Analysis on the Structure of Intellectual Property Right of the Tactical Invention of Sports

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Abstract — To promote the development of sports tactics. Analyzing the intellectual property right structure of the tactical invention. This paper describes the development and application of modern sports, expounds the concept of intellectual property rights and the basic characteristics of sports intellectual property, and shows the future development trend of sports intellectual property rights in our country. This paper studies the main contents of the innovation of sports technology and tactics in China, takes a boxing athlete’s skill and tactics as an example to analyze the sport and the tactic inventions, and finds that the players' tactical invention has a direct relationship with his tactical choice and the game features. The structure of intellectual property right of sport tactics is beneficial to the healthy development of sports in China.

Keywords - sports tactics; intellectual property right; tactic invention; game feature

I. INTRODUCTION

The application of modern science and technology in the field of physical education, from the macro management, the monitoring of the training process, the training of the health education, the implementation of health education, and the development of sports intelligence, there is a common understanding of the knowledge content in sports. In the process of sports knowledge, science and technology, specialization and socialization, many objects of intellectual property rights have been produced, but a large number of sports intellectual property objects, especially the end intellectual property of sports body, have not been included in the scope of intellectual property protection [1]. Intellectual property in sports is sports organization, sports workers and sports managers and sponsors are legally entitled to the power of sports intelligence work and business logo, the credibility of the main object is sports, sports, sports, sports, sports, radio and television Broadcast rights, national traditional sports events, the Olympic sports logo, sports non patented proprietary technology, sports undisclosed information, etc.. Sports intellectual property rights is to promote sports science and technology innovation, save the Olympic movement, and ensure the healthy development of sports. Therefore, it is necessary to study the intellectual property rights of sports. At present, the main problems of sports intellectual property rights are specific, the most important and common intellectual property not included in the scope of intellectual property protection. In this paper, we start from the reality, through the analysis of the results of previous studies, summarized, and on the current stage of the development of the situation, put forward their own views and response measures. The purpose is to make up for the lack of previous studies, and to improve the level of intellectual property protection [2]. Figure 1(a)-(d) shows several different sports characteristics.

(a) Basketball

(b) American Football

Figure 1. Continued on next page
II. MATERIALS AND METHODS

A Overview of Intellectual Property

The term "intellectual property rights", the Taiwan area of our country is translated into "the intellectual property rights", Belgium's famous jurist Picardy believes, is a kind of special intellectual property rights category, it is fundamentally different from the ownership of the object. "The ownership principle is eternal, termination of the production and destruction of the material, but there is a time limit intellectual property rights, certain rights over objects in each instant of time can only belong to a person (or a certain range common property rights to use the product knowledge is not limited to the number, because it can be infinitely recycled "[3]. This doctrine later spread widely in the world, which has been recognized by many countries and international organizations. The conclusion of the Convention on the establishment of the World Intellectual Property Organization in 1960s, the use of the term "intellectual property rights". Now, intellectual property has become a common legal term in the world. The concept of intellectual property, legal monograph, law and international treaties in many countries in the world, are only from the delineation of the scope of the concept of a clear definition of intellectual property, not to the definition of intellectual property rights. In fact, it is difficult to give an accurate definition of intellectual property right, which is generally accepted by people, and it's hard to describe the concept of it. In some textbooks, the concept of "intellectual property rights", such as that "intellectual property rights, is based on the experience and knowledge of their own intellectual activities, and the rights of the people are entitled to the right of the people". "Intellectual property refers to the patent rights that people can enjoy in accordance with the results of their intellectual creation"[4]. Huang Qinnan believes that understanding the concept of intellectual property, two point one is still should pay attention to the scope of intellectual property rights from the beginning to understand the concept of intellectual property, a clear meaning of the two is to see the intellectual property is a deepening connotation, extension of the concept of continuous development. It will expand and deepen with the development of science and technology, culture and art, and the type of intellectual property will be more and more extensive. Generalized intellectual property rights, currently has two major international conventions on intellectual property rights. The World Intellectual Property Organization Convention, the World Intellectual Property Organization Convention, in the scope of the World Intellectual Property Organization Convention in 1967, the article defines the scope of intellectual property rights in the form of second[5]. Sports intellectual property rights should include the right as shown in Figure 2.

