




The Excavation of the Archaeological Value of Dunhuang Mural Elements has Injected New Vitality into the Research of Modern Animation Image Color Narrative

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ABSTRACT

In order to further analyze the archaeological elements in Dunhuang murals, this paper takes the color, structure and material in Mogao Grottoes as an example. A high-definition microscope was used to observe the raw materials, blending, collocation, thickness, and other archaeological values of the colors in the murals, and then the infrared scanner was used to observe the distribution and narrative function of the colors and the narrative connotation in the murals was outlined. The results showed that the dyes in the Dunhuang murals were mainly iron hydroxide, zinc sulfate, calcium carbonate, copper sulfate and copper hydroxide, and the surface protective layers were iron oxide and alumina. The color fusion is high, with the presence of small oxide particles and no significant amounts of agglomeration. The thickness of the coating is about 3~4mm, which is caused by color overlap and color aggravation. The presence of long-distance development between the colors indicates that the chromatic aberration is minor and there are multiple transition colors. Therefore, there are many pure colors such as white, black, and yellow in Dunhuang murals, which are used to represent the narrative theme, the transition color is rich to represent the narrative process, and the multi-layer thickness is used to express the overlap of the narrative content, which has an enlightening effect on the color narrative influenced by animation.

Keywords: Dunhuang Mural Elements, Archaeological Value, Color Narrative, Modern Animation Video, Image Color.

INTRODUCTION

Dunhuang murals are an important treasure of art in the Sui and Tang dynasties (581~907 AC), and their historical origins can be traced back to the Tang Dynasty (618~907 AC), the Five Dynasties (907~960 AC) and the Yuan Dynasty (1271~1368 AC), forming a rich treasure trove of paintings. Dunhuang murals are famous all over the world for their rich content, large number and diverse styles, and have received more and more attention. Dunhuang murals are a witness to the development of religion, culture and art, and can show the social, political and economic outlook and cultural life orientation of the Sui and Tang dynasties (581~907 AC). Dunhuang murals have rich historical and cultural value and connotation, and are one of the treasures of China's excellent traditional culture (Bolong et al., 2022; Hao et al., 2022). The Sui and Tang dynasties (581~907 AC) were an era that focused on the development of murals, and it was also a critical period for using mural colors to tell the content of stories. As one of the treasures of Buddhist art, Dunhuang murals can not only reflect the spread and development of Buddhism in the Sui and Tang dynasties (581~907 AC), but also show the historical process of the integration of traditional Chinese culture and foreign culture. Moreover, the artistic value of Dunhuang murals is extremely high, for example, the painting techniques of Dunhuang murals are extremely exquisite, with profound cultural and artistic connotations, which makes Dunhuang murals a wonderful stroke in the history of Chinese

painting. Dunhuang murals present many wonderful figures and architectural structures, religious and life scenes, etc., all of which have rich aesthetic value (Lian, J. Zhang, Liu, Dong, & H. Zhang, 2023; Han et al., 2022). At the same time, it had a profound impact on the art of painting in later generations. Moreover, the Dunhuang murals not only have high aesthetic value and great historical value for the traditional Chinese culture, in addition, the Dunhuang murals also carry the inheritance significance of the traditional Chinese culture, and contain some religious beliefs and philosophical thoughts, social style information in the culture of the Sui and Tang dynasties, which have precious value (Z. Liu et al., 2022; X. Ma et al., 2023). It can be seen that the Dunhuang murals have a high preservation value, because it is very well preserved, therefore, it has become a valuable resource for future generations to carry out deep learning and research, and can be used as the ancient cultural heritage of all mankind. Studying the development of Dunhuang murals can help to understand and understand the development of China in various periods to a certain extent, such as social changes and cultural exchanges in various dynasties such as the Sixteen Kingdoms, the Tang Dynasty, the Song Dynasty, and the Yuan Dynasty. The display of Dunhuang murals can represent the cultural exchange between Buddhist art and the Silk Road and show the integration of Chinese and Western art styles and religious beliefs. From a cultural point of view, Dunhuang murals can not only reflect the social and cultural connotations of the Sui and Tang dynasties, but also show the religious beliefs and spiritual pursuits of the time, and show the historical style of the time (J. Liu et al., 2023, Mu et al., 2024). Moreover, the Dunhuang murals are also a precious material for the study of all aspects of knowledge in the Sui and Tang dynasties, for example, the Dunhuang murals contain the history, religion, philosophy, art, clothing, language and other aspects of the Sui and Tang dynasties, which are of great significance and value to future generations to understand and inherit China's excellent history and culture. The research of this paper is mainly to carry out a specific analysis and excavation of the archaeological value of Dunhuang mural elements, and to better analyze their application value in the influence of modern animation on color narrative, and strive to integrate ancient art and contemporary animation creation, so that the modern animation industry can have a deeper sense of history and cultural depth. Through the detailed analysis of Dunhuang murals, the use of colors, modeling characteristics, and rich imagery can be innovatively used and transformed in modern animation (H. Liu et al., 2023; Sun et al., 2022). Based on this, this paper will explore how to use the artistic elements of Dunhuang murals to strengthen the expressiveness of modern animation art, expand the boundaries of its artistic expression, improve the aesthetic level and narrative ability of modern animation murals, and promote the further dissemination of traditional Chinese culture in the context of global diversification, so that it can be protected and inherited. The study will bring global audiences closer to the essence of Chinese art and raise their awareness of the essence of Chinese art. At the same time, the research in this paper will promote further innovation and development in China's animation industry, which is of great practical significance.

