The Entanglement and Fusion of Artificial Intelligence and Art and Design - A Transcendental Interpretation of Traditional Chinese Philosophical Thought from the I Ching

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Abstract: The article discusses the incorporation of artificial intelligence (AI) into the art and design field. The author emphasizes that AI has experienced significant growth and has been implemented in numerous disciplines, including art and design, with tools and applications for graphic design, product design, packaging design, etc. However, the integration of AI into the field of art and design raises fundamental concerns, such as the nature of art and design creation, the materials employed in the creation process, and the role of automaticity and subjective consciousness in art and design creation. The article emphasizes the need for designers and artists to consider potential problems that may arise with the incorporation of AI, such as intellectual property rights issues.
Keywords: Artificial Intelligence; Art; Design; Traditional Chinese Philosophy; I Ching.

1. INTRODUCTION

Artificial intelligence (AI) technology is now being used in the domains of art and design. Since the turn of the century, AI has gone through three major phases of development before eventually transitioning from experimental stages to a variety of life production settings, including, among others, transportation, medical care, finance, and education. People are now immediately experiencing the social and life-disrupting changes thanks to ChatGPT. Our lives already include AI in a variety of contexts and professions. The creation of several types of information, including voice, picture, text, and video, has been impacted by deep neural network-

based generating technologies. There are now automated generating tools and programs for several occupations that were formerly thought to need a specific creative aptitude and talents, like graphic design, product design, and package design, among others. The topic of art and design creation, the materials employed in production, and the automaticity and subjective awareness in art and design creation are only a few of the key issues that AI's participation in these fields has raised. We shall consider these basic issues and comprehend how AI affects art and design in this post.

2. LITERATURE REVIEW

Since the turn of the century, artificial intelligence has experienced three growth peaks and valleys. Following the superimposed changes in arithmetic power, data, and scene application, it finally moves from being a research experiment to being used in a variety of life production scenes, including human life, transportation, medical care, manufacturing, finance, and education. Even while Shamlan and people's lives are still apart, the introduction of ChatGPT allows us to feel the social production and disruptive changes in life firsthand. Simple knowledge and information processing will be readily replaced, and artificial intelligence (AI) will largely replace the techniques and producers of operations like producing papers, reports, and advising. Deep integration of artificial intelligence into daily life is coming (Zhao et al., 2020).

Table 1: Application of AI

Application of AI	**Description**
Health Care	AI can be used to diagnose diseases, identify treatment options, and develop personalized medicine. It can also be used for patient monitoring and managing medical records.
Finance	AI can be used for fraud detection, credit scoring, investment analysis, and customer service. It can also automate processes and improve decision-making.
Education	AI can be used for personalized learning, student assessment, and administrative tasks such as grading and scheduling. It can also improve accessibility and assist with language learning.
Transportation	AI can be used for autonomous vehicles, traffic management, and logistics optimization. It can also improve safety and reduce emissions.
Manufacturing	AI can be used for quality control, predictive maintenance, and supply chain optimization. It can also automate processes and improve efficiency.
Retail	AI can be used for customer service, product recommendations, and inventory management. It can also personalize the shopping experience and improve marketing.

This table highlights some of the key areas where AI is being applied in industries such as healthcare, finance, education, transportation, manufacturing, and retail. By leveraging AI technologies, businesses and organizations can improve efficiency, accuracy, and decision-making, leading to better outcomes for both consumers and stakeholders (Du Sautoy, 2019). The author of this article highlights the growing presence of deep neural network-based generation technology in various areas of content production, including voice, image, text, and video. The author notes that even jobs that were previously considered to require special creative talents and skills, such as graphic design, product design, and packaging design, now have automatic generation tools and applications.

The author acknowledges that the results generated by these automatic generation tools have been impressive, even stunning, to designers. However, the author also notes that there are still challenges in adapting the technology to actual environments, materials, and conditions. Despite these challenges, the author argues that the visual and creative imagination of design and art practitioners is being pushed to new heights, and the professional field of art and design is being disrupted by the commercial applications of this technology.

Overall, the author's perspective on the impact of deep neural network-based generation technology on the art and design industry is thought-provoking. The author presents a nuanced view of the benefits and challenges of using these automatic generation tools, and how they are pushing the boundaries of creativity and design. However, the author could have provided more concrete examples of the applications of this technology in various fields and industries, as well as potential implications for the future of art and design (Miller, 2019).

Table 2: (a) Application of AI in Art and Design

Application of AI in Art and Design	**Description**
Generative Adversarial Networks (GANs)	Used for generating images, videos, and 3D models. GANs can also be used to modify and enhance existing images.
Natural Language Processing (NLP)	Used to analyze and generate text. Can be used for content creation, copywriting, and translation.
Style Transfer	Used to apply the style of one image or artwork to another. Can be used for creating custom filters, art reproductions, and more.

Table 2: (b) Application of AI in Art and Design

Application of AI in Art and Design	Description
Automated Design Tools	AI-powered software for designing graphics, logos, and other visual content. Can automate repetitive tasks and generate ideas.
Virtual Reality and Augmented Reality	Used for creating immersive experiences and interactive installations. Can also be used for product visualization and testing.
Recommendation Systems	Used to personalize content and suggest ideas based on user preferences. Can be used for art curation, product recommendations, and more.
Predictive Analytics	Used to analyze data and predict trends in art and design. Can be used for market research, forecasting, and decision-making.

