

# *The Representation of Dialectics of Nature in Western Art and Its Enlightenment to the Development of Chinese Modern Art Industry*

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**Abstract:** Science and technology are the driving force for the rapid development of art, and art progress also reacts on science and technology. The shadow of scientific thinking can be seen everywhere in the history of western art. Based on the research angle of natural dialectics, this paper summarizes and combs the natural view, scientific thinking and dynamic and static relations contained in the history of western art, associates the alienation of science and technology with the reflection of art, and probes into the thinking of art science from the concrete cases of "perspective" and "anatomy". According to the realistic development situation of digital and art in China, we should pay attention to the consumption mode of digital aesthetics and the cultivation of compound talents, summarize the beneficial experience in the integration of science and technology and art, and explore the development logic of Chinese modern art industry from the aspects of building modern industrial ecology, establishing modern cooperative development mechanism, and laying out modern international market, so as to illuminate the future road of science and digital integration in China.

## 1. Introduction

Dialectics of nature, as an important part of Marxist philosophy, plays a scientific role in guiding human beings to understand and transform nature. At the same time, dialectics of nature organically unifies marxist view of nature, view of science and technology and methodology of science and technology, and urges scholars to further explore the important role of science and technology in social life and labor practice under the background of social orientation. At the level of "nature", "society" and "human", Maslow's hierarchy of needs theory can be realized step by step with the help of science and technology, from basic survival needs to social recognition, artistic aesthetics, value realization, etc., which can be analyzed from the perspective of natural dialectics.

## 2. Method

### 2.1. Discussion Cases about Western Art from the Perspective of Natural Dialectics

#### 2.1.1. Nature View in Western Art History

Take artistic aesthetics as an example, the development history of western fine arts embodies the wisdom of natural dialectics everywhere. Firstly, artistic creation reveals life experience and provides tools for human beings to understand the natural space in which they are located. The four seasons of nature and the rotation of stars are the basic conditions and foundations of human society. The cultural and scientific systems formed by human beings relying on their labor practices in nature are based on natural productive forces. For example, *Lestres riches heures du Duc de Berry* written by the Limbourg brothers in the middle ages. The illustrations of the moon in this book of seasons record what the upper classes of the Netherlands, represented by Duke of Jean de Berry, see in a year. The natural scenery and the living arrangements of the people in the corresponding months are used as the criteria for distinguishing the moon. The Limbourg brothers plot the number of stars common in the sky at that time above the illustrations of March, and mark the laws of constellation transformation; Most of the areas in the picture are drawn as scenes of farm servants driving cattle to sow seeds, which is a true portrayal of human activities in a particular month and an artistic perspective used to explain "the interconnection of various objects in nature"[1]. Secondly, Mr. Lin Fengmian, a famous Chinese art educator, once commented that Western painting "focuses on imitating nature and tends to be realistic". The close connection between Western art and nature is evident. At the same time, when we observe the great changes in the course of western painting technology by using the thinking method of natural dialectics, we can see that man and nature are coordinated in the reproduction of form and spirit, and projected in the expression of skills. Tempera painting, which has been popular since renaissance, reflects the new techniques of western early art creators from experience to promote artistic creation, and the techniques have been repeatedly practiced by different subjects, that is, different masters. Tempera painting is the use of egg yolk mixed oily substances do not volatilize, dry extremely stable characteristics, explain the fresco color bright, not easy to peel off the reason, is the human rational guidance of the use of nature example.

In addition, the subjective and objective factors in the formation of artistic style also indicate that human experience and skills are integrated with the natural world.(Such as natural scenery, artificial buildings and other objective entities), social environment, historical background objective factors. It is self-evident that Western art style is the artist's personal subjective characteristics and works of the true reflection of objective reality.

#### 2.1.2. Scientific Thinking and Western Art

Scientific thinking is the accelerant that processes perceptual materials in human brain into rational cognition, and it is the thinking that discovers and reveals the essential relationship between things formed in practice. Some of the thinking is condensed into thoughts in the process of repeated deduction, and constantly guides the advancement, development and practical application of one or more disciplines. One of the most important characteristics of art is that it is created by human beings. Therefore, it is reasonable and feasible to consider western art in the thinking mode of dialectics of nature.

