AN ELECTRONIC ART APPROACH IN THE ADAPTATION OF WHITE SPACE ART COMPOSITION ON CHINESE INK PAINTING

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Abstract: White Space Art, otherwise known as *Xu Shi*, is not only used to create a powerful visual drawing space, but also a key composition principle and aesthetic feature in Chinese Ink Painting. This study focuses on the application of White Space Art in the implementation of the artwork. In other words, which initiatively to explore the method of combining the approach of technology with Chinese Ink Painting Art. Through the practical experience which executed by the author, intently to verify the feasibility if White Space Art to express the space philosophy of electronic art and discusses the possibility that the practical process can be used for further reference. The implementation of such a merger to achieve an artwork in the form of contemporary art which gives a new perception and meaning to the Chinese Ink Painting Art in a new context rather than in a conventional background.

Keywords: Chinese Ink Painting; Contemporary Art; Electronic Art; White Space Art; Xu Shi

1. INTRODUCTION

According to Wang et al. (2022), being one of the oldest traditional arts in existence, Chinese Ink Painting holds a significant place in the history of art. The tradition of Chinese Ink Painting is an exceptional embodiment of the 5,000-year-old ideological spirit of Chinese civilization that is still being upheld to this day (Shah et al., 2020). In the Tang Dynasty or 8th century, landscape painting was the first field to witness the inception of Chinese ink painting (Hu, 2023). Chinese Ink Painting is a type of painting using a traditional brush originating from China which consists of a variety of tonalities, darkness, and wet and dry ink colours, achieved by grinding the differentiation of the ink stick in water to change the ink density, ink absorption and pressure in one stroke of the brush. The White Space Art, one of the art principles in Chinese Ink Painting, provides a visually chic experience for the overall composition of the ink painting. Western painting focuses on perspective and form while Chinese Ink Painting is concerned with the similarity of the spirit of appearance which is contrary to the basis of Western art. In traditional Chinese painting, highlighting the existence of space is not reflected through a simple perspective technique, this painting uses various factors of ink colour darkness, distance, and height of objects and simple or complex formation, and one of them is white space.

Many artists were more and more interested in the nexus between art and technology as the industrial age gave way to the electronic era. Continuously need to establish vocabulary for art employing digital technology as a medium in social, economic, and aesthetic aspects because technologies frequently grow more quickly than the rhetoric judging them. Under the current trend of "art + technology", isn't it possible to fully demonstrate the White Space Art essence of Chinese Ink Painting through the manipulation of electronic art and subsequently establish a novel context for Chinese ink painting fitting to this era? Recently, more and more Chinese artists have been exploring such spatial theories to provide different answers, and such various White Space Art composition has also been applied to various categories of contemporary art.

For instances, the contemporary Chinese artist Pan Gongkai fused together both the style of ideas and expressions through various experiments to give a contemporary twist to his traditional Chinese artwork which conveys his concern about the inheritance and modernization of traditional Chinese Ink Painting. Based on his completed Chinese painting images and preserving a large amount of blank space, he uses projection techniques to form electronically generated Chinese characters in real time, filling in the white space to transmit his imagination and message. Rice

paper has a natural white colour, the main medium of traditional Chinese Ink Painting, which provides the author with ideas for the implementation of White Space Art. So, used an alternative implementation of blank art as the main element, which is video projected on rice paper. Whether this practical experience allows for the full interpretation of traditional aesthetics in electronic art needs to be further interpreted in the subsequent chapters.

2. LITERATURE REVIEW

The literature review includes three aspects: origin of White Space Art, Taoism and Xu Shi in White Space Art and application of White Space Art in contemporary artwork.

