

# The Embodiment of Science and Technology and Humanistic Concern of Competitive Sports——From the Perspective of Doping and Anti-doping

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**Abstract:** *The rapid development of sports science and technology in the new era brings rare opportunities to sports undertakings, and then it will face new challenges. This article mainly uses the literature material law, sociology, economics related knowledge of doping and anti-doping development of the analysis of existing problems, the concrete, from the perspective of the pedagogy, psychology, law and medicine, analyzes the development of sports science and technology to impact the pros and cons of doping, from the deep analysis of the reason, put forward to develop humanistic care, take its advantages, its disadvantages, We will guide the development of sports in a healthy direction. This paper discusses the embodiment of science and technology and humanistic concern in competitive sports, and provides a new perspective and method for sports training research.*

**Keywords:** *Sports science and technology; The doping; Anti-doping; Humanistic care*

## 1. Introduction

Sport, by its very nature, is simple. "Fair competition" has been the belief pursued by people since the birth of competitive sports. However, the emergence of "doping problem" has become a dark cloud hanging over competitive sports. Once sports lose "fair competition", sports will be meaningless. In other words, doping is the devil that destroys the Olympic ideal. The use of stimulants has long been criticized and has become a symbol of "derogatory words" in the streets. With the rapid development of sports and the intervention of scientific and technological means, when people enjoy the well-being of sports brought by sports science and technology [1], they cannot ignore the bad results brought by the abuse of science and technology [2].

Why do doping problems frequently appear in competitive sports? Therefore, "doping problem" has become the focus of scholars' attention. Doping and anti-doping both are the application of science and technology, but the reasons and countermeasures are worth us to explore.

## 2. Definition and types of stimulants

### 2.1. Definition of stimulants

Doping refers to drugs that stimulate the human nervous system and make people excited so as to improve their functional state. It generally refers to the use of drugs and methods banned by international sports organizations in sports because of violation of sports ethics and medical ethics [3]. As the drugs taken at the earliest are usually stimulant drugs, the term "stimulant" is still used in the international community as to whether other types of drugs are stimulant or inhibitory. In sports competitions, athletes take stimulants to improve their performance. This practice of trying to win by relying on the effects of drugs violates the principle of fair competition. Moreover, drugs have side effects and seriously damage the life and health of athletes. As a result, the International Olympic Committee banned the drugs and drug testing began at the 1968 Winter Games in Grenoble, France. Although other types of banned drugs have emerged in the future, it is still customary to refer to banned drugs collectively as "stimulants".

Doping, approved by the International Olympic Committee (IOC) and the World Anti-Doping Agency (WADA), is defined as: "The use of substances or methods potentially harmful to the health of athletes and/or capable of enhancing athletic performance; Or if the athlete has been found in his or her

system or there is evidence of the use of substances prohibited in the Olympic Anti-Doping Code list; Or there is evidence of use of prohibited methods listed in the Regulations " [4].It should be noted that the concept of "doping" includes not only the use of stimulants, but also participation in the use of banned substances. Participants include any athlete, coach, health worker, official, etc.

## **2.2. Types of stimulants**

In recent years, the number and variety of doping has increased every year, which has made the IOC pay more attention. In 2016, China's General Administration of Sport, General Administration of Customs and China Food and Drug Administration jointly issued the No. 9 Announcement in 2016, announcing the 2016 Doping Catalogue, which lists 267 kinds of doping. The 267 stimulants fall into seven categories: protein anabolic agents; Peptide hormone varieties; Varieties of narcotic drugs; Irritants (including psychotropic drugs); Pharmaceutical precursor chemicals; Types of toxic drugs for medical use; Other varieties [5]. And announced three banned methods for athletes: tampering with blood and blood components; Chemical and physical tampering; Gene doping. At the same time, it also explains the related regulations of doping control items for athletes, upper limit of concentration of some banned substances, therapeutic drugs for athletes, banned substances for special events, specific substances, unapproved substances and other banned substances.

