is More Threatening to Sport Than PESs**

Relating to the level-playing-field ideology, there is the belief that the advancement of sporting equipment is more threatening to the integrity of sport than PESs. There have been major advancements in sporting equipment, such as carbon fibre bicycles, graphite golf clubs, and titanium tennis racquets. The technology of sports equipment has progressed to the point where sports associations have to create

boundaries that limit the efficiency of sports equipment. This is illustrated by weight minimums on race-cars and limits on the “trampoline effect” of golf clubs.

### **Strength Versus Hand-Eye Coordination**

Advocates of this argument state that an increase in doped strength is insignificant in comparison to the hand-eye coordination required to play professional sport. That is, doping is a relatively minor problem when placed in the context of an athlete’s talent. The classic case study for this argument is the Barry Bonds – THG incident: even though many people were upset with Bonds being associated with THG, some felt that Bonds’ biggest asset was not his strength, but rather his ability to make contact with a baseball. It has been argued, “[We] don’t care if Barry used steroids, hitting a baseball out of the park 756 times is still impressive” (Smith 2005: 48). This is a good point considering that baseball players cannot hit a homerun if they cannot hit the ball; however, the increased strength that results from steroid use does allow for a great margin of error. In close, the strength versus hand-eye coordination argument is only applicable to sports that require hand-eye coordination. It does not apply to pure power sports such as weightlifting and sprinting.

### **The Regulation of PESs Creates Double Standards**

Another impediment for anti-doping regulation is the double standards that occur between sports and other social groups. The double standards exist in two main forms: the double standard between athletes and artists<sup>15</sup>; and the one between athletes and civil society.

#### *Athletes v Artists*

First is the double standard that exists between athletes and artists / musicians. Artists who openly use PESs to create masterpieces are rarely stigmatised and are often

---

<sup>15</sup> In the case of artists and entertainers, PESs are recreational drugs that allow an artist to create something that they would have not been able to create without the aid of that drug.

glorified (as opposed to athletes who are often vilified for using PESs). Cashmore (2000) points out this distinction by using the example of the band the Red Hot Chili Peppers:

The shaming of a sports performer found to have used drugs and the nullifying of his or her performance is a deterrent or a warning to the young: ‘do this and you will suffer the same fate’. But the Red Hot Chili Peppers are not disgraced and their albums would not be expunged from the charts if it were discovered that they recorded them while using coke (Cashmore 2000: 213).

This raises the question: why are artists and athletes, both of which are entertainers and have similar influence in society, treated differently for using PESs? Furthermore, it could be argued that athletes are more responsible with PESs, since misuse is more jeopardizing to an athlete's livelihood than an artist's. This could be counter-argued by stating that regulators also need to eradicate drugs from art; however, the music of the Beatles (who used illicit substances through their career) and the theories of Sigmund Freud (who used cocaine) were both influenced by illegal drugs and their work has not been discredited (Stark 2005: 170-183; Karch 1998: 43-5)<sup>16</sup>. If drugs are eliminated, society could potentially be jeopardizing a principle source of creativity and innovation. Sports-romantics seemingly want to keep sport's playing field level by eliminating PESs; however, society benefits from innovation: perhaps PESs should be perceived as sport's next innovation.

Another double standard exists between in regard to random drug testing. At present, the vast majority of individuals who have influential occupations (actors, musicians, politicians, etc) are not subject to random drug tests with the exception of athletes. It is understood that athletes need to be randomly tested for PESs to keep the playing field level; however, some sports associations are now testing for recreational drugs that do not increase performance. This is a regulatory area that has traditionally

---

<sup>16</sup> The Beatles experimented with many recreational drugs during their career including Marijuana, Dexedrine, Preludin, Cocaine and LSD (Stark 2005: 170-183). Freud experimented and published a book on cocaine titled: *On Coca*. Interestingly he recommended seven conditions where cocaine treatment might prove useful: “1) as a mental stimulant, 2) as a possible treatment for digestive disorders, 3) as an appetite stimulant in cases of wasting diseases, 4) in the treatment of morphine and alcohol addiction, 5) as a treatment for asthma, 6) as an aphrodisiac, and 7) as a local anaesthetic” (Karch 1998: 45).

been reserved for the state. It is understood that sports associations feel recreational drugs are ethically impermissible; however, many athletes feel they are being singled out and that anti-doping regulators are overstepping their boundaries. The classic case for this argument is that of Ross Reblati. Reblati is a Canadian Snowboarder who won an Olympic medal, tested positive for cannabinoids, had his medal revoked, then had the medal reinstated because cannabinoids were not banned at the time.

### *PESs Versus A Performance Enhanced Society*

A second double standard exists between society and athletics in relation to PESs: performance-enhanced athletes are being ridiculed by performance-enhanced societies (Poniewozik 2004: 92). Rea elaborates:

The public and media alike give themselves allowances we do not give our heroes and idols. The public can use erectile function and libido drugs, have plastic surgery to enhance breast and penile size, use liposuction to lose fat that a quality diet would remove and maintain. Then we tell our athletes to perform at superhuman levels without any means of superhuman recovery. How is that ethical? We live under a double standard and fail to accept it when others do not agree” (Rea in Carroll 2005: 193).

One other example of societal performance enhancement is students improving their ability to focus with Ritalin (*methylphenidate*). These forms of enhancement are rarely viewed as immoral; therefore, how can it be justified that an athlete who takes caffeine to enhance performance is sinister and a celebrity who gets a face-lift is sublime?

Another example of this form of double standard is their application in the military. In regards to creating a verdict on the acceptability of a PES in the military, an ethicist will likely compromise by permitting a potentially health-complicating PESs, if it can save soldiers’ lives. Similar to medicine, this example illustrates how some of the technologies used by dopers are ethically acceptable when placed in a different context.

Although the “setting a good example for children” argument is certainly noble, it is also full of irony. Citing the examples of Ritalin, Viagra, and plastic surgery, performance-enhancing technologies dominate society, so why should athletics be treated differently? There is the desire to keep the playing field level; however, it could be argued that the progression of sports science has already compromised that possibility.

Therefore, if sports purists want to add an asterisk to Barry Bonds homerun record, perhaps society should add an asterisk next to all its notable achievements (Poniewozik, 2004: 92).

### **Athletes are Genetic Freaks**

The argument exists: “Sport at its highest level should be viewed as a competition waged among genetic freaks” (Johnson in Sokolove 2004: 32). The former is an accurate description: athletes usually fall in the top percentile in size, height, endurance or whatever trait is advantageous in their respective discipline. This creates notable implications. Firstly, the reason spectators watch sports is they want to see humans perform super-human feats; therefore, the more super-human an athlete is, the more fans are fascinated (citing Michael “Air” Jordan’s (NBA) leaping ability and 7’6” Yao Ming’s (NBA) extraordinary size). Using this logic, it is understood why MLB ignored the steroid problem when it was first discovered: fans were spending a lot of money to watch baseball players (with the aid of science) push the levels of human performance.

Since many fans are interested in athletes who perform at super-human levels, perhaps regulators should encourage doping. Furthermore, since career athletes are already ‘freaks’ (in the top percentile of physical human ability), perhaps they should be allowed enhance their bodies further? Although complications to an athlete’s health provide an adequate governor for most existing PESs, genetic PESs will have all of the positive effects of first-generation PESs with few of the negative effects. In summary, the genetic freaks argument is powerful because it highlights the conflict-of-interest surrounding PESs: spectators like to watch athletes perform at super-human levels – PESs allow this possibility. On the other hand, society perceives PESs as unethical; this creates a puzzling situation.

### **Regulating PESs Makes the Playing Field *Uneven***

In response to the level-the-playing-field argument, there exists the counter-argument: Due to of the constant progression and innovation of PESs, regulators will never be able to fully eradicate drugs from sport; therefore, by attempting to regulate PESs, policy makers are inadvertently widening the distribution of performance between



dopers and “clean” athletes. In other words, the athletes which regulators are most likely to detect are amateur dopers who use obsolete substances, while the experienced dopers, who use the latest doping technology, will be able to dope without being detected.

### **Doping is Good for Sport**

Perhaps the most obvious counter-argument to regulating PESs is doping is good for sport. This is the perspective of bio-ethicist Andy Miah when discussing genetic doping. Miah (2005) states:

The idea of a naturally [un-doped] perfect athlete is romantic nonsense. An athlete achieves what he or she achieves through all sorts of means – technology, sponsorship, support and so on. Utilizing genetic modification [or other forms of enhancement] is merely a continuation of the way sport works. It allows us to create more extraordinary performances (Miah in New Zealand Sports Drug Agency 2005).

Although Miah’s remarks do not apply to existing technologies, they do highlight the growing tolerance of PESs. Miah’s reputation as a leading genetic bio-ethicist in the field of performance enhancement and author of one of the few books on the subject (*Genetically Modified Athletes*) further legitimise the argument.

### **Nobody Cares if Athletes Dope**

Another argument that weakens the justification for regulating PESs is the belief that no one cares if athletes dope. This perspective is becoming more commonplace: for example, according to *Sports Illustrated*, 41% of those under 30 years old do not care if an athlete uses steroids (Smith 2005: 43). This raises the question: If nobody cares or pays attention to doping, why should it be regulated?

### **Regulation is Futile**

In the future, policy makers are going to be presented with the problem of trying to regulate substances that are undetectable. Although regulators can still detect most existing PESs, it is difficult to know when doping technology has out-paced testing methods. This point is illustrated by the THG scandal, where regulators had no idea that THG existed until a sample was turned over (Fish 2003). The reactionary nature of dope

testing is flawed: PESs need to exist *and* be known before they can be monitored. Therefore, it is imperative that regulators look for alternate strategies to control doping.

### Comparing Existing Anti-Doping Policies<sup>17</sup>

Another piece of information that is needed in order to discuss why there is variation in anti-doping policies is introducing current policies; after all, how can one explain variance of policies before understanding what variances exist? Anti-doping policies range from no policy (the PGA), to what many would consider the most rigorous anti-doping policy (IOC and WADA). This exercise also points out the various philosophies in anti-doping, and highlights the strengths and weaknesses of each. Finally, four bills proposed to the US Congress illustrate the Government's attempt to control doping.

#### **The Professional Golfers' Association: No Policy**

Despite the recent scrutiny towards weak anti-doping policies, there are examples of athletic associations not having a policy<sup>18</sup>. In the case of the PGA, authorities felt that PESs are not conducive to golf, since golf is a game almost exclusively of hand-eye coordination and experience. PGA commissioner Tim Finchem states, "Some say we ought to be testing for drugs because all sports test and you want to know you're clean...In a vacuum, I see how you can make that argument. But honestly, I don't know what we would be testing for" (www.golftoday.co.uk 2005). Since golf has always been regarded as a gentlemen's game, encompassing values such as honour and trust, the

---

<sup>17</sup> Locating the anti-doping policies of the professional American sports associations was both interesting and frustrating (I was able to quickly locate the IOC's and WADA's policies on their websites). In search of the policies, I investigated the Internet, including searching through search-engines and sifting through the websites of the NBA, MLB, and NFL. I then contacted several authors of well-known books in the field, contacted WADA, and wrote emails to the respective leagues. Finally, I contacted the USADA and was notified that anti-doping policies were included in the player's collective bargaining agreement, and could be found on the player's union websites of the respective leagues. However, I found it interesting that MLB was very protective of its current anti-doping policy and would not release it without applying in writing.

<sup>18</sup> The paper refers to the American PGA. This distinction needs to be made because apparently there is an anti-doping policy for golfing in New Zealand.

argument has been made that imposing dope testing without probable cause would compromise the values of the game. Additionally, by not testing for PESs, golf also reduces its expenditure: an obvious benefit to a sport that seemingly does not have a problem with PESs.

### **The International Olympic Committee and World Anti-Doping Agency: Rigorous Policy**

At the other end of the doping spectrum are the anti-doping policies of the IOC and WADA. A group led by the IOC created WADA in 1999 (it opened in 2000) and the two organizations work closely together on anti-doping. In 2004, WADA established an anti-doping code that has been adopted by most international sporting bodies, with the exception of powerful American sports associations, such as the NFL, NBA and MLB. WADA's code is comprehensive, stating testing procedures for both in-and out-of-competition, the rights of athletes, and penalties for doping. According to both WADA and the IOC, if an athlete is convicted of doping, the penalty for a first offence is a two-year suspension and for the second conviction it is a lifetime suspension (WADA 2005). In addition to having the tightest regulations on doping, the IOC and WADA also have the most experience with doping, since the IOC created its first banned substance list in 1963.

In regards to the length of suspension, it could be argued that the IOC policy is too severe, since the window of maximum performance for many athletes is small. In some cases, such as gymnastics, a two-year suspension could be the length of an athlete's career. Conversely, other athletic events, such as archery, rifleman and curlers, have careers that can span for decades, thus raising questions of fairness.