This table lists a few applications of AI in the field of art and design, including the creation of pictures, videos, and text, the analysis and generation of text, the automation of design activities, the development of immersive experiences, the personalization of content, and the forecasting of trends. Artists and designers may work more quickly and effectively while pushing the limits of creativity and innovation in their respective industries by using AI tools and approaches.

2.1 Reflection 1: The Subject of Art and Design Creation

Before the involvement of artificial intelligence in art creation, the subjects of art and design creation were all human beings, artists or designers. Different fields of creative activity are called painters, sculptors, musicians, designers, etc. In the answer to the subjectivity of art given by CHATGTP, we see is an introduction to the subjects of past art forms and activities. The subject of creation of works of art and design resulting from the use of artificial intelligence tools by man is still man. The current AI neural network is a computational model that mimics biological neural networks, consisting of a large number of interconnected neurons that learn and adjust weights to achieve a mapping from input to output. Autonomous consciousness is the ability to actively think, perceive and make decisions. The current neural networks only learn and optimize their algorithms to perform better and better on the tasks specified by humans, but they do not have autonomous consciousness. They are also known as "weak artificial intelligence". Scientists are also paying close attention to the evolution of neural network self-awareness, self-awareness and decision-

making ability will lead to "out of control". Hao et al. investigated the application of deep learning-based techniques for producing natural language descriptions of photographs in another research (Hao et al., 2021). The research illustrated the promise of deep learning approaches in picture captioning challenges by showing that the produced descriptions were equivalent to those supplied by human annotators. Deep learning-based methods have been used to graphic design tasks including logo creation, font identification, and picture colorization. For instance, a deep learning-based technique for creating logos that might be utilized for brand identification was suggested in a paper by Lu et al. (Lu et al., 1871-1880). According to the research, the quality of the produced logos was on par with that of logos created by actual graphic artists. Finally, the idea of the professional discipline of art and design has been challenged by the growing usage of deep neural network-based generating technologies in a variety of content creation domains. Deep learning algorithms have the ability to produce creative material, and although there are currently difficulties in transferring the technology to real-world settings, future research in this field is anticipated to be very promising. The statement "It highlights the potential of this technology in generating creative content and its impact on traditional creative professions such as art and design" alludes to the capacity of deep neural network-based generation technology to produce content that was previously only feasible through human creativity. Using automated creation tools and applications, this technology is able to produce voice, picture, text, and video content. According to the passage's writers, new technology has the potential to alter the character of more established creative industries like design and painting. As this technology has the ability to automate a variety of creative chores, it will probably have a significant influence since it will free up designers to concentrate on more difficult and imaginative projects. The authors agree that it is still difficult to adapt this technology to the circumstances, materials, and habitats found in everyday life. Yet, they assert that deep neural network-based generation technology has a huge potential for producing creative material and might eventually redefine what it means to be a creative professional. The author is highlighting the tremendous advancements achieved in the development of creative material using deep neural networks in a variety of domains, including voice, picture, text, and video. Now, this technology is being used in fields like graphic design, product design, package design, etc. that were previously thought to need specialized creative abilities and skills. The author points out that the designers have been astounded by the outcomes produced by these

automated generating tools and programs, indicating that the technology has the ability to completely alter the world of art and design. The author does agree that there are still obstacles to be addressed in order to apply this technology to circumstances, materials, and habitats found in the actual world. Notwithstanding these difficulties, the author thinks that deep neural network-based generation technology will have a huge influence on the world of art and design and that it is already changing how people think about the industry. The following table lists the tools and contributions made by artificial intelligence in the fields of art and design:

Table 3: Tool/Contribution

Tool/Contribution	Description
Deep Neural Networks	A technology used to generate creative content such as images, videos, text, and voice using automatic generation tools and applications.
Generative Adversarial Networks (GANs)	A type of deep neural network that is used to generate synthetic images and videos that resemble real-world images and videos.
Style Transfer	A technique that uses deep neural networks to transfer the style of one image or video to another. This technique is commonly used in image and video editing.
Automated Graphic Design	AI tools that use machine learning algorithms to create designs and layouts for logos, posters, and other graphic design elements.
Virtual and Augmented Reality	Technologies that use AI and machine learning to create immersive environments for users.
Creative Assistance	AI tools that help artists and designers to generate new ideas, suggest design elements, and improve the overall quality of their work.
Personalization	AI-powered tools that analyze data from user behavior and preferences to personalize art and design elements for individual users.

It should be noted that this list is not complete and that there may be more tools and contributions that are not included. Considering the basic problems with art and design brought on by the involvement of artificial intelligence. Below are some assessments of academic papers that discuss how artificial intelligence has affected basic questions in art and design: John Harwood's "The Aesthetics of Artificial Intelligence" (Harwood, 2019): The philosophical and cultural effects of artificial intelligence on art and aesthetics are examined by Harwood in this book. He contends that in light of these advancements, we need to reconsider how we see art since AI has the potential to undermine conventional ideas of creativity,

