

## REVIEW ARTICLE

# Digital protection of traditional villages of “Retaining Homesickness”

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## ABSTRACT

With the rapid disappearance of traditional villages, the traditional culture contained in them has been in jeopardy, and digital protection has become the international trend and necessary way to protect traditional culture. Under the new situation, “retaining homesickness” has become a realistic demand at the national level. Homesickness originates from the distance of time and space. The satisfaction of homesickness demands not only the protection of culture, but also higher requirements for digital technology. The main obstacles to the digital protection of traditional villages are the lack of mechanism and top-level design, the fragmentation of departments and disciplines, and the emphasis on “form” over “spirit” in digitalization. The key to solve the problem lies in the top-level design from the aspects of system and standard, choosing digital memory content based on landscape gene theory, and designing virtual tourism products that meet the needs of homesickness by taking virtual tourism as the service form.

**Keywords:** retain homesickness; digital protection of traditional villages; virtual tourism; nostalgia digital memory

## 1. Introduction

Mr. Fei pointed out that Chinese society is local<sup>[1]</sup>, its traditional culture is rooted in agricultural civilization. Traditional village is the witness of agricultural civilization and the carrier of rural society. Chinese people’s homesickness is actual an emotional attachment to local culture, also and an identification with Chinese traditional culture. Urbanization has brought about the large-scale expansion of cities and towns, as well as the large-scale migration of the population. Many rural people are frantically pouring into cities. The local society that has been inherited for thousands of years suddenly

collapsed, and the local culture has lost its inheritance soil. The protection situation of local culture is becoming increasingly severe. Traditional villages are rich in local culture and the main battlefields of “retaining homesickness”. Traditional villages are scattered, most of which have been seriously damaged and are difficult to protect. It is very important to record the cultural landscape of traditional villages by digital means. However, at present, the digitization of traditional villages focuses on the digitization of “tangible” elements of villages, and the display of digital achievements is mainly “yes”.

“Form” elements of the scene display cannot meet the needs of homesickness. Therefore, under

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the new situation, it is of great practical significance to deeply understand the concept and connotation of homesickness, explore the digital means, management and service ways of “retaining homesickness” based on the current digital protection of traditional villages and facing the needs of homesickness.

## **2. The concept of homesickness and its carrier**

Today, with the rapid development of material civilization, people are enjoying the convenience and comfortable life brought by modernization, while still retaining a cultural identity of traditional civilization in their hearts. Driven by the process of urbanization, the unprecedented prosperity of the city has been achieved, and the rural landscape has become increasingly depressed. Some traditional cultural landscapes are disappearing, and it is difficult for modern people to find their own spiritual home, which leads to the “homesickness” of contemporary people<sup>[2]</sup>.

Homesickness is the feeling and yearning for hometown. Because of the distance from hometown in time and space, there is a need to identify hometown, especially hometown culture. The generation and intensity of homesickness are related to the distance between time and space. From the spatial point of view, the statistical research of Gruijter shows that the greater the spatial distance, the stronger the homesickness<sup>[3]</sup>; from the time point of view, the longer the time goes by, the more intense the homesickness becomes. The time away includes the time in the hometown and the time in the new environment. Culturally, homesickness is reflected in the yearning for traditional culture, which comes from the great difference between contemporary urban culture and traditional rural culture.

Homesickness, as a complex of attachment to local culture, belongs to the category of emotional space. The satisfaction of homesickness needs to guide people to build homesickness mood through some “concrete” things, which are called the carrier of homesickness. According to the morphological

differences of homesickness carriers, they can be divided into material carriers and intangible carriers, which respectively correspond to the material and intangible cultural elements in local culture.

The carrier of material form mainly includes the natural life in the countryside environment, rural houses, rural signs, etc. China has a vast territory, and the natural ecological environment varies greatly from place to place. The landscape of hometown is often marked with homesickness. Northerners are homesick when they see the black land and great plains. People from Jiangnan think of homesickness when they see small bridges, flowing water and other people. Mongolians think of homesickness when they see the endless prairie. Tibetans think of homesickness when they see snow-capped mountains and meadows. Rural houses, especially traditional houses, are also important carriers of homesickness. For example, Drum Tower carries the homesickness of Kam people, Tulou carries the homesickness of Hakka people, and caves carry the homesickness of people in the Loess Plateau, and so on.