B Relational Database Watermarking Technology of Intellectual Property System

The watermarking technology of relational database and the algorithm of the digital watermarking technology are not the same, but their principles are roughly the same, mainly includes the digital watermark embedding process and digital watermark detection, extraction process. The embedding process of the digital watermark is the original digital watermark information after the appropriate transformation, embedding the watermark into the original database, so the watermark database containing the watermark information is obtained. In order to increase the difficulty of the attacker to delete or counterfeit watermark, to ensure the security and reliability of the watermarking...
database, general watermarking scheme is adopted to embed and extract the watermark, only the owner can detect or extract the original watermark only if the database owner is correct[6]. The original database is I, the watermark information is W, the key is K, and the watermark embedding algorithm is F, then the embedded watermark database I can be expressed as:

\[ I' = F(I, W, K) \]  

(1)

Detection and extraction of digital watermarking for relational databases, is used to determine the relationship between the database of copyright ownership, when the data in the database is illegally stolen, copyright disputes occur, general needs to detect or extract the watermark in the database, to prove the ownership of the database. At least the watermark detection and extraction process is required to provide the relational database and correct dense steel which are to be detected, according to the difference of the detector and the application, the detection and extraction of digital watermark is divided into two cases, one is to detect whether there is a watermark in the relational database, the other is to extract the watermark from the relational database containing the watermark [7]. Due to the different watermark detection algorithm, the watermark detection and extraction process can be used to use the original database information and (or) the original watermark information. The assumption is that the original relational database, I is a relational database that has been embedded into the watermark, K is the key, D is the watermark detection or extraction algorithm, extracted from the watermark information can be expressed as W:

\[ W' = D(I, I', K) \]  

(2)

Or \[ W' = D(I', K) \] (blind detection).  

(3)

C  The Main Content of the Innovation of Sports Technique and Tactics

It is to put forward the new technology and tactics training competition principle and guiding ideology, lay a theoretical foundation for the new technology and tactics innovation. In our country, the national team has put forward a lot of innovation theory in the practice of long training competition, important guidance to the training competition. Such as table tennis to "fast, turn, quasi, hard, change";

Badminton to "fast, hard, full, accurate, live"; Volleyball to "full, high, fast, change"; diving to "hard, stable, the United States"; gymnastics to "difficult, new, stable, beautiful" and so on, have achieved very good training and competition results[8]. Omatsu Hirofumi, the former Japanese women's volleyball coach, put forward the guiding ideology of "multi - ball and repeated and extreme load", Japanese women's volleyball team in short term technology, rapid increase in physical quality, to become the world champion, refers to the movement in the movement of key technical innovation, so that a substantial increase in performance, or make it difficult to improve, the creation of a significant increase in the creation of the invention. For example, in the high jump Fosbury bar technique, shot back gliding technique, basketball emergency stop jump shot, table tennis fast half volley and loop technology, football undercut shooting technique, volleyball blocking technology, diving technologies etc.. It is through the new fit for athletes (team) characteristics, the trend should be sports events, the use of advanced technology, the traditional training and recovery methods and means of transformation, in order to achieve better training results[9]. "Intermittent training method, such as the creation of Reindel in Germany"; "Circular training method" created by Morgan in the United kingdom"; The ultimate strength of the strength training method of Bulgaria weightlifting coaches Ivan Abba Jay Jef created ; "Male female training method for the national table tennis team in china", there are simulated training, training method, training method, training method, training method, biological rhythm and so on. In the past, the coach of the Chinese table tennis team is based on experience and feeling, the use of brain electrical series analysis of blood and blood biochemical indicators to assess the performance of athletes and fatigue, scientific regulation of exercise, improve the quality and effectiveness of training. China has achieved excellent results in the Sydney Olympic games, one of the important reasons is the use of advanced training methods and means. Research personnel using computer to carry out three-dimensional animation of Zhan Xugang's weight lifting action, Provides a valuable reference for training; shooting athletes in high static before using advanced instruments of its firing placement test, find out the key to strengthen the stability of training[10].

