Research on the Protection and Inheritance of Traditional Villages from the Perspective of Cultural Genes—Take Wuhan Dayu Bay Historical and Cultural Village as an Example

Zhiqi Zhang¹, Hong Xu²*, Miao Xu³
School of Urban Construction, Wuhan University of Science and Technology, Wuhan, China
Email: xuhong@wust.edu.cn

Abstract. Traditional villages, as an important bearer of traditional culture, are the foundation for the survival and reproduction of traditional culture, but with the impact of rapid urbanization and the rapid development of information, the cultural protection and inheritance of traditional villages are facing a huge impact. This paper takes Dayu Bay as the research object, from the point of perspective of cultural genes, systematically sorts out the cultural elements of Dayu Bay, constructs a genealogy of Dayu Bay's cultural genes, classifies and analyzes its material and immaterial cultural genes, analyzes the problems exposed in its protection and inheritance by sorting out the cultural genes, builds a system of traditional village cultural genes protection and inheritance, and explores feasible protection and inheritance paths.

Keywords: Cultural Genes, Dayu Bay, Traditional Villages, Protection and Inheritance

1. Introduction
As an important carrier of traditional culture, traditional villages are of great significance to the protection and inheritance of traditional culture, but due to the influence of many factors, traditional culture and traditional villages are in decline, and the protection of both can not be delayed. Dayu Bay, as the second batch of Hubei's only national historical and cultural village and the first batch of national traditional villages, not only has a strong traditional culture and a large number of Ming and Qing dynasty buildings, but also its site layout is a model of traditional village feng shui pattern, which has been given a very high evaluation. However, due to the impact of urbanization and population exodus, Dayu Bay is in decline. Based on this, this paper introduces the cultural gene theory and tries to propose a path for the protection and inheritance of Dayu Bay traditional village by sorting out its cultural genealogy, analyzing the development dilemma and constructing a protection and inheritance system.

2. Overview of Dayu Bay

2.1. Traditional Village Background
Traditional villages are villages that were formed earlier, have richer traditional resources, have certain historical, cultural, scientific, artistic, social, and economic values, and should be protected [1]. In December 2012, the Ministry of Housing and Construction, the Ministry of...
Culture, and the Ministry of Finance issued a notice announcing the list of traditional villages in China, and the first list contained 646 villages. So far, five batches of traditional village lists have been published, with a total of 6775 villages on the list.

2.2. Overview of Dayu Bay
Dayu Bay is located in Shuangquan Village, Mulan Township, Huangpi District, Wuhan City, close to Township Road 105, and is the first attraction of the eight scenic spots of Mulan. It is located in the south of the urban area of Huangpi District, surrounded by mountains, with Mulan Lake in the northwest and the water system running through the village, more than 40 kilometers from Wuhan City in the south, with excellent geographical conditions.

As one of the first batch of traditional villages selected, Dayu Bay is also the only one among the second batch of 24 national historical and cultural villages in Hubei Province. In addition, Dayu Bay has also been named one of the "Top Ten Beautiful Villages of Wuhan", and its value and status as a traditional historical and cultural village are very high.

3. Cultural Genetic Profile
The term "cultural genes" first appeared in the 1976 book The Selfish Gene by British sociologist Charles de Dawkins, who argued that the spread of culture is similar to heredity in that heredity is the internal spread of biological reproduction that relies on the mutational replication and recombination of genes, while culture, which is not directly controlled by cellular genes, also has its own culture, which is not directly controlled by cellular genes, also has its own replicating genes - "modalities" - that spread externally [2].