Technology is the reflection of man's relationship with nature practice, and the experiential thinking mode of technology structure in dialectics of nature influenced the early western painting skills. 30,000 years ago, La Gravette art created the image of Venus of Willendorf with plump

buttocks and breasts, which reflects the human thinking mode restricted by natural environment. Meanwhile, the sculpture of Venus of Willendorf in La Gravette art is made of loess, and the artistic creation of this traditional material and skill also reflects the technical structure with manual experience and skill as the dominant factor. The second stage of technical form structure is dominated by mechanical, mechanical experience means, with experience and theory of the dual characteristics of the structure. This structure corresponds to the historical period of the Western art field appeared after the industrial revolution, such as pop art master Andy Warhol and his invention of screen printing, it is in the specific printing machine, paint pigment production and use, based on consumerism and pop art Andy Warhol and other artists screen printing as an art medium. Compared with the traditional industrial printing technology, the screen printing technology has realized the change of schools and the leap of artistic taste in the technical innovation of pop artists. The form of experience technology does not stop at the appearance of entity technology, but also contains the creative wisdom of experience technology and entity technology. The times when art content was restricted by religion and art form was restricted by machine are getting farther and farther away, and the trend of art integration has made great progress under the promotion of science and technology integration.

Friedrich Engels believed that "the theoretical thinking of any era, including the theoretical thinking of the current era, is the product of historical development." According to the genetic analysis of the origin of human thinking, the evolution of western art also follows the transformation from the lower stage to the higher stage. Human thinking first develops from intuitive action thinking to concrete image thinking, and finally transitions from concrete image thinking to abstract logic thinking. The evolution process of human thinking is corresponded one by one in the history of western art. It can be found that the important western art schools with art as the main part show the key inflection point of human thinking evolution. Intuitive action thinking is the imitation of surface phenomena of things and the close simulation of actions. In the ancient times, the sculpture images of Greece and Rome became perfect day by day, the texture lines of works were clear and distinct, and the gods were "of the same shape", which showed the world's desire for earthly life.

Sculptor Myron's discus thrower vividly depicts the movement of the athlete one second before throwing the discus, trying to show the aesthetic standard of "human", that is, imitating the intuitive action thinking of reproduction.

The representation of concrete images lasted longer in western art history, spanning classical times, Byzantine art, Renaissance, Baroque and Rococo periods, Enlightenment period and early realism. In the long process of art development, artists explored and polished a set of painting techniques to perceive concrete images. Especially in the middle and late 19th century, production needs were the basic driving force for the development of science and technology. The industrial revolution gave birth to railways and ships, and with the construction of transportation lines, Europe was gradually connected as a whole. Extensive technological revolution led to scientific leap, "the development of technology provides subjects and necessary material means for scientific research", social science, logical positivism, cell theory, evolution theory and other ideas followed, feudal autocracy collapsed in European countries, human aesthetic tendency became more personalized, realism shattered the romantic fantasy of returning to classical scenes, and artists no longer expressed the object of princes and nobles, but turned their creative eyes to ordinary people. Realism representative French painter Miller is keen to depict the production and life of the common people. His representative work "The Gleaner" takes the field after the autumn wheat harvest in the countryside as the creation background, takes the peasant woman picking up the ears of wheat to satisfy his hunger as the creation content, follows the light scattering principle of classical painting, condenses the artistic creation into the concrete image performance, pays

attention to the perceptual materials in nature, and displays the labor and life scene of people living in nature.

Finally, abstract logical thinking corresponds to post-impressionism in western art history, and later modernism, popism, dada and other art forms with emotional tension, distorted shapes, rough strokes, and colorful chaos. These art schools raise the structural representation of noumenon to interpretation and spiritual buzz. Due to the frequent changes of social systems in the 19th and 20th centuries, the irreparable damage caused by war and the pressure of livelihood caused by economic depression caused artists to constantly explore new definitions and functions of art in changing natural environments and social spaces. For example, the etymology of the avant-garde style comes from the pioneers of the French army. Picasso painted Guernica under Nazi German fire with a sense of geometric stitching. In the famous paintings painted on the basis of black, white and gray, scholars can interpret art with systematic methods. Through direct observation and factual comparison, scholars find that Picasso's Spanish town deviates from the norms of objective time and historical facts: History records that Guernica was bombed for nearly three hours in April from 4:30. In Guernica, the chandelier and dazzling lights give people a sense of anxiety and depression, but in fact, the Spanish town at eight o'clock will enter the night, and the gloomy background is only an amplification of the artist's inner feelings. This kind of emotional expression does not only refer to the surface shape of things, but also contains "entry" thinking, which is related to and different from the abstract logic of rational knowledge and scientific field. The connection lies in the fact that art and science at this stage are both concerned with the essential character of things; the difference lies in the difference in their presentation of essential character: art tends to enlarge emotion by means of abstraction, while natural science pays more attention to theoretical synthesis and practical benefits.