2.1 Origin of White Space Art

According to Wu (2019), "white" in Chinese painting has its value, especially in using white paper as the most basic background colour to achieve a natural appearance in the image, to emphasize the sensation of lightness and purity of Chinese painting. Most great and classic Chinese ink paintings with white space are composed of a type of master created by clerical officials and intellectuals during the feudalism system, where the literati infiltrated their minds through the production of their paintings at the time of the cross (Z. Fan et al., 2019). Art professionals find it challenging to demonstrate that white space is not simply unfilled and pointless space but rather purposely created to communicate meaningful information and contribute to the composition of the painting in a measurable and objective way. Fan & Zhang (2020) describe white space as the simplest form of sensory input as a stylistic element that has no transparent semantic meaning but can convey a simple and imaginative sensation. Thus, the application of white space is generally used in many famous works to depict formless objects such as clouds, rivers and lakes that are integrated into Chinese philosophy and aesthetics. A similar opinion from Wang (2017) said that Chinese ink paintings often express the beauty of mountains and rivers by using white space and the artist can add a spiritual aura to the picture by positioning the white space correctly. The placement of white space is also a widely applied and deliberate technique in Chinese ink painting, intended to arouse the audience's expectations, spark their imaginations, and refine it. The famous painter in the early era of the Republic of China, Pan Tianshou once said "I put black filling ink, but look at the white part", this proves that the painter not only pays attention to the image of the object but also pays attention to the design of space (white space). Fan et al. (2019) think that the white space in Chinese ink painting can allow the audience to create an aesthetic feeling of simple beauty but has the potential to hinder the audience from recognizing the object depicted with the use of white space. In

addition, white space produces shadows with the help of sunlight in the painting to create the balance of the picture and volume of the composition (Wu, 2019).

Figure 1. Ink Painting "*Solo Fishing in the Snowy River"* by Zhang Da Qian (1899-1983)

2.2 Taoism and Xu Shi in White Space Art

The aesthetic foundation of Chinese painting is heavily influenced by Chinese Taoism's ideological philosophy, which emphasizes the harmonious relationship between man and the universe (Bao et al., 2016). In traditional Chinese philosophy, *Xu Shi* and *Yin Yang* are complementary forces that are interlocked and interdependent. According to Powers & Tsiang (2017), *Xu Shi* (emptiness and substance) is one of the most frequently used terms in Chinese art and literary theory. At first glance, *Shi* may appear to be a positive quality because it refers to things that are real or substantial. But *Shi* is not necessarily considered the better, stronger, or preferable quality of the two, just as neither is necessarily considered stronger than Yin. On the other hand, the fact that *Xu* comes before *Shi* in the plural term *Xu Shi* implies that *Xu* can be more desirable than Shi in artistic value. Laozi, a leading Chinese philosopher who is believed to have lived around the 4th century BC, said that everything in this world is the unity of "nothingness" and "existence", or the unity of *Xu* and *Shi*. The Chinese people's view emphasizes a dynamic structure for human relationships with the environment and even the universe, independent of exact physical appearance or imitation of exact objects (Bao et al., 2016).

Figure 2. The logo of *Yin Yang* which is the symbol of Taoism, is composed of black and white.

2.3 Application of White Space Art in contemporary Chinese Ink artwork

The most prominent recent example is the art of "ink wash + installation" which come from the category of Experimental Ink Painting. This category tries to get rid of the heavy burden of "ink" and cut off the spiritual connection of traditional ink and wash to establish a contemporary art system which differs from traditional ink and realistic ink. The artist frequently works with composite materials to explore abstract realms that are not covered in traditional ink art contexts. From the perspective of the sense of space, the method of moving Chinese Ink Art on an easel from two-dimensional to multi-dimensional is to combine the multi-angle exhibition method of sculpture (Zheng & Fan, 2021). The creation of traditional ink and wash is usually limited to a static two-dimensional plane, while the ink and wash installation have a profound impact on the traditional mode. The first challenge to break through is the spatial dimension of creation.

One of the most protuberant examples is Chen Xiang Bo's large-scale digital interactive ink art installation "*Xuan Sheng*", which uses abstract Chinese ink as the basic element, combines the traditional Chinese scroll presentation form, and uses modern new media digital interactive technology to bring traditional culture comes alive. This "large scale scroll" gives the viewer a living, vast and imposing space in which to be immersed in a dynamic scene. The element of white space preserved in the artwork is the essence of Chinese ink painting, on which Chen established an artistic dialogue between the contemporary and the traditional. However, some discourses deny that "digital + Chinese ink medium" is Chinese ink painting which only provide space for immersive viewing experience. Like the artwork of Pan Gongkai, "Snowing Melting into the Lotus" or known as "Melt" It is a kind of projection transformation of the base of Chinese painting, which makes it purely a conceptual

and installation work rather than a Chinese painting anymore. "*It is like Duchamp moving a urinal (Fountain) into an art museum, a borrowed relationship, a medium,*" Pan said, which clearly delineating Chinese painting and contemporary ink installation art without being a kind of contemporary ink painting. "Melt" was inspired by his vision of Chinese art as being accessible to Western influence while keeping its core traditional qualities (Duan, 2020) .

