

Southern Buddhist Art: Exploration of the Digital Organization and Protection Path of Dai Ethnic Fresco Painting

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Abstract:

Digital conservation is a new direction for cultural heritage conservation, with its unique advantages of information dissemination, which can preserve the visual information of cultural heritage in a complete, accurate and authentic way. Dai mural paintings, mainly Buddhist temple murals, are an important representative of Southern Buddhist art in China, and contain great cultural connotations and aesthetic values. However, its 'living' mode of transmission makes it difficult to achieve the complete conservation of its tangible cultural heritage.

Keywords:

Dai Mural Painting, Digitisation, Pathway Study

1. Introduction

The article focuses on exploring the path to digitisation and conservation of Dai wall paintings, analysing their current state and constraints, categorising the digitised catalogue and discussing the feasibility of their digital conservation.[1]

2. Materials and Methods

Southern Buddhism is the dominant religious form in the Thai, Burmese, Cambodian, Lao and other Southeast Asian countries, as well as in the Dai region of China. The Thai, Burmese Shan and Lao ethnic groups share a common ethnic origin with the Dai people of China, and for nearly a thousand years the culture of Southern Buddhism has linked them together, influencing and penetrating each other to build a unique Southeast Asian Buddhist art and culture circle. As an important part of this, Southern Buddhist mural painting is the most typical form of art in the South Central Peninsula. Dai mural painting is an important representative of the localisation of Southern Buddhist mural painting in China, mostly found in Buddhist temples, and is also a very typical minority art style in the ethnic regions of Yunnan. The Dai frescoes have been severely damaged by geography, history and architectural forms, and the oldest of those remaining in Dehong and Xishuangbanna states were painted during the Qing dynasty. Among them, there are not only murals in Buddhist temples in

Xishuangbanna region, but also cloth paintings, streamer paintings and funneled gold and water patterns. The distinctive gold and water motifs are not only painted on the inner walls of Buddhist temples and preceptor halls, but are also omitted from the wooden pillars, beams, door panels and ceilings. At the same time Dai murals are also limited by traditional mural painting techniques, and the extent of their destruction is also related to the materials used for painting and the method of painting.[2]

Analysis of the existing state and problems of Dai mural painting. In addition to this, the way in which Dai mural paintings are passed down 'in living form' is a major factor in the destruction of their tangible cultural heritage. Under the influence of the Hinayana Buddhism practised by the Dai people, they often donate their savings to Buddhist temples for their construction. With the economic and policy support of the state, the living standards of the people in the minority areas have improved considerably, which has led to a gradual increase in their motivation and speed to renovate and build new Buddhist temples. Some of the renovated temples have retained their original architectural form and some of the better preserved murals have been preserved, but there are also a large number of murals of great historical and artistic value painted with traditional mineral pigments that have been easily covered over with modern painting materials such as gouache and paint. What is more regrettable is that most of these new murals are of a secular nature and do not have the rustic, childlike artistic feel of the original murals. Due to the relative abundance of funds and the influence of modern forms of architecture, a significant number of ancient temples have been knocked down and rebuilt using modern building materials such as steel and concrete, with their original architectural forms and the art of the Dai murals attached to them all being destroyed.

3. Results and Discussion

After completing the collection of field image data and the catalogue of digitised information, the mural paintings need to be organised vertically in terms of their content themes, material types, stylistic features and geographical locations, and on this basis, a horizontal comparative analysis will be carried out so as to establish a digital storage and information indexing system for Dai mural painting image information.[3] There is a great urgency of the times to preserve the traditional art form of Dai mural painting. We cannot change the damage caused by the natural environment, man-made environment and social development, but the art of mural painting itself, as a traditional visual communication image, has characteristics that are well suited to modern digital technology. At present, successful cases of digital restoration and finishing at home and abroad have confirmed the feasibility of digital conservation of Dai mural paintings by achieving the survival of the original visual forms and information symbols of the mural paintings. [4] This paper will explore the following aspects of the path to digitally organising and conserving Dai mural paintings.[5]