LITERATURE REVIEW

The Archaeological Value of Dunhuang Murals

Dunhuang murals are cultural treasures of Chinese art, especially the rich content of Buddhist art, which is mainly reflected in the display of ancient artists' superb skills in color and painting techniques, and also provides corresponding support for modern animation design. Dunhuang murals originated in the pre Qin period and went through multiple stages of development and rich content such as the Sixteen Kingdoms, Sui and Tang Dynasties. Until the end of the Yuan Dynasty, their murals achieved unprecedented development. The content of murals is not only the result of religious beliefs, but also a reflection of the social, political, economic, and cultural aspects of people's lives at that time. Overall, Dunhuang murals are characterized by their large-scale and exquisite artistic achievements, with themes depicted in the form of characters, mountains, waters, and animals. Among them, the unique feature of Dunhuang mural design is the green mountains and waters, with dyes and colors such as stone green and stone green as the main colors. The painting process has a bright and fresh effect and high artistic value, providing support for modern archaeological research and analysis. In depth research on Dunhuang murals can analyze ancient art based on actual case conditions, which plays an important role in current archaeological excavation and cultural inheritance.

The Influence of Dunhuang Murals on Modern Animated Imagery

Dunhuang murals attach great importance to the use of color and the improvement of visual effects, and reflect their artistic value by sublimating their cultural connotations. Mineral dyes such as cinnabar, stone blue, and stone green are widely used in Dunhuang murals, which not only have rich colors but also are willing to use colors very clearly. The color matching is reasonable, which can provide new ideas for the image design and content improvement of modern animation, improve the shock absorption of Dunhuang murals. In addition, during the drawing process, their color structure and character shape also have very clear characteristics. The

color is mainly based on the contrast of light and dark, and the shape is mainly composed of left and right structure and upper and lower structure. The thickness of the lines is matched, and special attention is paid to the use of streamlined lines, making the characters and landscape full of three-dimensional and dynamic sense. The two-dimensional animation design of provides knowledge that Dunhuang changes are carriers of historical culture, reflecting the humanistic characteristics of the time and the content of traditional Chinese culture, especially in terms of color and character expressions. It can provide support for character design, painting, and background setting in modern animation. Therefore, Dunhuang murals have high archaeological value. Using modern equipment to analyze and excavate them can provide support for modern animation images, not only enriching the original painting techniques but also promoting the dissemination of traditional Chinese culture.

METHODOLOGY

In this paper, the color, structure and material of the Mogao Grottoes in the Sui and Tang dynasties (581~907 AC) were analyzed. The archaeological value of the color in the murals was observed by using a high-definition microscope (high-definition, 2~5.5 times, produced in Guangdong). The distribution and narrative function of colors were observed with an infrared scanner (0~300°C range, produced in Guangdong), and the narrative connotation in the murals was outlined. Among them, the selection of observation indicators mainly relies on online data (CNKI, Wanfang) to obtain, and the samples are mainly imitations.

RESULTS

Colors and Dyes of the Murals

Comparing the colors and dyes of Dunhuang murals in the Sui and Tang dynasties, combined with the online literature, it is found that the dyes of the murals are mainly inorganic salt dyes, as shown in Table 1.