On the other hand, some feel that a two-year suspension is fair, since an individual is responsible for all substances ingested; however, athletes are given so many supplements that it is difficult for them to know exactly what they are taking (as illustrated by Bonds).

### **Major League Baseball: Ineffective Policy**

Although the anti-doping policies of the PGA and WADA differ in approach, they are relatively effective in the contexts that they are implemented. However, there are examples of sports associations consciously ignoring their doping problem, such as MLB. During the late 1990s, the steroid problem in MLB baseball escalated; however, MLB ignored the problem, possibly because they were trying to financially recover from the strike in 1994-1995<sup>19</sup>.

The history of MLB's anti-doping policy is short and could be considered reckless. Before 2002 there was no anti-doping policy in baseball; this is a fact that players accused of doping are quick to point out, because any prosecution relating to PESs before 2002 is omissible. In 2003, the players and owners agreed to conduct an anonymous survey to see how many players were taking steroids. They agreed that if more than 5% of players were using steroids, they would implement formal testing and penalties: according to MLB, the test came back between 5% and 7% (Bodley 2005). In 2004, MLB issued its first anti-doping policy consisting of one annual test. It stipulated that testing continue until steroid use drops below 2.5% for two consecutive years. The following are the 2004 MLB penalties for doping:

- i. First positive test: counselling
  - ii. Second positive test: 15-day suspension & up to a US\$10,000 fine
  - iii. Third positive test: 25-day suspension & up to a US\$25,000 fine
  - iv. Fourth positive test: 50-day suspension & up to a US\$50,000 fine
  - v. Fifth positive test: One year suspension & up to a US\$100,000 fine
- Note: all suspensions are without pay  
(Bodley 2005))

There are a couple of major flaws in this policy: firstly, the performance enhancing effect of a PES can be experienced long after termination of usage (perhaps even years with proper management); therefore, athletes who have been penalized still experience the benefits of doping after their suspension is over. Secondly, and coinciding with the first shortcoming, the policy implies that even if athletes are convicted during

---

<sup>19</sup> MLB claims that in terms of overall revenue, it has lost money every year since the strike. Furthermore, the television for the ratings for the World Series has decreased 33% on average since before the strike (Helfand 2005).

every yearly test (which is unlikely because of masking agents and the cyclical nature of PESs), they can still dope with relatively little punishment until the fifth year. Thirdly, the anti-doping fines relative to the salary of the average MLB player are insignificant: the average salary of the League is US\$2.7 million per year (MLB Players Association 2007). In sum, MLB is effectively telling players that they have two options: do not use PESs and take your chances competing against the other players who do use them; or, take PESs, reap substantial financial rewards, and if you get caught, you will be fined a fraction of your salary and take a 10 day vacation. This policy is a joke<sup>20</sup>.

Because of the inadequacies of the 2004 anti-doping policy, MLB revised its policy for the 2005 season. The new policy includes unlimited, unannounced and off-season testing. The banned substances list has also been expanded to include many other PESs rather than focusing on steroids. The penalties for the 2005 MLB are:

- i. First positive test: 10-day suspension
  - ii. Second positive test: 30-day suspension
  - iii. Third positive test: 60-day suspension
  - iv. Fourth positive test: one year suspension
- Note: all suspensions are without pay  
(Bodley 2005).

This is admittedly a big improvement on the 2004 policy; however, there remain many flaws in the 2005 policy. Firstly, there is no minimum amount of tests a player can receive in a year; therefore, the League can choose to not test certain players. Secondly, if players are suspended in 2005 for using a PES, they have a longer vacation in relation to the 2004 policy and no fine (except for pay withheld). Although the 2005 policy is more stringent, it is still inadequate when compared to other anti-doping policies. The World Anti-Doping Agency founding chair, Dick Pound, described MLB's 2005 anti-doping policy as: "worse than a joke. It is a travesty. It amounts to almost the complete abandonment of responsibility with respect to health of the participating athletes" (McCloskey & Bailes 2005: 74).

---

<sup>20</sup> It is noted that the players also forfeit their salaries during the time that they are suspended; however, it is still insignificant when compared to the alternative.

The next progression in MLB's anti-doping policy came in the form of a United States Federal Subpoena. On the 17 March 2005, a representation of players and officials had to testify in front of a federal court about steroids in baseball. It led to some interesting testimony: the representatives from MLB dodged questions by restating previously rehearsed answers. Interestingly, one of the players who testified that he had never used steroids at the hearing, baseball player Rafael Palmeiro, was later suspended for using an illegal substance. The developments from this hearing prompted a professional-sport-wide investigation on the use of PESs in sport (Committee on Energy and Commerce – US House of Representatives 2005).

Due to the pressure placed on them by the spectators, the media and the US Federal Government, MLB was forced again to re-visit its anti-doping policy. The new policy is significantly better with first-time offenders receiving at 50-game suspension (nearly 1/3 of the season). The punishment for second and third time offenders is 100-games and lifetime respectively. The policy has already taken affect and a few players have received 50-game suspensions<sup>21</sup>. Despite the improvement in policy, there continues to be a significant difference in standards between MLB and WADA.

One final shortcoming of MLB's anti-doping policy is the overlooking of the amphetamine problem in baseball. As previously stated, in a recent survey conducted by *USA Today*, 87.2% of players polled said that amphetamine use exists in the big leagues and 35.3% said that at least half the players use amphetamines (Hohler 2005). MLB's tolerance of amphetamines is unacceptable by IOC standards and the players using them would be suspended if they competed under an Olympic umbrella. This highlights the inconsistencies of anti-doping policies and the need for harmonized policy<sup>22</sup>.

---

<sup>21</sup> Florida Marlins pitcher, Juan Salas was punished under these new suspensions (espn.com 2007).

<sup>22</sup> Harmonization will be discussed later.

**Table 2.2: Suspension Length of MLB’s Anti-Doping Policy**

Offence	Pre-2003	2004	2005	Current
1 <sup>st</sup> Offence	None	15 Day	10 Day	50 Game
2 <sup>nd</sup> Offence	None	25 Day	30 Day	100 Game
3 <sup>rd</sup> Offence	None	50 Day	60 Day	Lifetime
4 <sup>th</sup> Offence	None	1 Year	1 Year	

Source: (Bodley 2005)

**Table 2.3: Doping Suspensions for American Sports Associations**

Offence	USADA	MLB	NFL	NBA	NHL
1 <sup>st</sup> Offence	2 Years	50 Game	4 Game	5 Game	20 Game
2 <sup>nd</sup> Offence	Lifetime	100 Game	8 Game	25 Game	60 Game
3 <sup>rd</sup> Offence		Lifetime	1 Year	1 Year	Lifetime
4 <sup>th</sup> Offence				Lifetime	

Note: the MLB, NFL, NBA, and NHL anti-doping policies are in their respective collective bargaining agreements. WADA’s and USADA’s policies are available on their websites.

Sources: MLBPA.com; NFLPA.com; NBAPA.com; NHLPA.com; WADA.com; USADA.com

### **Proposed Federal Anti-Doping Policies in the United States<sup>23</sup>**

The weak anti-doping policies of professional sports associations in the US have led to a series of Federal interventions. Although a number of bills have been introduced, this paper looks at four pieces of legislation that illustrate the change in the Federal Government’s attitude toward doping. These bills include: the Amateur Sports Integrity

<sup>23</sup> “At an international level, the Anti-doping Convention of the Council of Europe is the only legally binding document referring to doping, to which there are 32 member country signatories” (BMA 2002: 6).

Act of 2003, the Anabolic Steroid Control Act of 2004, the Drug Free Sports Act of 2005, and the Clean Sports Act of 2005.

*The Amateur Sports Integrity Act of 2003 [S. 1002]*

In 2003, the Amateur Sports Integrity Act was proposed (by Senators McCain, Brownback, Edwards, and Graham) to uphold the integrity of amateur sport and to research PESs. The main purpose of bill was to reduce gambling on amateur sports, but the bill also included a series of grants for scientific groups conducting research relevant to doping. It was proposed that US\$28 million over the period of four years (2004-08) be allotted for research (US Congress 2003).

*The Anabolic Steroid Control Act of 2004 [S. 2195]*

The Anabolic Steroids Control Act could be considered the first proposed legislation to specifically target PESs. Co-authored by Senators Biden and Hatch, it is designed to eliminate steroids from a non-medical environment<sup>24</sup>. Senator Hatch described the bill as follows:

Under this bill, clever chemists will no longer be able to dodge the law by disguising their chemicals to skirt the legal definition of a steroid...Our bill gives the Drug Enforcement Agency the power to schedule nearly any steroid precursor or in the future – giving the law the flexibility that we don't have to play catch-up with every new Andro look-alike that comes along (*Congress Passes Steroid...Nutrabio.com* 2004).

Accordingly, the bill lists 43 substances that are considered steroids by the Federal Government. In regards to punishments, the bill does not establish a fine or prison sentence, but does state that the case will be reviewed by the United States Sentencing Commission. Furthermore, the bill also mandates prevention and education programmes, authorizing US\$15 million of government spending for each fiscal year from 2005 to 2010. Finally, the bill includes funding for a national survey on steroid use and the

---

<sup>24</sup> Steroids are used in medicine as a remedy to muscle-degenerative diseases such as AIDS.



implications on health (US Congress 2004). The bill was passed on October 8, 2004 (Govtrack.us 2007).

#### *The Drug Free Sports Act of 2005 [H.R. 1862]*

The Drug Free Sports Act is one of two similar bills introduced to eliminate PESs from sport. It is a more aggressive approach to legislation in relation to the Anabolic Steroids Control Act: it targets all PESs. The bill establishes a uniform banned substance list, standardized testing, and universal punishments for dopers. In relation to the Clean Sports Act (its rival bill – to be discussed next), it is less coercive: it requires only two tests a year; does not require that professional sports associations adhere to Olympic Standards; does not require a designer steroids policy from professional sports; and does not focus on collegiate and high school sports (US Congress 2005). It was introduced by Representative Stearns on 28 June 2005 but was never passed (GovTrack 2007).

#### *The Clean Sports Act of 2005 [H.R. 2565]*

Finally, the Clean Sports Act of 2005 (proposed by McCain, Davis and Waxman) is designed to strengthen testing procedures and toughen penalties for using PESs in the major American sports associations. In relation to the Drug Free Sports Act, the Clean Sports Act is a more aggressive approach to controlling PESs. The bill proposes the following: the major sports associations in America adopt the standards of the USADA (similar to WADA); that athletes are tested five times per year (three in-season and two off-season); that all banned substances are tested for during each examination; and that refusing to take a test is treated as a positive test. Penalties for testing positive coincide with Olympic standards, with a two-year suspension for the first offence and a lifetime ban for the second offence. Sentences can be reduced if athletes can prove that they inadvertently doped or they assist in identifying other dopers (US Congress 2005). The bill was never passed (GovTrack.us 2007).

### The Difficulties of Implementing Anti-Doping Policy

Also relevant to this paper is an explanation of the obstacles that have hindered the implementation of anti-doping policy. This grants insight to the logic used by various

sports associations when creating anti-doping policy. Obstacles such as international politics, finance, legality, and definitions have all influenced how anti-doping policy is created and sculpted.

### **Sluggish Adoption of Policy: the Cold War**

Richard Pound of WADA says the adoption of anti-doping policy was sluggish because of its link to international relations. During the Cold War, anti-doping policy was neglected because no country wanted to offend another by accusing them of doping or cheating. Because of the diplomatic tensions of the Cold War and the threat of nuclear war, regulators thought it was best to ignore doping; however, ignoring the problem during the Cold War has made implementing policy much more difficult at present. Even though a well-meaning anti-doping policy was in place during the 1960s, doping was allowed to remain largely unbridled until the 1990s. Pound states, “We looked the other way, and it [the PES problem] snowballed” (Pound in Sokolove 2004: 33).

### **Reluctance of Professional Sports to Adopt Anti-Doping Policy**

A second complication in successfully implementing anti-doping policy is the lack of cooperation by professional sports associations to adopt and police new anti-doping legislation. Although this is highly visible in leagues like MLB, it happens even at the Olympic level; nine-time U.S. Olympic gold medallist Carl Lewis stated in 1999:

Federations at every level are covering up drugs and covering up for people...it's a joke. It's a credibility factor and it starts at the top. Sadly enough, America is right in the middle of it... The commitment to find drugs is not there. There are much better ways to test than they are doing, but . . . they don't want to catch anyone in the first place (Lewis in McCloskey & Bailes 2005: 38).

The reason for neglect is two-fold: scandal is not good for sport; and, PESs allow athletes the ability to perform at more super-human levels, which is the reason why many spectators watch sport. The Federal Government is currently addressing the reluctance of professional sports associations to enforce anti-doping policy.

