

# Discussion on Action Behavior Creation in Sports from Spatial Dimension

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**Abstract.** Action behaviors are important components of the physical activities of human beings. People know the world and themselves through the body, the creativity of which is the basis of the survival and development of them, while the expression of the body will is realized through the action behavior. The creation of action behavior is the combination of physical instinct behavior and rational behavior. Through the regulation and rationalization of physical activity, as an indispensable and irreplaceable cognition method of the body, the necessity of sports to the study on the creation of action behavior of the body becomes even more prominent. In addition to identifying individual athletic abilities, the study on individual action behavior can also provide effective methods and approaches to improve athletic skills, which shall promote to develop a teaching system that is compatible with it as well.

**Keywords:** Spatial dimension, Sports, Action behavior, Creation.

## 1. Introduction

Human beings have dual attributes of naturalness and sociality. Human beings are connected with the world through the body as a medium, and perceive themselves and the world through their bodies. "The body is the general way we own a world"[1]. The body and action behavior are interdependent, of which the dynamic existence of the body is manifested by the action behavior, and the existence of the action makes the body exist in practice. "Our form is an infinite and necessary world of creation." [2] Physical creativity is the foundation of the survival and development of human being. The action behavior mentioned in this paper refers to the action of human individual only. The purpose of the research on action behavior creation is to study the creative ability of human action behavior, the process of creation and invention and its laws. Human beings live for "behavior" and at the same time "behavior" for survival. Behavior creates the future, and the study on behavior creation is vital to the survival and development of all mankind.

## 2. Clarification of Concepts and Their Connotations in the Study on the Creation of Action Behavior

Action refers to the activity of the whole or part of the body, behavior refers to the external explicit activity of the organism, and the definition of creation is to create something unprecedented (novelty [3]). [4] Therefore, the concept of action behavior creation is the novel external explicit activity of the whole or part of the body of an organism. The object of this paper is the action behavior creation of human beings, which can be referred to as behavior creation according to the definition of action behavior creation (the same below). "The concept of creation refers to the construction of a region on the inner surface and the addition of a region in the previous region to fill the gap by exploring a new region" [5].

Action refers to a conscious activity that is conducted for certain purposes. [4] Based on the analysis of the concepts, action focuses more on purpose and initiative, while compared with the action, the connotation of the behavior is broader, that is, in addition to purposeful active behavior (action), it also includes purposeless active behavior (random behavior), purposeful passive behavior (passive behavior) and purposeless passive behavior (blind obedience).

The conceptual similarities and differences between creation and innovation are that innovation is creation, while creation is not innovation. Only when the results of creation has both "value effect"

and "novelty" can it be called innovation. [4] Creation is a process, while innovation is a valuable creation. In terms of individuals, the mastery of new knowledge can be referred to as self creation, and regardless whether the result to have the value effect, the application of new knowledge in solving problems can also be called self innovation, since it is valuable for individuals to integrate new knowledge with their knowledge system and apply it whenever it is required.

The creative potential is a potential natural attribute that is owned by everyone, an attribute that is owned by every normal human being according to the creationism and therefore has the creative potential to be developed. Through scientific education and training, human's creative potential can be constantly stimulated, transformed into explicit creativity and continuously improved. [4] Behavior is the basis and the practice of creativity. Nowadays, it is an important indicator of the ability of individuals or teams that whether there is creativity in their behavior as well as the level of it.

### **3. Spatial View of Behavior Creation**

#### **3.1 Current Concept of Space**

On the tensibility and extensibility of moving matters, space refers to the position, size and volume of objects. [6] Space must be connected with matter to understand it properly. It can be concluded from Einstein's general theory of relativity, the structure of space shall be affected when an object moves or there is a force, while conversely, changes in the structure of space shall affect the way objects move and the forces act.

##### **3.1.1 Biological Space and Social Space**

During the process of constant growth, the surrounding space enables the spatial nature to be included in the subject consciousness of them (inclusive structure). The interaction between human and space is presented as the social living environment which is a part of human beings, the foundation of which is space. [7] Only the research and application of behavior creation in social space are meaningful. The human body exists in and occupies certain space, while the difference between humans is the boundary, which is also a division of space. Due to the survival instinct, human beings have to take the space around them as the source of materials. No single person or tribe can form a society. The emergence of "boundaries" stems from the necessity of coexistence between their space and that of others different from them. Therefore, space can both be divided and connected by space at the same time (split-connected structure).