Table 1. Colors and Dyes of the Murals

Mural	Color	Chemical Composition	Coating	How To Apply
Background	White, brown	Calcium carbonate, calcium oxide, charcoal, white stone powder	$1.2 \pm 0.21\text{mm}$	Seal Carving Joint Painting
Surface Layer	Red, yellow, blue	Iron oxides, copper sulfate, iron hydroxide, zinc sulfate, calcium carbonate, copper hydroxide	$2.3 \pm 0.03\text{mm}$	Painting

The data in Table 1 shows that a variety of inorganic salts dominates the colors of the murals, and the variety of color dyes allows for rich painting. However, during the Sui and Tang dynasties (581~907 AC), the colors of the murals were mainly red, brown, and black, mainly expressing a dim and depressive theme. Among them, red is to express the religious idea of salvation and redemption. Dunhuang murals use red, black, white and other colors to express many contents, including religious content, social life content, architecture, clothing, art, history, etc., all of which provide many clues for the archaeological research of later generations. During the Sui and Tang dynasties (581~907 AC), there were a large number of Dunhuang murals, and in many Dunhuang murals, there were many different color combination styles, color elements, color mixing techniques, etc., which could show the aesthetic and artistic characteristics of the Sui and Tang dynasties, and were conducive to narrative and understanding the content and development of each narrative theme. Moreover, through the analysis of the dyes of the Dunhuang murals, we can also deduce the social structure, cultural landscape, religious beliefs, etc (Liu Z. et al., 2022; Zong, X., Li, Z., & Zhang, Q., 2024). in which the narrative content is located, and then better understand the social changes in the Sui and Tang dynasties. Dunhuang murals are the historical, cultural and material cultural heritage of Sui and Tang dynasties, which can reveal the history and cultural traditions of the Sui and Tang dynasties and the Song dynasties, and reveal the development and advancement of different dynasties. Looking at the murals of the Sui and Tang dynasties through a microscope, it is found that the religious themes in the murals are obvious, which are indicated in red, as shown in Figure 1.

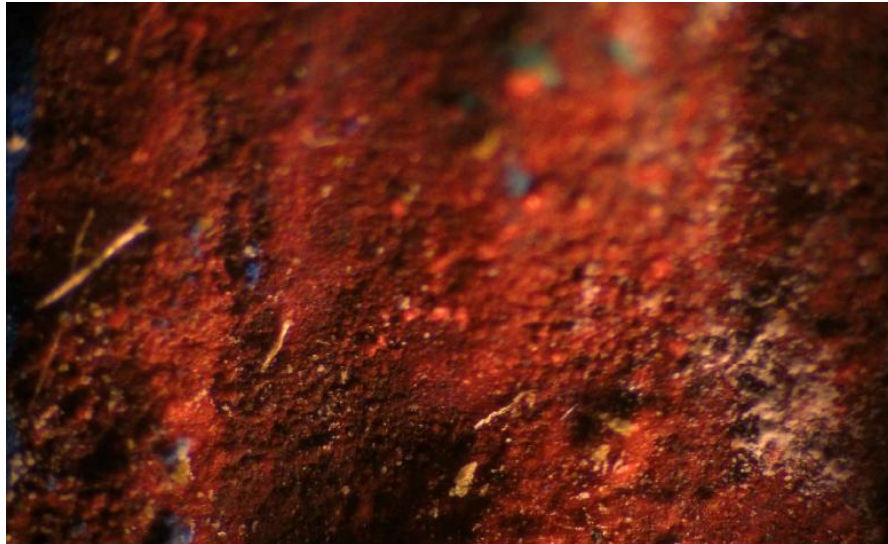
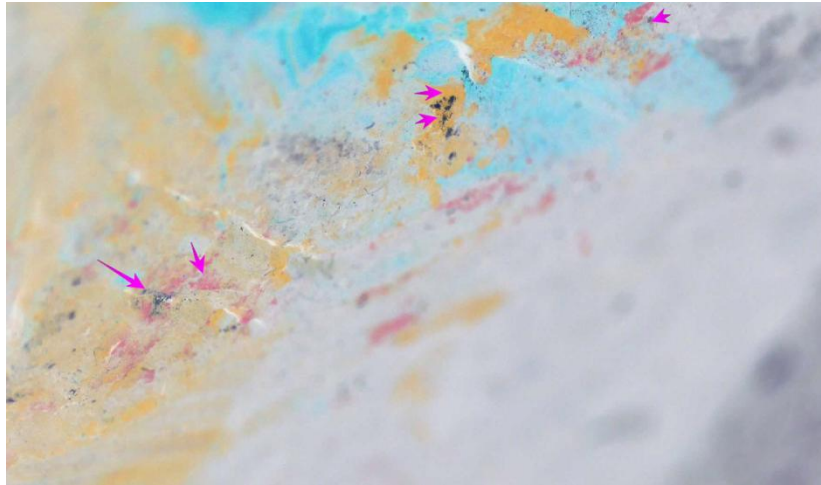


Figure 1. The Red Color in the Mural of "A Thousand Buddhas"