### **Conflicting Legal Status of PESs**

The ambiguous legal status of PESs in America creates problems for regulations. Carroll explains:

In some states, such as Rhode Island, both AAS and growth hormone are controlled substances. Pennsylvania, on the other hand, has gone out of its way to say that growth hormone 'shall not be included as an anabolic steroid'. Let's take the typical first-time possession of a small quality of 'juice' for personal use. In Connecticut it's a misdemeanour, in which case there's imprisonment. In Arizona it's technically a felony, but under a new law eligible offenders get probation with drug treatment in lieu of prison (Carroll 2005: 180).

In sum, the legal ambiguity has confused individuals about the seriousness of PESs. Before regulators can have an impact on PESs, they need to create solid ethical footing in the way that federal governments punish for possessing and supplying PESs.

### **Dietary-Supplement Industry**

Another impediment restricting anti-doping policy is the dietary-supplement industry. The US\$18 billion-a-year dietary-supplementary industry is loosely regulated and has flooded the market with substances that claim to improve performance (Sokolove 2004: 31). The problem with dietary-supplements is two-fold: firstly, because of the number and range of the products, it is argued that the public can no longer distinguish between legal and illegal PESs, thus gaining a tolerance for both. Secondly, dietary supplements are arguably a gateway drug to more serious PESs, such as steroids, thus exacerbating the doping problem. Although it is not an easy task, regulators need to develop a strategy to inform the public of the boundary between legal and illegal PESs.

### **Cost**

As previously stated, dope tests range in cost from US \$100 - \$500; this is a significant obstacle for amateur sports, especially at the high school level where sports programs run on a shoe-string budget. At the professional level, if MLB (for example) invested a million dollars a year into testing, they could give every player a comprehensive anti-dope test (\$200 per player) three times a year and have money left

over for research and education. Although this might sound expensive, a million dollars a year seems almost insignificant in a league where the average salary for a player is over US \$2.6 million (Black in Carroll 2005: 104; MLB Players Association 2007)

### **Staying Ahead of the Cheaters**

As discussed, the success of anti-doping policy hinges on the ability to test for PESs. Sokolove (2004) states that the future of testing for PESs is bleak, because “rogue scientists and coach-gurus have been winning [when using and disguising PESs] for years, and they have ever more tools available to them” (Sokolove 2004: 32). However, some optimistically counter-argue that if scientists can create a PES, then they can detect it.

As for the specific strategy used to catch dopers, regulators currently use a targeting approach, which means they predetermine what substances to test. This method is opposed to non-targeted testing where regulators test for everything that is available (obviously more expensive). Dr. David Black (President of Aegis Sciences Corporation, which is one of the few companies certified by the US Government to conduct doping testing) states, “Cost usually drives the decision to test of particular drugs. So yes, those who choose to cheat know what we are targeting, what drugs we are trying to identify. They look for drugs within the same drug class that are not currently being targeted” (Black in Carroll 2005: 99). In sum, scientists’ struggle to stay ahead of dopers poses a significant hurdle to regulators.

### **Defining Boundaries**

As previously discussed, drawing the boundary of acceptability is one of the most difficult and subjective aspects of creating policy. There are at least two boundaries that create problems: defining the word “dope / doping”; and, drawing the line between therapy and enhancement. As mentioned, anti-doping policy largely hinges on the word “intention”. If it is not used, athletes can be punished for honestly not knowing they were using a banned substance. If it is used, it provides a loophole (ignorance) for dopers.

The other philosophical obstacle weakening anti-doping policy is drawing an ethical distinction between therapy and enhancement. Miah (2004) states, “The problem

is not simply that there is trouble distinguishing between therapy and enhancement, where the former is ethical and the latter is unethical...there is also the problem of delimiting which kinds of therapy and which kinds of enhancement are acceptable, since within each of these categories, there is room for concluding varying degrees of acceptability” (Miah 2004: 115). Although making the distinction between therapy and enhancement is difficult, it is necessary if regulators are going to effectively combat doping. To quote Pound, “The line needs to be drawn somewhere” (in Sokolove 2004: 48).

In closing, this chapter introduced the history, mechanisms, and influences that influence anti-doping policy. It grants the reader the necessary knowledge to understand the theory and discussion sections of this paper.

# Chapter III:

## Theory & Method

### Purpose

As one can tell by the previous two chapters, there has been a great deal written on the subject of doping. To this point, factual information has been the main focus of authors and regulators. For example, many texts discuss the history and statistics of doping. Furthermore, many authors have found the ethics of doping interesting, since there is much to debate. However, one gap in the literature of anti-doping policy is the agendas behind various anti-doping policies. This paper aims to fill that gap by discussing the reasons why professional and amateur anti-doping policies are so different.

The reason that there is variation between professional and Olympic anti-doping policies is because they have two different agendas. Olympic anti-doping policies are designed to preserve the “moral righteousness of sport” (although contestable). Conversely, professional anti-doping policies are designed to satisfy their financial supporters. This requires a balance between pleasing fans expectations with a sufficient anti-doping policy, while simultaneously allowing athletes to use acceptable technologies to push the boundaries of human performance.

### Cases

The cases used in this paper are anti-doping policies of major professional sports associations in the United States, such as MLB, NFL, NBA, PGA, and NHL. Furthermore, the anti-doping policies of amateur sports associations such as the NCAA, WADA, and the IOC are also analysed. Although all of these anti-doping policies are mentioned, the paper mainly focuses on the anti-doping policies of WADA / the IOC and MLB, since they receive the most attention. WADA’s policy is often referred to when

discussing amateur anti-doping policy, since it has been referred to as the pinnacle of anti-doping policies. MLB's policy is often cited when discussing professional anti-doping policy because of the perception that MLB's anti-doping policy is the weakest and perhaps the most token of all of the American professional sports.

## Method

The method used in this thesis is the Most Similar Systems (MSS) design of comparative analysis (a.k.a. focus comparison). MSS is a form of non-experimental scientific method that bridges the gap between the case study method (which focuses on one case) and the statistical method (which focuses on multiple cases). Accordingly, MSS is usually applied when using a two to three cases that share many similarities. This method is typically used for comparative politics between countries; however, its principals can also be used to compare other fields, such as professional and amateur sport.

The technique of MSS is rooted in J.S. Mill's (1843) method of difference, which aims to identify key differentiating features between two bodies that are mostly similar (Landman 2003: 29). Studies that use this method are often referred to as more intensive and less extensive, since they tend to be quite focused. Furthermore, the outcomes from MSS are configurative, since usually a few causal factors act together rather than a lone factor (ibid: 29). Accordingly, this paper states that three causal factors are responsible for the variation between professional and amateur anti-doping policies. In sum, MSS is used to identify similarities and differences between two bodies and highlight a political outcome (ibid: 29). The following graphic illustrates how MSS works:

**Table 4.1: Most Similar System of Design**

<b>Feature</b>	<b>Group #1</b>	<b>Group #2</b>
	A	A
	B	B
	C	C
Key Explanatory Factors	X	Not X
Outcome to be Explained	Y	Not Y

Source: (Landman 2003: 30)

It should also be noted that there exists a complementary system called Most Different Systems of Design (MDS or MDSD). MDS systems works just the opposite as MSS; that is, it highlights the differences between two or more systems and then states why a few similarities are responsible for a certain political outcome. The following graphic further explains this model:

**Table 4.2: Most Different System of Design**

<b>Feature</b>	<b>Group #1</b>	<b>Group #2</b>
	A	E
	B	F
	C	G
Key Explanatory Factors	X	X
Outcome to be Explained	Y	Y

Source: (Landman 2003: 30)

If the purpose of this paper is to explain why there is a difference between professional and amateur anti-doping policy (dependent variables), one must start by drawing as many similarities between professional and amateur sport as possible. MSS is an appropriate method because professional and amateur sports are mostly similar



regulatory areas. Both fields have similar rules, have similar structures, and face similar obstacles since professional sport is a derivative of amateur sport. Once the links between professional and amateur sport have been drawn, a number of independent variables become evident. Once the independent variables are identified, the researcher can hypothesize, research and state how the independent variables result in changing the dependent variables.

Similar to most methods of analysis, there are some shortcomings with MSS; Lijphart outlines them in his 1975 article, *the Comparable-Cases Strategy in Comparative Research*. The first criticism is aimed at applying MSS to inter-state phenomena. Przeworski and Teune (1970) state, “Although the number of differences among similar countries is limited, it will almost invariably be sufficiently large to ‘over-determine’ the dependent phenomenon” (in Lijphart 1975: 174). It is understood that when working on a grandiose scale of inter-state action, there would be an overwhelming number of variables; however, in the case of anti-doping policy, these two areas of regulation (professional and amateur anti-doping policy) have so few variables that MSS is an appropriate method.

A second criticism is “the comparative method is said to lead to no more than partial generalizations, while the real need is to fashion generalizations of universal scope and validity” (Lijphart 1975: 172). This criticism certainly is valid; however, Lijphart is quick to point out that partial generalizations are better than nothing when generalizations of universal scope and validity are not available. In regard to anti-doping policy, since it a relatively new regulatory area (less than 50 years old), and comparing anti-doping policies are even newer (10 years), the comparison method creates footholds for larger and more substantial generalizations in the future.

Holt and Turner who argue, “Comparable cases are so rare that the research site is likely to dictate the hypothesis” raise a final criticism of the comparative method (1970: 13 in Lijphart 1975: 172-3). In other words, Holt and Turner believe that firstly there are very few comparable cases, and secondly, believe that this method is not scientific in design and the researcher will discover whatever they hypothesized, rather than what actually exists. This is a very legitimate concern; however, it is a concern that could be applied to several other methods of research and it is a concern that will always be voiced

by advocates of quantitative analysis. In response, I prefer the comparative method over the statistical method because I feel it best fits the field of anti-doping policy.

# Chapter IV:

## Analysis and Discussion

As mentioned, this paper seeks to discover why there is variation between professional and amateur anti-doping policies by using the Most Similar Systems Method of analysis. Accordingly, the forth chapter starts by establishing professional and amateur sport as a most similar system. Then, the independent variables of perception, management and finance are explained. This accentuates why the dependent variable (anti-doping polices) can be dramatically different even though professional and amateur sport are mostly similar.

### Professional and Amateur Sport: A Most Similar System

According to MSS, before one can isolate determining factors, the bodies being compared must be established as mostly similar. It is logical to conclude that there are a number of similarities between the two, since professional sport evolved from amateur sport. Rather than list all the similarities between professional and amateur sport, six major similarities are listed to avoid sounding monotonous.

Firstly, both professional and amateur sports have explicit rules that govern how they are played. These rules are formally written and if a participant chooses not to play by those rules, they are punished. Both professional and amateur sports have implicit rules as well, such as etiquette that are not always regulated, but are expected of participants. It should also be noted that there are subtle rule variations between professional and amateur sport, such as a deeper three-point line in professional basketball, or relaxed penalties on touchdown celebrations in American football. However, these rule changes do not radically change the way that these games are played; rather, they make the game more entertaining to please spectators.

Both professional and amateur athletics use similar equipment. Again, there is some subtle variation of materials between the ranks; however, the fundamental parameters remain similar. For example, MLB only uses wood bats to increase batting difficulty, whereas amateurs are allowed to use bats made of other substances, such as aluminium. However, both professional and amateur baseball players use bats of similar size and shape to play. In sum, the variation of materials of bats in baseball does not radically change how the game is played.

The investment of time in training for professional or amateur sport is mostly similar. Professionals do spend more time training since that is their job; however, in regard to personal sacrifice, amateur athletes have a similar experience, since they have to plan around other commitments such as work. Perhaps the argument could be made that amateur training is more difficult because of other commitments. Without getting too caught up in the argument, both professional and amateur athletes have to spend time training to excel at their discipline.

Both professional and amateur athletes are the subjects of coaching. In general, the strategies that professional and amateur athletes use are similar. The most significant difference between the coaching between the ranks is professional coaches typically have better mastery of the nuances. For example, there are some fundamental characteristics that make for a good golf swing; the difference is a professional coach understands subtle variations that make that swing more efficient and accurate. Another constant between professional and amateur sport coaching is at both levels the success of an athlete is governed by the relationship between the athlete and the coach.

Depending on the marketability of sport, both professional and amateur athletes receive television coverage. There are even many instances where amateur sport receives more media hype than professional sport. For example, College Bowl Week (NCAA football) and March Madness (NCAA Basketball) are some of the biggest sporting events on the American sports calendar. The championship games of each tournament have a Nielsen rating ranging from 14-30 and receipts from the tournaments are in excess of \$US200 million and growing (Smith 2001: 190, 198). Therefore, gifted athletes become acquainted with the media starting around high school. On the other hand, professional athletes obviously have extensive experience with the media.