In the 21st century, the concept of "cultural genes" entered the research horizon of Chinese scholars, and since then, Chinese and Western scholars have jointly considered "cultural genes" as a scientific category to carry out relevant research [3]. Domestic scholars have done a lot of research on the nature of cultural genes. Liu Changlin proposed that "cultural systems are an organic part of social systems and naturally have their own special genes, which can be called cultural genes. Cultural genes are those psychological underlying structures and ways of thinking that have had a profound impact on the culture and history of a nation" [4]. Wang Dong proposed from the perspective of transmission and inheritance that "the core content of cultural genes is the way of thinking and values, especially the core concept of how to deal with the relationship between the four main subjects: man and nature, man and man, country and country, and mind and matter" [5]. Bi Wenbo proposed that "the basic idea or basic spirit that is embedded in various cultural phenomena and has the ability to be passed on and unfolded in time and space, as well as the basic style of cultural expression or manifestation with this ability, is called 'cultural genes'" [6].

4. Analysis of Dayu Bay Cultural Genes
4.1. Cultural Genealogy Construction
Through the field survey of Dayu Bay and the compilation of related materials, this paper attempts to build a cultural genealogy map of Dayu Bay from two aspects: material culture and non-material culture. The analysis of the cultural elements of Dayu Bay shows that its material culture is mainly characterized by two types of architectural features and spatial patterns, while its immaterial culture is mainly characterized by three aspects: festivals, construction techniques and book culture. (As shown in figure 1).
4.2. Material Culture

4.2.1. Architectural Features. (1) Typical planar form. Dayu Bay dwellings generally face south and are in the form of a triple courtyard with a stone and wood structure, mostly with three open rooms. On the first floor, there are four main rooms, one hall house and two compartments with a total of seven rooms. The main house is arranged according to the front large and the back small, left large and right small, and the elders and children live separately. The main room has one floor and the compartment has two floors, which are connected to the attic by climbing ladders (As shown in figure 2). A shrine is set up in the middle of the main room for the ancestors and the "Heaven and Earth, the King, the Relatives and the Teachers". The patio is very shallow, mainly for lighting, and also has the symbolic meaning of the four waters returning to the hall.

(2) Carving decoration. As one of the traditional Huizhou-style buildings, Dayu Bay dwellings, like the three carvings of Huizhou-style buildings, namely wood carving, stone carving and brick carving, have obvious carving and decoration traces in their buildings, but the difference is that the carving and decoration of Dayu Bay buildings are more simple. Because of the simplicity of the people of Dayu Bay, there are very few ornate decorations in the buildings, and they are generally concentrated in the lattice doors and ridge purlins. The carvings at the junction of the ridge purlins and the central pillar or at the eaves-bearing, with rich figures, are mostly Guanyin or fairy figures. If the lion is carved on the four corners of the house, it means that the owner of the house is an official residence, while the commercial and general residential houses can only carve some seasonal flowers and plants.

4.2.2. Spatial Pattern. (1) Village site selection. The site of the village is very elaborate, it reflects the traditional Chinese culture of the unity of heaven and man: the mountain is the "Dragon", the left and right are "Green Dragon" and "White Tiger", there are mountains and water, the mountains are The mountains are surrounded by water, forming an independent space to hide the wind and collect the qi, which is a feng shui treasure place for people to prosper. There are
mountains behind Dayu Bay and the Clearwater River in front of it. The mountains to the left of the village winding to the fields are like the Green Dragon, and the mountains to the right are like the White Tiger, and not far from the front of the village there are two hills shaped like turtles that lock the throat of the village [7] (As shown in figure 3).

(2) Spatial texture. The architectural layout of Dayu Bay as a whole is arranged along the road and along the mountain, and the space as a whole is distributed in groups, which can be divided into four groups: the Yu Ancestral Hall, the Baizi Hall Group, the Traditional Residence Group, and the Deji Garden Group. The main road in the middle runs through the whole village in a southwest to northeast trend, and then leads to the branch roads leading to the buildings on the second side through the main road, forming an orderly and complete road and street system (As shown in figure 4).

![Figure 3](image3.jpg) Siting analysis of Dayu Bay village.  
![Figure 4](image4.jpg) Spatial texture of Dayu Bay.