According to the classification standard of intangible cultural heritage list, the carriers of intangible forms can be divided into folk literature, traditional music, traditional dance, traditional drama, folk art, traditional art, traditional sports entertainment and acrobatics, traditional skills, traditional medicine and folk customs. Some local dialects can also carry homesickness. For example, Hunan dialect has the characteristics of “five miles with different sounds and ten miles with different tones”. When you hear Changsha dialect, Changsha people from other places will naturally think of their hometown culture. In addition, many place names are not only geographical coordinates, but also contain a period of history and some stories, and also belong to the intangible carrier of homesickness. Writer Feng thinks: “Cities are alive, and place names are the containers of this historical destiny.” The fact that place names are an important part of local traditional culture, in 2007, the United Nations officially announced the place names as intangible

cultural heritage.

### 3. The background, problems and new of digital protection of traditional villages demand

Academician Wu of Chinese Academy of Sciences made an authoritative exposition on the necessity and urgency of traditional village protection<sup>[4]</sup>. Scholars from different disciplines discussed the importance of traditional culture protection from different disciplines. However, under the background that the demand for homesickness has risen to the national level, it is necessary to deeply explore the new requirements of “retaining homesickness” for the digital protection of traditional villages.

#### 3.1. The new background of digital protection of traditional villages

In order to promote the protection and development of traditional villages, the Ministry of Housing and Urban-Rural Development, the Ministry of Culture and the Ministry of Finance jointly conducted a survey of traditional villages and published a list of traditional Chinese villages. By 2014, 2,555 villages had been included in the list of traditional Chinese villages.

Traditional villages are rich in material and intangible cultural heritage, also rich in rural culture. To a certain extent, it can be said that “retaining homesickness” is the protection of traditional villages, and “remembering homesickness” first requires the protection of traditional villages as the carrier of homesickness and the inheritance of local culture bred in traditional villages. In addition, from the perspective of the subject of homesickness, it mainly includes the homesickness of urban people, suburban people and rural people who are temporarily staying in cities<sup>[5]</sup>. The common carriers of these people’s homesickness are mainly the natural, cultural and social elements of traditional villages, including natural scenery, local houses, characteristic culture, traditional customs and so on, which can place homesickness on them. Therefore, the key to “retaining homesickness” lies in the protection of

traditional villages, including the recording and dissemination of material and intangible cultural heritage of traditional villages.

#### 3.2. The problems of digital protection of traditional villages

With the advent of the digital age, it has become an important international trend to protect traditional village culture by digital means, forming a systematic digital theory and technical system of traditional villages, but there are still some problems.

Problem 1: Lack of institutional mechanism and top-level design. At present, the inaccurate, inconsistent and undisclosed digital data of traditional villages are the key obstacles that affect the wide application of digital achievements, also the key problem to realize the digital protection of traditional villages. Efficient data transmission and wide sharing are the basic features of the information age. However, at present, traditional village data is divided by departments and specialties, forming an information island, which is fundamentally due to the lack of institutional mechanisms and top-level design. The data sources of traditional village digitalization are complex, among which the basic geographic data mainly comes from the land department, while the data of cultural elements comes from the Cultural Relics Bureau, local government departments and related scientific research institutions and individuals. Because of the various data collection technologies adopted, the data formats are quite different. In addition, some basic geographic data of village scale are often classified data, and it is impossible to effectively share these data without the support of institutional mechanisms. This institutional mechanism includes the inter-departmental sharing mechanism of basic data on the premise of ensuring data security, as well as relevant intellectual property protection system and data collection and database building standards. Only under the guarantee of good system and mechanism, do a good job in top-level design, can we fundamentally avoid repeated investment in database construction, ensure data consistency and quality, and realize the sharing

of traditional village data and the sustainability of traditional culture inheritance.