## **3. Causes of doping problems**

In the face of the reality of doping, some people begin to question and reflect on the "fair competition" advocated by competitive sports. For some athletes who truly believe in the Olympic spirit and strictly follow the rules of competition, there is no doubt that it will be a great injustice and injustice. If the phenomenon of "if you use doping, you will get good results" appears, it will be the biggest tragedy of competitive sports.

### **3.1. Moral Disengagement in Pedagogy**

The emergence of doping caters to the speculative psychology of some groups and individuals in pursuit of interests, so doping events frequently occur in competitive sports [6]. Because each country's political, ideological reasons such as the lack of coordination, such as doping drugs, if can not stand lure, either active or passive use, have hindered the "fair competition" principle in the competitive sports, hindered the healthy and orderly development of undertakings of physical culture and sports, and also against itself or the health behavior of others, this is the result of "moral disengagement"[7]. The problem of doping is the negative effect caused by the stimulation of fame, huge profits and big rewards [8]. Most of the athletes who take stimulants are out of their own selfish desires, pay too much attention to the material interests in reality, ignore the professional ethics and social morality, take the risk to make great achievements. In our country it is to advocate anti-doping, doping does not accord with socialist ethics, does not accord with the Marxist spirit of seeking truth from facts, does not accord with the Olympic purpose of fair competition, does not accord with the fundamental interests of athletes. In recent years, China has taken a clear-cut stance on doping. Severe punishment has been meted out to athletes, coaches and units involved in doping, which fully demonstrates China's firm stance on anti-doping.

The reason why the use of doping in our country has been stopped and opposed by the government and scholars, not only because it violates the purpose of "fair competition" in competitive sports, but also with the moral standards advocated by the current society in Our country, square peg in a round hole.

### **3.2. The drive of fluke psychology in psychology**

In the final analysis, the essential attribute of human beings is still the social attribute of human beings. If we study the rules of individual psychological activities of human beings and ignore the connection with social conditions, people cannot get an overall understanding of the incentives of doping use, and doping events themselves cannot be regarded as an isolated behavior of athletes. The event itself may mean not only a network relationship between the stimulant user and the provider, but also the behavior from whom the stimulant user knows, learns, acquiesces and so on.

If allowed in competitive games athletes use drugs, an excellent, after the hard training of athletes is likely to lose to an opponent who has doped but is not good at competition, thus lose the competitive sports of the principle of "fair competition", makes it distorts the nature of competitive sports, the

deformation of competitive sports development. In order to rectify the imbalance, some of them bear the blame for the loss of sports ethics and morality, and take the risk to join the ranks of illegal drugs and use stimulants for the so-called "fairness"[9]. Some coaches and athletes believe that other competitors may use various ways and means to take doping. If they do not take doping, they will not be able to compete with their competitors at the same competitive level. Under the action of this lucky psychology, the athletes intentionally or unintentionally use doping. Such a vicious cycle will exacerbate the doping problem and form a chronic disease that is difficult to cure.

### ***3.3. There are different standards of execution in law***

How to legally regulate doping has always been faced with some difficulties, mainly because of the complexity and variability of doping. The complexity of doping is manifested in anti-doping establishment of relevant laws and regulations, not only must be in accordance with the domestic environment, but also look after the norms of international law, and also consider to the Olympic Games and the Olympic Games such as policy standard, need to coordinate and according to national relevant policies, finally is related to the athlete on athletic competition. And the variability of doping, and the main performance in the role of science and technology to promote sports development and upgrading the stimulant drugs continuously updated, so must be through the new method to detect athletes use drugs, through their use of new drugs and new means, and the corresponding changes to the laws and regulations and update.

