



On the Contemporary Spirit of Dunhuang Culture and the Pathway of Digital Development

Jingshuo Zhao^{1,*}, Yaqi Li²

¹Shaanxi Forestry Group, Xi'an, Shaanxi, China.

²Hainan Normal University, Haikou, Hainan, China.

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***Corresponding author:** Jingshuo Zhao, Shaanxi Forestry Group, Xi'an, Shaanxi, China.

Abstract

On August 19, 2019, during a discussion at the Dunhuang Academy, the General Secretary Xi pointed out that "only a self-confident civilization can tolerate, learn from and absorb different civilizations while maintaining its national characteristics". The brilliance of Dunhuang civilization is a model of continuous integration and penetration of Chinese civilization through thousands of years of history. The spirit of the Silk Road that "only through equality and mutual benefit, tolerance and mutual learning, and win-win cooperation under the influence of solidarity" formed on the basis of Dunhuang culture is still of profound practical significance today. Globalization is affecting the economy, politics, culture, art and other aspects of the world. In the current human anxiety about internationalization and fear of modernization, what is the state of Dunhuang culture with the most national cultural characteristics in Chinese culture? And how should Dunhuang art face the challenges and integrate with modern digital technologies in the context of globalization? The solution to these problems cannot only depend on cultural relics conservation workers, but also needs to promote and disseminate protection methods and concepts, enhance public awareness and jointly safeguard the future of Dunhuang world cultural heritage and intangible cultural heritage.

Keywords

The spirit of the Silk Road, the Belt and Road, cultural integration, Dunhuang intangible cultural heritage, digitization

According to historical literature, "Dun" means "grand" and "Huang" means "splendid and glorious". Dunhuang is an important place where Eastern and Western civilizations meet in Chinese history. It is a name closely related to the historical memory and cultural blood of the Chinese nation. Dunhuang painting is pioneer work that impacts the Chinese civilization in the Middle Ages and several major civilization systems in the modern world. Familiar names such as "Yangguan Pass and Jade Gate Pass" also represent the great ambition for the Chinese nation to forge ahead to the west and the endless nostalgia while looking east. In the past thousands of years, people from various countries and ethnic groups have come along the Silk Road and met here, forming a unique and charming Dunhuang culture. The brilliance of Dunhuang civilization is a model of continuous integration and penetration of Chinese civilization through thousands of years of history.

1. Dunhuang Culture and the Spirit of the Silk Road

Dunhuang in Chinese history was an important channel for cultural exchanges between China and the West and a prosperous international trade center. The trade and interaction of different countries and nationalities converge here; the exchange and collision of various cultures and civilizations are reorganized and sublimated here. Civiliza-

tions interact with each other, learn from each other's strengths, and the spirit of the Silk Road that "only through equality and mutual benefit, tolerance and mutual learning, and win-win cooperation under the influence of solidarity can all races, various religions and all nations of various backgrounds develop together" has emerged in the long process of commodity and cultural exchanges (Yan Lihong, 2016). As the main cultural relics of China's ancient Silk Road, the Dunhuang grottoes also incorporate cultural and artistic elements from ancient China, ancient India, Persia, Afghanistan and other places, and are the most open and inclusive cultural embodiment of the cultural spirit of the Chinese Silk Road.

Since Zhang Qian's mission to the Western Regions, from the Dunhuang Painting County set up by Emperor Wu of the Han Dynasty in 111 BC to the present, the civilizations of the Eurasian continent and China's multiple transportation networks have all met in Dunhuang Painting County, which is therefore called "a metropolis where Chinese and foreign cultures blended". As important post and pass on the Silk Road, Xuanquanzhi and Jade Gate Pass have retained a large number of cultural relics such as silk, paper and iron artifacts, which have witnessed the prosperity of Sino-Western economic and trade exchanges on the Silk Road and outlined the magnificent picture of multi-ethnic life. "These heritages really reflect the most powerful management power of a great country from ancient times to the present, as well as the responsibilities and undertakings of the Chinese nation in the world." Shi Mingxiu, Curator of the Dunhuang Museum, said "Dunhuang civilization really conveyed the voice of the country and told the story of China in ancient times, and deserved its reputation as the gathering place of the world's four great civilizations."