### 2.1.3. Static and Dynamic in Western Art

Engels once said: "Every science analyses a particular form of movement or a series of interrelated and interchanging forms of movement." In the field of art, sir E.H.Gombrich believes that the significance of the development of art history or aesthetics also lies in the extension of the analysis of movement time. In a keynote speech, the art historian E.H.Gombrich pointed out that "in the field of art, the problem of space and its representation occupies the attention of art historians to an almost exaggerated extent; However, the reproduction of time and motion has been inexplicably ignored"[2]. After this problem was raised, art historians gradually began to pay attention to the concept of motion space in art works. The value of paying attention to motion and time not only broadens the theoretical path of art analysis, but also highlights the theoretical implications of historical materialism and dialectics in the aesthetic dimension. Even if art has freedom of expression beyond reality, it does not mean that it is divorced from reality. The inseparability of motion and matter is still the principle that art creation must grasp, "motion without matter and matter without motion are unimaginable", all creative imagination should be based on realistic needs, otherwise it is groundless and meaningless, and it cannot promote social development and aesthetic progress.

Interpreted from the angle of time and space, art works can be divided into the movement of creative content and the movement of creative form. From the drifting brush strokes in the draft to the body angle of the finished work, even capturing a moment like a camera can point from the dynamic content in the picture to the high fighting passion of the revolutionaries in the French Revolution. In the draft drawing, even if the blurred face and details of the character are not completely outlined, it can be intuitively inferred from Eugène Delacroix's *La Liberté guidant le peuple* that the work is not a static scene, and the scene painted should also be a moment or instant with a large amplitude of the character's limbs. In Engels 'view, motion is not a simple position

change, but the motion scene in the art work cannot be separated from the motion examined in the natural dialectics. The concept of motion in the natural sciences has spawned the establishment of new disciplines, while sketches such as *Freedom to Guide the People* provide the audience with a narrative expectation, which is generated by the sense of motion of the draft, and the audience has an aesthetic impulse to appreciate the finished draft. The completion of *Freedom to Lead the People* begins with the displacement of people. (The images include a woman holding the French flag, a two-armed teenager running beside her, stacked corpses, etc.), allowing viewers to reflect on the meaning of carrying out advanced life movements. From the analysis of creation form, the "drip painting" created by abstract expressionism creates non-stagnant pictures through the instantaneous splash of pigments. The seemingly random creation is accompanied by accidental drops of pigments to give people a music-like rhythm. This artistic movement, as Engels said, can neither be created nor destroyed. It is the interaction between art, paper, pigments, emotions, painters and audiences.