Microscopic observations in Figure 1 show that the red color of the mural is pure, mixing with other colors to a greater extent, and a slight brown dye appears, indicating that the mural uses red to indicate religious themes. Religious connotations. The main themes of Dunhuang murals include Buddhist stories, including many Buddha statues, arhats, bodhisattvas, flying images, etc., all of which belong to religious content. For example, the mural painting of Cave 45 of the Mogao Grottoes in Dunhuang has the story scene of Shakyamuni Buddha, from his birth to his enlightenment and nirvana, the scene can deeply reflect the piety and understanding and performance of the ancient Chinese Buddhist scriptures (W. Ma et al., 2023; Song, 2023). Through the analysis and research of related religious images and scenes, later generations can deeply understand and understand the admiration of Buddhist culture in the Sui and Tang dynasties, and reflect the development process of Buddhism in China and the specific influence of Buddhism in society. For example, the Tang Dynasty mural in Cave 220 of the Mogao Grottoes in Dunhuang depicts the images of different donors, whose costumes and hairstyles can reflect the daily details of the time. Through the daily details, future generations can deeply study the style and cultural characteristics of Tang Dynasty society. During the Sui and Tang dynasties (581~907 AC), murals had unique artistic styles and techniques. For example, the colors of the murals in the Tang Dynasty are extremely bright, and the lines are smooth, and the figures are rich, plump, and dynamic. For example, in the murals of Cave 57 of the Mogao Grottoes, a number of lifelike characters are displayed, with vivid expressions, full of Sui Dynasty style, and natural and vivid emotional expressions, which can reflect the extremely superb painting skills of the Tang Dynasty mural art authors and have high aesthetic pursuits (D. Wen, 2024; Shui et al., 2022). At the same time, the artistic elements, and characteristics of Dunhuang murals greatly influence the color narrative. The use of color dyes in Dunhuang murals not only shows the theme of art, but also promotes the archaeological research of social history, culture and art.

Detail Measurement of the Mural

Comparing the details of the Dunhuang murals in the Sui and Tang dynasties, it will be found that the color fusion and color matching are highly reasonable, as shown in Figure 2.



Transition Color Blending



Mainstream Color Fusion

Figure 2. Fusion of Colors

Compared with the Sui and Tang dynasties (581~907 AC), the degree of color fusion shows that in terms of transition color, the color fusion is strong, and there is no large dye particles, indicating that the color is more delicate and proves that the color transition is reasonable. Observing the main colors such as yellow and blue, it was found that the colors were mainly fused with coatings, and there was no obvious color difference. From this detail, it can be seen that when the Dunhuang murals are narrated, they pay great attention to the detailed expression of colors, and express their artistic themes through delicate color collocation. There are many different elements in Dunhuang murals, such as people, architecture and landscapes. In order to facilitate readers to understand the artistic characteristics and charm of Dunhuang murals, we need to analyze the uniqueness of Dunhuang murals in the depiction of people, buildings and landscapes, and express the unique artistic expression of Dunhuang murals. The figures in the Dunhuang murals are very diverse, which is reflected in the meaning of the various figures in the Dunhuang murals (Yin et al., 2022; Yu et al., 2024). For example, the bodhisattvas, Buddhas, arhats, heavenly kings, donors, etc., all have unique characteristics and symbolic meanings and expressions. For example, the Buddha depicted in the murals is often very serious and solemn, the Bodhisattva is beautiful and benevolent, and the image of the flying sky is very light and moving. The portrayal of different figures can show the profundity and diversity of the depiction of characters in Dunhuang murals, and reflect their excellence in emotional expression. For example, the figures in the Dunhuang murals have their own characteristics and different expressions and movements, which are quite vivid. The artists' portrayal of the facial expressions and body language of the characters can show various complex emotions and states of the characters, such as sadness, sorrow, joy, etc. In addition, the artists of the Dunhuang murals pay attention to the display of the details of the costumes of the figures, especially in the use of very diverse colors. Through the careful design of the color matching, pattern decoration, light and shadow effects of the characters' costumes, the artist reflects the human figures, clothing fashions, and fashion concepts of the Sui and Tang dynasties, so as to improve the artistic

expression and appeal of the mural characters. The first is the structure and layout of the building (G. Zhang et al., 2022; L. Zhang et al., 2022). There are many Buddhist temple buildings and palace buildings in Dunhuang murals, Buddhist temple buildings and palace buildings basically have very precise proportions and complex structures, they can show the wonderful skills of architects in the Sui and Tang dynasties and the exquisite painting skills of Dunhuang mural artists, and show the majesty and grandeur of the buildings in the Sui and Tang dynasties. In addition to showing religious buildings, Dunhuang murals also depict many landscapes, flowers and birds, and landscape paintings can not only really show the characteristics of the natural environment, but also reflect the painter's romantic treatment of mountains and rivers and clouds, and present wonderful visual design and artistic conception creation ability. Although the perspective techniques of the Sui and Tang dynasties were not yet mature, they were able to use multiple color superpositions and dislocation arrangements to show the three-dimensional space, and better deal with the spatial content of the narrative. Although the color treatment method does not belong to the category of perspective principle, it has become an artistic feature in Dunhuang murals because of its unique form of expression, as shown in [Figure 3](#)