Dai frescoes are also facing a huge heritage crisis, as the monk painters of Dai Buddhist temples and the original Dai painting artists gradually age and are unable to do the work of restoring and repainting the frescoes, while few young Dai people are now engaged in this work, Dai frescoes have fallen into the dilemma of having no one to succeed them. Many of the Buddhist temples under renovation and new construction have had to invite painters from Thailand, Laos and Burma to carry out their paintings, which are consistent with the art form of Southern Buddhism itself and have lost the original regional character of Dai mural painting.

3.1. Digitised collection and indexing of original image information of Dai mural paintings based on two-dimensional images

More professional and accurate high pixel imaging equipment (such as the high definition cameras provided by Microsoft for the digital capture of Dunhuang murals), 3D scanning and other technologies are used to collect the original image information of the Dai murals to form a two-dimensional high definition digital gallery. During the collection phase, we strive for accuracy in image colour, scale, and texture of the murals to ensure a sense of authenticity for later digitisation. A catalogue of digitised Dai mural information should be created before digitisation is undertaken and continuously improved during the field collection process.

3.2. Virtual reality scene reproduction and interactive experience of Dai mural paintings in their native land based on three-dimensional space

The carrier of Dai murals is mostly ancient temples, so their form has a sense of art that blends with the temple architecture itself, and the use of virtual reality technology can fully recreate the realistic integrity of Dai murals. Although we can use digital technology to restore these obscured parts, there is a gap between them and the original art form. The use of virtual reality technology can avoid such problems, and the interactivity and immediacy of the virtual reality scenes created by virtual reality technology can provide the viewer with a deeper and more accurate cultural message, thus allowing them to experience the formal features and cultural connotations of Dai mural art in a more immersive manner and narrowing the geographical limitations of cultural transmission.



Figure 1. Murals derived from the fusion of digital information and traditional architecture.

3.3. Restoration of damaged Dai murals using digitally assisted technology

Traditional methods of mural restoration are labour-intensive and extremely demanding on the skills of the staff. Dai mural painting has the typical characteristics of folk art: it has no particularly strict and fixed artistic forms and expressions, and most of the painters come from the folklore, mostly Buddhist masters, monks and folk artists who have returned to the monastic world. Although Dai frescoes do not have the artistic integrity and technicality of mainland Buddhist temple frescoes, their artistic forms are more flexible and varied, and their methods of expression are freer, breaking away from the rigour of traditional frescoes in terms of composition. This flexibility and variety poses great difficulties for manual restoration, but the use of computer-aided tracing technology can assist in the manual depiction of graphics, and AI technology can even mimic the drawing style and hand-painted marks of the original murals. Despite the power and convenience of digitally assisted technology in the restoration of murals, it is important to emphasise its 'supportive' role. In the process of restoring Dai murals using computer technology, human intervention is

required throughout the process of fieldwork, image analysis in the middle of the process, and image restoration and proofreading in the later stages to ensure the accuracy and integrity of the image information.[6]

4. Conclusions

By digitally collecting and collating Dai mural paintings and establishing an information catalogue, we can help us to better understand the development history, artistic characteristics, geographical distribution and cultural radiation of Dai mural paintings, spread their culture and expand their influence, thus achieving the goal of heritage and conservation. At the same time, we should actively explore the development constraints of its existing state, and on this basis develop a digital technology development strategy, and discuss the feasibility, necessity and extension issues of realising cultural heritage conservation from the application of digital technology, using the digital conservation of Dai mural paintings as an example. The promotion of the digital conservation process of Dai mural paintings is an effective path for the preservation and continuation of Southern Buddhist art and culture in China, and an effective attempt and exploration to preserve the diversity of ethnic traditional culture and try to transform it into a modern image resource.[7]

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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