#### **2.1.4. Alienation of Science and Technology and Reflection on Art**

With the change of times, the dialectics of nature has been continuously integrated into the alienation and reflection of science and technology. Under the guidance of Marxist critical spirit, the Frankfurt School of Western Marxism questioned the value neutrality of modern science and technology. The progress of modern science and technology has brought about positive development of society, but at the same time, it has also led mankind to go further and further on the road of "fetishism," and the traps of consumerism are everywhere. The slogan "In the future, everyone can be famous for 15 minutes" and the rise of mass media objectively reflected the upsurge of new commodity culture hatched by capitalism at that time. On one hand, it accelerated the pace of society, on the other hand, it manipulated people into slaves of consumption. People gradually lost their ability to judge and accept elegant culture and became followers of mediocre culture. The Frankfurt School argued that, in addition to the crisis of thought brought about by consumption mania, technology and its gradual extension of social control "led to a deep maintenance of the irrational reality of capitalism." As an artistic rebellion against violent and totalitarian technological rationality at this stage, Dadaism expressed its disgust and resistance to the traditional bourgeoisie and war with radical and absurd works. Jürgen Habermas believes that technocracy is not confined to political system, but permeates into culture and life, but I think that because art can transform ideology, Dadaism, Surrealism and other new art schools can be regarded as important forces to resist the "ideologization of science and technology" of capitalist society. In 1917, at the American Art Exhibition, Marcel Duchamp borrowed the title of French neoclassical master Ingres' famous work *Fountain* to name the male urinal, which was a sensation[1]. Duchamp and other Dadaist creators refuted the meaning and artistic concept of "beauty" in the old society, satirized people's pursuit of industrial products in the mechanical age, and worshipped the value of free thinking, which coincided with the hope of Frankfurt School that "new technology helps people get rid of the temptation of material needs and the bondage of ideological alienation, and promotes human freedom and liberation."

### **3. Results**

#### **3.1. Analysis of Artistic Scientific Thinking Based on Perspective and Anatomy**

The dialectics of nature reveals the general laws of nature, science and technology and the society they act on, which reflects and includes the western artistic creation. The evolution of human history and humanized nature strengthen the connection between human historical view and natural historical view, which further guides the generation of scientific theory and brands "the

imprint of will" in the iterative renewal of technology serving human beings for better production and life.

### 3.1.1. Western Art and Perspective

The concept of perspective represents a systematic art theory and technique applied to realistic creation with the help of scientific experiments, empirical observation and inductive methods. Before Early humanist, Leon Battista Alberti, perspective in scientific context and perspective in artistic context belong to two categories. Optical perspective system in ancient Greece lasted until the Middle Ages as a representative of perspective in scientific context. Ευκλείδης proposed in his Optics that "man can see things because the rays emitted by the human eye are reflected from the surface of an object and then perceived." Over the next hundred years, Claudius Ptolemaeus, Al Hazen, etc. summarized the relatively simple theory of optics. Al Hazen deduced the linear propagation of light through the principle of small hole imaging in dim environment. This conclusion has always been the scientific knowledge taught in the classroom of medieval Arab universities. It was not until 1415 that Filippo Brunelleschi, as a painter, combined science and art in an artistic way. He drew the Baptistery of Saint John in a small hole on paper based on the optical system proposed by Al Hazen, and placed the Baptistery in front of a mirror after punching the paper. The viewer could see the approximate picture of the Baptistery of Saint John from the reflection of the hole and mirror. At this time, linear perspective was officially discovered. With the help of perspective, medieval painters painted works that visually emphasized the sublime nature of God, the Virgin, etc. compared with previous flat paintings, including Masaccio's Trinity and the Virgin, St. John and the Provider, which created a three-dimensional perspective frame. Before Leon Battista Alberti's book On Painting, painters and sculptors used to call things "near big and far small" shortening based on empirical judgment, but it was not until Leon Battista Alberti introduced geometry into art that this technique of creating the illusion of depth was systematically reduced to geometric perspective. Gombrich, in The Story of Art, praises Filippo Brunelleschi for "giving the artist the mathematical solution to this problem (the reduction of the volume of objects at a distance obeys certain mathematical principles); it must have aroused great excitement among his painting friends."

### 3.1.2. Leonardo da Vinci, Western Art and Anatomy

The development of science shattered the stale cage suppressed by religion in the Middle Ages, and democratic academic air circulated in Europe. The Renaissance accelerated the fusion and collision of art and science, and the materialist epistemology had a soil for survival. Leonardo da Vinci, one of the three heroes after the Renaissance, made important contributions to promoting the coupling of scientific theory, technical application and art practice. Albert Einstein highly valued Leonardo's achievements in science and technology. "If Leonardo's scientific achievements had been published at that time, science and technology could have developed thirty to fifty years earlier." As Albert Einstein said, in addition to painters, Leonardo also made achievements in medicine, music, mathematics, physics, architecture, literature, astronomy and other fields. It is precisely because of the exercise of physics, medicine, astronomy and other natural sciences that Da Vinci cultivated his innovative thinking, and dialectically combined and reconfigured various production factors in the field of natural sciences, and maintained his enthusiasm for continuous creation. Under the social background of Renaissance freedom and humanity, natural art stimulated the advancement of scientific research. Artists, especially painters and sculptors, were keen on refining perspective techniques and dissecting corpses themselves to study human bodies. In the late 15th century, Leonardo da Vinci sought to achieve divine proportions through anatomical drawings