The water system is an important part of the spatial texture of the village. The Qing Shui River in front of the village runs through the village and eventually flows into the name of the river in the western part of the village into the Yangtze River. There are also ponds and ditches of various sizes scattered throughout the village, and as a whole the water system and roads are intertwined and interdependent with the buildings.

(3) Height difference treatment. Since the whole village is built in an area buffered by hills and flatlands, many buildings in the village are built according to the topography and have the layout pattern of a mountain village, and there are many ways to deal with the height difference. However, since the slope of the surrounding mountains is much smaller compared to that of the mountain settlements, the height difference is generally not very large. In the process of building construction, the height difference is minimized by arranging the buildings in parallel contour lines, which results in the overall layout of village buildings with varying heights. For the traffic street space inside the village, there are both parallel to the contour line and tangent to the mountain contour line.

4.3. Intangible Culture

4.3.1. Festivals and Events. Dayu Bay has a rich and colorful culture of excellent traditional festival activities, including dragon lantern dances, ancestor rituals, listening to good books, welcoming relatives with palanquin and stealing green festival, etc (As shown in table 1). The rich festival activities have created the colorful details of villagers' lives and a strong traditional cultural atmosphere of the whole village.
Table 1. Statistics of Dayu Bay festival activities.

| Name              | Description                                                                                                                                 |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| New Year's Dragon Lantern Dance | On the 30th of the New Year, we put up the Spring Festival couplets and door gods, and at 10 pm, we burn incense to reunite the whole family; on the 15th of the first month, we dance dragon lanterns to celebrate the Lantern Festival. |
| Ancestral rites   | The Yu Family Ancestral Hall holds annual rituals, with the Qingming Festival being the grandest, and the elders speak in Mandarin.               |
| Listen to the Good Book | Shanshu is a combination of rap and singing, later mainly popular in the Yangtze River basin, Shanshu form is simple, easy to pass on, initially for one person to preach, and later developed into three or more people preaching on the same stage. |
| Marriage Celebration in a sedan chair | The palanquin in Dayu Bay is strongly Ming Dynasty style, where the wedding is called "performing the colorful ceremony" and the bride and groom dance around the table. |
| Stealing the Green Festival | Local June and July there is a theft of green festival, the garden of melons and fruits everyone can steal, the garden owner can prevent theft but not arrest the theft. |

4.3.2. Construction Techniques. Many skilled craftsmen are also one of its treasures, and Dayu Bay is known as the "Four Kiln Makers of Ten Han". The typical construction techniques in the village include Mulan dry masonry, glutinous paste masonry and drip line stone walls (As shown in table 2). In the back garden of Baizitang, a section of the stone wall is preserved and built by the Mulan dry masonry method, while many other buildings are built by the glutinous masonry method.

Table 2. Statistics of construction techniques in Dayu Bay.

| Name                    | Description                                                                                                                                 |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| Magnolia Drywall        | Mulan dry masonry does not use any bonding materials, but only stones, which have survived the wind and rain for more than 100 years and are still strong. |
| Glutinous paste masonry method | Mix glutinous rice pulp and lime in a certain ratio, stir well as a slurry for masonry, good adhesion, not easy to weather, mostly used for exterior wall masonry. |
| Drip line stone wall    | The green curtain stone or green mud stone is chiseled into a square stone, the longest of which is 3 meters, and the front side is carved with fine and uniform slanting lines, from the front side, the whole wall looks like the dripping line of the eaves, and like the slanting weave of the rain, the rain from the eaves will flow to the ground along the chiseled lines, and will not seep into the home. The width of each stone is the same, and the angle and density of the chiseled lines are the same, so the wall is very uniform and beautiful. |

