

Transformation and Contradiction: Reconstructing Art in the Perspective of Artificial Intelligence

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Abstract: With the continuous advancement of the Internet, big data and artificial intelligence technology, it has brought far-reaching impacts and potential opportunities to traditional art, and at the same time continues to shape its content and form. From generating art to analyzing and preserving artworks to innovating the art market, AI is reconfiguring the ecosystem of art in an unprecedented way, which expands the boundaries of art creation, and promotes the integration of art and technology. However, the reconfiguration of art also faces many challenges and opportunities. The balance between technology and humanities is crucial to prevent art from losing its humanistic connotation due to over-reliance on technology. At the same time, we also need to face the limitations of AI algorithms and the originality of art works, to reveal the internal mechanism and external manifestation of art reconstruction, and to further explore the path of art development under the symbiosis of human and AI.

Keywords: Artificial Intelligence; Art Reconstruction; Symbiotic Development; Creative Approach; Aesthetic Concepts

1. Introduction

In today's era of rapid technological change, artificial intelligence, like a powerful torrent, is rapidly sweeping through all fields. Art, an ancient and charming form of human spiritual expression, is also inevitably subject to the profound impact of artificial intelligence. The rise and development of AI technology is reshaping the connotation of art in an unprecedented way, from the brushstrokes of painting to the melody of music, from the performance of the stage to the presentation of images, the figure of AI is everywhere. It is not just a tool or a means, but a brand new source of creativity, opening up unprecedented paths for

the development of art. However, this change has not been smooth, and while it has brought surprises and opportunities, it has also triggered confusion and challenges. Therefore, it is of great theoretical value and practical significance to deeply explore the impact of the age of artificial intelligence on art and study the reconstruction path of art in this new environment.

2. Changes in the Art Environment Triggered by Media Iteration

In the face of the new wave caused by the era of artificial intelligence, art creation has ushered in unprecedented opportunities and challenges, and has gradually become a research field of great interest. The use of AI technology in art allows us to explore the potential of technology in art creation in a whole new way. In today's rapid development of AI, it is no longer just a technical tool, but also an important factor involving artistic creation and aesthetic concepts. As the "artefact of artefacts", AI-generated artefacts have indeed triggered a number of profound discussions and challenges regarding attribution, originality and artistry.

First of all, we need to approach the new phenomenon of AI in the field of art with an open mind and a cautious attitude. Traditionally, art is an expression of human creativity and emotion, and a witness to culture and history. And now, the intervention of AI brings brand new challenges and possibilities to this tradition. We should realise that AI is not a simple tool, it has its own learning ability and creative expression. Therefore, we need to accept its existence with a more open and tolerant mindset, and explore how it interacts with human creations and enriches and expands artistic expressions. Secondly, regarding the difficulty of attribution of AI-generated objects, this is a very challenging topic. While the attribution of an artwork usually involves the author's identity and creative intent, AI-generated works may

involve multiple levels: from the technological operator to the data provider to the algorithmic designer, and so on. Current legal and ethical frameworks are not fully adapted to this new form of creativity, and there is an urgent need for legal and ethical discussions to establish reasonable mechanisms for the attribution and protection of these works.

In addition, the issue of the "artistry" of AI-generated objects also needs to be explored in depth. When we talk about "artistry", we must talk about its artistic production. Artistic production as the product of the artist is a special kind of spiritual production. "Artistic production" is developed from the concept of "spiritual production", and the formation and development of the concept has been influenced by Liszt, Say, Kant, Hegel, Feuerbach, etc. However, in distinguishing between "artistic production" and "artistic production", the concept of "artistic production" has been influenced by the concept of "spiritual production". However, the method of distinguishing between readymade products with "artistic" qualities and utilitarian objects can no longer be based on perceptible and recognisable physical properties, but only on the invisible artistic atmosphere in which the object is situated. Art critics now need to address the attributes of the works that AI is involved in producing, and by routinely placing the generated objects in the theoretical atmosphere of the "art world", AI may also have accomplished the "transmutation of technological objects".[1]