Figure 3. Large-scale digital interactive ink art installation "*Xuan Sheng"* by Chen Xiang Bo at the Powerlong Art Center, Xiamen, 2021.

Figure 4. Large-scale video projection art installation "*Snowing Melting into the Lotus"* by Pan Gong Kai at the 2011 Venice Biennial Exhibition, Venice, 2011.

3. RESEARCH METHOD

Formal analysis is a visual argument that takes a position and generates an engaging dialogue using the formal aspects of the work. With this method, the reference of visual materials which is Chinese ink paintings were analysed and carried out focusing on the White Space Art composition as the main visual criteria and the effect of the art on the whole painting. To obtain statistical data proving the white space in the reference work to be more accurate, the author used mathematical calculations
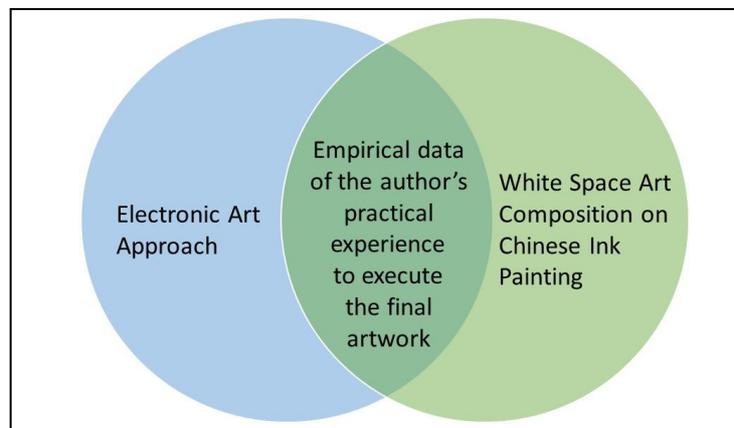
for the Salient Region which refers to the white space. In this execution, applications like object-based picture retrieval and adaptive content distribution can both benefit from the ability to identify visually salient regions (Achanta et al., 2008). This salient region detection and segmentation model which used by Fan et al. (2019) to define how audience's visual aesthetic experience with the influence of white space. Noted that the latest practice of this model also found in the study of Fan et al. (2022) by limiting the effects of other attributes on the effects of white space on the perception of the painting's complexity. The mathematical calculation involves analysing whether white space is included in salient areas by calculating the percentage of the blank regions in each artwork.

Table 1: Definition of "white" in mathematical calculations for the Salient Region

Original white	Acceptable shades of grey as "white "

In the emphasizing the theory of White Space Art or *Xu Shi*, the empirical data of the author's practical experience from the execution proses of artwork as the outcome. Rice paper and ink are the main media materials in the execution of this artwork. Headed for achieve the Postmodern context which in electronic art approach as appropriate as possible, to apply alternative (contemporary) methods compared to conventional methods.

Diagram 2: Empirical data sources

4. ANALYSIS AND OUTCOME

To obtain statistical data proving the white space in the reference work more accurately, the author used mathematical calculations for the salient region that refers to the white space. This statistical data will be discussed in the analysis findings section later. One of the distinguishing characteristics of electronic art is the hybrid practice in which different media and artistic approaches are combined as well as interdisciplinary.

4.1 Artwork Identification and Proving through Mathematical Calculation of the Salient Region on Selected Sample of Conventional Media Artworks

This mathematical calculation involves analysing whether white space is included in salient areas by calculating the percentage of the blank regions in each artwork (Z. Fan et al., 2019). Human control of visual attention involves both a stimulus-driven and fast bottom-up strategy as opposed to a slower, volitionally controlled top-down strategy. In a previous study carried out by them, if the white area covers 30% then it should be counted as white space in a painting. Therefore, the author used the guidelines in the implementation of this formal analysis, by employing Image Color Summarizer web application as a tool to calculate the percentage of the white area. Selected drawing image files may have a slight colour gap when uploaded to the Image Color Summarizer, but colours close to white count as "white".

