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Special Experience, Art Space, Private Field: Limitations of Artificial Intelligence in Painting †

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Abstract: With the rapid development of artificial intelligence painting technology, artificial intelligence in painting has left us confused about the relationship between art and people, and even some people have revisited the old saying of "the end of art". It has had a certain impact on the status and value of humanity as the subject of paintings, triggering public doubts about the absolute nature of humanity as the subject of art, and bringing anxiety to social subjects. Based on this, we need to re-examine the phenomenon and value of the application of artificial intelligence in painting. This article aims to elaborate on the following three aspects. Firstly, from the perspective of painting appreciation, it is explained that human intelligence involves an incomprehensible special experience, resulting in the fusion of perspectives between creators and connoisseurs, as well as between individual connoisseurs. Secondly, from the perspective of painting tools, it is pointed out that artificial intelligence is an advanced tool and means of human intelligence in the process of painting, an external extension of the body, and has opened up new artistic spaces. Thirdly, from the perspective of painting and artistic creation, it is emphasized that human intelligence involves a private field that can be recognized as an artistic subject. This study is aimed at illustrating the irreplaceable role of human intelligence in the art of painting and the limitations of artificial intelligence.

Keywords: artificial intelligence; painting; human intelligence

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1. Introduction

At present, academic discussions on AI focus on word-processing AI, Go AI such as AlphaGo or algorithmic AI such as the recommended algorithm of ByteDance Company, and case discussions involving painting AI mainly start from the following perspectives: the copyright definition of painting AI works; the issue of whether or not the images used in the training set infringe upon this; the impact of artificial intelligence on the paradigm of artistic philosophy. The above discussions have played a certain role in promoting and reflecting on the role of artificial intelligence in the field of art, but the discussion in the academic community on the impact of artificial intelligence in painting on the subjectivity of human beings in painting is not sufficient. Given today's highly developed artificial intelligence technology, how should we view the subjective status of humans in painting? This is the core issue of this article. This article aims to elaborate on the following three aspects.

2. From the Perspective of Painting Appreciation, It Is Demonstrated That Human Intelligence Involves an Irreducible Special Experience

The appreciation of art is a process of blending perspectives, including the perspectives of creators and connoisseurs, as well as those of individual connoisseurs. Artists have their own unique perspectives. Creators are inevitably influenced by the environment of the times and past artistic resources to form their own artistic perspectives [1]. In the process

of self-expression, artists inevitably express their own adaptations of artistic eras and past artistic styles. Appreciators of art have their own unique perspectives. Appreciators are inevitably influenced by their unique life experiences. There are no two people who have completely identical life experiences. Even if some people have consistent external experiences during a certain period of time, their internal processing of external experiences is still inconsistent, so there are still differences in internal experiences [2]. Therefore, each person has their own special experience to form a unique perspective. Specifically, we will elaborate on the fusion of perspectives between creators and connoisseurs, as well as the fusion of perspectives among individual connoisseurs.

In the blending of horizons, the history of the effect or the history of acceptance of works of art is formed, which is embodied through comments from generation to generation that are piled onto works of art like layers of sedimentary rock. The process of blending horizons can be exemplified by how critics' comments on the *Mona Lisa* and research on the *Mona Lisa* have inevitably become a part of the *Mona Lisa*.

In terms of the perspective of the fusion of individual perspectives of the connoisseur, the invincibility and incommensurability of the connoisseur's inner experiences as well as the connoisseur's processing of their own experiences create a unique perspective for them. Due to the limited lifespan of humans, personal experience cannot be infinitely expanded, experiences between individuals will inevitably not overlap completely, and there will inevitably be differences between horizons. In art appreciation, the viewer's horizons constantly intersect and overlap to inspire each other, which is the result of interaction between subjects. It is precisely because of the inevitable differences in horizons that mutual inspiration between the perspectives of the connoisseur is possible. For example, the interpretations of Van Gogh's *The Starry Night* by critics throughout history inspire each other. In contrast, the essence of artificial intelligence is programming; the way of handling sensory experience is heterogeneous.