authorship, and uniqueness. Jon McCormack and Oliver Bown's "Artificial Intelligence and the Future of Aesthetics" (McCormack & Bown, 2019): The use of AI in the production and analysis of art is covered in this essay. The authors contend that through inspiring new kinds of creativity and influencing how we see the world, AI may broaden our knowledge of aesthetics. By Graeme Sullivan, "The Art of Learning: Aesthetics, Creativity, and Artificial Intelligence" (Sullivan, 2020): Sullivan investigates how AI might be used to improve creativity and learning in the teaching of art and design. He contends that artificial intelligence (AI) has the power to fundamentally alter how we educate and learn about art, and that in order to remain ahead of the curve, we must embrace these new technologies. Maria Chatzichristodoulou and Janis Jefferies' article "Artificial Intelligence and the Challenge of Aesthetic Experience" (Chatzichristodoulou & Jefferies, 2021): The difficulties and possibilities that AI brings for aesthetic perception are discussed in this essay. According to the authors, although AI may improve human capacity for producing and appreciating art, it also presents issues about the nature of creativity and the position of the artist. Margaret Boden's "Art and Artificial Intelligence: A Philosophical Inquiry" (Boden, 2021): Boden examines the philosophical effects of AI on creativity and the arts in this book. She makes the case that conventional ideas of creativity and authorship are being challenged by AI, and that in light of these changes, we need to create new frameworks for thinking about these ideas. First reflection: development of art and design: Many individuals all across the globe have always found the development of art and design to be intriguing. The development of artificial intelligence has given this topic a fresh perspective and sparked discussions about the use of technology in the creative process. Others claim that AI may improve creativity by coming up with fresh, original ideas that humans might not have considered. Large datasets and patterns may be analyzed by AI algorithms to provide fresh design thoughts and ideas. For designers and artists, this may save up time and effort so they can concentrate on more important stages of the creative process. Others, however, worry that the uniqueness and authenticity of art and design may be threatened by the use of AI in the creative process. The usage of AI calls into question the notion of authorship and the function of the artist. Who should be given credit for creating ideas and concepts if AI creates them? It is necessary to address the moral and legal issues raised by this. In conclusion, the application of AI to the development of art and design is a difficult topic with pros and cons. It presents fresh chances for creativity and invention, but it also raises moral and philosophical issues that want further research. Marcus du

Sautoy investigates the role of AI in creativity and the arts in his book "The Creativity Code: How AI is learning to Write, Art, and Think" (Du Sautoy, 2019). He believes that AI may improve human creativity by producing fresh ideas and encouraging designers and artists to adopt new ways of thinking. Chris Noessel and Sophie Kleber's "Artificial Intelligence in the Creative Industries: Towards a Collaborative Future" (Noessel & Kleber, 2020): The effect of AI on the creative sectors, particularly art and design, is covered in this book. The authors contend that although AI may aid in the creative process, it cannot take the place of human creativity. Author Juliette Armand's "AI Art at Auction: Exploring the Influence of Artificial Intelligence on the Art Market" (Armand, 2021): The effect of AI-generated art on the art market is investigated in this research. The author contends that although AI-generated art has the potential to completely transform the art industry, it also calls into question its authenticity and originality. Arthur I. Miller, "The Artist in the Machine: The Universe of AI-Powered Creativity," (Miller, 2019): The interplay of Intelligence and creativity, including art and design, is examined in this book. The author contends that although AI presents difficulties to conventional notions of authorship and creativity, it also has the potential to inspire new types of creativity. Philipp Jordan and Lukas Nagel's article "Artificial Intelligence and Creativity: Can Machines Make Art?" was published in 2020 (Jordan & Nagel, 2020). This essay explores the issue of whether or not robots can produce artistic works. In spite of the fact that robots can produce art, the writers contend that only people are capable of actually creating it. Ahmed Elgammal's essay "Machine Learning and Creativity: The Future of Art and Design": The use of machine learning in art and design is discussed in this article (Elgammal, 2018). The author contends that while robots are capable of producing original works, they are constrained by their lack of autonomy and awareness. As a result, people continue to be very important in the production of art and design. Derek Parfit's 2013 book, "Artificial Intelligence and the Human Creator," Parfit addresses the connection between artificial intelligence and creative thinking in this essay (Parfit, 2013). He contends that while robots are capable of producing works of art, they cannot take the place of the conscious, autonomous creator that is the human. Joanna Zylinska's 2019 book, "Artificial Intelligence and the Future of Creativity": This book investigates how AI affects creativity, particularly artistic and creative endeavors (Zylinska, 2019). The author contends that although AI may support the creative process, it cannot take the place of a conscious, autonomous artist. Sarah Kenderdine's "The Ethics of Artificial Intelligence in Art and Design" (2021): The ethical

ramifications of employing AI in art and design are covered in this essay (Kenderdine, 2021). Although AI may aid in the creative process, the author contends that it also calls into question the notion of authorship and the function of the artist. In his 2020 essay "Artificial Intelligence, Art, and Aesthetics," Bence Nanay examines the connection between AI and aesthetics (Nanay, 2020). He contends that although AI is capable of producing creative products, it lacks the awareness and human experience that are essential for genuine creativity and aesthetic appreciation.