David Liew Chan Hua's artwork produces an unconventional translation style of Chinese ink painting, especially in terms of subject matters. His artwork pays attention to simplicity and comfort in terms of momentum, emphasizing the practice of brush technique, softness, elegance, and strict composition. Grounded on this mathematical calculation method, this selected Chinese Ink painting shows more than 30% which consists of 63.1%. This demonstrates that David's painting maintains a large major area of white space component. Not a worthless white background at all, but the empty space in this painting is also purposefully left or created that way to improve the composition of the image overall. As a philosophical stance, the artist intentionally leave space for audience's anticipation and imagination. One of the great possibilities for interpretation in the painting is to depict the empty space as a triggering association of the viewer with the subject of the orangutan, while the background would represent the primeval jungle (or other imagery) filled with fog.
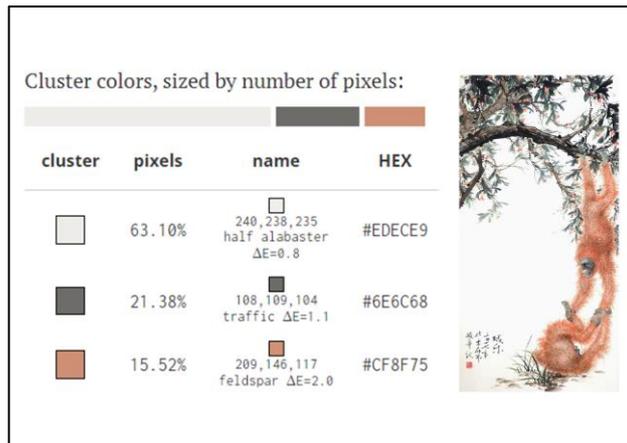
Figure 5. Percentage of Salient Region of Contemporary Chinese Ink Painting "Happy Hour" through analysation of Image Color Summarizer

For ancient paintings, due to the high-intensity lighting for a long period, scroll paper or ancient paintings will turn yellow and become brittle. These works of art also have a history of thousands of years where oxidation has already occurred. Thus, this analysis count yellow or light brown as white or an approximation of it which is expected to be the basic colour of this artwork in the past.
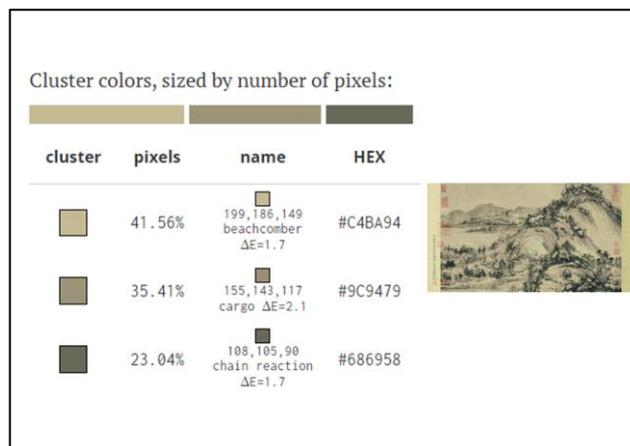

Figure 6. Percentage of Salient Region of 13th Century (Song dynasty) Chinese Ink Painting "Pure and Remote View of Streams and Mountains" (partial View) through analysation of Image Color Summarizer

Chinese landscape painter of the Song dynasty, Xia Gui, used his most well-known technique of constructing a composition in which only a small portion of the landscape is visible while the remaining area is shrouded in mist. The landscape in this painting varies greatly due to the artist's use of several viewpoints; it includes towering peaks and curving rivers, resulting in an interesting compositional structure for the piece. Based on the results analysed by Image Color Summarizer, this classic Chinese ink

painting comprises 41.56%. Such emptiness space represents the mists, a large, shapeless, unending, and ever-varying natural phenomenon. Therefore, it can be said that since ancient times Chinese society has been concerned with the white space component which on the other hand practices the philosophical approach of Taoism.