Artificial intelligence, as a technological tool, intervenes in artistic creation in a variety of ways, ranging from simple aids to the ability to learn and create on its own. However, the lack of emotion and consciousness in AI makes the works it creates often questionable as to whether they are truly artistic. On the one hand, it has been argued that because AI is unable to give emotion and depth to its creations, these works should be considered non-artistic because they lack true creativity and artistic soul. This view emphasises the importance of the emotional expression behind the artwork and the author's intention in the definition of art, and excludes AI generatives from the traditional art circle. On the other hand, there is an opposing view that AI-generated objects can equally have a place in the art scene. Although they are incapable of expressing emotions, their place and

significance in artistic creation can be explained through the framework of art theory or historical knowledge. These views seek to embrace the possibilities created by emerging technologies by expanding the boundaries of traditional art, arguing that the definition of art should be more open and flexible, adapting to the challenges and changes brought about by technological advances.

The process of defining art is not only about distinguishing the artistry of a work, but also about the identity of the artist and the creative process. Art is seen as an expression of human creative thought, and "creativity" is equally seen as unique to human beings. It has been noted that creativity is a judgement of degree rather than an absolute distinction. The connotation of creativity can be divided into many aspects, such as artistic concepts, connotations of works, styles, expressive methods and so on. [2] The intervention of artificial intelligence has triggered profound thinking about human creativity and technological innovation, which may threaten the status of traditional artists and also bring new perspectives and methods for art creation. In this process, art receivers play a key role. They need to gradually adapt to and understand the forms of artistic expression brought about by new technologies, from initial shock to gradual acceptance and recognition, and need to form a new conceptual norm to assess and understand these works. Artistry is not only about formal beauty, but also includes the expression of emotions, the exploration of ideas, and the reflection of human experience and social issues. Although AI can imitate and generate similar artworks, whether it can truly possess the soul and depth of art is a question that needs to be examined and pondered over and over again. Therefore, we need to keep an open mind when dealing with the new phenomenon of AI in the field of art, and at the same time, we need to conduct in-depth discussions at the legal, ethical and art theory levels. Only in this way can we better understand and respond to the challenges and opportunities brought by AI to the art field, and how to promote the continuous innovation and development of art at the intersection of technology and art.

3. New Perspectives on Artistic Creation in the Age of Artificial Intelligence

In the era of artificial intelligence, art creation

has ushered in unprecedented new perspectives and methods. Advances in intelligent technology have not only changed the process and form of artwork creation, but also provided artists with new tools of expression and means of creation. Intelligent technology has not only changed the way art is created, but also promoted the horizontal integration of art with other fields.

The first is a change in the way of creation. In visual arts, Generative Adversarial Networks, abbreviated as (GAN) and Variational Autoencoder, abbreviated as (VAE), are widely used in art creation. They are deep learning models that enable image style migration, capable of learning the underlying style of an image and combining the content of one image with the style of another, for example, converting modern photographs into the style of art masters such as Van Gogh and Dali to generate modern images with a classic art style. In addition, it can be seen in music, literature, and video creation, and in recent years, GAN and VAE have been used in a large number of installation art. through the sensors and cameras to capture the audience's movements and expressions, and generate the corresponding artworks in real time. For example, in interactive art exhibitions, GAN and VAE are used to generate dynamic visual effects and music according to the audience's movements to enhance the viewing experience.

The application of GAN and VAE in art creation demonstrates the great potential of the fusion of technology and art. By learning and generating potential representations of artworks, they are able to create highly original and diverse artworks. Whether it is image generation, style migration, music composition, or multimedia art, they provide artists with powerful creative tools and new ways of expression. In the future, with the continuous development and application of science and technology, art creation will usher in more innovations and changes, bringing colourful art experiences to mankind.