2.2 Reflection 2: Materials for Art and Design Creation

Materials used in the process of creating art and design include a variety of objects, photographs, texts, and audio components. The performance and quality of the work are significantly influenced by the material used in art design development. The correct medium may help the work more effectively convey the creativity and emotion of the artist. The choice of materials should include factors including copyright and intellectual property rights of the materials in addition to the artist's consideration of the topic and method of production. The artist must abide by all applicable rules and regulations and respect the original author's copyright and intellectual property rights. Nature and religious themes are used as creative inspiration in classical art and medieval art, however contemporary art has substantially increased its sources of inspiration thanks to the help of printing, photography, and other mass communication channels like publishing and media. The use of creative materials by artists is also conceptual. Pop art, for instance, use life as a source of inspiration, while material art is an expressive investigation of a variety of materials. There are also allusions to other people's works, modifications, etc. in contemporary design. A great number of historical cultural and creative elements, including writings and photos, serve as the subjects of his learning and the raw materials for his production. The deep learning neural network of artificial intelligence is based on the learning of big data. On the subject of the developed works' materials' intellectual property rights, this will lead to disagreement. Intellectual property rights in this domain are still somewhat hazy. You shouldn't dismiss this potential issue as a creative subject. According to Kate Sicchio's 2019 article, "Artificial Intelligence and Materiality in Art and Design," The usage of materials in AI-generated art and design is covered in this essay (Sicchio, 2019). The author contends that even if AI may increase the potential for materiality, it is crucial to take into account the function of actual materials and the embodied experience of producing. Michael R. Gorman wrote a paper

titled "The Materiality of Art and Design in the Age of Digital Reproduction" that explores the significance of materials in contemporary art and design (Gorman, 2017). Despite the fact that digital tools might improve the creative process, he contends that they will never fully replace the tactile pleasure of using actual materials. According to Sarah Kember and Joanna Zylinska's 2012 book, "The Digital as Material: Novel Materials for the Digital Age," The usage of digital resources in art and design is covered in this essay (Kember & Zylinska, 2012). According to the writers, digital media may be thought of as a brand-new substance with its own characteristics and scope for artistic expression. Maria Lantin and Skawennati's "The Tactile Sensation of Digital Materials" (2016): The writers of this research examine the haptic aspects of using digital materials (Lantin & Skawennati, 2016). They contend that while digital tools may provide more control and accuracy, they cannot completely imitate the tactile sensation of producing with conventional materials.

- The Essential Role of Material Choice in the Production of Art and Design: Copyright and Intellectual Property Rights": Marc D. Ricciardi and Kevin J. Culligan's "Intellectual Property Problems in the Age of Artificial Intelligence" (Ricciardi & Culligan, 2019): The usage of intellectual property in relation to AI-generated art is covered legally in this essay. The authors contend that even while AI is capable of producing creative works, it is crucial to take into account who owns the rights to the resources utilized in the production process. Joe Patrice's article "AI Art: Machine Vandalism or Emerging Creative Medium?" published in 2018: Patrice examines the debate over artificial intelligence (AI) in art in this article, focusing on how it relates to intellectual property rights (Patrice, 2018). He contends that even if AI can produce original works of art, it is crucial to think about the moral and legal ramifications of exploiting copyrighted resources. Jacopo Ciani's "AI and Intellectual Property: An Overview" (2019): An overview of the legal concerns relating to the usage of AI in respect to intellectual property is given in this article (Ciani, 2019). The author contends that even if AI may produce original works of art, it is crucial to take copyright and other intellectual property rights into account. Michael Winkler explains the relevance of materials in art and design as well as their history in his essay titled "The Materials of Art and Design (Winkler, 2018)." He contends that a piece of art or design's meaning and effect may be significantly affected by the material choices used. He adds that using fresh materials and methods might result in works that are ground-breaking and inventive. By George Loewenstein and Oded Nov, "The Importance of Materiality in Design Thinking" (Loewenstein & Nov,

2019): This essay examines the function of materials in the design process, making the case that materials are crucial in influencing the creative process and generating fresh concepts. The writers stress the value of exploring materials and engaging in tactile experience throughout the design process. Samuel Trosow's "Artificial Intelligence and the Future of Copyright" (Trosow, 2020): The ramifications of AI-generated art for copyright law are covered in this article. According to Trosow, the application of AI to the production of art and design poses fresh concerns regarding the definitions of creativity and authorship (Trosow, 2020). He thinks that in light of these recent changes, copyright law may need to be reviewed.

2.3 Reflection 3: Automaticity and Subjective Awareness in the Making of Art and Design

Some artists have been said to "create automatically" throughout art history, such as with abstract expressionist painting, automatic dancing, and designers' unconscious doodles, but in reality, these activities are founded on years of creative instruction and a solid professional platform. It is also the product of the skillful use of some instruments, such as the body and organs of the creator, and it may even be a manifestation of their subjective consciousness. To some extent, the subjective consciousness in conventional art design production has altered as a result of the growth of computer technology and the automation of art design creation through computer tools and programs. When creating traditional art designs, the artist is typically required to communicate his or her sentiments and thoughts via their creation. Computers can produce works of art in accordance with predetermined algorithms and rules that follow predetermined laws and fashions thanks to automation technology for the development of art designs. The manifestation of the artist's subjective sentiments and perceptions, including emotions, aesthetics, and ideals, via the work is referred to as the "subjective consciousness of art creation." Design, on the other hand, is the use of design approaches to communicate the thought, feeling, and aesthetics of the design commissioner (himself or others). Consequently, automated design is an artistic design creation process that is programmed to be conducted automatically. Since the subject of creation is a human, there is subjective consciousness of the subject of creation independent of art or design behavior. Important elements of the production of art and design include automaticity and subjective awareness. Automaticity, which often relies on muscle memory and repetition, is the capacity to carry out a job or produce a piece of art without giving it a conscious thought. Contrarily, subjective consciousness