Finally, both professional and amateur sport have corporate sponsors. Although it is sometimes forgotten, amateur sports clubs are allowed to have corporate sponsors that donate equipment and money. Accordingly, most top amateurs (such as NCAA or Olympic athletes) have their equipment donated and logistical costs covered by corporate sponsors.

In sum, professional and amateur sports are mostly similar. This point is made easy since professional athletics is rooted in, and would not be possible without, amateur athletics. That is, it would be almost impossible for professional athletics to exist without amateur athletics sending them athletes. Consequently, the structure and philosophies that exist in amateur athletics are often transposed into professional athletes; however, some key variations do exist. This provides segue to the next section, which highlights the few differences between the ranks and explains why those differences result in different approaches to anti-doping policy.

## Independent Variables

Now that professional and amateur sport has been established as a most similar system, one can now identify the independent variables. Accordingly, this paper identifies three variables (perception, management, and finance) and explains why they result in different approaches to anti-doping policy.

### **Perception: Amateur Sport**

There is a difference in the ethical perception of sport between the professional and amateur ranks. Typically, there is moral righteousness attached with amateur sport. At the youth level of amateur sport, many believe that the role of sport is to teach children ethical lessons. Furthermore, sport is a fun way to encourage physical fitness. At the more elite level of amateur sport, much of the righteousness is preserved; however, for different reasons. One of the reasons the elite amateur sport is righteous is because of the international element. Amateur competition at the top-level usually involves multiple countries, as illustrated by the Olympics and World Cups. Because of the international element, sport then becomes politicised. The consequence of politicised sport is that nations then want sport to function in two ways: firstly, governments want amateur

athletics to embody wholesome morals so that members of society have positive role models. Secondly, nations want to ensure a level playing field because of the diplomacy that coincides with international sport. Certainly, there are numerous cases of amateur athletes exhibiting bad sportsmanship; nevertheless, from a policy standpoint, international competitions are regulated more heavily for doping.

### **Perception: Professional Sport**

Even though professional sport is expected to uphold a degree of morality, it certainly is not at the same degree as amateur athletes. Using the United States as an example, there are numerous cases of professional athletes exhibiting sub-standard behaviour and the media judging it as acceptable, or worse, victimizing the perpetrator. Cases include: “Pete Rose was banned from baseball for betting on games; Magic Johnson, who says he had sex with thousands of women, contracted the virus that causes AIDS; Boxer Mike Tyson was convicted for rape; and, Steve Howe was banned from baseball after six previous suspensions and after pleading guilty to a cocaine charge” (Berkow in Berlow 1994: 32). Although these acts are shameful, professional athletes typically receive little punishment, are not vilified for any extended period and are allowed to continue with their careers. Seemingly, there is a growing tolerance for athletes being bad citizens.

I believe the reason for this tolerance of misbehaviour is because fans of sport simply do not care. Seemingly, the level of performance supersedes the level of morality in professional athletics. Fans are more interested in watching super-human feats than caring about character of the individuals. Fans may complain that they have no control over the situation; however, they have *all* the power via their expenditure on sport: if fans boycotted teams or more harshly stigmatised athletes who doped, doping would diminish.

### **Management: Amateur Sport**

Relating to sports perception is the subject of management. Amateur sport is typically regulated by local or international associations. At the international level, regulation is aimed at keeping the playing field level due to the links with diplomacy and international relations. At all levels, management aims to uphold the moral code that

sport is meant to embody. One characteristic that most amateur sport shares is that much of their funding is supported by governments and external contributors; therefore, amateurs are forced to behave in a manner that pleases their sponsors. This results in highly controlled policy and low tolerance for those individuals who break protocol.

### **Management: Professional Sport**

Conversely, professional sport is autonomous. Although professionals have to keep their sponsors happy, there appears to be more forgiveness than the pressure that amateurs endured from the government and their sponsors; perhaps this is because professional sport has an ally in the media. Although media sources have an obligation to report news of players being suspended for using PESs, it is also not in their interest to make a huge fuss about doping. After all, the profitability of professional sports and the media companies that report on them is inherently related. Backing this claim is the fact that ESPN mainly reports on professional American sport as opposed to amateur or international competition.

Another significant variation in the management of professional sport is they do not receive funding from the government. Because the government does not invest in professional sport, they do not have any leverage to control it. Professional sport traditionally is not an area of governmental control; however, the recent deaths of professional, amateur and high school athletes has prompted regulators to take a closer look at how sport is being regulated. This is illustrated by the US Federal Government issuing subpoenas to the major American sports associations in 2005 (Committee on Energy and Commerce – US House of Representatives 2005).

### **Finance: Amateur Sport**

Although corporate sponsorship certainly is present in Amateur Sport, the majority of funding, especially at the Olympic level, is derived from public sources. For example, the financial contribution for the Sydney Olympics was US\$3154 million public and US\$832 million private (Preuss 2004: 17). Since Olympic programs are funded mainly by the state, national programs are obligated to conduct themselves according to the wishes of their governments.

**Finance: Professional Sport**

In opposition, professional sport in America operates independently of government. Seemingly, this equates to catering to the expectations of the fans rather than a standard of morality. The outcome of having the fans determine what is acceptable is illustrated by the tolerance of flamboyant touchdown celebrations in professional football and the toleration of fighting in professional ice hockey. When faced with the issue of PESs, professional sports associations are faced with a catch-22: on one hand, performance enhancement creates more of the inhuman feats that fans love to watch (such as homeruns, big collisions, and acrobatic dunks). On the other hand, if doping gets out of hand, fans will become disillusioned with sport and professional sport will financially suffer.

The outcome of this dilemma is varied. Sports such as football where there is a substantial physical element, regulating bodies were relatively quick to create a banned substance list and testing procedures. This is because PESs poses more of a health risk in contact sports due to potential mismatches.

MLB took a different approach; although there are many reasons why baseball did not create an anti-doping policy sooner, it could be argued that because baseball is not a collision sport, the ramifications of athletes doping are not as severe as in contact sports. Another reason why baseball did not create an anti-doping code sooner is that baseball is a game heavily reliant on hand-eye coordination; therefore, enormous muscle-power does not benefit a baseball player unless he can make contact with a pitch. This is different to football where the performance of an athlete is predominately governed by size and speed.

The logic in MLB not creating an anti-doping code is understood: firstly, there is little risk of an un-doped athlete getting hurt by a doped athlete, since there are few collisions compared to football. Secondly, batting average should not be affected greatly, since a player still needs to make contact with the ball for any increase in strength to have an affect. Thirdly, the baseball statistic that is going to be most greatly influenced is homeruns, since a boost in strength creates a larger margin of error for a homerun: this of course is a positive in the eyes of MLB, since homeruns are a fan-favourite.



The former logic was witnessed in the early 2000s when Sammy Sosa, Mark McGwire and Barry Bonds were chasing the homerun record. Although there were multiple rumours that these athletes were using questionable substances to enhance their batting, fans did not seem to care: the year when the doping story in baseball was most publicized, MLB set an all-time attendance record (Weir 2004).

## **Conclusion**

The independent variables of perception, management and finance, are most responsible for the variation between professional and amateur anti-doping policies. In lieu of this, question that could be asked is: Does having two different approaches to anti-doping policy a benefit to society? On one hand, having two different policies allows consumers to choose what version of competition they enjoy. On the other hand, two different approaches to anti-doping policies create ethical ambiguity that potentially confuses athletes and spectators. In my opinion, a universal anti-doping code needs to be created. In order to do so, the various policy templates and policy mechanisms need to be examined so that the best policy is constructed: the following does exactly that.

## Philosophical Approaches to Anti-Doping Policy

This section outlines the current philosophical approaches to anti-doping policy. This is done so a reference point is established in preparation for the subsequent section, which explains the alternatives to the existing framework. All of the approaches have flaws, so the objective for regulators is to pick mechanisms that work the best.

### **Existing Method: Negative List**

The current philosophical background for anti-doping policy is called a negative list; it works by stating the substances and methods that an athlete *cannot* use. For example, an athlete *may not* use steroids, or an athlete *may not* use genetic enhancement. This method works well when there are a limited number of substances being regulated. The negative list is advantageous because it grants more freedom to an athlete than other alternatives, such as the positive list (to be explained below). Negative lists are used by the IOC, WADA, and a whole range of professional sports bodies.

However, negative lists are not without their disadvantages. One criticism of negative lists is that they inadvertently encourage doping. Bird and Wagner illustrate this point using the metaphor of basketball:

Rules can tactically encourage the behaviour being ruled against: foul shots in basketball stop the clock and thereby can encourage teams to commit fouls when they are in desperate need of game time. In the same way, the negative list, in its utter clarity about banned substances, tacitly encourages doping (Bird & Wagner 1997: 754).

Furthermore, it has been argued that by stating what substance an athlete cannot take, regulators are introducing athletes to PESs they might not have considered using; that is, negative lists provide a catalogue of PESs for athletes. Finally, the biggest shortcoming of a negative list is that it only declares what is illegal, whereas any new substance or method is legal. Consequently, they encourage the progression of doping and give an additional advantage to experienced dopers who know how to avoid detection.

### Alternatives and Addenda of Anti-Doping Policy

Although the negative list has been the dominant regulatory template, there are many other alternatives and addenda that could increase the effectiveness of anti-doping policy. The following section highlights some of these alternatives and comments on the advantages and disadvantages of each option.

#### **Harmonization**

One addition that would improve the effectiveness of anti-doping policy is harmonization (Miah 2004: 33). This is the idea that all sports bodies should adhere to a universal anti-doping policy. Currently, each professional sports association in the United States has its own anti-doping code; thereby creating inconsistencies in the perceptions of doping across sport. The lack of harmonized policy is especially problematic for athletes who compete under multiple sporting umbrellas, because the legality of certain substances can change according to the contest. Gary Wadler summarizes the dilemma that athletes face before ingesting any substance: “Is it banned? Will it adversely affect my performance? And, is it safe?” (Wadler 2003: 6). A harmonized policy would shorten

and simplify this process by making an athlete accountable to one anti-doping code. In sum, a harmonized anti-doping policy would create: a constant philosophical base, uniform definitions, a definitive policy, and standard testing methods; this would in turn lead to a reduction in costs due to standardization. A harmonized anti-doping policy would create an environment of no surprises, which is something that all stakeholders in sport would surely appreciate.

### **Positive List**

A positive list works by dictating what methods and substances an athlete *can* use. The advantage of a positive list is that it creates a strong policy: any new PES is illegal because it has not yet been made acceptable by regulators. Subsequently, if policy makers decide that the substance is ethically and medically permissible, they can add it to their “acceptable substance list”.

However, there are weaknesses to the positive list: they are much more restrictive than negative lists, because they dictate exactly what an athlete can take. Furthermore, civil society governs using negative lists; therefore, it seems unethical to have different rules for civilians than athletes. A positive list also has the potential to expand and complicate dope testing. According to a positive list, since everything not on the acceptable list is illegal, regulators have to test for every substance not on that list, which could be gigantic depending on the scope. This is opposed to a negative list where regulators only have to test for banned PESs. Therefore, policing a positive list is more complicated, more expensive, and more impractical than a negative list.

### **Drug Diary**

The drug diary works by athletes being accountable for their own use of PESs (Bird & Wagner 1997: 757). In this system, athletes keep a diary of what substances they take and are subjected to random drug tests to verify their records; an athlete is fined and/or suspended if the diary and test results do not concur. According to Bird and Wagner, if this method is used, doping has a new definition: “Doping is any drug that enhances the athlete’s performance so greatly that he or she is ashamed to admit that he or she uses it” (Bird & Wagner 1997: 757). This aspect of the drug diary is empowering

to athletes because it provides the opportunity for athletes to be open about what PESs they take. The method hinges on athletes being ethically responsible for constructing their own threshold of doping, which could be positive or negative depending on the individual. The drug diary is essentially a variant of self-regulation, but there is a degree of accountability and good-will included. This concept is good, because athletes are going to be most aware of the implications of emerging PESs, since their livelihoods depend on it. Furthermore, the accountability characteristic keeps the public aware of who uses what PES(s), and the good-will aspect makes athletes feel less coerced.

Although the method of the drug diary could be criticised for being naive, it is also the most obvious way to create transparency in the field of doping. That is, if regulators are trying to discover what substances athletes are taking, why not just ask? Of course there will be individuals that are dishonest, but the diary might generate a great deal of honest data as well. Furthermore, the drug diary would be an inexpensive program relative to the invasive and costly procedures of drug testing.

The major shortcoming of the drug diary is that it makes athletes become ethicists. It is not to say that athletes are unethical, but by granting athletes the power to make moral decisions, the drug diary eliminates a check and balance. Also, the drug diary still requires regulators to test for PESs, thus preserving the cost and inconvenience of monitoring.