Problem 2: Dividing disciplines and doing things in their own way. Geographers use geographic information system technology to digitize geographic scenes, ignoring the number of cultural landscapes generated in the geographic environment.

For example, the virtual geographical environment modeling technology put forward by Nanjing Normal University in 1997 emphasizes the simulation of natural geomorphology, ecology, rivers and other geographical environments<sup>[6]</sup>. Scholars in the field of cultural heritage often pay attention to the digitalization of cultural landscape elements in traditional villages. For example, Geng emphasized the digitalization of shadow play itself while ignoring its geographical environment. The distinct division reflects that the integration of disciplines is not deep enough at present<sup>[7]</sup>. Traditional village digitization is a field of integration of culture and science and technology, involving many disciplines such as geography, architecture, history, ethnology and art. Only through the deep integration of multi-disciplinary theories and the extensive collaboration of technical methods can traditional village digitization be systematically realized. Multi-disciplinary fragmented the relationship between traditional village landscape elements and geographical environment, and formally cut off the connection between geographical environment and traditional village landscape elements.

Problem 3: The digitalization of traditional villages pays more attention to “form” than “spirit” pass. The fundamental purpose of unified village digital protection is to build the “shape” of traditional village cultural landscape through the reasonable intervention of digital technology, so as to spread and inherit the “spirit” of traditional culture. Therefore, traditional village digital protection requires both “shape” and “spirit” to be conveyed by “shape”. However, in the concrete practice of traditional village digitalization, the digitalization of

“form” is often overemphasized, and the expression of “spirit” is not enough. Digitalization without “God” is just a kind of cold data presentation, which is difficult to meet the needs of homesickness. There are many reasons why digital products are not “shaped”. First of all, in terms of digital content, the selection of content elements is inaccurate, ignoring the elements that can best represent traditional village culture, that is, landscape gene elements. In this case, it is difficult to spread the “spirit” of traditional village culture no matter how exquisite the digital products are. For example, the digitization of traditional villages in Jiangnan water towns often focuses on the digitization of residential buildings, rivers, roads and bridges, while neglecting the digitization of awning boats. Because awning boats were the main means of transportation in people’s production and life before, it is difficult for people to think of the production and life scenes in the water town environment without awning boats in the digitized scenes, so digitalization lacks “spirit”. Secondly, in the aspect of digital application, one-sided emphasis is placed on digital recording, ignoring digital presentation. Under the background of the rapid disappearance of traditional villages, it is of great significance to record their village appearance, village appearance and rural culture by digital means. However, the digitalization of traditional villages is not the “flashy technique” of digital technology, but should pay more attention to the application of digital data, and digital presentation is the premise of its application. Finally, in digital applications, there is a lack of user participation. That is, the interaction between digital products and users is not enough, people’s experience in using these products is poor, and the “one-man show” is staged in the virtual rural scene of computer, which can’t drive users to build the artistic conception of rural culture, resulting in that digital products can’t convey “spirit”.

### **3.3. The new requirements of “retaining homesickness” for digitalization of traditional villages**

Facing the needs of homesickness is an important difference between digital memory of



homesickness and digital protection of traditional villages. The key to meet the needs of homesickness lies in whether the digital achievements provide a good experience function of homesickness. When discussing the current situation and problems of intangible cultural heritage protection in China, Song pointed out: At present, digital protection generally has the problem of emphasizing technology over culture, and digitalization should pay more attention to culture<sup>[8]</sup>. In order to meet the needs of homesickness, compared with the digitalization of traditional villages, “retaining homesickness” has some new requirements for the digitalization of traditional villages.

Firstly, digitization of traditional villages to “retain nostalgia” requires commercialization based on maintaining the cultural authenticity of traditional villages. Authenticity is the core of traditional cultural protection. The digitalization of traditional villages requires keeping the authenticity of traditional village production and living scenes and emphasizing the authenticity record of traditional village culture. The contradiction between authenticity and commercialization is the key to realize digital memory of homesickness. The breakthrough to solve this contradiction lies in identifying the core elements of traditional village culture, and clarifying which elements of authenticity can’t be destroyed and which elements are available to be processed. To find a balance between authenticity and commercialization, which not only guarantees the authenticity of cultural transmission, but also provides the feasibility of the application of traditional village culture.