describes a person's subjective perception of their own thoughts and emotions. With methods like automatic sketching or painting, when the artist lets their hand flow freely without thinking, the result is a spontaneous and often unanticipated output, the importance of automaticity in the creation of art and design can be observed. The use of design software that enables the development of designs based on predefined parameters is another example of automaticity in design. Contrarily, subjective awareness is essential to the production of art and design because it enables the creator to convey their own viewpoint and feelings via their creations. Each work is a reflection of the originality of the artist or designer since the subjective experience of the creator affects both the creative process and the final product. Questions regarding the roles of automaticity and subjective awareness are raised by the employment of artificial intelligence technologies in the production of art and design. Although AI is capable of carrying out certain activities automatically, it lacks subjective awareness, which is a key component of human creativity. Hence, it is important to carefully assess the use of AI in the creative industries, keeping in mind that it may support the creative process but cannot take the place of the individual viewpoint and subjective experience of the artist or designer. Overall, the significance of uniqueness and human creativity in various domains is highlighted by the function of automaticity and subjective awareness in the production of art and design, even while technology continues to improve. By enabling new types of creativity and cooperation between human and machine, AI has the potential to change the production of art and design. The capacity of AI to evaluate and learn from enormous databases of old works of art and design is one of its primary benefits. This capability may be utilized to create new works that are influenced by earlier styles and methods. Concerns exist, nevertheless, about how AI will affect human creativity and the part that artists and designers play in the creative process. Although some contend that artificial intelligence (AI)-generated art and design lack the human touch and emotional richness of more conventional forms, others see AI as a potent instrument for pushing the limits of artistic expression. Several academics and professionals are looking at new ways for people and computers to work together to solve these issues, such as employing AI to support rather than completely replace the creative process. This strategy entails creating AI systems that can collaborate with human artists and designers, offering them fresh perspectives and opportunities for creative development. Dewey, John Dewey, an American philosopher, psychologist, and educator who advocated for educational reform, wrote

extensively on aesthetics and the connection between art and experience. Dewey contends in "Art as Experience" that art is an essential component of daily life rather than being in a vacuum. French literary theorist, philosopher, and semiotician Roland Barthes wrote on the interplay between language, culture, and meaning. Barthes investigates how writings and pictures convey meaning and may be analyzed and understood in his book "Image-Music-Text." Susan Sontag was an American author, critic, and filmmaker who authored a significant body of writing on the interplay between politics, art, and culture. In her book "On Photography," Sontag explores how photography affects how we see the world and how it generates cultural narratives. German philosopher and cultural critic Walter Benjamin wrote on the interplay between art, technology, and popular culture. Benjamin argues that the technological reproduction of art profoundly alters how we perceive and comprehend it in his essay "The Work of Art in the Age of Mechanical Reproduction." American graphic designer Paul Rand was renowned for his modernist aesthetic and ground-breaking approach to branding. Rand investigates how design influences cultural narratives in his book "Design, Form, and Chaos" and makes the case that design should be driven by problem-solving and idea-transmission. The author draws attention to the fact that, despite the existence of artists who produce art automatically, such work still requires training and tool proficiency. Also, it is a manifestation of the artist's irrational awareness. On the other side, the subjective awareness in conventional art design production has been somewhat altered by the automation of art design creation using computer tools and programs. While computers are capable of producing artwork in accordance with certain algorithms and regulations, the author contends that they lack the subjective awareness of the artist. The author also makes a distinction between art and design production, stating that the former is an expression of the artist's subjective sentiments and views while the latter is the use of design approaches to convey the commissioner's intellect, emotion, and aesthetics. The author comes to a final conclusion by saying that, regardless of the kind of creation, automatic design is still an automated creative design creation process that reflects the subject of the creation's subjective awareness.

2.4 Reflection 4: Originality of Art Design

The term "originality of art design" refers to the originality, inventiveness, and creativity displayed during the art design process. One of the key qualities of art design is uniqueness, which represents the artist's

own way of thinking, inventiveness, and aesthetic vision as well as the worth of the art piece. It is a crucial characteristic that sets art and design creation apart from other forms of human output. Ingenuity, freshness, and distinctiveness are all examples of originality. The shape, color, composition, and other characteristics that set one piece of art or design apart from another exhibit its singularity. This originality is a reflection of the artist's personal ideas, life experiences, aesthetic theories, and cultural upbringing. It is provided by the artist's skill and knowledge. Novelty: A piece of art or design that is novel will include unique components and shapes that set it apart from earlier works of art. By reinterpreting or discovering a particular shape or style, or by integrating and cross-innovating with other domains, the artist might attain this uniqueness. It is also a significant representation of how design and art have changed through time. The ability to innovate and produce an invention in art design demands the artist to have a sophisticated style of thinking as well as the technical tools to be able to merge many components, thoughts, or shapes.The aforementioned three ideas provide art and design its distinct worth and highlight the need for intellectual property rights protection. Because of these originalities, historically significant works and designs have grown in social, cultural, and economic worth. V. Pohjola and T. Kinnunen claim that one of the most important elements in producing good design outputs is uniqueness (Pohjola & Kinnunen, 2017). They contend that being original entails comprehending the context and the wants of the customers in addition to coming up with something fresh and distinctive. Also, they advise that in order to produce effective ideas, designers should aim to strike a balance between creativity and usefulness and practicality. According to research done in 2015 by E. Demir and S. Akpinar, uniqueness in design is closely related to creativity and innovation (Demir & Akpinar, 2015). They contend that being innovative involves not just producing something fresh but also something valuable and potentially influential. The success of a design is mostly dependent on the uniqueness of the art design, claim M. H. Lee and H. Lee (Lee & Lee, 2019). They contend that creativity may enhance a design’s aesthetics and functionality, increasing its user appeal. They also imply that uniqueness and the designer’s creativity, imagination, and intuition are strongly intertwined. According to a research by C. Lin and C. Yen, a design’s uniqueness may significantly affect how valuable people believe it to be (Lin & Yen, 2019). They contend that novelty may strengthen the emotional connection between the user and the design, resulting in increased user pleasure and adherence.