4.2 Salient Region Approach as Guide for Artwork Execution

Based on the above calculations for selected artworks, the spatial white space must be at least 30% in order to achieve a balance between Chinese ink painting pictures and compositional volume. This serves as these examples of how to use white space to express the appearance of clouds or fog using the natural colour of rice paper. The authors employ a completed artwork named "*Reverie*" made of Chinese ink painting material to determine the precise likelihood of white space to demonstrate and confirm the existence of white space once more. Based on the calculation result, the white colour in the painting is 42.69% of the total, which is the role of white space to interpret the basic theoretical elements of Chinese ink painting - that is, Taoism thought of existence and emptiness. The composition of the artwork deliberately leaves the sky and the lake white and is electronically detailed in the post-production application. This is in line with each theory of white space to stimulate the viewer's imagination, so the post-production gives the artist the ability to express the dynamic images for the imagination.

Figure 7. A completed Chinese Ink Painting "*Reverie*" in coventional form

cluster	pixels	name	HEX
	42.69%	253,253,254 pale grey ΔE=0.0	#FCFCFC
	17.24%	204,204,204 grey ΔE=1.1	#CBCBC9
	13.93%	154,153,145 archive grey ΔE=2.0	#989793
	13.10%	93,92,88 chicago ΔE=0.8	#5E5D59
	13.03%	35,35,35 black ΔE=1.5	#232321

Figure 8. Percentage of Salient Region of Chinese Ink Painting "*Reverie*" through analysation of Image Color Summarizer

4.3 Adaptation of Electronic Arts Approach in Artwork

In terms of displaying the artwork, it shows that the form of Chinese Ink Painting is not only in a 2-dimensional form but can be separated into several layers in a 3-dimensional space on the other side. The hanging scroll arrangement expresses a sense of rhythm in the "white space" from top to bottom and shows that the composition in the "white space" is layered. The idea of this artwork is more in line with the video mapping art proposed in the early stages to explore the sense of space brought by "white space". Before entering the animation phase, the drawing image needs to undergo the "Layer Masking" process in Adobe Photoshop (PS) software which allows each subject in the drawing to be made into layers. This is so because each subject in the image follows own direction of movement. Next, the animation in the video mapping presentation was produced using Adobe After Effects (AE) software. Most plant movement effects are edited with the "Puppet Pin Tool" which can track parts of the movement. With a hand-crafted array of scrolls, a video mapping projection is projected onto the blank surface of the scrolls. Therefore, the form of presentation of this artwork is different from the conventional form where only the drawing is static in the scroll. The final display of this work fulfils the completion of the formation of a final work with the theoretical rationale of White Space Art or *Xu Shi*.

Figure 9. Final display of video installation in the adaptation of White Space Art composition

5. CONCLUSION

At the end of the phase, the final form of the artwork is presented as an art installation consisting of a drawing and a projector. The white space (empty space) found in the scroll will be filled by the video projection part of a projection device such as a projector. This implementation aims to create a visual effect of a moving image or known as animation to prove that white space is not just empty. With that, the subjects that are not conveyed by the purpose of Xu's imagination or imagination can be realized with a real image. This study has proven the depicted subject to have "presence" or "absence" for comparison between moving or static images. In the context of contemporary art, contemporary is not only a type of art that happens now but is seismically different from modern and post-modern art, thus this transformation needs to be explained and understood (McNamara, 2012). The two moments in what O'sullivan (2010) calls the aesthetics of contemporary art are composed of a dissent (turning away from, or rejection of, the typical) and an affirmation (something different), after which triggers two later actions: one criticism, one creativity. Compared to the conventional art, contemporary art can fully explore the potential of materials and media, the question lies in whether the core ideology and aesthetics of traditional Chinese ink painting can be maintained or preserved. Because it is generally believed that the aesthetic interpretation of the ink painting is more of a metaphysical explanation, especially the interpretation of "empty" space. Overall, the results of the study are conducted in a rationally and scientifically manner which is a principle obtained by a scholar who has a critical attitude towards knowledge.

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