##### **3.1.2 Cyberspace**

Nowadays, the ever-changing science and technology makes us more and more aware of the existence of virtual reality, that is, cyberspace. It refers to the space in virtual technology that virtual reality emerges, representing the "extensiveness" of virtual reality. In cyberspace, all realities have become various types of information through computer substrates. When virtual reality is closely related to information, all objects and behaviors are presented as binary logical results. The substrates formed by cyberspace is a kind of binary mathematical logic, and when it is applied to empirical experiments, physical movements can be understood in time and space through scientific calculus. [8]

#### **3.2 Behavior Creation in Social Space**

Since there are no boundaries in natural space, to express its survival intention, human beings show their identity through the ability of behavior creation, thereby forming boundaries, which are social, with others. The process of behavior creation is not only the process that the subject of the demarcation party makes his rights and identity recognized by the demarcation party (construction), but also the process of breaking boundaries (deconstruction) and integrating.

In the category of social space, our bodies are part of the space. Space doesn't work without our bodies. What the behavior creation space requires is a mandatory space fact, such as the size, scope and distance of it, so that our social perceptions, concepts and ideology are able to create the rigid

space, that is, to adjust, flex and soften it, thus making it a space knowledge system exclusive to human beings after the treatment of human cognitive system and creative system.

### **3.2.1 The Social Space Logic of Behavior Creation**

Social space is made up of complex consciousness. The socialization of space is about to privatize space and make the most powerful defense to this, which is required by both self-cognition and social identification. Social space can be divided into three levels, namely physics, function and the meaning and representation of space.

#### **3.2.1.1 From the Physical Level (Physical Perspective) , There are Only Various Entities as Well as the Spatial Relationships between Them. [7]**

The formation process from the physical level such as perception and consciousness of the body to the psychological level can be understood from the perspective of physical space, which is the structural explanation of the real space in the specific frame of scientific conception and an important attribute reflecting the objective existence of matters. Whereas the body itself can be a space or part of a space, at this level the smallest unit of behavior creation is the joints of human beings. As parts of the body, joints connect all parts of the body. The movement of the joint position leads to the coordination of all joints. Joints' perception of space is particularly focused by behavior creation. As long as human beings with physical space are used to solve interpersonal conflicts, people will truly understand the concept of conceiving space as a universal ability to connect objects.

#### **3.2.1.2 From the Functional Level (Social Perspective), the Segmentation and Connection Functions of Space are Determined by the Production Mode and Social Relations.**

Space is a spatial set of multiple functions [7]. Through physical activity in space, humans form a unified spatial perception. The body firstly adapts to the environment instinctively and unconsciously, and then produces active and conscious actions. The spatial nature of the body refers not only to the physical position space, but also to the social situation space.

#### **3.2.1.3 From the Level of the Meaning and Representation of Space (Psychological Perspective), the Symbolization and Representation of Space form the Specific Activity Environment of Human Beings.**

The visualization of space makes multiple narration and reading possible by forming multiple spatial texts, and thus generates semantics, which is the premise of cognitive sense of space. We can understand this through the mathematical space. As a rational space constructed with mathematical entities, mathematical space usually presents the structure of physical space in an intuitive and abstract way, so it is substantially a special conceptual framework. Might be not uninvolved in the phenomena and relationships in the objective world, the mathematical space can be developed in the logical world. However, mathematical space can provide mankind with an experiential experience of space. Humans understand real spaces through representation and symbolic systems, such as flat and three-dimensional spatial representations. The functional semantic system of space provides the most basic guarantee for the space activities of human beings [7]. After the representations and symbols are endowed with deep meanings, the space is accordingly attached with multiple connotations and meanings, while it is in this space that the behavior creation constantly deduces the process of its formation and extinction.