Secondly, the digitalization of traditional villages that “retain homesickness” requires the live transmission of traditional village culture. Liveness is the basic criterion for the effectiveness of traditional village culture protection and inheritance. At present, the protection of traditional villages unilaterally emphasizes the preservation and repair of village houses, but ignores the protection of living elements, such as traditional customs of villages, folk arts and other intangible elements with typical

“living”. In order to make up for the deficiency of traditional protection, the digitization process should emphasize the protection of living elements of traditional villages. Intangible elements, such as traditional music, dance, opera and sports acrobatics, are performance-oriented. They are presented in the form of living in digital new media product design, games and music creation, which can not only ensure the living memory of traditional cultural elements, but also help to realize their live transmission.

Thirdly, the requirement of digitalization of traditional villages of “retaining homesickness” enhance the experience in traditional village cultural communication. Whether the traditional village digital products can meet the needs of homesickness depends on whether people can experience the traditional village culture with the help of digital means. “Retaining Homesickness” requires transcending the monotonicity of traditional digital text, pictures and video push. By constructing a three-dimensional virtual scene and designing the functions of experience interaction, cultural guidance and interactive communication, people interact with the elements in the three-dimensional scene through the participation of multi-dimensional senses such as sight, hearing, touch and smell, and lead to a feeling of immersion from sensibility and rationality, so as to achieve the purpose of cultural experience. For example, in the virtual experience design of minority festivals and customs, the virtual scene is visualized by virtual reality equipment, and people’s real actions are transmitted to the computer system by motion capture, and the behaviors of the characters in the virtual scene are controlled, and the connection between the virtual scene and the psychological scene is established, so that the feeling of being on the spot arises spontaneously.

#### **4. The traditional village digitization means of “retaining homesickness”**

At present, there are various digital means in traditional villages. Which means can meet the needs of “retaining homesickness”? How to “retain home-

sickness” on the basis of digitalization of traditional villages? In view of the above problems, it is necessary to comprehensively sort out the digital means of traditional villages, refine the key problems facing the digitalization of “retaining homesickness” traditional villages, and explore effective solutions.

#### **4.1. “Stay homesick” digital means of combining**

According to the difference of digital objectives, digital means can be divided into rescue digital means and development digital means. Rescue digital means are the repair or reconstruction of homesickness carriers that are on the verge of disappearing or have disappeared, such as the digital reconstruction of Laosicheng in Yongshun County, Xiangxi Prefecture, Hunan Province and the digital scanning technology of ancient books and archives. The development of digital means takes the homesickness carrier as a resource and develops it into corresponding digital products through digital technology, such as film and television works containing traditional village culture, video game products and literary works reflecting traditional village culture, etc. The technical means involved mainly include digital scanning, multimedia technology and animation technology.

According to that different digitized object, the digitizing means can be divided into digitalization of geographical scenes of traditional villages, digitalization of material cultural heritage and digitalization of intangible cultural heritage. Geographic scene digitization is the focus of scholars in the field of surveying and geographic information science. Its means are mainly remote sensing, global positioning technology, traditional surveying methods and three-dimensional laser scanning technology, to obtain the present and historical terrain, vegetation coverage, land use, traffic, water system and other data of traditional villages, and to use some three-dimensional modeling technologies to realize three-dimensional virtual geographic scenes. The digitization of cultural heritage is the memory of traditional houses, cultural relics and historical sites,

and the technical means mainly include ancient building measurement technology, 3D laser scanning technology and 3D modeling technology. Intangible cultural heritage elements reflect the liveliness of traditional village culture, and are the key elements of digital memory of homesickness, including folk arts and crafts, folk customs, traditional folk arts and traditional sports, etc., and their digitalization means are varied, such as digitalization of folk music by digital audio recording technology, digitalization of shadow play and paper-cutting by Flash animation technology, digitalization of folk sports or dance by motion capture technology, and so on.