On January 1, 2015, the Anti-Doping Administration Measures (hereinafter referred to as the Measures) of the General Administration of Sport of China came into effect, replacing the decree No. 1 of the General Administration of Sport of China, which had 17 years of history, and became the main anti-doping law in the field of sports, marking that China's anti-doping work is more legalized and standardized [10]. From the perspective of law, domestic sports law scholars emphasize the means of "strengthening legislation" and "strengthening international cooperation", and formulate relevant anti-doping rules and regulations internationally, such as "International Anti-Doping Agreement", "World Anti-Doping Code", "Oslo Anti-Doping Declaration", etc. Obviously, it is very necessary to strengthen the cooperation of international anti-doping work.

### ***3.4. Limitations of development in medicine***

As we all know, doping detection technology has developed rapidly. Compared with the past, the detection accuracy of the current detection technology has been improved a lot. However, we should also be clearly aware that while the detection technology is improving rapidly, new stimulants will be developed, leading to drug detection that is unfamiliar to the detection technology. As the saying goes, "the devil climbs a foot higher", how can doping detection technology keep up with the pace and speed of the emergence of new drugs? It seems like a difficult question to answer. On the other hand, in medicine, in high-level sports, good medical quality and service will determine the outcome of the competition. Competitive sports require "faster, higher, stronger", the use of some safe drugs can promote the recovery of athletes, so as to improve the ability of competitive competition. This raises questions about the criteria and basis for defining illicit drugs, the difficulty of drawing the line between protecting health and enhancing performance, and the apparent side effects of drugs on athletes.

Drug testing continues to lag behind new drugs and, given current testing limitations, there are potentially stealthier stimulants that are already in use in competitive sports but are simply not detectable with current technology. At the same time, due to the lack of funds, the high cost of drug testing can not be carried out smoothly.

## **4. Countermeasures of anti-doping work**

### ***4.1. Carry forward humanistic care and strengthen publicity and education***

With the development of sports science research and the extensive application and use of top science and technology in doping, the changes of doping show a distinct "science and technology", while the "injustice" of abusing science and technology to athletes will lead to the lack of humanistic care. Athletes and coaches should improve their humanistic quality and professional ethics, so that they can establish a correct view of competitive sports, understand the cultivation of competitive sports ethics, the harm and consequences of doping to athletes themselves. At the same time, the ideological and moral education of

coaches should be strengthened to prevent the coaches from using stimulants to athletes. For athletes, education should be given priority and punishment should be given priority. Actively carry out anti-doping education among athletes, so as to enhance the social awareness of anti-doping. As for the doping problem, a kind of atmosphere should be formed. All enterprises, institutions, schools and communities should carry out anti-doping education, increase the pressure of public opinion in the society, and strengthen the involvement of the media to educate and supervise athletes and coaches.

In under the guidance of people-oriented spirit of sports, for the sports science and technology to provide the correct course and pointer, put the protection of athletes and the Olympic spirit as the main position, increase the intensity of anti-doping work of scientific research, and guide the scientific research personnel to form the correct values and the correct scientific position, form a good sense of responsibility and professional ethics, Sports science and technology can better play a role in the development of sports, so as to better serve the society.

#### ***4.2. Increase the intensity of doping detection and punishment***

It can be said that increasing punishment is a magic weapon against doping. At present, most athletes have carried out relevant sports training when they were young, and their general education level is low. Sometimes, doping is instigated or coerced. Although there are provisions of criminal responsibility in China, due to some loopholes in the current legal system, the anti-doping law has relatively light rules on the illegal behavior of taking stimulants, which is embodied in the situation of "lifting weights to lighten up". There are no corresponding charges and clauses in The Criminal Law of the People's Republic of China, so that the acts of inducing, organizing, abetting and forcing others to use stimulants and helping others to use stimulants in competitive sports cannot be justly judged. At the same time, the lack of connection between the "Anti-doping Regulations" and the "Criminal Law of the People's Republic of China" makes it difficult to implement some criminal responsibility systems stipulated in the "Anti-doping Regulations". Therefore, it is necessary to strengthen the punishment of coaches and team doctors.