### **Split Divisions**

Another alternative is splitting sport into two divisions: natural and modified. In this model, the “natural competition” functions like contemporary sport with drug testing and penalties for using banned substances; however, athletes unhappy with the paradigm could choose to compete in the modified competition. The modified division (or unregulated division) would provide an environment where athletes are permitted to modify their bodies using PESs. In sum, the modified division exhibits what the human body is capable of with the aid of science.

A potential split division would determine what members of the sporting community are really interested in: purist competitions or super-human feats. Divisions would reduce the amount of testing in sport, thus reducing the expenditure of monitoring.

On the other hand, there are many negatives that can arise from split divisions: firstly, one of the divisions could be eliminated, due to the inability of the market to support both classes. Secondly, having two divisions of athletes is ethically unsettling and society might not support it. Thirdly and most importantly, the modified class can potentially cause a split in humanity. It could create one class of humans (as we currently understand them), and a second class of super-humans. Although this scenario is currently not a threat, genetic technologies have this capability.

### **Deregulation or No Regulation**

Deregulation is simple: athletes can take any PES without punishment. According to this method, regulators have to rely on athletes being mindful of health risks and being responsible for ethical decisions that influence society. There are many positives that would result from deregulation: the criminal element of drug use would cease to exist; the black market would unveil all PESs so that science could intellectually benefit; and, the expenditure of testing would be eliminated. Furthermore, the invasiveness and inconvenience of testing would be eradicated; it would arguably level the playing field because everybody would have equal access to drugs; and, it would eliminate doping scandals. These ramifications are certainly worth pondering.

Conversely, there are some serious consequences with deregulation as well. Firstly, although deregulation may work for professional sports in developed countries, deregulation would create problems in international competitions, since some countries have better resources available in developing PESs. Secondly, because PESs have the potential to homogenize the physique of athletes, spectators may lose interest in sport because they can no longer identify with the individuality of athletes. In other words, spectators might believe that they are watching robots compete because of the enhancements made to athletes' bodies. Thirdly, deregulation may lead to a tolerance of PESs that might extinguish the positive morals and ethics that coexist within sport: sportspersons would no longer require a solid work ethic, just a great doctor. Fourthly, there is the chance of serious health risks for both athletes and the general population. If PESs continue to be regulated, this will slow the progression of PESs and sends the message that taking PESs is not acceptable. Conversely, if PESs are deregulated, there

may be a race in the development of PESs with little thought of ethical and physical consequences. Finally, the tolerance of PESs could also result in a complete separation of race: natural humans and super-humans. Although sensationalized, it is a possibility that ethicists and regulators need to take seriously.

### **De-Professionalising Sport**

A final solution is to de-professionalise sport. This method stipulates that money be removed from sport: if there are no monetary incentives, doping should logically subside, since the risk of PESs would far outweigh the reward of capital. Hypothetically, if sport were de-professionalised, it may lose its win-at-all-cost ideology and return to a more classic mentality. However, because of its money and lobbying power, it is unlikely that sport would ever be de-professionalised.

In sum, there is no clear front-running philosophical template for anti-doping policy: all options have positive and negative attributes. Since there is no way for regulators to fully control anti-doping and its effects on society, they need to isolate and focus on what aspects of doping in sport are most crucial in relation to society.

### **A New Approach to Anti-Doping Policy**

One of my goals in writing this paper is to use the knowledge I gained to create a better anti-doping policy. Accordingly, the following section expands on the templates and knowledge previously stated to achieve my goal. Addressed are the five elements of policy: goals, implementers, target groups, instruments, and rationales<sup>25</sup>, complete with details and justifications why strategies within those categories would work.

---

<sup>25</sup> Goals are the objectives that regulators attempt to achieve with their policies. Implementers are the individuals who are going to monitor the policy. Target groups are the individuals or substances that a policy aims for. Instruments are the tools that regulators have at their disposal to achieve those goals; examples include education, funding, and legislature. Finally, the rationales are the logic that justifies the policy (Rothmayr 2002).

## **Goals**

When creating policy, one should state their goals so others have an idea of what is trying to be accomplished. The objectives for this anti-doping policy are two-fold: firstly, in relation to general sports regulation, this policy intends to ensure that sport remains a financial asset and retains its moral fibre. More specifically, it uses Bird and Wagner's (1997) approach; that is, it aims to "discourage doping in the first place; do so without encouraging new drugs; and, do so with a minimum of off-the-field testing" (Bird & Wagner 1997: 755).

## **Implementers**

The three most likely implementers of anti-doping policy are: professional sports associations (such as the NFL), international sports regulators (such as IOC or WADA), and national governments. At present, regulation is being dominated by the first two possibilities but national governments are starting to take an interest, because some professional sports associations are not implementing or avoiding anti-doping legislation.

Although there is a degree of subjectivity in deciding who should have regulatory power, doping should be regulated by international sports authorities such as WADA and backed national governments financially and authoritatively. If WADA controlled regulation, the banned substance list would be harmonized, and costs would be reduced. However, if controlling PESs were a task exclusive to WADA, they would have an enormous amount of power over professional sports associations, which is very trusting. In order to combat the centralization of power, perhaps WADA could incorporate a panel of representatives from both professional sports associations and government in order to preserve balanced opinions.

## **Target Groups**

Choosing target groups in policy is equally as important as choosing implementers. In the field of anti-doping, there are several possible targets: the creators of the PESs; the dealers of PESs; the sports associations; the teams within those associations; the coaches; the individual athletes; and civil society. At present because of the limited authority of those that control the issue of doping (making professional sports

associations or international sport regulators), policy has typically been confined to targeting athletes; however, if international sport regulators were backed by state jurisdiction, a few more targets become visible. The following explains each possibility and justifies who should be targeted.

### *Creators and Dealers*

Dealers of PESs should be targeted. One of the most famous cases of dealing PESs is the BALCO incident in San Francisco. When the case broke, regulators were able to identify a potent new PES and received education about the latest form of steroids. Furthermore, they were able to identify several athletes that had been linked to the lab. However, it remains difficult to track these groups.

### *Athletes*

In the end, athletes are responsible for what they ingest. However, this can be problematic, since athletes are given so many substances that it can become impractical for an athlete to question each one (as previously highlighted by Bonds). Although legitimate cases of inadvertent doping occur (as illustrated by Alain Baxter), the athlete's argument of "I take so many substances I cannot remember" could also be a diversionary argument. In response, if athletes have trouble keeping track of the substances they ingest, they should not take so many. However, in order to be accommodating, sports associations should have multiple resources available to help athletes avoid doping.

### *Society*

Finally, regulators should target society by educating them of the dangers of PESs. If society is educated about the dangers of PESs and is presented with solid justifications for why PESs harm sport, doping should subside. Currently, this plan is being thrown into action with the Athletes Targeting Health Exercise and Nutrition Alternatives programme (ATLAS and ATHENA – to be discussed), which is a nationwide anti-doping education program (Goldberg in McCloskey & Bailes 2005: 111-15).



## **Instruments**

As mentioned, the traditional instruments of anti-doping policy have been limited because of lack to authority and limited capital; however, if sports regulators were backed by national governments, a few other instruments become available. The following section introduces some new addenda to policy and discusses how existing instruments can be strengthened.

### *The Policy: A Focused, Harmonized, Negative List and Drug Diary*

Although there is not much room for improvement on existing policy, there are a few alterations that could be made to make policy more effective. Firstly, one of the most important steps to reduce doping is harmonization: a single, universal anti-doping policy. Currently this is the trend, as illustrated by many international sporting bodies adopting WADA's anti-doping policy and by federal bills being proposed in the US Congress. Harmonization would once and for all draw a clear line of what is acceptable, thus giving regulators another weapon to combat doping: stigmatisation.

In regards to the philosophical templates, the negative list is still the most effective. The other alternatives discussed, such as a positive list or de-regulation, are not practical in relation to anti-doping policy; however, the addendum of a drug diary would be beneficial. Although drug diaries are an ineffective tool for regulating banned substances, they are useful because they give regulators insight of an athlete's intentions and the substances they use. Additionally, they force athletes to think ethically about their methods.

Drawing the line between acceptable and unacceptable substances is a difficult and contestable exercise. No matter where the line is drawn, dopers use every substance up to that line. Conversely, if the line is drawn at zero tolerance, monitoring bodies are viewed as oppressive and the chance for inadvertent doping is increased<sup>26</sup>. In sum, it is important that regulators set high standards, since it is the nature of athletes to push the boundaries of acceptability (PESs or otherwise).

In regard to suspensions, the objective of regulating agencies should be to severely punish dopers, especially for using serious PESs such as AAS or hGH.

---

<sup>26</sup> This is illustrated by the case of Alain Baxter.

However, a doping conviction should not end an athlete's career, especially in cases where an athlete was deceived or unintentionally used an illegal substance. What regulators need to remember is a two-year suspension has different implications depending on the sport; perhaps regulators should dictate a player suspension based on their estimated career length.

### *Education*

In my opinion, the best deterrent against PESs is education. PES-education has been slow in its development (largely due to the recent public awareness of PESs), but that is rapidly changing with education being a primary goal of institutions like the USADA.

Another anti-doping education program that is being used is ATLAS and ATHENA (developed by Linn Goldberg, M.D. and Diane Elliot, M.D. at the Oregon Health Science University). Their program is targeted at high school athletes and was developed around the belief that deterrence via testing is not the best means to reduce doping. Their anti-doping philosophy is well summarized in the following passage:

[In reference to testing high school athletes for PESs] No. 1, high school athletes are not college athletes – they don't have scholarships; they're very different. And there's no [scientific] proof that NCAA testing reduces use. No. 2, you're going to isolate these kids further if you abandon them. They've got fragile psyches. You'll make them more depressed if you kick them off the team. . . The last twenty years have taught us that scare tactics don't work and role models don't work [without other means of reinforcements] (Goldberg in McCloskey & Bailes 2005: 112).

He continues by stating:

In drug testing, you pay someone to come into your school and test your kids, you're not even involved. You don't teach it, you don't have to monitor it. All you do is hire 'Drug Testing Are Us'. You set up a contract with them, they come in, they do testing, and they leave. You get the results and that's it. ATLAS involves coaches and team-mates. It involves changing social influence. Teams work together; that's what they're designed to do. Most kids are on a team of some kind. It's a pro-social atmosphere (Goldberg in McCloskey & Bailes 2005: 114).

I believe that Dr. Goldberg's assertion is correct: education is relatively inexpensive and pre-emptive. If high school athletes understand the dangers of misusing PESs before being confronted by them, they are less likely to use them. However, the counter-argument is that if kids are educated about PESs, they are simultaneously presented with a wish-list for dopers. When presented with this dilemma, I believe education will reduce doping more than it will encourage it.

As for cost, the Atlas program is relatively inexpensive in relation to testing. The program costs US\$4 per student and there is a coach's manual that costs US\$280. The workbook is based on a ten-session curriculum. The program extends beyond doping to teach children about healthy nutrition, using supplements correctly, and what to eat at fast food restaurants. Accordingly, ATLAS has outstanding credentials: The Substance Abuse and Mental Health Services Administration (of the U.S. Department of Health and Human Services) named ATLAS an exemplary program. Furthermore, ATLAS is recognized by the Department of Education's, *Safe and Drug Free Schools program*, as one of nine exemplary programs (McCloskey & Bailes 2005: 114).

In sum, ATLAS seems to be an ideal anti-doping education program. As of 2005, it was being used by half of the high schools in America (McCloskey & Bailes 2005: 112); hopefully the program (or similar programs) will grow both within the United States and worldwide, so athletes are educated about PESs before they encounter them.

### *Stigmatisation*

As briefly mentioned, an advantage of having a harmonized policy is that it allows regulators the ability to stigmatise. Currently, it is difficult to stigmatise dopers because of the ambiguity and non-uniformity among anti-doping policies. However, a harmonized anti-doping policy draws a definitive line of acceptability, thus allowing regulators and society to stigmatise more effectively. This instrument might seem naïve, but it is a method that has worked for drunk-driving campaigns:

A couple of decades ago, when drunken-driving deaths in America were mounting at a terrifying rate but little public outcry was heard, a group of mothers organized and began pressuring legislatures, law-enforcement bodies, corporations and the mass media. In the 25 years since Mothers Against Drunk Driving (MADD) drew a line and went to war, alcohol-related deaths have

dropped by more than 40%, and since 1990 teen drunken-driving accidents have diminished by nearly 60%. The mothers did it by stigmatising the behaviour (Smith 2005: 48).

Although this does not prove that stigmatising will work for anti-doping policy, it certainly merits an attempt.