"Each civilization has its own unique beauty, which is worth learning and appreciating; we need to learn to appreciate the advantages of other civilizations; different civilizations live in harmony and develop together; this is a harmonious and beautiful society." This is the basic principle pointed out by the traditional Confucianism for the interaction of different civilizations, and it is also the spiritual connotation of the traditional national culture of China. Through the Silk Road that stretches from the east to the west, we have seen that China has risen from a weak country to a strong one, from a closed country to an open one. Today, the development driven by the Silk Road has shown a spiral growth. China and the international community are looking forward to reaching the new humanistic height in economic development with each other. China's "Belt and Road" construction is a new embodiment of the spirit of the Silk Road, an axis of concentric circles, and the best portrayal of "shared beauty and prosperity". The construction and development of "the Belt and Road" fully embodies the spirit of the Silk Road and the broad-minded and tolerant spirit of the Chinese nation. "A river or sea makes its deepness for never detesting a small stream." Dunhuang grottoes are important historical relics on the ancient Silk Road of China, which integrate the historical, humanistic and artistic factors of ancient China, ancient India, Persia, Afghanistan and other countries, and this is also the demonstration of the high openness and inclusiveness of the ancient Silk Road culture of China (Zhang Hao, 2017).

2. The Contemporary Value of Dunhuang Culture

Dunhuang is a comprehensive textbook on cultural relics and fine arts, which gathers information about many civilizations and arts and cultures in the world. It is worth noting that Dunhuang also has three world heritage sites, 8 national key cultural relics protection units, a famous 5A natural landscape - Crescent Spring of Mingsha Mountain, and one national geological park Yadan Landform. In 1979, Dunhuang was listed as one of China's first batch of open cities by the State Council, and in 1986, it was named as a famous historical and cultural city in China.

At present, there has been a lot of research on Dunhuang socialist literature in the Chinese theoretical circle. Taking CNKI as an example, by searching the keywords of "Dunhuang culture", a total of 1543 papers published from 1958 to 2021 can be retrieved, whose contents are mainly in-depth social aesthetic research on Dunhuang's specific material cultural heritage such as paintings, Buddhas and music (Li Ruoyan, 2021). The contemporary value expression of ancient cultural heritage in Dunhuang and other places can allow the public to appreciate the special features of ancient China that led the world culture in that era, and to obtain valuable enlightenment and innovation inspiration.

Domestic painters have also borrowed from Dunhuang grotto art for a long time. Copying Dunhuang's painted sculptures and murals has become a compulsory course for many art colleges and universities majoring in Chinese painting, and ancient Chinese cave art with Mogao Caves as a typical example has also become an important foundation for cultivating China's painting geniuses. The ceiling murals of the Mogao Caves in Dunhuang have a wealth of patterns and images, most of which are gorgeous and exquisite, and incorporate a large number of Chinese and

Western cultural elements, having great reference significance for today's pattern creation.

3. The Crisis Faced by the Inheritance of Dunhuang Culture

Mogao Caves have existed for thousands of years, bringing a cultural feast to mankind, but the murals have been seriously damaged and are difficult to protect; tourist overload have imposed great pressure on the fragile surrounding environment of the grottoes; Dunhuang World Cultural Heritage is located in the northwest, where large sandstorms and dry climate weather the grotto statues, making them fragile.

A place called Dunhuang is "disappearing". This is neither an alarmist rumor nor a manifestation of excessive human concern, but an objective fact. The inheritance of intangible cultural heritage in Dunhuang and other places and international intangible cultural heritage have two predicaments: first, there is no practical space for related skills and lack of return value, and second, inheritors are less willing to open up and cooperate with reform and development. In addition, in the protection and inheritance of Dunhuang cultural heritage, a number of international cooperation projects have been carried out, such as Digital Dunhuang, the International Dunhuang Project (IDP) and the digitization of literature of the Western Regions in Dunhuang, hoping to carry out more comprehensive research with the help of the power of all mankind. However, in the international community, the relationship and interests of various players may not be consistent, and their backgrounds, goals, behavior patterns, etc. are different. Moreover, in the "anarchic" international community, international cooperation becomes more complicated. It can be seen that international cooperation co-exists with conflicts, and friction is easy to occur in cooperation, which will directly affect the development of the entire international project, that is, to some extent, a certain constraint has been formed.