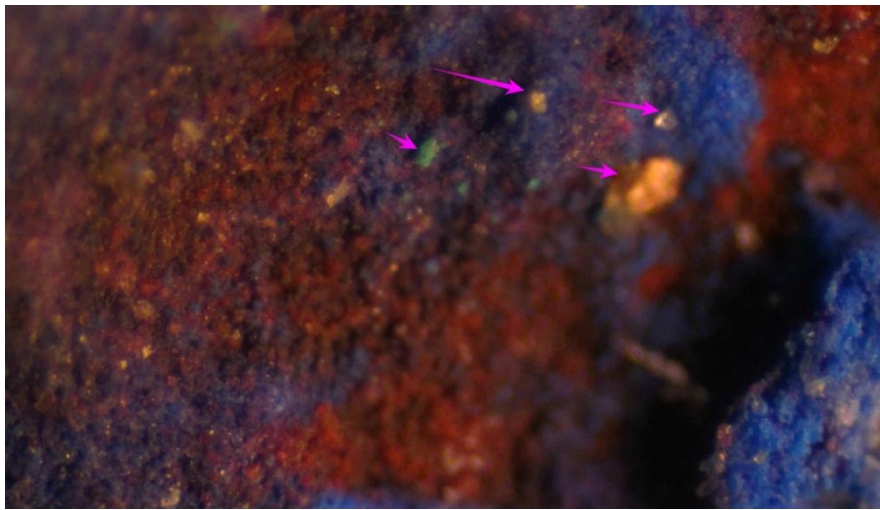


Figure 3. Spatial Display of Colors

From the color observation in [Figure 3](#), the insertion of dyes such as yellow and green between the red colors can enhance the brightness of the red, and the insertion of dark blue between the red and light blue can enhance the spatial sense of the mural. In addition, color fusion produces crystals, increasing the vividness of colors. This shows that the insertion of dark colors between colors can achieve a three-dimensional narrative and improve the vividness of the mural (Y. Zhang et al., 2022). The integration of color details can more accurately express the imagination of the narrative, and pay more attention to the personalized expression of the color narrative. According to the theme and style of the mural, choose a reasonable color scheme and color scheme, so that each mural has a special visual identity. Through the adjustment of color contrast, light and shade, saturation, and other details of visual elements, Dunhuang murals use color to enhance emotional expression and atmosphere creation, making their personalization more prominent. For example, when depicting some sad scenes, the creator may use cool tones to express emotions and enhance the emotional feeling of the mural. In Sui and Tang murals, color has become more than a mere decorative element, but a tool that can drive the narrative and, in some cases, reveal the theme of the whole text. For example, by changing the color of red and black, it is possible to hint at the passage of time, the transition of scenes, and the emphasis on a certain plot point, etc., to improve the mural's narrative. In addition, the contrast between light and dark colors produces light and shadow effects. In Dunhuang murals, the effect of light and shadow has a prominent function. Realistic light and shadow effects can make the mural more realistic and three-dimensional, and make the narrative content in the mural feel realistic. By using the direction and intensity of light, shadow treatment, etc., the mural's image shows a better visual sense. However, although the color narrative ability of Dunhuang murals is relatively strong, there are still many shortcomings, such as insufficient theme colors and obvious color oxidation. However, the color narrative of Dunhuang murals has a high connotation, and the historical content is restated, and the diversity of color narratives is emphasized.

Spatial Distribution of Murals

Comparing the color of the 21*31cm² area in the Dunhuang murals, the 3D color scanning results are obtained, as shown in [Figure 4](#).