Secondly, cross-disciplinary creation provides unprecedented opportunities for horizontal integration of artistic creation. For example, artists collaborate with engineers and scientists to explore the application of intelligent technology in art and create works that are technologically innovative and artistically beautiful. Such cross-disciplinary collaboration not only integrates different art forms, but also combines the fields of science, technology, and

engineering to expand the expressiveness and innovation of art.

In the field of painting, the development of AI painting can be traced back to the 1970s. 1970s: Artist Harold Cohen invented AARON, one of the first AI painting tools. AARON can paint with the output of a robotic arm, which is driven by a computer programme based around rules and algorithms. 2006 saw the creation of The Painting Fool, a computerised painting product similar to AARON, which looks at photographs and extracts colour information from them, using real-life painting materials such as paint or pencils. 2012 saw the creation of The Painting Fool. In 2006, there was The Painting Fool, a computer painting product similar to AARON, which could look at a photo, extract the colour information in the photo, and use real-life painting materials such as paint, pastel, or pencils, etc. In 2012, Google's Ernst & Young Wu and Jeff Dean trained a model that could generate a blurred cat face based on a large number of images of cat faces using a deep learning model, which marked the beginning of a new era in AI painting. In 2014, Ian Goodfellow et al. at the University of Montreal, Canada, proposed the Generative Adversarial Network (GAN) algorithm, which brought a new development to AI painting. The essence of the GAN algorithm is to generate images through the adversarial process of generators and discriminators. 2015: Google launches Deep Dream, an image generation tool that generates psychedelic and surreal drawings. In the same year, major advances in intelligent image recognition technology allowed computers to algorithmically recognise and label objects in images, and some researchers were curious to see if the process could be reversed to generate images from text, so they fed some text into a computer model to see what it would produce, and the model actually produced some images.

Compared to the development of AI in painting, the development of AI in sculpture is in its infancy, and its potential is gradually unfolding as technology develops. The application of AI in digital fabrication and 3D printing has made the production of complex sculptures more efficient and precise. AI can optimise design files, improve manufacturing efficiency, and ensure the accuracy and quality of the work while maintaining the artist's creativity. For example, The Impossible Sculpture: a 1.5 metre high, 500kg sculpture made primarily of stainless steel,

featuring a gender-ambiguous human holding a globe. The AI software that designed the sculpture "learned" from five great artists, including Michelangelo and Rodin. By analysing and learning from the creative styles of these five artists, the AI software first generated a flat image and then modelled it in 3D to complete the final design. AI can also be used to automate the sculpture process. For example, through robots and intelligent tools, precise carving and surface treatment of complex sculptures can be achieved, reducing labour costs and errors in the manufacturing process.

AI can play an important role in cultural heritage preservation by helping to preserve and reconstruct damaged historical sculptures through image recognition and reconstruction techniques. These technologies can also help researchers analyse and preserve digital records of cultural heritage. "Digital Dunhuang" is a major project proposed by the Dunhuang Academy, which aims to protect and preserve Dunhuang's cultural heritage using digital technology. The project uses a combination of photographic and computer technology, laser scanning and structured light to digitally reconstruct the murals and coloured sculptures of Dunhuang's caves in two and three dimensions, as well as to digitise large sites using remote sensing mapping and oblique photography. As a virtual project for Dunhuang protection, the project includes three parts: virtual reality, augmented reality and interactive reality, which makes Dunhuang treasures digitised, breaks the time and space limitations, and meets the needs of people's visit, appreciation and research, so that more people can experience the charm of Dunhuang culture in an immersive environment.

In the early 1990s, the Dunhuang Academy began to explore the practice of "digital Dunhuang". In 2016, the "digital Dunhuang" resource base platform online. By the end of 2022, the Dunhuang Academy has completed the digital photographic collection of 289 caves, 178 caves image processing, 45 bodies of colourful sculptures, 140 caves, 7 large sites three-dimensional reconstruction, 162 caves panoramic roaming programme production, more than 50,000 archival negatives digitized. The "Digital Dunhuang" project is a demonstration of the significance of the century project, which uses computer technology and

digital image technology to achieve the permanent preservation of the Dunhuang caves heritage and sustainable use. Through "Digital Dunhuang", netizens from all over the world can log in to enjoy a 360° view of high-definition digital images of the murals in 30 caves spanning 10 dynasties, including the Northern Wei Dynasty, the Western Wei Dynasty, the Northern Zhou Dynasty, the Sui Dynasty, and the Tang Dynasty, as well as textual introductions to the murals, and a virtual roaming experience.