### **3.2.2 Behavior Creation and Sense of Space**

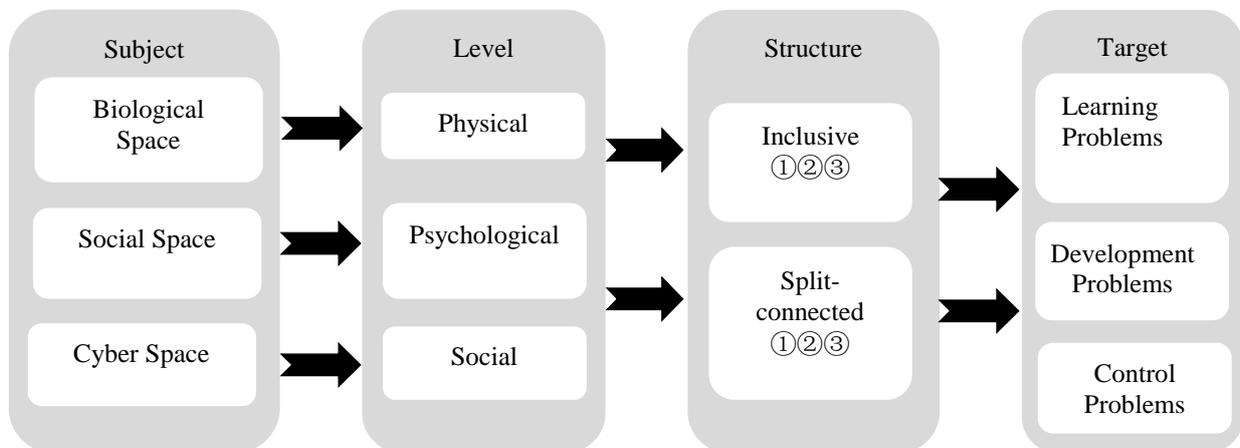
The sense of space refers to the feeling of spatial relationship between specific matters of a certain area. [7] It is an experience formed by the interaction between human and space. Besides the perception of space, the sense of space also includes the habits cultivated through imagination, memories, customs and traditions, especially the space experience formed by that specified by the production mode. It is an experience formed by the interaction between human and space. [12] The depth perception occurs between the perceiver and the world, which is the perception formed according to the relationship between the perceiver and his or her area. It encompasses life and movement and spans between the perceiver and the world instead of on either side. [8] The functional

life limited by practical goals is more about the weakening of human sense of space than the richness of sensibility. [12] Therefore, enhancing the sense of space contributes to the creation and innovation of behaviors, while behaviors shall constantly enrich the contents of creativity and innovative cognition of the sense of space. It can be concluded that at the beginning of occurrence, human subjectivity has incorporated space into its behavior creation, thus making the dual construction and multiple interaction between human and space possible.

### 3.3 Sports Behavior Creation based on the Sense of Space

#### 3.3.1 Analysis of the Process of Behavior Creation based on the Sense of Space

Discussion on the creation of spatial path of sports behavior is shown in Figure 1. Being target-oriented to solve the problems in the development, learning and control of movements spatial sense. We will still use the football penalty shot as an example. If the target is identified as just kicking the ball into the goal, then what should be focused are merely the player, the ball, the goal position, the part and position of the foot touching the ball, as well as the running track and placement of the ball, in which, the requirement for direction or orientation is single and broad, the distance is set within its range, no request in flight path of the ball, and no angle request for the placement of the ball. Therefore, the lower the space requirement, the lower the behavior creativity. If the target is set as a penalty shot special training before the game, then the shot must simulate the game situation, including identifying run-up distance and the part of the foot touching the ball the ball, predicting the goalkeeper's space movement state, confirming whether the false action of shooting is realistic in space performance, confirming the space combination of the false action and shooting action, choosing the trajectory of the ball's flight and the angle of the goal-breaking, etc., and making the best or optimal break combination according to their ability in every technical link. Since such creation is mainly aimed at development and control, it belongs to higher-level behavior creation.



Note: ① Direction or orientation; ② Distance; ③ Connection or relative position.

Figure 1. Path Diagram of the Sense of Space of Behavior Creation

During the initial learning stage of penalty shot, it is the space that in consistence with the control ability of the subject that is generally selected, while the biological time of the subject does not indicate the space control ability of the body. Although the possible restriction of space conditions on behavior creation will increase the difficulty of learning, to achieve effective creation, it is required to be tailored to individual and local conditions. The attempt and experience of social space and cyber space can help to improve individual's sense of space step by step. As shown in Figure 2, during the learning of the penalty shot, as a part of the space, the body starts to move and multiple joints are involved as well (physical level). The sensory system of human controls the movement of the body in space and makes corresponding actions and behaviors actively through the regulation of the nervous system, which is accompanied by complex psychological activities, psychological stimulation, psychological experience and the improvement of psychological quality (psychological level). In addition to the human's own space, the space occupied by the ball, the space of the goal, the

space of the goalkeeper and his mobile scope, the space of field, it may also include the space of audiences, teammates, competitors, as well as the referee, which together constitute a functional and random space. As a symptom, it can be both significant and signifié (social level).