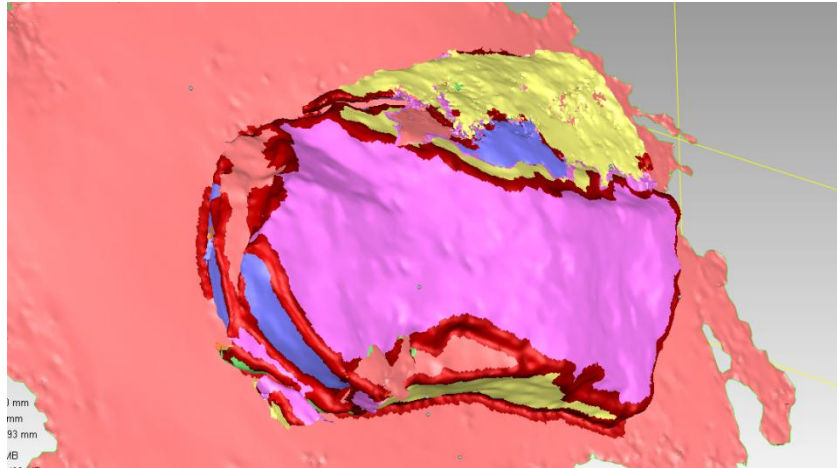


Figure 4. Color Distribution of Dunhuang Murals

Through the scan results of the distribution of the color of the mural, it can be seen that the color narrative of the mural has a variety of transition colors, the distance between the theme colors is large, and the color distribution is random, which is mainly changed according to the light and shadow and the rock characteristics where the mural is located. It can be seen that the spatial layout of the mural is diverse, and there are more areas for the fusion of colors. Dunhuang murals are an important relic of art in the Sui and Tang dynasties, which can be said to be an outstanding representative of Chinese traditional culture, which carries the cultural and artistic connotations of the Sui and Tang dynasties, and has a lot of religious content, which is of great significance to the study of art history. During the Sui and Tang dynasties (581~907 AC), the painting style of Dunhuang murals was unique and the subject matter was rich and colorful. The formation of Dunhuang murals is closely related to the cultural exchanges of the Silk Road, and the Dunhuang murals are indeed the products of the fusion of Chinese and Western art elements, so they are of great significance to the history of mural art in the Sui and Tang dynasties. The fusion of multiple colors reflects the unique style of Chinese and Western art, and the wind obviously has Chinese and Western light and shadow art elements. For example, in the murals of the Sui and Tang dynasties, you can see different colors of human figures and architectural styles, and retain landscape painting techniques, such as brush and ink techniques and composition. Such a fusion can not only show the mutual penetration and mutual influence and intermingling of Eastern and Western cultures, but also be a historical testimony and provide valuable materials for further research on global art history, through the strong contrast of red and yellow, religious symbols and meanings. There are many different religious symbols and themes in the Dunhuang murals, which not only contain traditional Buddhist themes, but also contain religious elements from countries such as India and Persia, so it will help future generations to understand better and understand the social outlook and cultural exchanges between China and the West at various stages in the Sui and Tang dynasties. By measuring the boundaries of the mural in the space, it was found that the editing was fused into a free-circulation form, as shown in Figure 5.

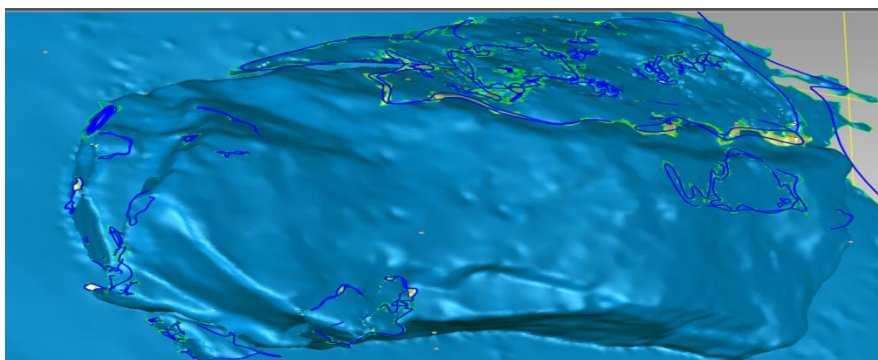


Figure 5. Color Blending Boundary

As can be seen from the contents in Figure 5, the color fusion boundary of the Dunhuang murals is in the form of free fluid, and the fusion of the boundary is random and nonlinear. During the Sui and Tang dynasties

(581~907 AC), Dunhuang murals had a unique result of the integration of Eastern and Western cultures, and had a strong charm, and at the same time, the artistic style of Dunhuang murals was unique and the subject matter was diverse, which could bring certain enlightenment to the field of modern art and culture, so we could know and understand the position of Dunhuang murals in global art history through in-depth analysis of Dunhuang murals. Moreover, Dunhuang murals can also influence various art forms in later generations, such as architecture, painting, sculpture, etc., and have a strong position in global art history. For example, the traditional painting techniques of Dunhuang murals, such as color matching and line depiction, human expression, etc., can serve various modern art forms and inject new vitality into modern art forms. For example, Tang Dynasty murals have many advantages in the use of color and line sketching, and their characteristics can influence the picture design of modern animation. In short, the Dunhuang murals are important cultural heritage in the world. They can stimulate the international community's awareness of the protection of art murals in the Sui and Tang dynasties, and promote the application of current scientific and technological forces in cultural protection. Through the cooperation of all parties, Dunhuang murals can further promote cultural exchanges between China and the West, and raise global awareness, understanding and research on the integration of Chinese and Western cultures.