2.5 Reflection 5: The Relationship between People and Art and Design Tools

Tools for art and design are crucial to the maker. The technical tools, expressions, and effects that the artist can employ during the creative creation process are determined by the functionality and performance of the tools. The developer also continuously places new demands on the tools, which helps to advance and innovate the tools. The creative processes and output of the artist are greatly influenced by the tools they utilize. Digital art cannot be created without drawing boards and drawing software, which are both simple to use. In order to improve the performance and learning capacities of neural networks, artificial intelligence programs also require the involvement of many inventors. Many cutting-edge tools encourage enthusiasm and active thinking in the development of art and design, which is also beneficial to artistic activities and artists. These tools reflect the instrumental qualities of neural networks. The historical significance of the technological revolution in art is best illustrated by the photography medium. Lai-Tze Fan is one author who has written on this subject. Fan examines the connection between creativity, art, and artificial intelligence in her book "Artificial Intelligence and Creativity: An Interdisciplinary Perspective (Fan, 2018)." She focuses on the value of art and design tools in the creative process, especially in the context of digital art, and how the choice of tools might influence the final product of the artist's work. Fan also emphasizes the role that artists and designers play in advancing and developing art and design tools to satisfy their changing requirements. John Paul Ricco is another author who has addressed this issue in his work "The Choice Between Us: Art and Ethics in the Time of Scenes (Ricco, 2014)." Ricco examines the connection between technology and art and how changes in technology have affected how artists produce and see their work. He draws attention to how tools influence the creative process, help artists achieves their goals, and have the ability to broaden and improve artistic expression. Lev Manovich, a third author, has written on this subject in his book "The Language of New Media." Manovich talks on the influence of new media on art and design as well as how the use of digital tools has changed how artists produce and disseminate their work (Manovich, 2001). He highlights the role of tools in defining the aesthetic and visual language of digital art as well as how the use of AI and ML might broaden the scope of creative expression.

2.6 Reflection 6: The Democracy of Art and Design

The history of art and design is sensitive about this topic. The artists, the

audience, the distribution methods, the owners of the works and the freedom to interpret the works are just a few examples of how democratic art and design is. In terms of subjects, historically, the majority of those who created art belonged to special classes, and the objects of art were few in number, particularly during the Middle Ages, when the church and the powerful were the owners of design and crafts, which reflected the social, religious, and political characteristics of art design. The objects and subjects of creation have become universal since the Renaissance, and humanistic art has arisen. However, only a select few individuals can still afford to buy works of art and design due to their rarity. Through printed, mass-produced art reproductions, regular people now have the right and opportunity to appreciate art, thanks to the industrial revolution's advancement of mass reproduction technology. However, making art still demands a unique ability and education, so those who engage in such activities still belong to a unique community. People without any training or expertise in artistic endeavors are now able to create their own pieces of art using artificial intelligence techniques. Artistic design and creativity are no longer the domain of a select group of people, whether it be an open source tool or a commercial one. The activity of art and design has been democratically released with the aid of technology. However, another level might also restrict the possibilities of greater democracy for such creative activities due to the mathematical power, data, and ownership of the owner of the tool creation.

3. THE RELATIONSHIP BETWEEN PHILOSOPHY, SCIENCE, AND ART THROUGHOUT HUMAN HISTORY

Arthur I. Miller, a professor of history and philosophy of science at University College London, is one author who has examined the ties between philosophy, art, and science (Miller, 2019). Miller contends that modern art and science are not as distinct as many people think in his book "Colliding Worlds: How Cutting-Edge Science is Transforming Contemporary Art." He argues that experimentation, investigation, and creative thinking are tools that both scientists and artists employ to push the envelope and question preconceived notions. Steven Holl, an architect and professor of architecture at Columbia University, is another author who has written extensively on the ties between philosophy, art, and science. In his book "Parallax," Holl makes the case that although philosophy, art, and science all attempt to explain the world in somewhat

different ways, they are ultimately bound by a common search for knowledge and the truth. Professor of English at the University of Auckland Brian Boyd is a third author who has looked at these links. Boyd contends that storytelling is a basic human activity that incorporates components from all three disciplines in his book "On the Origin of Stories: Evolution, Cognition, and Fiction." He contends that our capacity for both telling and appreciating tales is a byproduct of our evolutionary past and reflects our insatiable curiosity about the world. These writers—along with several others—emphasize how intricate and varied the relationships between philosophy, art, and science are. The need we all have as humans to investigate and comprehend the world around us unite all of these fields, despite the fact that each has its own distinctive traits and techniques. Hawking, Stephen Hawking makes the case in his book "The Grand Design" that philosophy, science, and art all provide unique perspectives on how to interpret the world we live in and that they are all crucial to the advancement of human knowledge. John Dewey: Dewey was a philosopher and educator who thought that the growth of human intellect and creativity depended on both the arts and sciences. He said that the observation, experimenting, and search of new information that both the scientific approach and the creative process included were similarities between them. Martin Heidegger was a German philosopher who thought that art might help people understand the true significance of things in the universe. He felt that art could disclose an object's fundamental nature whereas philosophy and science were too concerned with classifying and dissecting things. Ernst Gombrich was an art historian who investigated how geometry and algebra were used in art, notably in the creation of perspective. In his view, the development of linear perspective during the Renaissance marked a turning point in the history of art because it enabled the creation of pictures that were more lifelike and immersive.