As shown in Figure 1, the space of body should be constantly adapted to the course space, including the joints' linkage and control in its own space, as well as the integration and extraction of the space of body in the course space (inclusive structure of physical level). After the collision of the body space and the ball space, the ball leaves its original space, flies in the course space, finally falls into the goal and becomes a part of the goal space (split-connected structure of physical level). During the whole movement of the physical space, the occurrence, control and ending of the mind continue going on, that is, the sense of space of human cannot exist without space (inclusive structure of psychological level). Behavior can change or remain unchanged by changes in psychology. Controlling physical space and keeping it from being affected by external space sometimes requires controlling the excitation and inhibition of the nerves. In addition to increasing spatial awareness, behavior creation also shapes the spirit, which naturally leads to self-identity, self-motivation and self-value embodiment (split-connected structure of psychological level). Only when the behavior is created in various spatial perspectives can the scoring be achieved successfully. For example, the technical and tactical arrangement after penalty shot fails, the supplementary shooting technique and tactics after the ball is saved by the goalkeeper, the supplementary shooting technique and tactics after the ball is hit on the goal post (taking into account the different directions of the goal), the defensive tactics after the ball is caught by the goalkeeper, and the corner kick technique and tactics after the ball is blocked by the goalkeeper from the bottom line.

### **3.3.2 Behavior Creation Rules based on the Sense of Space**

The sense of space refers to the feeling of the body, while the formation, development and application of the sense of space of human beings is the result of the body' feeling, storing and creating through behavior. Therefore, the behavior creation rules based on the sense of space must firstly be explored from the space formation rules under the space perspective.

#### **3.3.2.1 The Instinctive and Unconscious Adaptation of the Body to the Environment**

Based on this, the experience on the body includes, in particular, the displacement of the body or part of the body in motion, the stimulation that occurs locally in the body, the periodic combination of movements, and the movement traces constantly presented by the limbs and joints under the visual center. The spatial nature of the situation arises after the spatial nature of the position. The perception of space develops harmoniously from local to whole, from single to various aspects. Although it cannot exist independently from society, and the body needs to gradually integrate into and control the order of space, thus making the behavior creation possible, the space conditions in which social order is formed will also have an impact on the behavior creation. The activity of the body is reflected in the adaptation of behavior creation to various changes of conditions. In addition, in the behavior creation, when the subordination of space is different from the expectation, the methods such as space reconstruction, space replacement, space complement and space overlap shall be adopted. Therefore, we can understand that the emergence of biological space, social space and cyber space is to meet the demands of human's exploration of the world, rather than a matter of human's will.

#### **3.3.2.2 Behavior Creation has Activity**

Since the perception-based experience and cognition are not the purpose in themselves, it is necessary to combine the knowledge and action and apply them to the reality, so as to stimulate the initiative of behavior creation. The path of behavior creation is explored from the physical level, psychological level and social level respectively, from the outside to the inside, from the inner relationship of individuals to that between individuals, from reality to meaning. In the distinction between the subordinate relationship and the boundary, the direction or orientation, distance, connection and relative position are studied to further clarify the behavior creation path. Like the rules of behavior creation under the view of time, the rules of behavior creation based on sense of space is also oriented to solving practical problems. It firstly explores the origin of behavior creation

from its own body, and then forms the path, improvement, combination, reflection and reconstruction of behavior creation by constantly recognizing the changing rules of the constraints of space order in terms of quantity and nature.

### **3.4 Behavior Creation and the Spatial Awareness of Body**

Besides the psychological meaning on the space, the space consciousness also has the meaning of space idea and is the substitute word of it. Although both the idea and psychology of individuals are quite abstract, they are expressed through the individual's words and deeds, thereby belonging to the same category regardless of the difference.

When the body is the subject of speech, the experience space will enable the body rich in culture, thus naturally reflecting the cultural background of the environment. Behavior occurs in certain situations. The relation between sense and knowledge of the physical body as well as the relation between behavior and space can not only build the relationship between people, environment and space, but also reveal the implicit body view and sense, so that the behavior creation can have a definite object in space, such as the magic of space conveying feelings.

## **4. Sports is a Shortcut for Behavior Creation.**

### **4.1 Behavior Creation and Mind Creation Enhance Each Other'S Beauty in Space-Time**

Behavior creation and thought creation are a pair of parallel lines, which are no longer independent due to the human body. The reality of the "body" in its environment can only be expressed in "distortion". Although language is bound by meaning, the magical power of the expressive experience of words makes the thinking space bloom. In our lives, the review of the past is to recall the past in the sense of spatial distance. The reason why life is wonderful due to movement lies in the fact that many phenomena existing in social space are incomplete, unclearable and impenetrable, which leads to the feeling of space-time emptiness in the face of reality. The body exists in reality based on the behavior, while the mind creation presents the result through the body, thus constructing the value and meaning. The absence of the body shall result in the loss of projection, while the absence of behavior shall cause the light to fade, due to which humans shall get lost in their search for themselves.