D  Basic Characteristics of Sports Intellectual Property Rights

The basic characteristics of sports intellectual property are shown in Figure 3.

![Figure 3. Basic Characteristics of Sports Intellectual Property](image)

Non materiality: the intangible property of the object of the intellectual property is the essential attribute of the intellectual property, is that the object of intellectual
property is not material existence, it is only as a kind of information, moreover, this kind of non material information must have the corresponding material carrier, to be able to perform, and be perceived by people. The object of intellectual property is not the manifestation of thought or emotion that has no physical substance, is an objective existence, is not material, from the "virtual" in the "pseudo". This can be clearly aware of the legal protection is not the carrier of information, but the information conveyed by the carrier. Proprietary: intellectual property rights, is the only person who is the subject of intellectual property rights or the use of its mandate, other persons shall not enjoy or use the rights of intellectual property rights. That is to say, the right holder of intellectual property right is protected strictly, no person shall infringe upon. Intellectual property rights are recognized by relevant legal procedures, other people who want to acquire the exclusive right to intellectual property, can change the rights of the right people through the use of the license, statutory license, compulsory license, reasonable use, transfer and other legal procedures [11]. For violations of intellectual property rights, the right holder may be able to sue the people's court, or request the administrative department of intellectual property rights to handle.

Regional: intellectual property, is the law of a certain state to be produced and protected by law in the country. According to the feature, intellectual property rights acquired by a state in a country are protected by law in the field of the country and are not protected by the laws of the country in other countries, must obtain the authorization and permission of the state organization of intellectual property rights in the country. Such as the "Olympic Charter" stipulates: "a national Olympic emblem is used only in its effective, the National Olympic emblem after another national Olympic Committee unless agreed, otherwise it can not be used in other countries for any advertising and commercial activities for the purpose of making profit." The commercial use of the Chinese Olympic Committee and market development can only be used in China, if used in other countries, with the consent of the other national Olympic Committee to carry out market development. For example, the right to apply for and obtain the sports goods industry in the United States, only in the United States by the legal protection, and in our country will not play a role, to be protected by patent law in our country, it is necessary to apply for and obtain approval from China. Time: intellectual property has certain time limit, the term of protection is only within the time stipulated in the law, intellectual property rights become the common wealth of the whole society [12]. Any person can use it freely without the consent of the owner. For example, the time limit for a trademark in our country is 10 years, after the expiration of the trademark renewal can continue; And for the copyright protection period is specified for the author died 50 years, protection period has been included in the public sector, no longer accept protection; Patent right also has certain limitation, the protection period of the invention patent right is 20 years, the protection period of the utility model and the design patent is 10 years. The object of intellectual property right also has time limit, such as "special signs Management Ordinance" provides the protection of special sports special signs for 4 years, special signs right may apply for renewal rights within 3 months before the expiry date. The Olympic flag, which is required to be protected by the State Council in February 4, 2002, is also required for the protection of the Olympic symbol in the Olympic flag, the regulations involved in the Olympic Games Organizing Committee of the twenty-ninth Olympic games, with the twenty-ninth session of the Olympic Games Organizing Committee signed a contract to use the term of use until December 31, 2008. Legal recognition: intellectual property has no body, no space, the right person is difficult to control the actual control, moreover, the intellectual property right is a kind of civil right, need to give the legal recognition to have the right, no relevant legal confirmation, it's hard to enjoy this right[13]. That is to say, each citizen's knowledge and wisdom in his own mind is only recognized by the law, in order to enjoy the civil rights, such as the acquisition of the trademark right to the Trademark Office for registration procedures, such as publicity and other procedures to obtain trademark. Sports patent right is also required by the application, review, approval, etc.. Take the Beijing Olympics as an example, the twenty-ninth Olympic Games Organizing Committee will apply for the patent protection of the twenty-ninth Olympic Games emblem and mascot. Without the legal authority of the relevant departments of the state, the patent application is not recognized by the state.