### **Clinics**

One step they have taken in Great Britain is anonymous clinics that help treat those individuals who choose to use performance enhancing drugs. The Drugs and Sport Clinic and Users Support Clinic (DISCUS) was created in 1995 in County Durham with the objective of harm reduction rather than cessation of drug use. It has 450 clients (mostly bodybuilders) and it provides “confidential and non-judgmental” service to users of PESs. New clients are given a full check-up and their vital organs are continuously monitored for danger signs. Clients are also encouraged and educated how to reduce using PESs and still obtain their desired body type. The clinic even provides a counselling service for those individuals who suffer from the side effects of PESs such as sexual dysfunction or aggression (BMA 2002: 104).

Although some may argue that anonymous clinics encourage doping, since they educate people how to use PESs; however, they also provide regulators cutting-edge insight on doping. Furthermore, clinics allow medical professionals to monitor how PESs affect the body, thus increase knowledge and avoid more serious health complications. Similar clinics have already been established to cater to recreational drugs, so it does not seem to a great leap to PESs. In sum, those athletes who wish to use PESs will use them regardless of circumstances; therefore, regulators might as well provide a proper safe house and gain insight to the world of doping.

### **Conclusion: A New Anti-Doping Policy**

Harmonization, additional education, and stigmatisation are a few changes that would improve anti-doping policy. In general, tangible policy is satisfactory at present, but the anti-doping message would be more effective if society were further educated about the physical and ethical ramifications of doping. One advantage that regulators

have is that most current PESs have obvious health consequences; therefore, if regulators build a strong case and ensure that the anti-doping message is heard, doping should subside.

# Chapter V: Conclusion

In close, this paper answered the stated purpose of explaining why there is variance between professional and amateur anti-doping policies. In order to achieve the primary objective, several other contributions were made: the paper also explained the definitions, history, ethics, and implications surrounding anti-doping policy.

So what is my take on drugs in sport? I must admit that my opinion has shifted back and forth a number of times over the course of writing this paper. At first, I felt passionately that drugs in sport are unacceptable and should be expelled at all costs. However, my idealism faded when I created my list of why doping should not be regulated. Although I am still torn, I believe that doping needs to be regulated aggressively. I think that if doping is not regulated, society is endangering the lives of athletes and is undermining the moral foundations of sport.

I believe that the biggest risk that anti-doping regulators have to address is the use of PESs in high school sports. High school athletes do not have the resources or education to responsibly use these substances, as opposed to professional athletes who do. Regulators need to get the anti-doping message to high school athletes so drug-free habits will follow them through their sports careers.

As for the variation between professional and amateur anti-doping policies, I am an advocate of a harmonized policy; this will likely need to occur by federal mandate. A harmonized policy would get all athletes adhering to the same policy and would eliminate confusion. Perhaps, it would have other spill-overs, like getting sports associations discussing current substances and strategies. Many countries already have the infrastructure in place to carry out this task via anti-doping associations.

Overall, I think the ideal anti-doping policy would balance two things: it would discourage youth from using PESs and would allow athletes the freedom to use some forms of enhancement to entertain fans.

One last consideration is what technologies are going to arise in the future. In the case of anti-doping policy, genetic technologies present a whole collection of considerations. For example, gene doping will allow athletes to covertly increase performance without any risk to health; these implications exponentially compound the problems face regulators. If regulators are going to control genetic performance enhancement, they need to get a head start by improving the implementation of current anti-doping policies.

In closing, the field of anti-doping policy is a budding regulatory field. It is a field that deals with many interesting and unprecedented problems. Due to sports popularity and capital, doping needs to be dealt with intelligently and skilfully. Hopefully, PESs are controlled in a way that protects the health of society while simultaneously allowing athletes to achieve peak performance.

# Appendix

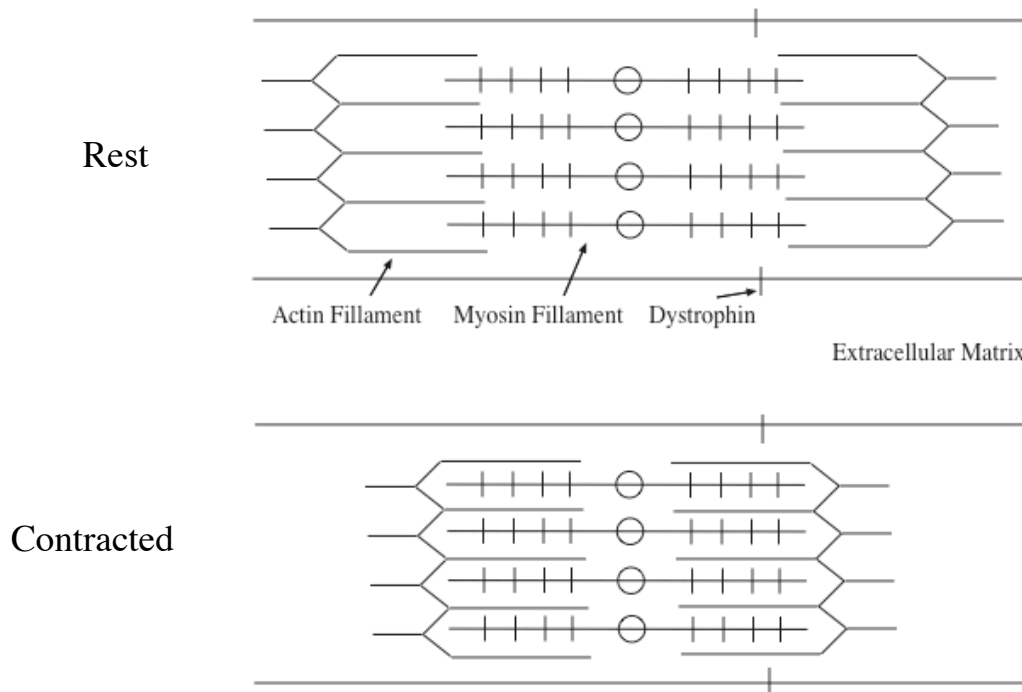
The following section provides the background knowledge of PESs for those who are unfamiliar with their potential. The appendix also provides foresight into future PESs, thus allowing the reader to anticipate future concerns. The topics covered in this section include: some basic muscle physiology, a representation of current PESs, and future genetic technologies.

## Muscle Physiology

Muscles are not comprised of a single entity, but of many long cylindrical fibres, similar in appearance to a box of straws. There are two types of these fibres: slow-twitch and fast-twitch. Slow-twitch fibres can contract for long periods with little comparative fatigue but are not as explosive as fast-twitch fibres. Slow-twitch fibres are conducive to endurance sports, such as marathons, and long-distance cycling. Conversely, fast-twitch fibres contract more forcefully than slow-twitch fibres, but cannot endure long periods of contraction. They are necessary for explosive exercises like basketball and sprinting. An interesting characteristic of fast-twitch and slow-twitch muscle fibres is that they can be developed by certain training methods. In other words, muscles fibres are intelligent: they recognize what types of muscle fibres are important to an athlete's discipline and can adjust to suit the conditions (Sweeney 2004: 64).



**Figure A.1 Sarcomere at Rest and Contracted**

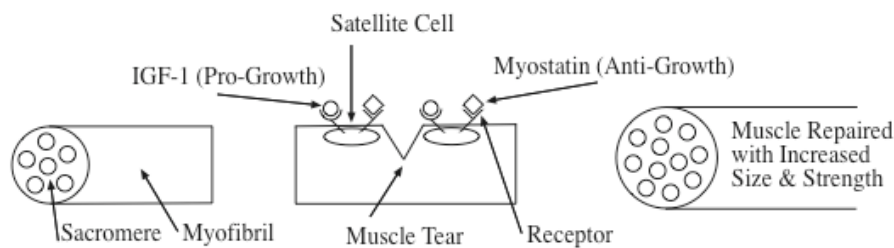


Source: Sweeney 2004

Each cell of muscle fibre is composed of myofibrils that are made up of sarcomeres that are composed of two proteins: actin and myosin. The actin filaments surround the elongated myosin filaments at either end. When the actin filament tightens around myosin filament, the muscle is contracting. There is a great deal of force generated during these contractions that could potentially be harmful to the sarcomeres; therefore, there are fibre proteins that span the cell membrane that release the excess force into an extracellular matrix outside the cell, thus protecting the sarcomeres. Dystrophin is an example of one such fibre protein. Dystrophin's protective capability is

not only limited to conducting force outside the cell membrane, it also works as a shock absorber inside the cell membrane<sup>27</sup>. However, as with most moving parts, there is inevitably some wear and tear that results from usage. In muscle fibres, the force generated by the contracting and expanding sarcomeres can cause microscopic ruptures in the muscle fibre, especially after doing vigorous exercise; this is registered in the brain as muscle soreness (Sweeney 2004: 67).

### Figure A.2: Normal Muscle Repair



Source: Sweeney 2004

Once the brain registers soreness, a chemical alarm is triggered that initiates tissue repair. The body repairs muscle by building up existing muscles cells. A good way to visualize this is the wrapping of duct tape on a stressed duct: the muscle combats the stress by building up fibres, thus increasing its size and improving its strength<sup>28</sup>. In the event of microscopic tears, local satellite cells – such as insulin-like growth factor 1 (IGF-1) – aid in the repair of the myofibrils. Once they arrive at a damaged area, the satellite cells begin to replicate by normal cell division and then attach to the muscle cell, thus adding their nuclei to the strand. The process of adding nuclei is regulated by pro-growth and anti-growth mechanisms: the pro-growth mechanism being IGF-1 and the

<sup>27</sup> Dystrophin is the protein missing in Duchenne muscular dystrophy patients (Sweeney 2004: 67).

<sup>28</sup> The building up of muscle fibres is why one's muscles grow in size after continually working out.

anti-growth factor being myostatin. The balance of IGF-1 and myostatin is the key to the cure to muscular diseases such as muscular dystrophy; however, it also is the key to the next revolution in doping. Altering IGF-1 and myostatin balance in muscles will occur genetically and may be closer than many people realize; clinical trials, led by Lee Sweeney, are already underway at the University of Pennsylvania (Sweeney 2004).

## Existing Performance Enhancing Substances

The following section describes the different PESs, how they work, and some of the ethical arguments that surround each technology. However, due to the hundreds of different doping agents, the list is simplified and broken down into broad categories. Although the following general categories dilute the scientific accuracy of each technology, the implications remain the same and make understanding the various technologies more manageable.

Existing performance enhancers fall into five main categories. First, rehabilitating PESs help with the recovery of sore muscles. Secondly, muscle-builders actually aid the body to build muscle mass. Thirdly, oxygen boosters are most applicable to endurance athletes who gain advantage by an increase of oxygen in the bloodstream. Fourthly, mental modifiers block pain or induce euphoria, thereby allowing competitors to push their bodies harder without feeling discomfort. Fifthly, a 'not otherwise specified' (NOS) category is given for those PESs that do not fit neatly into the other categories.

### **Muscle Rehabilitators**

Muscle Rehabilitators are an expansive category; however, the common thread is they either decrease discomfort or decrease recovery time for athletes. For example, pain-killers are considered a rehabilitator since they allow an athlete to function more comfortably.

A more contentious example of a muscle rehabilitator is creatine. Creatine is a naturally occurring substance, which is found in the muscles of vertebrates such as meat and fish. Creatine has two beneficial uses: it aids with muscle stamina and muscle repair;

the body naturally uses it when muscles need repair<sup>29</sup> (Mottram 2003: 286). The aspect of creatine that makes some regulators uncomfortable is creatine-loading, where an athlete ingests substances to help boost their creatine-reserve. The boost in creatine does not increase an athlete's overall strength like steroids; however, it does allow an athlete to work out more rigorously and more often. As for side-effects, creatine increases an athlete's chance of cramping, and users are encouraged to ingest lots of water (ibid: 298). Also, there is an argument that creatine increases injury proneness, since muscles strength can potentially outgrow tendon strength, thus upsetting the natural balance of the body.

The ethical debate surrounding creatine is interesting. Sports purists argue that because creatine shortens recovery time and allows an athlete to workout beyond a natural capacity, it should be an illegal substance. Conversely, it can be argued that athletes can receive the same benefits of artificial creatine by eating a creatine-rich diet (ibid: 301).

### **Muscle-Builders**

Of all of the first-generation performance enhancers, the most threatening to sport are muscle-builders. Initially used by body-builders to aid in the body sculpting process, muscle-builders have become a common PES used by athletes who seek enhancements in explosiveness and power. This section introduces the two most prevalent classes of muscle-builders: androgenic-anabolic steroids (AAS) and peptide hormones.