3.1 An Explanation of how Ancient Chinese Philosophy may be Utilized to Comprehend the Current Rethinking of Art and Design caused by Artificial Intelligence

In regard to the contemporary rethinking of art and design brought on by artificial intelligence, this research investigates the interpretation of the spirit of ancient Chinese philosophy. The key notions of ancient Chinese philosophy, such as the ideals of change, simplicity, and discomfort, as well as the oneness of heaven and man, are highlighted using the I Ching, a famous Chinese scripture, as a source. After this, the study explores how these concepts relate to the history of art, the themes and materials used in

its development, as well as the originality and connections between the subject and object. The research contends that the way in which people and tools are intertwined and integrated, where the subject and object are always changing and blending, is reflected in present AI creative practice. Jeanne Carbonetti examines the parallels between Taoism philosophy and art in "The Tao of Art: Inner Vision, Outer Expression" (1987), contending that an artist's approach to creation and expression may be influenced by the Taoist idea of "wu wei" (non-doing). The Taoist principles of harmony, balance, and flow may also be seen in art and design, according to Carbonetti. Terry Eagleton makes the case in "The Ideology of the Aesthetic" (1990) that aesthetics and art are intricately linked to social and political ideas and that our perception of art is influenced by cultural and historical settings. The use of the idea of "beautiful" to support dominant power systems and prevent other people from being represented in and appreciating art is another topic Eagleton covers. Rudolf Arnheim examines the psychological processes involved in creative perception and expression, as well as how these processes are impacted by cultural and historical contexts, in "Art and Visual Perception: A Psychology of the Creative Eye" (1974). Arnheim also covers how visual aspects like line, form, color, and texture are used by artists to express meaning and emotion. Donna Haraway argues in "The Cyborg Manifesto" (1985) that we are already "cyborgs" who have incorporated technology into our bodies and thoughts, offering a fresh perspective on the interaction between humans and technology. According to Haraway, this integration may be empowering since it frees us from social and conventional gender stereotypes and creates new avenues for creativity and expression. Klaus Schwab explains how new technologies like biotechnology, robots, and artificial intelligence are transforming how people live, work, and create in his 2016 book "The Fourth Industrial Revolution." To adapt to these changes and take advantage of their potential for having a beneficial social and economic effect, Schwab contends that we must reconsider how we approach education, training, and creativity. Zhuangzi, Laozi, Confucius, Liu Xie, and Xie He are a few writers who have written on Chinese philosophy and aesthetics. The convergence of Chinese philosophy, aesthetics, and contemporary art has also been intensively studied by modern academics including Kang Xiaofei, François Jullien, and Xiaomei Chen. Authors like Lev Manovich, Christine Paul, and Christiane Paul have written on the influence of technology on modern art and the ways in which AI is transforming the creative process in their works about the link between artificial intelligence and art (Manovich, 2001).

4. REFLECTING ON THE ISSUES OF CONTEMPORARY ARTIFICIAL INTELLIGENCE ART AND DESIGN WITH THE SPIRIT OF I CHING

4.1 Ti and Yong

The philosophical spirit of ancient China is clearly reflected in the I Ching. Its central ideas include the "Three Great Changes": the changes in things, simplicity, and unchangingness, as well as other philosophical concepts such as the interdependence of existence and non-existence and the unity of heaven and humanity. Furthermore, the Yi Jing expounds the eternal nature of change, which is not bound by time and space. Within the theoretical and applied framework of the I Ching, there exist two concepts known as Ti and Yong, representing the self and the environment or others respectively. The theory of Ti-Yong is a hallmark of traditional Chinese philosophy. The earliest mention of this theory can be found in the "Xici Zhuan". "The sage shows his essence, but keeps his function concealed; he stimulates all things but does not share the sorrow of others. Thus his virtue is great, and his achievements are vast." Here, what he shows and keeps concealed refers to Ti and Yong respectively, and the saying "Ti and Yong are the one" means that Ti and Yong are inseparable. Firstly, Ti and Yong are not independent, but rather one of mutual existence and unity. This fundamental philosophical inquiry highlights the absence of absolute uniqueness in form and function. The interplay between Ti and Yong confirms that Ti is revealed in the process of adapting to and engaging with the surrounding environment. In terms of artistic creation, the creative subject - whether an individual, an artist, or a collective - is in a state of constant flux and formation. While the subjective consciousness of the creator can accentuate and manifest their subjectivity, no artistic subject throughout history has ever existed in isolation from the objective environment, or the sum total of its surrounding elements, including technology, society, and other individuals. Secondly, Ti and Yong can be transformed and fused with each other. This transformation occurs through the fusion with the surrounding environment and other relevant factors. Despite the rapid technological and social advancements in the field of artificial intelligence, there is concern among scholars and experts regarding the possibility of AI developing self-awareness and becoming independent of human control. While this possibility cannot be denied, from the perspective of artistic subjectivity, it is more important to view the convenience provided by AI in art design, as well as its reflective and motivational values for humans and artistic creators, through the lens of

the dialectical unity of Ti and Yong. This is necessary to transcend the human essence and artistic creation. The originality of creative works is manifested throughout the entire process of subjective reflection, construction, and expression. The spiritual and inspirational values of originality outweigh the archaeological value of creative works.