By increasing doping detection and punishment, professional ethics of competitive sports can be maintained, so as to promote the good development of China's sports cause.

#### ***4.3. Establish a sound anti-doping legal system and management system***

Law is an important tool in the fight against doping. China's State Council promulgated and implemented the Anti-Doping Regulations in 2004. In October 2007, The State Council issued the Working System of the Coordination Group for Comprehensive Control of Doping in Sports, and the Anti-Doping Center was officially established after the 2008 Olympic Games. For this year, China's anti-doping work can be said to be a continuous exploration, continuous improvement of the process. But at present, there is no special anti-doping law in Our country, so we should promulgate the anti-doping law in accordance with our characteristics as soon as possible, so as to perfect our anti-doping legal system.

First, strengthening the management of anti-doping work can strengthen the coordinated supervision and overall planning of anti-doping work; Secondly, standardize the inspection work, in the investigation and evidence collection, should be judicial intervention, to be severely punished in accordance with the law, in addition to imposing fines should also be investigated for criminal responsibility. To carry out the anti-doping inspection work in a strict and standardized situation; Thirdly, the main body responsibility should be clarified, and the relevant policies and regulations on anti-doping should be resolutely implemented. For those who use doping, once verified, they will be severely punished and will not be tolerated. The associated persons involved in the use of doping should also be punished by law. Finally, we should strengthen the exchange of reference. The anti-doping issue has a corresponding international nature. In the form of legislation, we can learn from the legislative experience of foreign countries. China's anti-doping law is still not perfect, so we should refer to the more advanced and perfect laws of other countries for reference, and make corresponding modifications according to the local conditions.

#### ***4.4. Strengthen comprehensive research to reduce testing costs***

Science and technology is the primary productive force. Science and technology provide powerful power support for understanding and transforming the world [11]. Sports science and technology can be said to be the core force of the current anti-doping work, especially the forward-looking technology, advanced means and timeliness of drug testing operation, is undoubtedly an important embodiment of

the development of science and technology in competitive sports. There are many research directions for anti-doping, such as: Pedagogy, psychology, law, medicine, etc., but for the moment in a single perspective on research will more or less flaws, do not have a single direction can fundamentally solve the phenomenon that the anti-doping only do eclecticism, take various measures, combined with various research methods, to fundamentally solve the problem of doping.

For cutting down the stimulant drug costs, can be taken to improve testing technology, most of the new drugs is biological and chemical technology, due to the research in this aspect in China started late, at the same time, under the influence of scientific research funds and conditions of testing technology research in China not only from the breadth and depth compared with those in developed countries, Europe and the United States, or there is a big gap. Therefore, China's relevant scholars should pay attention to this phenomenon, emancipate the mind, learn from others, and reverse the current situation as soon as possible. China's anti-doping departments need to keep close contact and exchange with international anti-doping organizations and institutions, and combine with local biological and chemical scientific research technology, so as to improve drug testing technology and reduce testing costs.

## 5. Conclusion

In competitive competition, the purpose of using stimulants is nothing but to improve their performance and win the competition. However, the use of doping will not only harm the health of athletes themselves, but also deviate from the "fair competition" advocated by competitive sports. Both the improvement of competitive level and the improvement of medical level cannot be separated from the development of science and technology. As a part of the current social culture, science and technology is always an important driving force for the development of sports. When science and technology act on competitive sports, it should conform to its internal development law, neither destroy the value of competitive sports itself, nor run counter to the people-oriented spirit of sports. In my opinion, there is still a long way to go for China's anti-doping work, but the current situation is gradually improving, and the future prospect will be full of bright potential. As the saying goes, the future is bright and the road is tortuous. Given time, the fight against doping will be for the good of the world. With this article, I would like to stay true to my original aspiration and continue to move forward with you.

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