#### **4.2. The key to digitalization of traditional villages of “retaining homesickness”**

“Retaining homesickness” puts forward more requirements for the digital protection of traditional villages, and it is required to solve the key problems of system design, digital content selection, digital service forms and so on.

Firstly, do a good job in the digital top-level design of traditional villages that “retain homesickness”. On the one hand, in view of the division of departments and disciplines in the current digital protection of traditional villages, it is necessary to clarify the responsibilities and rights of digital subjects from the legal and institutional levels. From the legal level, it integrates the relevant intellectual property protection laws of the current Law of the People’s Republic of China on the Protection of Cultural Relics, Intangible Cultural Heritage Law of People’s Republic of China and local regulations, and stipulates the rights and obligations of departments or individuals for the digital protection of traditional villages, as well as the intellectual property rights of original materials and digital achievements. From the operational level, the relevant national departments jointly organize efforts to design and realize a unified data collection and management platform, and formulate relevant technical standards in digital collection, product research and development, etc., so as to realize the integration

of unified data resources from top to bottom and consistent with departments. On the other hand, it is necessary to establish a diversified operation mechanism of commercialization of digital achievements in traditional villages, and adopt a diversified operation mechanism of government guidance, public participation and enterprise investment. The government calls on relevant experts and scholars to dig deep into the traditional village culture, coordinate the digital work related to traditional villages, and formulate relevant digital plans. In order to ensure the liveliness of digital achievements, it is necessary to strengthen the public participation in the digital process and digital product design, especially the participation of intangible cultural heritage inheritors. Enterprises play a key role in realizing the commercialization of digital achievements. As investors, it is understandable to pursue interests, but it is necessary to coordinate the relationship between the commercialization of traditional village cultural resources and cultural protection, and promote the protection and inheritance of traditional village culture with a good commercialization model.

Secondly, based on the theory of landscape genes, targeted select digitized content. The content of traditional village digitization oriented to “retaining homesickness” includes material elements, such as geographical environment, residential houses, transportation, etc., as well as non-material elements, such as folk art, dance, festivals and folk customs, etc. This kind of comprehensive and high-precision digitization is costly and difficult, and the higher the accuracy, the larger the data volume, and the higher the performance requirements of computers, which will inevitably affect the homesickness experience. In fact, some public elements that can’t represent the cultural characteristics of traditional villages are not the focus of people’s attention and experience, and there is no need for high-precision digitization, while some reflect the cultural characteristics of traditional villages and can stimulate and meet the needs of homesickness. Elements should be the key content of memory, and high precision should be guaranteed.

Landscape gene theory is about traditional villages put forward by Liu. The new theory of landscape feature identification, extraction and management is an important innovation in the research theory and method of “cultural landscape” in the field of cultural geography. According to the theory of landscape genes, the key to the formation of landscape differences in traditional villages lies in the difference of cultural genes. Cultural genes are influenced by cultural inheritance while being restricted by natural conditions. Factors such as primitive cultural memory, religious belief and local culture play an important role in the formation of cultural genes. The key elements of digitalization should represent the core features of traditional rural landscape, namely landscape genes, and its identification should be based on the analysis of external expression and internal causes of cultural landscape. According to landscape gene theory, the identification of key elements of traditional village digitalization can follow the principles of uniqueness and superiority. Among them, uniqueness includes uniqueness in internal cause, external landscape or key elements compared with other traditional villages, while superiority means that other traditional villages have similar landscape elements, but they are more prominent in this traditional village.

In order to fully identify the key elements of digitalization, classification is needed. Elements are divided into two dimensions, such as village plane shape, roof shape, gable shape totem plane shape, etc. Three-dimensional elements are mainly the three-dimensional characteristics of key elements, such as the dry column structure of residential buildings; the arrangement structure of elements, such as single-column, quadrangle and so on; decorative elements, such as doors, windows, carvings, patterns or paintings, etc. According to the requirements of identifying the key elements of homesickness memory, we can adopt hierarchical identification methods from whole to part, from tangible to intangible, that is, from environmental factors, village layout, subjective public buildings and residential buildings, from architecture to cultural signs, folk art and folklore. For example, in the

villages of Jiangnan Watertown type, because of the vertical and horizontal water lanes, the key link of water lanes is stone bridges, and there are stone bridges in other villages.