#### *Androgenic-Anabolic Steroids (AAS)*

AAS were first identified and isolated in the 1930s. They were primarily used to promote a positive nitrogen balance in starvation victims and used in hormone replacement therapy to treat those who had a deficiency in testosterone (Wadler 2003: 2). It is rumoured that the first group to administer anabolic agents for its enhancement effects were the Nazis. The Nazis administered AAS to soldiers, because they increase stamina and aggression: two traits obviously beneficial to soldiers (Yesalis et al in Lenahan 2003: 6). Even Hitler himself is said to have been injected with steroids (Taylor

---

<sup>29</sup> As previously explained, exercise results in microscopic tears of muscle; creatine helps with the recovery.

in Lenehan 2003: 6). Other early utilizations of AAS were treatments for cardiovascular disorders and a “cure” for homosexuality (Lenehan 2003: 6-7)<sup>30</sup>.

According to Lenehan (2003), the effects of anabolic agents mimic those of testosterone. Testosterone is a type of lipid that is synthesized in the adrenal cortex, ovaries, or testes and is produced in the male testes and female ovaries; however, testosterone production is higher in males than females. Testosterone has two main effects: androgenic and anabolic. Androgenic effects encompass male secondary sexual characteristics such as deepening of the voice and facial hair. Anabolic effects include the growth and development of many of the body’s tissues, such as muscle, thus having obvious implications for athletics.

During the discovery of androgenic and anabolic steroids, researchers initially thought the two parts could be separated; therefore, it was believed that science could increase muscle size without causing secondary male sexual characteristics. However, further research proved that the two parts could not be separated. Improvements in science allowed the production of synthetic steroids with suppressed androgenic properties but not their complete eradication; therefore, the proper name for what is commonly referred to anabolic steroids (or simply steroids) is androgenic-anabolic steroids (AAS) (Lenehan 2003: 2). There are numerous health risks that are associated with AAS, ranging from the shrinking of the testes, severe acne, and uncontrollable anger (called roid rages) to liver problems, heart complications, cancer, and ultimately death (ibid: 2).

#### *Tetrahydrogestrinone (THG)*

The most recent controversy involving a muscle-building substance is THG. THG (or “the clear”) was created by Patrick Arnold and was distributed through the Bay Area Laboratory Cooperative (BALCO). THG is infamous because it is a steroid that has been modified to be virtually undetectable by traditional anti-doping tests, thus allowing athletes to dope without being caught. THG is hard to detect because it breaks down quickly when it dries out (Carroll 2005: 19); it was discovered in June of 2003 when

---

<sup>30</sup> Of course science now knows that homosexuality cannot be cured since it not a disease; however, it was viewed as a disease during the pioneering days of AAS.

Trevor Graham, a US track coach, sent a syringe of THG to the United States Anti-Doping Agency (USADA) and told them it was a PESs. If this act of vigilance had not occurred, it is possible that THG would still be unknown to anti-doping agencies. THG's ability to remain undetectable raises questions about how many other undetectable PESs are available.

### **Oxygen Boosters**

In endurance sports, where the principle cause of a decline in performance is the lack of oxygen in the blood stream, oxygen boosting has become a common form of performance enhancement. Oxygen is carried by red-blood cells; therefore, endurance athletes try to boost red-blood cell count in an attempt to absorb more oxygen and reduce fatigue. There are four basic methods of increasing the amount of oxygen in the bloodstream: an athlete can train at high altitude to “naturally” increase red blood cell count; an athlete can sleep in an oxygen tent (an oxygen depleted environment) to gain the benefits of training at altitude; an athlete can blood dope (where an athlete trains at high altitude, withdraws blood after the body has acclimatized, and re-injects the ‘high-altitude’ blood before competing at a lower elevation); and, an athlete can take substances such as the peptide hormone Erythropoietin (EPO) that artificially increases the amount of red blood cells (Cashmore 2000: 202).

Unsurprisingly, oxygen boosting has been the source of many recent ethical debates. There is a solid argument for oxygen-boosting drugs (such as EPO) being unethical: it is synthetic; and, it poses a health risk, since an increase of red-blood cells makes blood viscous, thus leading to heart attacks. Alternatively, the problem of oxygen tents and altitude training is more difficult to resolve. Ever since it was discovered that training at high altitudes is advantageous in endurance competitions, it has been argued that those athletes who train at high altitudes have an unfair advantage. Therefore, some competitors argue that they should have the right to use altitude tents because it is not invasive; however, there remains something unsettling about allowing athletes to sleep in a tent that deprives them of oxygen.

## **Mental Modifiers**

Although not attracting the same kind of attention from the media as other PESs, mental modifiers have impacted sport. This category includes three classes of cognitive alteration: stimulants, narcotic analgesics and beta-blockers. The following section briefly explains each class and its implications for sport.

### *Stimulants*

Stimulants are drugs that boost alertness and reduce fatigue; examples of stimulants are amphetamines, cocaine and caffeine (Meduna 2000: 4). Stimulants enhance performance by increasing reaction time and give the user a slightly euphoric feeling; however, there are health risks associated with stimulants including increased heart-rate and addiction. Stimulants are applicable to most competitions and many stimulants are legal in certain doses. However, international sports regulators such as WADA feel that stimulant use has become uncontrollable in some cases. This can be illustrated by a survey conducted of MLB by *USA Today*: of the 568 major leaguers who responded, 87.2% said that amphetamine use exists and 35.3% said that at least half the players use amphetamines (Hohler 2005: 2).

### *Narcotic Analgesics*

Narcotic analgesics are drugs such as heroine, codeine and methadone that have pain-killing effects. They have implications in all sports, because they help an athlete compete when injured (Meduna 2000: 4). There have been substantial debates about analgesics, since they do not directly enhance performance, but allow an injured athlete to compete more comfortably when injured. However, some feel that they indirectly enhance performance because an athlete can compete with no sense of pain. Furthermore, due to the honour that accompanies an athlete while playing injured, and with the acceptance of many types of analgesics within the medical community, there are wide-ranging interpretations of the ethical status of analgesics.

### *Beta-Blockers*

Finally, beta-blockers such as *Atenolol*, *Oxprenolol* and *Propranolol* are drugs that slow the heartbeat and steady movement. They have implications for athletic events such as archery and shooting. Complications resulting from beta-blockers include a low heart rate that could lead to fainting. Since they are only applicable to a handful of sports, they are not highly scrutinized by anti-doping regulators (Meduna 2000: 4).

### **Not Otherwise Specified Substances (NOS)**

There are a few other substances that, although they do not fit neatly into the previous categories, do threaten the integrity of sport. Firstly, diuretics are drugs that increase the frequency of urination, thus causing loss of water-weight. They are especially popular among athletes who compete within a weight-class structure. Diuretics have been around for years and are relatively unthreatening to health and integrity in relation to other performance enhancers. Diuretics are also somewhat self-regulating, because if they are abused, an athlete becomes weaker, therefore disadvantaged.

Another NOS performance enhancer that is becoming increasingly prevalent is masking agents, which are designed to hide PESs from regulators. Masking agents have recently become popular because they allow dopers to continue to use their favourite illicit substances, even if regulators are able to test for that substance. This has created a host of new problems for regulators because it extends the scope of banned substances: regulators now have to test for both PESs and the agents that mask them.

A final substance that has interesting application is Forteo, which is drug that is typically used to treat Osteoporosis in women; however, professional athletes are now using it to heal bone fractures more quickly. Forteo has famously been used by Mark Mulder (MLB) Terrell Owens (NFL) (Carroll 2005: 15).

### **Unknown Substances**

As mentioned above, there are most likely to be other PESs on the black market of which monitoring bodies are unaware. *Sports Illustrated* writer Will Carroll describes



an encounter he had with an apparent legend of the underworld of PESs: Dr. X<sup>31</sup>. In the article, Dr. X criticizes Jason Giambi for using the steroid “Deca”. “Here is this guy with all of the money in the world who’s taking something you can find at Gold’s Gym? You take Deca today and come back in 2006, and you’re gonna pop [test positive]. A guy on my stuff could walk into the test with a needle in his ass and not worry” (Carroll 2005: 19). Dr. X continues to endorse his product by stating, “I know my stuff is the best out there. I hear who’s working with who. I know who is winning”. Finally, he concludes with a statement that strikes fear into the hearts of anti-doping regulators; “I know there’s ten [PESs that regulators] don’t know about” (ibid: 19). The Dr. X article, coupled with the THG saga, suggests that there are many PESs that are undetectable.

### Genetic Performance Enhancement

Never before has society had the power to affect humanity in the way that is possible with gene therapy. Not only does gene modification endanger the future of athletics, it has the potential to split humanity. This section provides an in-depth analysis of how genetic modification works and the ethical implications that surround it.

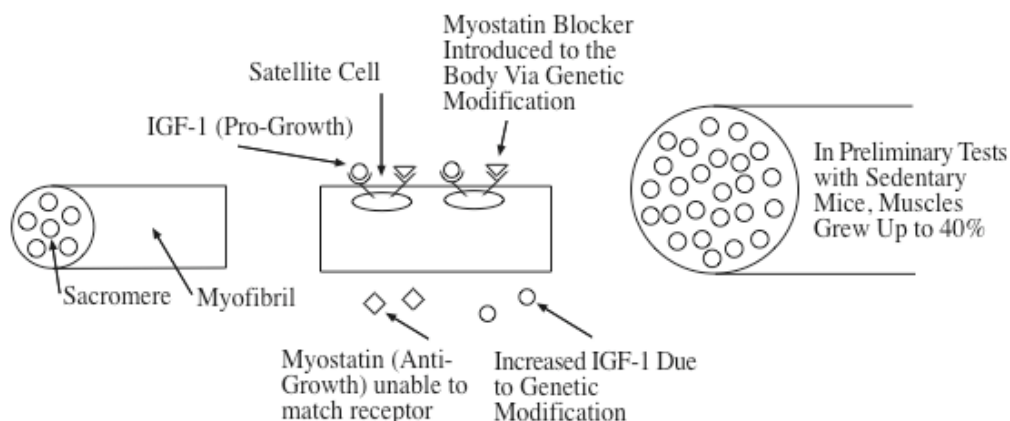
---

<sup>31</sup> The October 9, 2006 issue of Sports Illustrated leads me to believe that Dr. X may be Patrick Arnold, who has recently been acknowledged as the creator of THG.

---

**Figure A.3: Genetic Muscle Enhancement**


---




---

Source: Sweeney 2004

### How Genetic Modification Works

Reverting back to the physiology section, the key to genetic performance enhancement lies in the balance of IGF-1 and myostatin. It was originally hypothesized that if the pro-growth hormone IGF-1 is injected directly into the muscle, the muscle would grow; however, scientists discovered that when IGF-1 is directly injected, it quickly dissipates. On the second attempt, scientists thought that if they introduced IGF-1 at a cellular level, the gene would last for the length of that cell's lifespan. It was concluded that the best way to present the IGF-1 gene is to co-introduce it with the help of a virus; they decided to use adeno-associated virus (AAV) because it "infects human muscle readily but does not cause any known disease" (Sweeney 2004: 66). According to Sweeney (2004), the best way to conceptualise this process is to think of AAV as a biological Trojan horse, because the gene penetrates the cell membrane with the aid of the virus. Then once inside, the gene can have the desired effects.

The results from clinical trials have been mind-boggling. Sweeney (2004) reported, “after injecting this AAV – IGF-1 combination into young mice, [scientists] saw that the muscle’s overall size and the rate at which they grew were 15 to 30 percent greater than normal, even though the mice were sedentary” (Sweeney 2004: 66). Furthermore, Sokolove stated that these mice “looked like a different animal. They were built like cattle, with thick necks and big haunches, like they belonged in some sort of mouse rodeo” (Sokolove 2004: 28). Even though Sweeney has not started human testing, and the technology is being developed for patients with muscular dystrophy, the implications for sport are obvious. Potentially, a professional athlete could add 30 percent muscle mass without ever entering a gym.

### **Alpha-actinin-3 (ACTN3)**

Not only have scientists discovered how to introduce modified genes into the cells, but they have also discovered what genotype is principally responsible for athletic ability. In August 2004, a group of Australian scientists discovered the genotype alpha-actinin-3 (ACTN3). ACTN3 is an actin-binding protein, which influences the volume of fast-twitch myofibres that generate force at high velocity (Yang et al. 2003: 1). This is applicable for many sports such as basketball where the ideal body-type is both light and powerful, so that players can achieve an enormous vertical leap and quickly change direction. Although there are many external factors that determine the success of an athlete, Australian scientists believe that 10 to 30 genes may be crucial in determining athletic ability (Australasian Bioethics Information 2003: 28-9). Now that scientists have discovered a way to introduce enhanced genes, *and* what gene types to focus on, it is only a matter of time before the introduction of genetically modified athletes.

### **Types of Treatment**

Unlike current performance enhancement that is limited to enhancing one individual at a time, genetic enhancement has the capacity to affect athletics in many of ways: firstly, there is the obvious application of increasing an athlete’s strength and speed with such techniques as AAV – IGF-1 therapy. As previously discussed, genetic enhancement could produce athletes of unprecedented physical ability. Before genetic

enhancement this was the only type of enhancement possible; however, genetic modification has many other applications.