Finally, what kind of attitude should we take to watch over Dunhuang? The solution to these problems cannot only depend on cultural relics conservation workers, but also needs to promote and disseminate protection methods and concepts, enhance public awareness and jointly safeguard the future of Dunhuang world cultural heritage and intangible cultural heritage.

4. The Integration and Development of Dunhuang Culture and Modern Digital Technology

It is urgent to protect the sacred grottoes of Dunhuang as times change! In order to thoroughly implement the spirit of the General Secretary Xi's important instructions during his visit to Dunhuang, Dunhuang Academy will persist in protecting cultural relics by scientific and technological means, continuously promote the "Digital Dunhuang" project, and realize the digital sharing of Dunhuang's traditional cultural and artistic resources around the world on the basis of long-term protection and sustainable use of Dunhuang grottoes and the excavated cultural relics.

4.1 The Research Course of Digital Technology for the Mogao Caves in Dunhuang

The main research results of Dunhuang Academy on the digital preservation technology of cave art originate from the early 1990s. Dr. Fan Jinshi, former Director of Dunhuang Academy, first put forward the definition of "Digital Dunhuang", that is, to achieve permanent preservation of Dunhuang grotto art and the preservation of Dunzhu Mural by modern digital technology, and extensively use modern scientific and technological resources to jointly preserve and spread culture. Over years of hard exploration by researchers of Dunhuang literature and art, the concept of "Digital Dunhuang" was finally formed. Dunhuang literature and art have gone out of Dunhuang to other parts of China and finally face the world with the help of modern information technology. The opening up of the road of Dunhuang digital art preservation provides new conditions and possibility for the preservation of world cultural heritage (Yu Tiange, 2020). Until 2014, after the completion of Mogao Grottoes Visitor Center, the Center has grotto live-action roaming room, dome film and TV studio. The combination of electronic technology and culture and art has not only allowed Dunhuang painting visitors to understand the Dunzhu culture with the help of photoelectric video technology, but also more effectively reduced the damage to the Dunhuang grottoes due to visitor overload. The application of modern digital technology had effectively solved the problems in the conservation and use of Dunzhu cultural heritage, and achieved the goal of effectively preserving the artistic value of Dunhuang grottoes (Wang Yi, 2021).

4.2 The Principle of the Digitization of Dunhuang Cultural Relics

The main technology for the digitization of the art of Dunhuang grottoes is to use a precision digital camera to

reproduce different parts of a large-format painting, and then use a computer to splice and restore them, so as to achieve the purpose of accurate digitization of large-format paintings. Relevant experience and operating procedures have a general guiding role in the digital construction of paintings in Dunhuang caves and ancient Chinese caves, halls, mausoleums, etc. (Chen Zhenwang, 2016).

4.3 Dunhuang Digital Development Trend

The combination of technology and humanity is the inevitable pathway for the preservation of many intangible cultural heritages represented by more civilizations, and the history of technology is also that of socialist civilization. With the progress of science and technology, 2D, 3D and 5D technologies are becoming more and more perfect, and future technologies will be more and more widely used in the preservation of intangible cultural heritage. These technical means have been used as early as the Dunhuang Academy period, including "2D digitization", "2.5D digitization", "3D digitization" and "5D display". The successful application of many digital technology means has improved the reproduction precision of Dunhuang grottoes culture and art, which not only improves people's sense of experience and use, but also improves the market promotion ability of products and the influence of traditional art and culture. The effective use of digital technology in the Mogao Caves in Dunhuang, the interactive development of modern information technology and the improvement of scientific and technological standards have added more enjoyment to human life.

Dunhuang culture is not only China's excellent traditional culture, but also the spirit that contains the source of strength for the great rejuvenation of the Chinese nation. As a place where the Silk Road must pass, Dunhuang has long demonstrated a cultural core premised on exchange, cooperation, development and prosperity. And this unique "Dunhuang culture" of the Chinese nation enables us to respect each other's beliefs, seek common ground while reserving differences, and be inclusive for each other in our contacts with completely different countries and civilizations. And only in this way can we seek common interests, maximize interests and form a new pattern of interest sharing. We will further enrich the modern connotation of "Dunhuang culture" through digitization, further carry forward the "spirit of the Silk Road", and strive to promote peace, mutual benefit, tolerance, mutual learning and win-win cooperation among countries along the Silk Road.

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