However, for the convenience of ships, the stone arch bridges in Jiangnan Watertown are generally not straight stone bridges, but stone arch bridges with a certain height. According to the above identification principle, the key homesickness elements in Jiangnan Watertown should be stone arch bridges. Another example is the traditional village in southern Anhui. Its stone archway reflects the ritual culture of the Central Plains, which is symbolic and more typical in appearance than other villages. Therefore, the stone archway should be the key element of the traditional village in southern Anhui province.

Thirdly, promote digital achievements in the form of homesickness service.

The digital protection of traditional villages for “retaining homesickness” is based on the digital records of traditional villages, but the emphasis is on homesickness service. Under the background of strong demand for homesickness and unprecedented attention to the protection of traditional villages, homesickness digital service will be an important part of exerting the value of traditional cultural resources and realizing its “cultural governance” function. The main content of “retaining homesickness” is traditional village culture, which has two important functions: Resource function, traditional culture as cultural resources can be consumed and utilized; “cultural governance” function, traditional village culture not only played an important governance role in the historical period of the village, but also had an important influence in modern village management. Peng believes that “cultural governance is an important part of public governance”<sup>[9]</sup>, and Wu believes that governance should be introduced into public cultural services, and points out that public cultural services should become the form and content of cultural governance<sup>[10]</sup>. In order to give full play to the resource function and “cultural

governance” function of traditional village culture, it should be regarded as one of the important contents of public cultural services to carry forward, inherit and develop traditional culture in the form of services.

According to the functions and characteristics of current digital visualization technology, virtual tourism will be a necessary form to realize digital services of homesickness. Compared with the traditional tourism information platform, virtual tourism pays more attention to the simulation of tourists’ senses, and its goal is to construct a virtual “immersive” feeling. Virtual tourism oriented to “retaining homesickness” is guided by homesickness demand, and through the simulation of digital scenes and cultural elements, it guides tourists to resonate with their senses and homesickness artistic conception, so it emphasizes the interactivity and experience of tourists in the process of virtual tourism. In addition, not all virtual tourism products with a strong sense of immersion can create homesickness atmosphere and meet the needs of homesickness. Because homesickness varies from person to person, the differences of homesickness needs cannot be arbitrarily ignored. Therefore, the design of virtual tourism products for homesickness needs should emphasize the participation of homesickness demanders and create diversified virtual tourism products according to their differences in knowledge base, culture and information technology level. In a word, virtual tourism for homesickness needs should emphasize the experience, interactivity and user participation of virtual tourism products.

## 5. Conclusions

Digital protection of traditional villages has become a recognized international trend, and digitalization for different landscape elements, such as digitalization of geographical environment, digitalization of traditional houses and digitalization of intangible cultural heritage, is flourishing. The demand of “remembering homesickness” puts forward higher requirements for the digital protection of traditional villages.



The unified digital protection of villages focuses on the digital records of village landscape elements, and “retaining homesickness” requires that the digital achievements meet the needs of homesickness. Only by clarifying the characteristics of the current needs of homesickness can we find out the way to realize “retaining homesickness” in the digital age.

Homesickness comes from the distance of time and space. In the context of our country, homesickness mainly comes from the urbanization of population, and the satisfaction of homesickness needs focuses on the protection of traditional village culture. There are some problems in the traditional digital protection of villages, such as the lack of institutional mechanism and top-level design, the fact that the digitalization of the whole geographical scene and the digitalization of cultural landscape elements are independent, and the emphasis on “form” rather than “spirit” and so on. Based on this, the key to digitalization of traditional villages that “retain homesickness” lies in: Doing a good job in top-level design of digitalization process and application of results; selecting digital elements based on landscape gene theory; realizing the virtual tourism service for homesickness.

## Conflict of interest

The authors declare no conflict of interest.

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