of the human body. He explored the human body in a strictly experimental and artistic manner. The process of completing the anatomical drawings was recorded in Leonardo's manuscripts. After the facial end was removed, Leonardo carefully described the facial blood vessels, muscle veins, cranial nerves and tissue patterns in the skull cavity[3]. In his manuscript of spinal bone sketches, the biological accuracy is comparable to that of 3D digital imaging five hundred years later.

On one hand, anatomy provides a factual basis for Da Vinci's artistic creation, and future scholars' understanding of Da Vinci's portrait works is true and verifiable; on the other hand, Da Vinci's superb painting skills contribute to the development of anatomy. In 2020, Nature published a study on the inner wall of the heart by The Cold Spring Harbor Laboratory in the United States, answering the question raised by Leonardo da Vinci after he drew the heart map in detail in the Renaissance. "The heart grows this structure (myocardial trabecula). Surely it is not just for decoration like I painted murals?" Leonardo's deliberate and systematic description and study of objective objects in his anatomy and painting denied God's dominance of the human world and objectively questioned the rule of religious theology, and was therefore denounced as "witchcraft" by the Church. In addition to the positive influence of anatomy on the development of art, Leonardo's anthropomorphic mechanical tools designed in 1495 are also regarded as the first prototype of human history. At the beginning of the 21st century, the world's first surgical robot named after Leonardo da Vinci was put into use. This surgical robot system, which pays tribute to the great artists and scientists of the Renaissance, has improved the efficiency of surgery in modern medical practice and played an extremely key role in liberating medical productivity. On the one hand, the cost of surgical treatment has been reduced, artificial deviation has been reduced, and the recovery speed of patients' wounds has been accelerated, essentially reflecting the goal of science and technology serving human development. In a word, Da Vinci's fusion of art and technology (anatomy) is a dialectical innovation practice at the stage of historical development at that time, which makes an example for exploring unknown fields of art and science, and promotes new knowledge to produce new achievements in creating material civilization.

#### 4. Conclusions

Early scholars generally believed that "modernization" first appeared in western society, and with the expansion of western trade behavior in the world, "modernization" dominated by "westernization" affected the evolution of human history in the east and even in the world, and "modernization" at that time was mainly manifested as "economic modernization" or "industrialization"[4]. However, with the deepening of "modernization" in different fields, some scholars still fail to get rid of the hegemonic vision of Western arrogance. For many developing countries, the suppression effect caused by "modernization" in Europe and America has existed for a long time. In order to trace back to the origin and explore the modernization model suitable for China's development, the Chinese government has demonstrated its determination to get rid of total "Westernization" based on the actual national conditions, social system and historical culture. People's Republic of China President clearly pointed out at the opening ceremony of the seminar on studying and implementing the spirit of the 20th National Congress of the Communist Party of China that "a country's modernization should not only follow the general laws of modernization, but also conform to its own reality and have its own characteristics [5]. Chinese-style modernization not only has the common characteristics of modernization in various countries, but also has distinct characteristics based on its own national conditions." The report of the 20th National Congress of the Communist Party of China emphasizes "stimulating the creative vitality of the whole nation's culture" and "persisting in creative transformation and innovative development" of the excellent traditional Chinese culture [6]. "Creative innovation" as a key word in the world culture and art

industry, Blair government development "creative industry" national policy left a heavy ink, and now is slowly outlining the modernization of China's art industry development scroll. Data show that in 2022, China's culture and art industry related scale has exceeded 16.5 trillion yuan. The industrial department with art and content as the core is getting the possibility of construction in the unity of opposites between universality and particularity of Chinese-style modernization by inheriting ancient times, innovating, absorbing, drawing lessons from, integrating the characteristics of Chinese and Western civilizations and seeking the answers of ancient and modern development.