DISCUSSION

The Deepening of the Connotation of Color Expression

The various elements in the Dunhuang murals can bring certain enlightenment to the color narrative of modern animated images, such as the combination of color and emotion. Dunhuang mural artists have first-class ability to use color and are good at showing rich human emotions and picture atmospheres through wonderful use of color and incorporating religious elements. For example, the artists of the Dunhuang murals use warm colors to enhance the solemn and peaceful atmosphere and cool colors to convey a calm and solemn atmosphere. In terms of color storytelling, modern animated images rely heavily on the individual intuitive feelings of the creator, so sometimes there is no deep emotional expression. It can be seen that modern animation image creators can refer to the mode of combining color and emotion in Dunhuang murals to convey the visual sense of animated murals and make their visual effects more delicate and profound. In the Dunhuang murals, many colors can be seen, and it is recognized that colors often have some kind of symbolic meaning, such as gold symbolizes sacredness, while blue symbolizes infinite space. In this regard, modern animation should draw on the cultural connotations and symbolic meanings behind different colors and apply them to their own murals to enhance the theme connotation; In the construction of space, Dunhuang murals use ingenious color perspective methods to express the distance and proximity of space. Although modern animation images have been very superior 3D technology to complete the wonderful expression of space, the creator can still learn from the traditional techniques of Dunhuang murals to show wonderful visual effects and form unique style characteristics.

Dunhuang murals can reflect the inheritance and development of color techniques of traditional culture in the Sui and Tang dynasties. At present, with the continuous advancement of globalization, modern animation video design has been profoundly affected. Based on this, creators are required to respect local culture and its characteristics so they can use the color culture elements in Dunhuang murals to promote traditional Chinese culture. Fifth, the diversity of color styles. Dunhuang murals span multiple dynasties, including the Sui and Tang dynasties, and can show the changes in various styles. In this way, modern animation creators can have many style reference templates, and draw new inspiration in the process of pursuing the personalization of modern animated images.

Enhance the Cultural Connotation of the Sui and Tang Dynasties in Color Narrative

The excavation of the archaeological value of Dunhuang mural elements is conducive to cultural inheritance and innovation, which is embodied in these aspects: first, cultural inheritance. The excavation of the archaeological value of Dunhuang murals and the color narrative of modern animated images can help the world understand and recognize traditional Chinese culture, and ensure the enthusiasm of young Chinese people to inherit Chinese history and culture. For example, by studying the social, historical, cultural, Buddhist, costume, philosophical, painting and other aspects of Dunhuang murals, we can explore the cultural essence of Dunhuang murals and the values of the Chinese at that time, and promote the further publicity and promotion of the excellent traditional culture of the Chinese nation. Second, innovation. The excavation of the archaeological value of Dunhuang mural elements and other aspects of research can inject vitality into the innovation of modern animation images. By excavating the profound themes and connotations of the Dunhuang murals, the creators of modern animated images can draw inspiration from them and create murals that blend tradition and modernity. The application of Dunhuang mural elements in modern animated images will help creators broaden their thinking and prompt them to explore the characteristic elements of the Sui and Tang dynasties to achieve

innovative purposes. Third, cultural exchanges. Relevant research results can promote communication and exchanges between various regions and ethnic groups, and improve the degree of cultural integration and reference. Through the in-depth exploration of different cultural forms and expressions, we can promote mutual learning, mutual respect and mutual cooperation among the peoples of the world, and promote the further development of global multiculturalism. Fourth, the dissemination of values. The results of the research can also help to understand and disseminate positive ideas. Through the in-depth excavation of the historical and cultural elements, characters, religion, architecture and other aspects in the Dunhuang murals, we can be inspired and motivated, and then tell the animated image story well, serve the spread of positive social energy, and guide the establishment of a correct world view, values and outlook on life. Film and television entertainment and animated images have become more concerned content, although this can bring great economic benefits, but it also shows the cultural scarcity of the current era. In this case, there are many deficiencies in the color narrative style of many animated murals. To this end, relevant personnel believe it is necessary to draw on the elements of Dunhuang murals to inject new vitality into the color narrative of modern animated images, improve the quality and cultural connotation of modern animated image murals, and improve their sense of history. Based on this, this paper will excavate the archaeological value of Dunhuang mural elements, and discuss the significance of Dunhuang mural elements to the color narrative of modern animation images, and the value of reference and reference.