The "Digital Dunhuang" project is an important exploration and practice of the Dunhuang Academy in the field of digital conservation and inheritance of cultural relics. The project provides strong support for the protection, research, display and dissemination of Dunhuang's cultural heritage. By digitising the precious murals, sculptures and other artefacts in Dunhuang's caves and recording and preserving them with high precision, it not only helps to prolong the life of the artefacts, but also allows more people to appreciate and learn about the essence of Dunhuang's art through virtual means. This project is not only significant in the preservation of Dunhuang culture, but also provides new ideas and methods for the digital preservation and inheritance of global cultural heritage. The digital technology will enable remote access and study of the artefacts, as well as a wide range of exhibitions and educational programmes, allowing Dunhuang's cultural influence to be further expanded and spread.

4. Artificial Intelligence Gives New Ideas for Aesthetic Education

Aesthetic education has always occupied an important position in the history of China's educational development. Famous educator Cai Yuanpei once pointed out: "pure aesthetic education, so cultivate our feelings, so that there is a noble and pure habits, and so that the people I see, self-interest and detrimental to the thoughts of others, in order to gradually frustrated." [3] Zhu also said that "life is originally a kind of art in the broad sense" [4], and believes that aesthetic education can promote the art of life. Modern pedagogy believes that "aesthetic education is the education to cultivate a correct aesthetic outlook, to develop the ability to appreciate and create beauty, and to cultivate noble sentiments and civilised qualities." [5]. To sum up, "aesthetic

education" includes aesthetic education, aesthetic education, art education and so on, and "aesthetic education" is included in the scope of aesthetic education. Aesthetic education is aesthetic education, in other words, it is also the education of perceiving beauty. In the process of aesthetic education, teachers often use art, music, theatre and other forms of art to stimulate students to perceive beauty. Artificial intelligence, on the other hand, provides new means in the way and path of perceiving beauty. In the era of artificial intelligence, art education presents some new features and development trends. On the one hand, artificial intelligence provides more resources and tools for art education. Artificial intelligence-driven online learning platforms provide a large number of art learning resources, including video courses, interactive tutorials and art work libraries, so that students can learn anytime and anywhere. These platforms also provide community interaction functions where students can share their works, exchange creative ideas, and get feedback and advice from peers and tutors. At the same time, AI technology can break geographical and resource constraints and bring quality art education resources to all parts of the world, especially to regions with scarce education resources, to promote education equity. Through online platforms and open courses, more students can access high-level arts education and enjoy equal learning opportunities. For example, through virtual reality and augmented reality technologies, people can experience artworks and scenes immersively, expanding the dimension of aesthetic experience; using technologies such as intelligent image recognition, it is easier to analyse and appreciate the details and styles of artworks. In addition, AI can provide multicultural art learning resources to help students understand and appreciate art works from different cultures and enhance cultural inclusiveness. And it can pay attention to the individual differences of each student, provide adaptive learning, and respect and support each student's artistic development path. On the other hand, AI also prompts people to rethink the nature and value of aesthetic education. It reminds us to pay more attention to cultivating people's aesthetic judgement, creativity and emotional resonance, rather than just relying on technological presentation. At the same time, it is also necessary to guide people to be able to maintain a sharp aesthetic perception

and independent aesthetic views when facing a large amount of digitised art content.