It is not a western patent to pour scientific thinking into artistic creation. In the new era, China is also looking for a way out for science and technology. Since the 18th National Congress of the Communist Party of China, the CPC Central Committee has attached great importance to the integration of culture and science and technology. In 2019, the Ministry of Science and Technology jointly issued the Guiding Opinions on Promoting the Deep Integration of Culture and Science and Technology jointly with the Propaganda Department of the CPC Central Committee, the Ministry of Culture and Tourism and the Office of Network Information Technology [7]. Starting from the top-level design, the natural science and humanities social science resources will be sorted out and integrated to ensure that the deep integration of culture and science and technology can stimulate new industrial momentum in the process of meeting the growing spiritual and cultural needs of the people. As an important part of cultural industry, artistic works are constantly innovated in the tide of scientific and technological empowerment. The creators of artistic products and scientific and technological workers, starting from different sensory functions such as hearing, vision and touch, take "connected thinking" as the banner, which not only connects artistic value with scientific theory, but also connects digital expression forms and technological practices applied in art; In recent years, art consumption based on digital collections and art education based on science and technology have provided two ways of integrating art and science and technology.

#### **4.1. Digital Collections: A New Consumption Concept Integrating Art and Technology**

Robert King Merton, the father of sociology of science, believes that science, which has not yet been institutionalized, needs the support of social and cultural forms. However, even in today's increasingly institutionalized science, the influence of culture on the development of science and technology is extremely important. Culture and art provide humanistic connotation for science and technology, so that science and technology are no longer empty tools; science and technology inject new vitality into culture and art. Taking digital collections as an example, with the maturity of blockchain technology, it is gradually widely used in art collections. Under the localization transformation of China, digital collections emerge as the times require. Unlike traditional art collections or works of art, digital collections give viewers a sense of participation, so the people who appreciate the collection or the owners of the collection are no longer "viewers" in the full sense. Under the protection of blockchain technology, digital collections have unique digital copyright benefits with unique digital certificates. This full-process peer-to-peer service and personalized customization mechanism enhance the participation experience of digital collection owners and meet the needs of differentiation. Digital collections broaden the dimensions of art creation commercialization in three ways. First, the rapid development of blockchain technology has created storage and exhibition fields for works in the form of music, paintings, videos, 3D models, etc., so that different types of art creators can carry out artistic ideas in a digital environment [8]. Secondly, the digital assets of art can be traced back, which not only corrects the bad behavior of some auction houses mixing genuine works with fake ones, but also helps to perfect the royalty system. Finally, digital collections have both technical renewal value and artistic appreciation value. Owners obtain the only inalienable right of digital assets under the encryption

protection of digital technology. The number of consumers who buy digital collections increases, which further ignites the creative desire of the main body of digital collection market and promotes artistic progress to some extent.

#### **4.2. Science and Technology Art Major: Creating a Highland for the Integration of Science and Technology and Art**

Premium education is the premise and foundation for the development of science and technology. Education catalyzes the continuous and inherited dissemination, digestion and absorption of science and technology in society. In 2012, China listed "Art and Science" in the subject catalogue of the Ministry of Education. Ten years later, the Central Academy of Fine Arts declared and set up a science and technology art major[9]. It is enough to show that the coupling of science and technology and art has played a positive role in the country's urban planning and rural construction. Science and Technology Arts Program aims to cultivate innovative talents who use technology to improve the quality of life. It creates rich audience experiences through micro-art, and directly affects people's spirit in the form of pictures, sounds and three-dimensional perception. At the meso level, it builds "smart cities" and "digital villages" full of cultural flavor based on mathematics, optics, human engineering, and other disciplines and sustainable ecological concepts. In a word, from "art and science" to "art of science and technology", it is necessary to give full play to the dynamic role of man and create a new situation in which man and nature coexist harmoniously and art and science and technology advance cooperatively.