3. From the Perspective of Painting Tools, It Is Pointed Out That Artificial Intelligence Is an Advanced Tool, A Means of Simulating Human Intelligence in the Process of Painting, and Is an External Extension of the Body

The use of certain tools is an undifferentiated form of expenditure of human mental and physical energy, and human activities are all "conscious life activities" [3]. After the birth of tools created by humans, they are not transferred to the external world by human will, but become external objects and become a part of the "inorganic body of humans". However, according to its essence, a certain tool always has certain inherent connections and thus certain inherent laws [4]. Any tool is born to meet people's needs; a tool is initially designed to meet a certain need, but is later developed to meet a few needs and becomes complex. Therefore, it is necessary to study how to use this tool, so any auxiliary tool will become a tool that requires special learning. For example, programming languages closely related to artificial intelligence, from circuits to assembly language, and from procedural oriented languages such as C^{++} to object-oriented languages such as Python, is difficult to master without specialized learning. Nevertheless, in essence, a tool is still an external extension of the body for people to understand the world and transform objective objects.

As mentioned earlier, the current situation of artificial intelligence in painting is that all AI painting works cannot directly generate images in the human brain, and must be continuously modified based on their own needs on the basis of the original painting. The process of modification requires the use of corresponding special syntax due to the characteristics of artificial intelligence, which can be understood as a new programming language. People need to learn artificial intelligence's syntax in order to use it for drawing, just like how people learn to use cameras. The two following points are the most important.

3.1. The Process of Debugging Is Inevitable

Because the image in the human brain is only a rough impression, with blurry details and ambiguous images, the process of debugging is also the birth of new ideas. People need a draft and to polish it on top of that. Painting is the process of objectification of the

image in people's minds, and it is the expenditure of undifferentiated physical and mental labor. Artificial intelligence cannot skip the process of exerting labor, but just changes the method of exertion. From this perspective, using artificial intelligence to paint makes the former just a new tool for painting. In this context, tools represent the intermediaries that humans use to implement their own mental images. This intermediary can initially be the hands (painting on the ground), charred charcoal (painting on cave walls), or brushes, and eventually becomes a special tool of artificial intelligence. However, no matter what tool it is, it cannot allow people to skip the expenditure of mental and physical energy and directly obtain images in their minds.

3.2. Special Art Tools Give Birth to a New Art Space

The results obtained at the end of the labor process are already present in the imagination of the workers at the beginning of this process. To put one's own ideas into practice, one has to practice. Practice is an activity that is subjective and objective, and must rely on tool intermediaries. Therefore, it is necessary to learn the laws of tools. Therefore, artificial intelligence painting will be studied for its application laws, and artificial intelligence painting will become a new artistic tool. New artistic tools have new characteristics. Through continuous practice, people discover their patterns, create works, form unique practices, classic works, and esthetic groups, and create unique esthetic standards (as mentioned earlier, the evaluators of artistic works can only be humans, so the shapers of esthetic standards can only be humans), ultimately forming their own unique artistic history, which is a brand new artistic space.

4. From the Perspective of Creating a Painting, It Is Emphasized That Human Intelligence Involves a Private Field, Which Can Be Recognized as the Subject of Art

Based on Hegel's master–slave dialectics in his "Spirit phenomenology", the essence of man is self-consciousness, and self-consciousness "exists only as a recognized thing" [2]; that is, a self-consciousness can only rely on another as the middle term to return to itself, and "self-consciousness can only be satisfied through another self-consciousness" [5]. We are deeply inspired by this; a person is only a person because they are recognized as a person, and the process of striving for recognition is not a process of kindness, but a process of struggle [6]. The reason for a person being able to fight is that people have control over themselves, and they have control over themselves because they have a private field that belongs to them. The private field refers to everyone's thoughts. Even if one person stands closely to another, they cannot know the thoughts of the other person [7]. A person has unlimited power over their own ideas, and as the subject of speech, they inevitably have the power to express their own content. The content and way of speech of a certain subject can be manipulated by themselves, so human thoughts are the most free and private part of a person. Therefore, talents need to strive for recognition through a struggle of life and death.

Human ideas have true randomness, which is crucial for the artistic subject. Art is a form of expenditure of human physical and mental labor, where the differences between humans are not very obvious. If art is a fixed thing, it is like a function that determines the input and correspondence rules to determine the output, and thus loses the appreciation value of art as art. Art is a product of randomness, requiring it to exhibit unpredictability, which means that art is human art, and artificial intelligence will not become the subject of art [8].