In intelligent teaching aids, AI can provide personalised learning recommendations and teaching aids based on students' learning styles, abilities and progress. For example, by analysing a student's drawing work, the intelligent system can give personalised feedback and suggestions to help students improve their artistic skills more effectively. Through virtual reality and augmented reality technologies combined with artificial intelligence, virtual tutors or simulated artists can be created to show students the process and techniques of art creation, enhancing the interactivity and visual experience of learning. In digital display and global interconnectivity, AI technology can support virtual reality art exhibitions and online art platforms, allowing artists and audiences around the world to create and communicate across geographical distances. This form not only expands the scope of art dissemination, but also promotes cross-cultural art exchange and understanding. In the course of the past, whenever we met with artificial intelligence, a strong sense of crisis that we might be replaced by it would often emerge from the process of passive acceptance of the new technology. This is accompanied by a certain degree of resistance as well as trepidation. As Heidegger suggests, technological demystification allows the hegemony of representationalism to maintain its grip on the way we understand the world, reducing the object to a "bestand" and leaving us with a particular form of "blindness". [6] It is time for us to change our mindset from passive "acceptance of technology" to a brave new direction of "creative challenge". We should proactively use artificial intelligence to participate in the teaching of aesthetic education, giving full play to its multidisciplinary integration characteristics. In this way, it can provide students with rich multidisciplinary knowledge support for their creative practical activities, and help them achieve broader exploration and deeper development in the field of art and aesthetics.

Aesthetic education in the era of artificial intelligence is undergoing profound changes and innovations. Artificial intelligence can assist the teaching of aesthetic education and customise personalised learning programmes according to the characteristics and needs of students, but the irreplaceable role of teachers in guiding

aesthetic emotions and stimulating creativity cannot be ignored. In the future, with the continuous development and maturity of artificial intelligence technology, aesthetic education will usher in more possibilities. However, the era of artificial intelligence also requires us to incorporate the exploration of issues such as the ethics of science and technology and the change of aesthetic concepts in aesthetic education in order to better adapt to the development of the times.

5. Controversies and Challenges in the Development of Art Reconstruction

In the process of art reconstruction in the age of artificial intelligence, many controversies and challenges have inevitably emerged. Firstly, there is an ongoing debate about the artistic nature of AI-generated works. Some people believe that it can display unique artistic charms. For example, in the creation of paintings, "AI can be a very useful tool and partner in the digital age, whether it is for the enlightenment of creative inspiration, the creation of new painting styles, or the enhancement of creative efficiency." [7] while others are convinced that it's just the result of mechanical arithmetic and lacks true artistic soul and emotional depth; Delacroix points out that artistic creativity is an inner force that creates new things and images, breaks through the limitations of existing things and experiences, and even transcends established laws and norms. [8] Although AI is able to create new images, music, and interactive images by virtue of adapting mathematical logic algorithms, however, its creation is still significantly constrained by linear logic and established rules in nature. AI's creative process tends to follow predefined patterns and algorithmic paths, making it difficult to escape this inherent limitation. In stark contrast, human imagination and creativity are unrivalled in their freedom and agility. Unshackled by the shackles of linear logic and established rules, humans are able to keenly capture the potential connections between various seemingly unrelated things. This unique ability allows humans to produce highly innovative non-logical and heterogeneous thinking. Driven by intuition, inspiration and emotion, human beings can break out of the conventional thinking framework and open up entirely new artistic and creative fields. Whether in artistic creation, scientific research or everyday life, this unfettered way of human

thinking offers unlimited possibilities for solving complex problems and creating unique value.

Second, the boundaries of the subject of artistic creation become blurred, which raises concerns about the unique status of the human artist, and people fear that the purity of traditional artistic creation will be impacted. Furthermore, AI-generated works may have a large number of similarities and repetitions, leading to a certain degree of homogenisation in the art market and affecting the diversity and innovation of art. At the same time, the use of AI technology may also bring about ethical issues, such as the difficulty of defining the authenticity and originality of works.