4.3.3. Book Culture. Dayu Bay is home to many talented people and has a strong culture of learning, with hundreds of scholarship holders since the Ming Dynasty. The Dayu Bay Yu clan originated from the Jiangxi Xiushui Mao Yu clan. According to historical records, the Yu clan of Changmiao was a very prosperous clan in history, counting from the ancestor Yu Liang, the birth of countless dignitaries. Yu Liang had five sons, the most developed of which is the fifth house of "one family of three sheriffs, five generations of four shang Shu", which is a good story for future
It is said that during the Ming and Qing dynasties, more than 100 talents were born in the village, and in modern times, more than 100 experts have come out of Dayu Bay, and since the reform and opening up, compared with the surrounding villages, Dayu Bay has the largest number of university students.

5. The Dilemma of Preserving and Passing on the Cultural Genes of Dayu Bay

5.1. Historical and Cultural Fault
The transmission of cultural genes has been affected to some extent by natural and man-made factors such as natural decay, population out-migration, family rise and fall, foreign cultural invasion, and the impact of modern ideas, producing a fault line [8]. Although the village settlement form still exists, it is also accompanied by the spillover development of core factors such as population and the march from the traditional clan management style to the modern village council governance model. Under the impact of rapid urbanization, many cultural elements of traditional villages have been destroyed due to the historical environment and human factors that nurtured their growth and reproduction, resulting in the difficulty of sustaining cultural inheritance and facing the crisis of discontinuity.

5.2. Weakening of the Clan Concept and Diminishing of the Neighborhood Atmosphere
As a typical traditional clan colony dominated by villagers with the surname of Yu, Dayu Bay has both geo-neighborhood and inseparable blood kinship relationships among villagers. However, due to urban-rural mobility and the modernization of lifestyles, many villagers have moved out of the village or into the city, and the long-term spatial isolation has led to the alienation of blood relations. In the long run, the clan concept has gradually faded due to the lack of perception of the clan's living environment by the descendants. The villagers in the village, unlike in the past when they lived mostly within the village, have seen their time and space interactions diminish due to the complexity of life trajectories and the expansion of living space in the modern context, which has also led to a decrease in neighborly interactions and a slow decline in the neighborhood atmosphere.

5.3. Lack of Public Space and Lagging Service Facility System
The public space of traditional villages is an important space carrier for villagers' outdoor activities and communication. Due to the expansion of construction of Dayu Bay villages, the public space is inevitably encroached upon, and with the diversification of villagers' indoor activities, the status of outdoor public space gradually declines, and the public space is used for other purposes. In addition, the service facilities of the village are lagging behind, there is no large-scale artificial pipe network system, and there are few toilets in the village, only two toilets at present, and some villagers are still using traditional dry toilets.

5.4. Blurred Spatial Texture and Decay of Residential Architecture
Traditional houses are difficult to adapt to the needs of contemporary villagers' life due to the effects of lighting and ventilation, so many new buildings have been born in traditional villages, some of which are the original traditional buildings demolished and rebuilt on the site, some of which are renovated and added on the original buildings, and some of which are completely new on the unused land. Due to the lack of effective supervision and construction guidelines, the new buildings take different forms, and it is difficult to integrate into the original spatial texture of the streets and alleys in terms of plan form, and the disorderly increase of plan building patches makes the original spatial texture of the village blurred; in terms of façade form and shape, many new buildings cannot integrate into the traditional architectural atmosphere and are independent from the village environment. On the other hand, as most of the villagers are willing to live in
new buildings, the old traditional dwellings have become deserted and decayed due to long-term unoccupation.

6. Strategies for Preservation and Inheritance from the Perspective of Cultural Genes

6.1. Cultural Gene Protection and Inheritance System Construction

This paper constructs a cultural genealogy map of Dayu Bay from two levels: material culture and intangible culture, systematically sorts out its cultural genes by comprehensively organizing five aspects: architectural features, spatial patterns, festive activities, construction techniques, and book culture, compiles the corresponding conservation and inheritance dilemmas, and proposes gene integration, cultivation, implantation, restoration, and activation from the perspective of cultural genes in Dayu Bay. The five-in-one preservation and inheritance strategy is proposed (As shown in figure 5).