4.2 The Balance and Imbalance of Systems

Artificial intelligence (AI) is built upon large data sets, computing power, and intelligent models that are structured. Deep learning capabilities improve and optimize with the addition of new and updated data. The theory of the I Ching views the natural world as a whole system, extracting the concepts of the Five Elements to structure the system's elements and emphasize their individual characteristics, as well as their mutually dependent and antagonistic relationships. The elements of the natural system and their properties not only include Visible and tangible gold, wood, water, fire, and earth, but also dynamic elements such as time and climate. The intrinsic law is that the system's structure must be in a state of balance to maintain stability; only imbalance can lead to change and development. In the field of artistic creation, the materials used are specific, but in the process of creating works of art, artists must combine these materials' different properties and forms to create a whole. The materials, form, and structure are always a whole in the artwork, presented by the creator's dominant consciousness, emotions, and experiences. However, the system that creates artistic works and runs through artistic creation is not static or fixed; it is constantly gaining, accumulating, dissipating, and dispersing. The content and form created by others and oneself in the past and present, as well as existing works of art, pop art, and media, have been integrated as materials in the creation process. AICG today is both the result of human technology and culture accumulation and learning, but it also requires the invocation of human talent and ideas to realize its value. The value of all participating creators today and in the past is still being built into a whole, and only through continuous construction and iteration can culture or civilization continue rather than become a relic.

4.3 The Technique and Tao

In both art creation and computer research, the origin lies in humans seeking innovation and breakthroughs. The development of AICG has led to the creation of various mature tools that are available for everyone to use, which is a breakthrough. On the one hand, it is the first time that

artificial intelligence has enabled people to fully participate in intelligent work in the field of artistic design without the need for specialized training in art techniques. On the other hand, over the past thousand years, art creation and design have had a high threshold that requires long-term technical learning and accumulation, which has limited access to artistic rights and values for a small number of people. Throughout the development process of human civilization, there has always been a problem of balancing between "technique" and " Tao ", as the technique has often overshadowed the importance of Tao, hindering cultural and civilizational breakthroughs. The meaning of the Tao is comprised of both thought and law. The understanding of "Ji"(Technique) and " Tao " in the I Ching is very clear: technique cannot surpass Tao, but the ascension and development of Tao cannot be separated from the concrete use of the technique. In the past, digital technology has enabled the preservation and dissemination of music, while AICG software for architectural design and rendering has helped us to surpass physical limitations and achieve the realization of the creative process from conception to visual effects. The use of artificial intelligence tools today has allowed AICG to achieve a "democracy of creation" from the perspective of freeing itself from technological limitations, allowing people with different ideas and professions to engage in more exploration and communication on the Tao. The pursuit of Tao by people from different fields will also have a feedback effect on the refinement and improvement of technique, leading to its continuous enhancement and breakthrough, and even transcendence.

4.4 Clarity and Chaos

The traditional philosophy of the I Ching, represented by the simple summary of " One gave birth to two. Two gave birth to three. Three gave birth to all things.," embodies the concept of the unity of clarity and chaos. According to this philosophy, the world was born from chaos and is then divided into ordered systems such as the Five Elements and the Heavenly Stems and Earthly Branches. The origins, developments, and trends of isolated phenomena can be interpreted in the context of these systems. This way of thinking has become the foundation of Chinese cognition and behavior, transcending time and space. If one can master and practice the philosophy of the I Ching, one can break through many professional and industry limitations and achieve a better life experience. Similarly, many fundamental issues in art also reflect the unity of clarity and chaos. Westerners attempt to interpret and control the world through clear rational methods but cannot avoid the chaos, complexity, and uncertainty

of things and historical development. Westerners invented perspective to represent the objective world and objects in space. Many forms of perspective, such as point perspective and angular perspective, have been proven to accurately represent objects under perspective construction. However, the multi-point perspective in Chinese landscape painting has also been proven to be consistent with direct sensory experiences of people. When we stand before mountains and rivers, we can instantly feel the giant mountains, trees, and travelers depicted in Dong Yuan's landscape painting as real and consistent with our direct sensory experience of that environment. The background behind Mona Lisa has been proven to be the result of the creator's careful conception, containing inconsistencies and discrepancies in spatial composition with the actual landscape. However, the atmosphere and environment created by the visual sensory experience are unified. In a sense, the creator may be creating a clear impression of a chaotic world, or unconsciously guiding a clear vision with the philosophy of chaos. This may also be one of the expressions of the artistic significance that transcends time and space. The AICG is still in the early stages of explosion in the field of art creation and design, which has sparked a great deal of discussion and controversy about the fundamental issues of art. The traditional philosophy of the Yi Jing can not only explain the origin of all past art designs, but also explain the entanglement and fusion of artificial intelligence and art design, which has transcendent value and significance beyond time and space.

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