Openness and Inclusiveness Sui and Tang Dynasties Paid Attention to the Color Characteristics of Images

Based on the elements of Dunhuang murals, the creators can provide more materials for the color narrative part of modern animated images, and effectively refer to and integrate them to inject new vitality into the creation of modern animated images. For example, creators can integrate the theme of Dunhuang into their murals, and based on the inspiration of Dunhuang murals, through the use of color and line expression in Dunhuang murals, to create animated murals with rich classical beauty. For example, through the integration of fantasy themes and Dunhuang murals, the protagonist is integrated into the fantasy world rich in Dunhuang murals, showing the integration and inheritance of traditional Chinese culture and modern life, making the audience feel a sense of novelty. Alternatively, creators can learn from the color advantages of the flying images in the Dunhuang murals to enhance the narrative and artistry of modern animation image design. For example, by borrowing the costumes, portraits and color elements of the flying images in the Dunhuang murals, he can integrate new characters into his animation creation, enhance the fullness and artistic sense of the characters, and improve the connotation of animated images and animated characters. For example, the creators can create more vivid colors and emotional narrative characteristics by integrating the animated characters with Dunhuang art elements and cultural connotations, and use Feitian's adventures in various scenes to show a positive and courageous concept. In addition, the light and shadow effects in the Dunhuang murals are a technique that can be used for reference in the narrative of modern animated images, for example, the creator can learn from the light and shadow effects in the Dunhuang murals to create a narrative style and atmosphere through detailed color rendering and light and shadow processing, and keep the picture three-dimensional and layered. For example, in terms of narrative design, the creator can combine various patterns and decorative elements in the Dunhuang murals, integrate traditional Chinese culture and storyline, to show the ups and downs of light and shadow contrast and interweaving, and provide another idea for the excitement of the story. From the current point of view, many animated murals are on the market, all of which borrow from the traditional elements and color application methods in Dunhuang murals. For example, the animated murals "Nine-colored Deer" and "Demon Enlightenment" have borrowed some color collocations and symbolic meanings from Dunhuang murals, and integrated them into the animation color narrative, providing the basis for the color structure of the protagonist's various experiences, and conveying different emotions and experiences, so that you can feel the bravery, joy, hope and other positive emotions that the animated murals want to convey. At the same time, some of the animated murals find inspiration from the ancient colors of Dunhuang mural elements and use them to blend modernity and tradition. For example, some creators have borrowed elements and color characteristics from Dunhuang murals to design characters' costumes, backgrounds, and related scenes, and use chiaroscuro contrasts and vibrant colors to show dynamic dance scenes and convey the connection between Dunhuang mural elements and modern animated images. Based on this, you can connect the animated characters and scenes, and the color narrative style of the animation with traditional Chinese culture, Dunhuang murals, music, dance, history, etc., and improve the historical and cultural connotation of your own murals. It is worth mentioning that the elements of Dunhuang murals are full of uniqueness and have rich color skills, which are generally connected with the spirit of ownership to be conveyed in the animated images, so we can also learn from the elements in the Dunhuang murals and their use of color, etc., to show the adventure and growth of the protagonist in a variety of different environments, show the adventure of the story and the courage of the characters, and show the wonderful life of the characters. At the same time, it can bring a rich emotional and cultural experience to the audience. At the same time, the creators of modern animated

murals can draw on the elements of Dunhuang murals to inject new vitality into the color narrative of their animated image murals, better promote the development of modern animated image murals, and improve their artistry, cultural connotation, sense of history, and storytelling.

CONCLUSION

Dunhuang murals are one of the treasures in Chinese traditional culture, and the murals in the Sui and Tang dynasties have extremely profound archaeological value, cultural value, artistic value, etc., so it is necessary to continue to research Dunhuang murals in all aspects, so as to protect better and inherit Dunhuang culture and Dunhuang mural skills. At the same time, for modern animation mural creators they need to further dig deep into the Dunhuang mural elements for reference, and based on the excavation of the archaeological value of Dunhuang mural elements, to find some content that can be used for reference, better serve the color narrative of their animated images, improve the storytelling, picture sense, and sublimate the connotation of the characters. Based on this, this paper carried out a comparative and systematic study on this issue, and concluded that the Dunhuang murals are mainly composed of red, black, white, and blue elements, and the main components are iron hydroxide, zinc sulfate, calcium carbonate, copper sulfate and copper hydroxide. Through chromatic contrast and compound crystallization, the color shows the three-dimensionality of the narrative content and maintains the authenticity of the color narrative. In the process of narrative expression, color pays great attention to the drawing of the theme color, and shows the narrative plot through the transition color, and the color fusion is delicate and diverse. There are some shortcomings in this study, mainly because there is a lack of authentic contact in the fusion analysis of colors, and only observational research can be carried out, so there is a certain bias in the results. In the future, practical detection will be applied to improve the accuracy of mural research.

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