![Figure 5. Cultural genetic protection and inheritance system.](image)

6.2. Integration of Historical and Cultural Elements

After a long period of accumulation and precipitation, traditional villages have formed a wide variety of historical and cultural resources elements, which are easily faded under the wash of time because they are more scattered among each other. The primary task of the protection and inheritance of the cultural genes of traditional villages is to integrate the historical and cultural elements, systematically build a system of historical and cultural elements, and form a complete framework of protection and inheritance. The integrated historical and cultural elements can be rejuvenated in the environment of traditional villages and maintain a more vigorous vitality.

6.3. Fostering Clan Concept and Regaining Neighborhood Atmosphere

As the core of Dayu Bay's cultural gene and one of the most important parts of the cultural gene protection and transmission system, clan culture is of great significance. Clan culture is the basis for uniting villagers and enhancing their sense of identity and belonging, and is the most valuable spiritual and cultural asset of Dayu Bay as a clan settlement. It is the most valuable spiritual and cultural asset of Dayu Bay as a clan settlement. Cultivating villagers' clan concept, enhancing their sense of ownership, enabling them to realize their self-worth and return to their spirit, regaining a harmonious and cordial neighborhood atmosphere, and making them the real owners of the village preservation and inheritance.

6.4. Implant Public Space and Improve Service Facilities

Public spaces such as theatres and squares are the essence of villagers' activities in traditional villages and are also important cultural carriers. Faced with the situation that existing public spaces are encroached upon and underused, high-quality public spaces should be created to make them a place where traditional culture and modern life needs are integrated with each other, and the popularity of villages should be gathered through the implantation of public spaces. On the other hand, for the lagging public service facilities, they should be upgraded to better serve the needs of modern life in order to meet the sustainable development needs of the village by combining the rigid needs of modern life.
6.5. Restoration of Spatial Texture and Residential Architecture

To restore the spatial texture, the first step is to analyze and sort out the original traditional spatial texture, analyze the texture pattern and refine the texture skeleton. We analyze the current spatial texture, identify the impact of new buildings on the continuation of traditional texture by comparing the traditional texture with the current one, evaluate the new buildings from both qualitative and quantitative levels, and demolish the new buildings with greater impact according to the evaluation results, and propose guidelines and constraints for the future development of village architecture, so as to ensure the integrity and clarity of the village spatial texture.

As the root of traditional villages, the goodness and survival of traditional dwellings are directly related to the development of traditional villages, and the restoration of dwelling buildings is very necessary for the protection and inheritance of traditional villages. Through the evaluation of the current buildings, we evaluate and analyze the three dimensions of building layers, building style and building quality, and take corresponding restoration measures for the residential buildings in need according to the results.

7. Concluding Remarks

In today's rapid urban development, Chinese traditional culture is facing internal cultural loss while going global. In this context, traditional villages, as an important carrier of traditional culture, are also suffering from a huge cultural submersion crisis. This paper, from the perspective of cultural genes, classifies the cultural types of Dayu Bay and constructs a genealogy of Dayu Bay culture, which consists of material cultural genes, mainly architectural features and spatial patterns, and intangible cultural genes, mainly festival activities, book culture and construction techniques. By analyzing its cultural genes and sorting out the cultural lineage of Dayu Bay, we summarize the bottlenecks of its cultural protection and inheritance, mainly in terms of historical and cultural fault lines, dilution of clan concept, lack of public space, blurred spatial texture, and loss of non-heritage culture. The system of cultural gene protection and inheritance of Dayu Bay is constructed by taking into account the real-life dilemma, and the four levels of cultivation, implantation, restoration and activation of cultural gene are developed to provide reference for the cultural protection and inheritance of Dayu Bay.

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