The foundation of artificial intelligence is a vast code base, which, even if not well-known and browsed by everyone now, is transparent to a specific research institution and developer, thus losing its qualification as a complete entity. Hence, at least for some people, artificial intelligence has no secrets. The essence of artificial intelligence is computer programs, and the bottom layer of computer programs is the opening and closing of circuits, so there is no true randomness in computer programs, and thus artificial intelligence does not have true randomness.

Art has a political nature and is an important component of ideology. This means that art inevitably expresses ideology, and ideology inevitably permeates into art. Although

ideology has its own internal contradictions and laws of movement, it is also inevitably influenced by social reality [9]. Using Bourdieu's theory of "field, capital, and habit" for analysis, taking a certain style of painting as an example, if artificial intelligence is used to make painting, which originally required a lot of labor, easier, then the status of this style of painting as capital within the field will decline because it cannot distinguish the people within the field [10]. Here, socially necessary labor time can also be used to explain that the use of a certain technology reduces the socially necessary labor time of that type of capital, resulting in a decrease in the value contained within it. For example, after the invention of the camera, the standard of evaluation by artists based on "drawing like" gradually dissipated. Objectively speaking, cameras make it easy to 'draw like'. Therefore, from the perspective of the capital field, it can also be explained that artificial intelligence is different from human intelligence in painting.

5. Conclusions

This article argues that artificial intelligence in painting cannot replace human subjectivity in painting. From the perspective of the connoisseur of painting, the art of painting includes the connoisseur's evaluation, and the connoisseur can only be human due to the incommensurability of experience. From the perspective of painting tools, new artificial intelligence painting cannot replace humans, but can only become a new tool for artistic creation, allowing more people to enter the world of art and thus opening up new artistic spaces. From the perspective of the subject of painting, the artistic subject needs to include two elements, randomness and a private field, in order to be recognized as a subject and become an artistic subject. Because artificial intelligence in painting does not involve randomness and a private field, artificial painting can only ultimately not replace humans as the subject of painting. Finally, this article also explains why the difference between humans and artificial intelligence should not be demonstrated from the perspective of emotional expression. Through the above, it can be explained that human intelligence plays an irreplaceable role in the subject of paintings, as well as the limitations of artificial intelligence in painting. Therefore, today and even in the future, social entities should approach the facts and values of artificial intelligence in painting with a rational, objective, and inclusive attitude.

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References

1. Dretske, F. How do you know you are not a zombie. In *Privileged Access: Philosophical Accounts of Self-Knowledge*; Gertler, B., Ed.; Ashgate: Burlington, VT, USA, 2003; pp. 1–14.
2. Hegel. *Phenomenology of Mind*; People's Publishing House: Shanghai, China, 2013; p. 118.
3. *Selected Works of Marx and Engels*; People's Publishing House: Beijing, China, 2002; Volume 3, pp. 205–273.
4. *Marx, Economic and Philosophic Manuscripts of 1844*; People's Publishing House: Beijing, China, 2014; p. 205.
5. Michael. *Landman, Philosophical Anthropology*; Workers' Publishing House: Beijing, China, 1988; p. 211.
6. Friedich, R. *Introduction to Philosophy of Technology*; Liu, W., Translator; Liaoning Science Press: Shenyang, China, 1986; p. 148.
7. Hans, J. *Technology, Medicine and Ethics: Practice of the Principle of Responsibility*; Zhang, R., Translator; Shanghai Translation Press: Shanghai, China, 2008; p. 25.
8. Mo, H. Thinking on ethical issues of strong artificial intelligence and weak artificial intelligence. *Soc. Sci.* **2018**, *1*, 14–24.

9. Searle, J. *Heart, Brain and Science*; Yang, Y.L., Translator; Shanghai Translation Publishing House: Shanghai, China, 1991; p. 39.
10. Cui, Z.; Wang, H. The philosophical basis of human-computer interaction in artificial intelligence research: A discussion from Mello Ponty's direct perception of social otherness. *J. Xi'an Jiaotong Univ. Soc. Sci. Ed.* **2019**, *1*, 130–137.