From the viewpoint of the development of art, for the artist as the main body of creation, his creative concept and creative language and form are always under constant development and change; and with the innovation of the technology of the times, new creative thinking and concepts constantly give birth to subversive artistic language and form. In the traditional concept of literature and art, people always agree that "art comes from life", "content determines form", and "art is the expression of the subject's emotion". [9] But with the emergence of computer art, algorithmic art, especially artificial intelligence art, it has influenced and even changed the traditional creation mode. Courses combining AI painting and Chinese medicine are gradually being taught in many colleges and universities. This is not only a new idea of aesthetic education, but also provides a new direction for the teaching of traditional Chinese medicine. Traditional aesthetic education teaching is based on the practice of art copying and theoretical appreciation, Chinese calligraphy and Chinese painting copying practice class, very popular with TCM students, traditional art philosophy and TCM philosophical thinking are originated from Chinese philosophy, in which the yin and yang discernment, the unity of heaven and man, and imagery thinking have the same root and the same origin. Nowadays, with the rapid development of science and technology, both traditional art and traditional medicine are facing new challenges. [10] In this process, it is possible to break through the traditional thinking mode, break the limitations of AI technology, and cultivate the innovative ability of discipline intersection.

The development of technology leads to the

transmutation of the conceptual system of art. As the subject of technology, human beings achieve self-liberation through technological invention, and while pursuing the freedom of body and mind, technology in turn profoundly influences the methods and concepts by which human beings know themselves as well as the external world. [11] The revolution of new technology has liberated people's physical and mental labour, giving them more time and greater freedom to engage in creative labour, such as artistic creation. Although AI plays an important role in art creation, the role and value of human artists still cannot be ignored. Human artists have unique creativity, emotional expression and cultural heritage, and they are able to create works with profound connotations and unique personalities. In the era of artificial intelligence, human artists need to continuously improve their abilities and qualities, integrate and promote each other with AI technology, and jointly promote the development of art.

6. Conclusions

In the course of technological development, the birth of each new technology has always been accompanied by voices of criticism and resistance. Such voices often stem from the fear of the unknown and the concern that the existing order will be disrupted. Every technological revolution, from the steam engine to electricity to computers, has gone through a similar process. From the perspective of art history, technological innovation has always been an important factor in driving artistic development and innovation. Each technological advancement has in some way redefined artistic expression and creation methods. Over the past few centuries, technological evolutions such as photography, film and television have profoundly changed the face of art. These technologies have not only provided artists with new tools and mediums, but have also expanded the audience and reach of artworks. The advent of photography, for example, has allowed artists to capture reality more quickly and accurately, while film and television have taken storytelling and visual art into entirely new dimensions, influencing popular culture and the development of artistic language.

Nowadays, the rise of Artificial Intelligence (AI), especially its application in art creation and production, has once again triggered widespread discussion and controversy. On the one hand, AI

technology brings innovative possibilities and new forms of expression to art. It is capable of generating, adapting and interpreting artworks, and even participating in the artist's creative process, thus expanding the boundaries of art and the audience's experience. On the other hand, AI's involvement in art creation has also raised some concerns and questions. Some worry that over-reliance on AI will weaken the artist's individual creativity and expression, resulting in artworks that lack depth and humanity. In addition, AI-generated works may lack emotion and originality, making it difficult to compare them to traditional human creations. This concern also extends to the impact on the art market and industry structure, with fears that the proliferation of AI works will impact the livelihood and market recognition of traditional artists.

In addressing these challenges, the key is to find a balance between technological advancement and artistic creation. Artificial intelligence can be used as a tool and resource to assist artists in their creation and research, but it should not replace their creative core. Artists and society need to work together to explore how the power of AI can be harnessed to enrich artistic expression and experience, while protecting and promoting the core values and creativity of art. In addition, attention needs to be paid at the societal and policy levels to develop appropriate legal and ethical frameworks that safeguard the rights of artists and the value of their work, while encouraging innovation and technological development. Through the joint efforts and rational discussions of the whole society, the application of AI technology in art creation can be better guided in order to realise a good pattern of symbiosis between art and technology.

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