E. The Future Development Trend of Sports Intellectual Property Rights in China

The object of sports intellectual property rights is very extensive, which involves various types of sports copyright protection object, such as books, papers, teaching materials for sports, and also related to the protection of sports patents, for example, the relevant design, invention, utility model of sports goods industry; And sports trademark, trademark and domain name, trade secret rights, anti unfair competition, and so on, these are the intellectual property rights of sports need to protect the object[14]. I think, the object of intellectual property right and the protection object of intellectual property right of our country is not very different from the nature and the protection way of the works, patents and trademarks, these sports intellectual property object can be incorporated into the existing intellectual property system to protect, no special study. However, in the field of sports, the sports skills competition, sports competition, sports, sports, sports competitions, sports competitions, sports competitions, sports competitions, sports competitions, sports competitions, sports competitions, sports competitions and other aspects of the important value of sports skills, sports skills, sports competitions, sports competitions, sports competitions and other aspects, these are parts of the sports field with key resources. The State Council promulgated the regulations on the protection of the Olympic symbols in 2002, provided the basis for the Olympic intellectual property protection. Due to the promulgation of the administrative laws and regulations, there is still a need to improve the place, the
protection of other sports symbol rights in China is not exhaustive [15]. Sports event broadcast right is an important source of funding for sports event organization, the legal nature of its legal nature and the lack of relevant legal regulations. Intellectual property is a changing concept, along with the changes of technology, economy and people's cognition, we look forward to the above controversial sports areas of intellectual achievements and signs, perhaps one day to be included in the protection of intellectual property rights. Modern social and economic development, intellectual property is the strategic resources of economic development, which determines the quality and structure of economic development, independent intellectual property rights is the core competitiveness of enterprises in China. Sports event broadcast right is an important source of funding for sports event organization, the legal nature of its legal nature and the lack of relevant legal regulations. Intellectual property is a changing concept, along with the changes of technology, economy and people's cognition, we look forward to the above controversial sports areas of intellectual achievements and signs, perhaps one day to be included in the protection of intellectual property rights. Modern social and economic development, intellectual property is the strategic resources of economic development, which determines the quality and structure of economic development, independent intellectual property rights is the core competitiveness of enterprises in China [16].

III. RESULTS AND ANALYSIS

Here we take the technical and tactical characteristics of a Boxing Athlete as an example to analyze the invention of sports and tactics, as shown in Table 1.

<table>
<thead>
<tr>
<th>Attack distance</th>
<th>Long distance</th>
<th>Middle distance</th>
<th>Near distance</th>
<th>A little distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usage frequency</td>
<td>171</td>
<td>113</td>
<td>26</td>
<td>11</td>
</tr>
<tr>
<td>Usage rate</td>
<td>53%</td>
<td>35%</td>
<td>8%</td>
<td>4%</td>
</tr>
<tr>
<td>Get points</td>
<td>86</td>
<td>33</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>Get point rate</td>
<td>50%</td>
<td>29%</td>
<td>27%</td>
<td>18%</td>
</tr>
</tbody>
</table>

The results from the above table show that the boxer is good at choosing a long distance attack, the selection of the attack distance is distinct, and the choice of the distance is far from the attack, the use rate of 53%, 35%, the attack effect is also good, the success rates were 50% and 29%, respectively, this may have a direct relationship with the players' tactical choice and the characteristics of the game [17].

IV. CONCLUSIONS

The core of sports science and technology innovation is the innovation of sports technology and tactics. It is the life and the vigor of sports, the history of the development of human sports can be said to be a creative history of sports technology and tactics. There is no modern sport without sports and tactics innovation, each major technological and tactical innovation has brought a revolution and progress of sports technology and progress. The article describes the intellectual property right structure of the sports and sports tactics invented by the sports and the development of modern sports education.

REFERENCES