#### **4.3. The Path of Chinese Modernization of Art Industry: Create a Modern Industrial Ecology**

To jointly build an industrial ecology from the perspective of Chinese-style modernization, we should adhere to the tenet of keeping correct and innovative and strengthen the core kinetic energy of cultural and creative industries. On one hand, we should deeply excavate the core of Chinese excellent traditional culture and determine its core competitiveness in content output. In recent years, all provinces and municipalities have tried to find a way to promote rural revitalization relying on "traditional intangible cultural heritage + art." For example, Wuyuan County of Jiangxi Province combines intangible cultural heritage Huizhou opera, Nuo dance and "sunning autumn" sightseeing to improve the integration quality of rural cultural tourism industry; The Torch Festival in Liangshan Yi Autonomous Prefecture of Sichuan Province promotes the extensive interaction between cities and villages and drives the employment and income increase of poor people in Liangshan. On the other hand, "adhering to the core position of innovation in the overall modernization construction" and "accelerating the implementation of innovation-driven development strategy" put forward more urgent requirements for the innovation and development of the art content industry. In the Opinions on Promoting the Implementation of the National Cultural Digitalization Strategy issued by the General Office of the State Council of China, we encourage the expansion of the supply of digital cultural products, explore the "personalized + batch" intelligent creation and production mode of artistic and cultural products, and improve the market competitiveness of cultural products and art supply in the digital era. With the in-depth implementation of the national cultural digitalization strategy, the rapid development of new cultural industries characterized by digitalization, networking and intelligence has become an important support for promoting the high-quality development of China's cultural industry. Data show that the digital economy of the mainland reached 50.2 trillion yuan in 2022. Cultural venues accelerated the digital transformation, and the digital service capacity of reading and art popularization for the whole people was significantly improved.

#### **4.4. The Path of Chinese Modernization of Art Industry: Put Up a Modern Cooperative Development Mechanism**

Alasdair Chalmers MacIntyre believes that "without common interests, the community's public life has no meaning"[10]. Accelerating the financing of different art manufacturing sectors in the field of cultural creativity is an important way to expand economic and social integration, which is conducive to enhancing the degree of interest linkage in all links of the art industry. At the same time, we should speed up the construction of international cultural and creative cooperation mechanisms, and give play to the key and fundamental role of cooperative development mechanisms in maintaining and consolidating the destiny community of cultural and art industries. On the basis of fully promoting the establishment of "cooperative" non-governmental organizations, jointly raise "creative funds" to complement the advantages of China and overseas countries, introduce loans for the transformation and upgrading of the art industry, encourage the promotion of medium and long-term capital planning, and jointly improve the cultural and artistic industries. Talent is the first resource, innovation is the first driving force for cultural and creative industries, and innovation and creativity in culture and art mainly rely on high-quality cultural talents. Summarize talent training experience in large-scale cultural and creative enterprises, replicate and promote it, and form siphon effect in key cultural enterprises. Colleges and universities improve the cultural talent training system, accelerate the training of "academic + technical" compound cultural talents, and establish mutual learning and mutual learning alliances for art management majors. Joint organization of culture and art formulates innovative entrepreneurship projects and cultural industry incubation projects in cultural and creative industrial parks, independently forms cultural cooperation teams, and cultivates various innovative entrepreneurship teams and individuals. In terms of government support, we will build a database of cultural talents oriented to the whole field and industry chain of cultural and creative industries, and optimize the talent development environment of cultural and artistic industries.

#### **4.5. The Path of Chinese Modernization of Art Industry: Layout of Modern International Market**

"Traditional culture constitutes the spiritual identity, cultural bloodline and value system of the country and nation. China's international discourse power has profound traditional cultural genes. Due to frequent trade unilateralism in the international market, China must find a cultural modernization path suitable for its own development to strengthen its development and form its ability to cope with risks. In 2022, China's foreign cultural trade volume exceeded US\$220 billion, an increase of 11% year-on-year [11]. Targeting cultural creativity and art industries to overseas markets is an inevitable requirement for accelerating the construction of a cultural power and a trade power, and is also an important channel for accelerating the development of cultural creativity in different regions of China. On the one hand, in the process of building a new development pattern, it is necessary to smooth the international and domestic double circulation system in the field of cultural creativity, integrate the route of the "Maritime Silk Road", and promote excellent cultural and creative works that show Chinese cultural characteristics. On the other hand, we will continue to build international cooperation networks, strengthen ties with international institutions and exhibition units in various industries, actively participate in international exhibitions of art and cultural creative industries, and push cultural creative and artistic innovation products to different target markets according to different market characteristics and different types of works in the process of adhering to the development path of "Chinese modernization". In general, international exploration of different sectors of the arts and culture industry helps to "tell the Chinese story" in a broader market arena.

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