Another application of genetic modification is germ-line therapy. Germ-line therapy gives science the power to modify an individual's progeny. Therefore, the combination of genetic modification and gene-line therapy gives science the ability to not only improve the performance of a single athlete, but could also improve an individual's offspring. This possibility raises serious questions, such as how do regulators handle an athlete who was enhanced because their parents had gene therapy? Is that doping?

Moreover, genetic technology allows the owners of sports franchises to screen athletes in-depth for injury proneness. However, just because a player is prone to injury, does not make injury inevitable. The scenario was recently played out in the case of NBA player Eddy Curry: In 2004-5, Curry experienced a "benign arrhythmia" that caused him to miss the final 13 games of the regular season and playoffs for the Chicago Bulls. Before signing him to an extension, the general manager for the Bulls, John Paxson, required Curry to take a DNA test to see if he had a potentially fatal heart condition. Citing an invasion of privacy, Curry refused the tests. Curry was subsequently traded to the New York Knicks (*Bulls Deal Curry...ESPN.com* 2005).

Finally, the acceleration of injury recovery is possible with genetic technologies. In addition to increasing recovery time of common sports injuries, such as muscle strains and tears, a subsidiary of genetic technology called pluripotent stem-cells would allow science to manufacture "every kind of human tissue, including muscle, bone and even brain" (Wadler 2003: 7). Another prospect of genetic technology is that science could repair an injury so that the injured body part is improved beyond its original ability. These capabilities present ethicists with a difficult conundrum: on one hand, athletes have the right to recover from injury quickly; on the other hand, it seems contradictory to the nature of sport that season-ending injuries would cease to exist. Injuries have always been part of sport and one of the most romantic aspects of sport is a reserve player performing well in the vacancy of an injured starter. This raises the question: when genetic technologies are available, should there be a minimum recovery period? In conclusion, a genetically enhanced recovery leaves regulators with the conundrum of healing athletes

quickly, but not too quickly; and, making sure they return to their natural level of ability without being unfairly enhanced.

### **Testing Genetically Enhanced Athletes**

Testing for genetically enhanced athletes poses a significant hurdle for monitoring bodies. Because genetic modification occurs at a cellular level, current testing methods such as blood and urine tests are ineffective. The only proposed means of discovering if an athlete is gene doping is a muscle biopsy (Sweeney 2004: 69); however, it is uncertain whether or not a muscle biopsy would definitely detect genetic manipulation. Moreover, the muscle biopsy is substantially more invasive than blood and urine samples, thus strengthening the case against it. Regardless of testing procedures and ethical decisions, Lee Sweeney states, “preventing athletes from gaining access to them [genetic PESs] could become impossible” (ibid: 63).

In conclusion, there are numerous puzzling ethical decisions related to genetic performance enhancement. Regulators already are having a difficult time keeping pace with first-generation PESs; therefore, the thought of regulating genetic PESs is daunting.

# Bibliography

- (2004). "Congress Passes Steroid Control Act". *www.nutrabio.com*.
- (2005: 4 Oct). "Bulls Deal Curry After DNA Refusal. *www.espn.com*.
- (2005). "Golf sees no need for drug testing policy". *www.golftoday.co.uk*. 2005.
- (2005). "Jimmy Carter Calls For Boycott of Moscow Olympics".  
*www.thehistorychannel.com*. (2005)
- (2005). "Steroid Policies for Major Sports". *www.usatoday.com*. (2005: 13 Jan).
- (2007). "Forbes Top 100 Celebrities". *Forbes.com*. (2007).
- (2007). "Forbes Baseball Valuations". *Forbes.com*. (2007).
- (2007). *www.dea.gov*. (May 2007).
- (2007). *www.fda.gov*. (May 2007).
- (2007). *www.espn.com*. (May 2007).
- (2007). *www.GovTrack.us*. (Dec 2007).
- (2007). *www.nba.com* - *Muggsy Bogues* (May 2007).
- (2007). *www.ncaa.org*. (May 2007).
- (2007). *www.nzflag.com*. (May 2007).
- (2007). *www.rudyinternational.com*. (May 2007).
- (2007). *www.usantidoping.org*. (May 2007).
- 108<sup>th</sup> US Congress. (2003). "Amateur Sports Integrity Act". *The United States Government*. (Washington DC).
- 108<sup>th</sup> US Congress. (2003). "Bill Summary & Status for S.1002". (Washington DC: 2005).
- 108<sup>th</sup> US Congress. (2004). "Bill Summary & Status for S.2195". (Washington DC:

- 2005).
- 108<sup>th</sup> US Congress. (2005: July 13). "Hearing Before the Senate Caucus on International Narcotics Control: Abuse of Anabolic Steroids and their Precursors by Adolescent Amateur Athletes [S. Hrg. 108-814]". *The United States Government*. (Washington DC).
- 109<sup>th</sup> US Congress. (2005). "Bill Comparison: The Clean Sports Act [H.R. 2565] and the Drug-Free Sports Act [H.R. 1862]". *The United States Government*. (Washington DC).
- 109<sup>th</sup> US Congress. (2005). "Clean Sports Act of 2005: [H.R. 2565]" *The United States Government*. (Washington DC).
- 109<sup>th</sup> Congress. (2005: 18-9 May). "The Drug Free Sports Act: Hearings before the Subcommittee on Commerce, Trade, and Consumer Protection of the Committee on Energy and Commerce - [H.R. 1862] ". *House of Representatives: First Session*. (Washington DC).
- Australasian Bioethics Information. (2003). "Genetic Screening for Elite Sportsman". [www.australasianbioethics.org](http://www.australasianbioethics.org).
- Berlow, D. (1994). "Sports Ethics". *ABC-CLIO publishing*. (Santa Barbara, Denver, Oxford).
- Bird, E. J. and G. G. Wagner (1997). "Sport as a Common Property Resource". *Journal of Conflict Resolution* 41(6): 749-766.
- Bodley, H. (2005: Jan 1). "Baseball Officials Announce Tougher Steroids Policy". [www.usatoday.com](http://www.usatoday.com).
- The British Medical Association. (2002). "Drugs in Sport: The Pressure to Perform". *BMJ Books*. (London).
- Carroll, W. (2005). "The Juice: The Real Story of Baseball's Drug Problems". *Ivan R. Dee*. (Chicago).
- Carroll, W. (2005: 25 April). "Scorecard: The Creator". *Sports Illustrated* (Vol. 102: No. 18).
- Cashmore, E. (2000). "Making Sense of Sports". *Routledge*. (London & New York).
- Committee on Government Reform. (2005). "Government Reform Committee Approves Anti-Steroid 'Clean Sports Act of 2005'". *US House of Representatives - News Release*. (Washington DC).

- Crawford, K. (2005: Feb 4). "Sanitizing the Super Bowl". *CNN Money*.
- Dohrmann, G. (2005: Oct 9). "Is This Dr. Evil?: The BALCO Chemist Comes Clean" *Sports Illustrated (Vol. 105: No. 14)*.
- Fish, M. (2003: 30 Oct). "THG Discovery a Huge Breakthrough in Fight Against Doping". *Sports Illustrated.com*.
- Freedman, J. (2006: July). "Fortunate 50". *Sports Illustrated.com*.
- Haugen, K. K. (2004: Feb). "The Performance-Enhancing Drug Game." *Journal of Sports Economics*. (5(1): 67-86).
- Hart-Davis, D. (1986). "Hitler's Games: The 1936 Olympics". *Harper and Row Publishers*. (New York).
- Helfand, L. (2005). "Strikes and Lockouts in Professional Sports". *Askmen.com*.
- Hohler, B. (2005). "Baseball Slow to Act on Use of 'Speed'". *Boston Globe*. (Boston).
- Karch, S. (1998). "A Brief History of Cocaine". *CRC Press*. (Boca Raton et al).
- Landman, T. (2003). "Issues and Methods in Comparative Politics: An Introduction". *Routledge*. (London and New York).
- Lenahan, P. (2003). "Anabolic Steroids". *Taylor and Francis Inc*. (London).
- Leonard II, W. (1980). "A Sociological Perspective of Sport". *Burgess Publishing Company*. (Minneapolis).
- Lijphart, A. (1975 Jul). "The Comparable-Cases Strategy in Comparative Research". *Comparative Political Studies (Vol. 8 No. 2)*. *Sage Publications*.
- Longman, J. (2003: 26 Nov). "An Athlete's Dangerous Experiment: The Case of Tyler Hooton". *NYTimes.com*.
- Major League Baseball. (2003). "MLB Common Bargaining Agreement". *www.mlba.com* (this is the latest CBA).
- Major League Baseball Players Association. (2007). "Major League Baseball Average Salary". *www.mlba.com*.
- McCloskey, J; Bailes, J (2005). "When Winning Costs Too Much: Steroids, Supplements, and Scandal in Today's Sports". *Taylor Trade Publishing*. (Maryland).



- McPherson, B; Curtis, J; Loy, J (1989). "The Social Significance of Sport: An Introduction to the Sociology of Sport". *Human Kinetics Books*. (Champaign Ill).
- Meduna, V. (2000: Aug). "Drugs In Sport." *The Gamma Series of the Royal Society of New Zealand*.
- Miah, A. (2004). "Genetically Modified Athletes: Biomedical Ethics, Gene Doping and Sport". *Routledge*. (London and New York).
- Mitchell, J; Mitchell, W. (1969). "Political Analysis & Public Policy: An Introduction to Political Science". *Rand McNally & Company*. (Chicago).
- Mottram, D.R. (2003). "Drugs In Sport". *Taylor and Francis*. (London). (note: e-book accessed through Middlebury College).
- The National Basketball Association (2006). "Collective Bargaining Agreement, Article XXXIII: Anti-Drug Program" accessed: [www.nbapa.com](http://www.nbapa.com).
- The National Football League (2006: 20 June). "Policy on Anabolic Steroids and Related Substances". accessed: [www.nflpa.com](http://www.nflpa.com).
- Ockey, J. (2004: March). "Invented Tradition: Thailand". *Unpublished*. (Christchurch, New Zealand).
- Poniewozik, J. (2004: 20 Dec). "Better Living Through Steroids: Why do Performance-Enhanced Societies Scorn Performance-Enhanced Athletes?" *Time* (Vol. 50: No. 92).
- The Presidents Council on Bio Ethics. (2002). "Session 4: Enhancement 2: Potential for Genetic Enhancements in Sports". *The United States Government*. (Washington DC).
- Ratcliffe, S. E. (2001). "Oxford Dictionary of Quotations and Proverbs II". *Oxford University Press*.
- Smart, B. (2005). "The Sport Star: Modern Sport and the Cultural Economy of Sporting Celebrity". *Sage Publishing*. (London).
- Smith, G. (2005). "Steroids and Baseball: What Do We Do Now?" *Sports Illustrated* (No. 102: No. 13: pgs 40-50).
- Sokolove, M. (2004: 18 Jan). "In Pursuit of Doped Excellence: The Lab Animal". *The New York Times Magazine: Section 6*. (New York).
- Stark, S. (2005). "Meet the Beatles: A Cultural History of the Band that Shook Youth, Gender, and the World". *Harper Publishing*. (New York et al).

- The Subcommittee on Crime, Terrorism, and Homeland Security. (2004). "Anabolic Steroid Control Act of 2004". *U.S. Government Printing Office*. (Washington DC).
- Sweeney, H. L. (2004: July). "Gene Doping." *Scientific American* (Vol. 291: No. 1: pgs. 63-69).
- Toohy, K. and Veal, A.J. (2000). "The Olympic Games: A Social Science Perspective". *CABI Publishing*. (Sydney).
- Voy, R. O. and K. D. Deeter (1991). "Drugs, sport, and politics". *Leisure Press*. (Champaign, Ill.)
- World Anti-Doping Agency. (2005). *www.wada.org*. 2005. (this cite was used as a general reference).
- World Anti-Doping Agency. (2004). "Athlete Guide". *www.WADA.org*.
- World Anti-Doping Agency. (2004: Mar). "The World Anti-Doping Code: The 2004 Prohibited List (International Standard)". *www.WADA.org*.
- Waddington, I. (2000). "Sport, Health and Drugs: A Critical Sociological Perspective". *E & FN Spon*. (London and New York).
- Wadler, G. I. (2003). "Doping in Sport: From Strychnine to Genetic Enhancement, It's a Moving Target". *New York University School of Medicine* (Speech).
- Weir, T. (2004: 8 Dec). "Drug-free sports: Do the fans care?". *USA Today*.
- Yang, N., D. MacArthur, et al. (2003: September). "ACTN3 Genotype is Associated with Human Elite Athletic Performance." *The American Journal of Human Genetics* (Vol.73: No.3: pgs 627-331).