### **4.2 Behavior Creation Corresponds to the Spirit of Postmodernism**

As a creative spirit that seeks the greatest freedom (J.F. Lyotard, 1984), postmodernism pursues absolute freedom in the basic form of "uncertainty". It is required to empathize with the lack of freedom in life to understand the vitality needed to sustain the creative spirit.

Human beings are small for being individuals, yet great for their invention and creation. Starting from the space of their exclusive space (biological space), people step into the infinite daydream space (mind space) with confidence and inferiority (psychological space), and write unique lives through being the "crossovers", it is based on which humans initiate the dialogue with lives, seize empathy, and describe contradictions or conflicts from the perspectives of the phenomenon and representation. To focus on and avoid ignoring the body through the dialogue between the subjects, so that each crossover can reflect and understand by referring to the life experience of others, thus achieving the connections among people.

The reflection result is the accumulation of experience as a necessary method to improve the capacity of behavior creation, while the unified spatial intuition is completely derived from experience, whose continuous accumulation can improve behavior creation. As a path or combination of paths, the behavior creation path always tends to remain its stable structure. When faced with a new situation, instead of redesigning, it makes a slight adjustment to the existing pattern, even maintaining the existing pattern temporarily, while the usual action structure shall be changed only when the situation is unable to cope with or a more convenient way emerges. In the case that the processing structure of a spatial domain is not appropriate or not conducive to learning, it is required to conduct multi-spatial auxiliary experience and practice. To improve the separation ability of social aspects from the perspective of cyber space, such as filming when carrying out behavior creation to

restore the situation of each space in the virtual space and analyze its splitting state and rationality, or finding out the inadequacies or unreasonableness by comparing with the standard of behavior creation, or calculating the situation that will happen in the future space and making planning or prediction. For the sense of space that has been devoted to "surprising victory", "unimaginable" and "extraordinary", it is required to create a variety of paths or combinations of paths.

#### **4.3 Sports Embody Its Natural Attributes by Providing a Platform for Behavior Creation**

Sports is an education activity mainly based on the cooperation of the large and small muscle groups of the body. Different from learning text knowledge, it is the mastery of knowledge on motor skills. The creation of sports behavior throughout. In the field of sports, the exploration of behavior creation is the study of the learning, development and control of sports skills. In modern times, with a high degree of modernization and the prevalence of creativity and innovation, human beings gradually lost their bodies, thus losing the origin of creation and failing to clearly understand their relationship with time and space. The research on behavior creation is to seek the path of behavior creation from the "nature" of human beings, while sports is the best "stage" for behavior creation.

#### **4.4 Behaviors Embody Its Social Attribute by Creating in the Statute**

The activity ability of human body can only be known through body fitness test, in which if the natural development attribute of behavior creation potential is observed, and the behavior creation path is simple and easy to follow, then the behavior performance measured will naturally reflect the physical fitness of the tested person. In view of the inevitable individual differences, it is necessary to make up individual differences in the natural and social attributes of human being. Therefore, the task of sports is to scientifically grasp the best natural period of action creation potential and carry out scientific practice, so that the creative ability can be demonstrated through action. The behavioral creation path and path combination will be permanent in the individual and readily available in their lives. The development of behavior creativity is limited by basic abilities, space-time conditions and targets, and improved through repeated behavior creation path practice and effective feedback. In the process of behavior creation, it is necessary to take experience as the basis, targets as the guide and look back on its restrictive conditions so as to make the recreation of behavior creation inevitable.

The difficulty in the study of the creation of the actions and behaviors of a number of individuals in daily life lies in that it is difficult for us to realize a unified platform of qualitative and quantitative research due to the restriction or interference of a large number of uncertain factors, such as situation, environment and language. However, sports enable the study of behavior creation more scientific. Coming from life, the behaviors in sports are not only concentrated or even extreme expressions and forms of behaviors based on certain statutes, but also the channels and shortcuts for self-creation, development of self-creation potential and improvement of self-creativity.

As the education for human body carried by human beings, sports contain the essence of human activities with the body, thereby is undoubtedly rational and scientific. With the development of science and technology, the "fresh blood" is constantly being injected into the body-based educational knowledge, which constantly broadens and deepens our cognition and makes the expression of behavior creation become the indispensable treasure of our wonderful lives.

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