

# Neural Field Construction of Village Cultural Heritage and Economic Value Regeneration

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## ABSTRACT

In response to the existing issues of spatial disconnection, behavioral interruption, and emotional detachment in the current protection of traditional village cultural heritage, a theoretical framework of "cultural neural field" is proposed, aiming to construct a dynamic cultural system composed of spatial nodes, behavioral pathways, emotional consensus, and value recycling. Taking the Shiqiao Village in Fengning Manchu Autonomous County, Chengde, Hebei Province as a case, this study sorts out the broken structure and potential for reconnection of cultural resources in the village through field investigation, node identification, and pathway analysis. On this basis, a three-dimensional construction strategy of "pathway linkage - emotional awakening - value co-creation" is proposed, covering aspects such as the redrawing of cultural behavior maps, activation of identification emotions, and design of co-creation cultural and tourism mechanisms. The research emphasizes that the vitalization of traditional cultural heritage should not be confined to physical restoration and festive performances. Instead, it requires the construction of a cultural system that is transmittable, perceptible, and feedback-oriented, promoting the coordinated growth of cultural identity and economic efficiency.

**Keywords:** Cultural Neural Field; Traditional Villages; Pathway Linkage; Emotional Awakening; Value Co-creation; Shiqiao Village

## I. Introduction

Under the guidance of the "Strategy for the Inheritance and Development of Excellent Traditional Chinese Culture," the protection of cultural heritage in traditional villages is increasingly shifting from "emergency preservation" to "vitalization inheritance" and "value regeneration." However, in reality, phenomena of performance, symbolization, and short-termism occur frequently. Culture is detached from the context of life, becoming an isolated and static exhibit. Village culture is essentially a living entity that carries memories, relationships, and emotions, and its revitalization should be based on systematic understanding and linkage mechanisms. Traditional villages are rich in historical information and cultural landscapes, representing the greatest heritage left by China's agrarian civilization.

The village retains a significant historical heritage, with minimal changes to the architectural environment, style, and location. It possesses unique folk customs and traditions, having served the people over the ages, and still continues to do so to this day, to highlight its civilizational value and the significance of its inheritance.

This paper introduces the perspective of "Neural Field," drawing on the concept of "Neural Field" in artificial intelligence, to construct a dynamic cultural system composed of spatial nodes, behavioral pathways, emotional consensus, and value recycling. Current research has attempted to achieve the dual objectives of "restoring cultural identity" and "co-creating economic benefits" through the reconstruction of cultural and tourism spaces, which provides insights for the construction of the proposed "cultural neural field" in this study.

## II. Theoretical Shift of the Cultural Neural Field

The current cultural heritage protection in rural villages is generally caught in a "static" predicament. On the one hand, over-reliance on the restoration and landscape reconstruction of physical space keeps cultural expression at a visible level, lacking interaction with daily behavior; on the other hand, the practice of performing and exhibiting cultural content weakens its lived attributes, transforming intangible cultural heritage into a festive showground and villages into popular spots. Furthermore, the "project-based operation" led by external curatorial agencies has even excluded the villagers from deep participation, causing the cultural production to lose its inherent momentum. Under this logic, cultural heritage gradually becomes a "visible and tangible but unnecessary" visual ornament, creating a misplaced scene of "superficial bustle with empty substance."

For this purpose, this paper proposes the concept of "cultural neural field," aiming to reconstruct the linkage mechanism of village cultural heritage. The study indicates that different cultures (such as collectivism and individualism) lead to significant differences in individuals' emotional expression, logical thinking, and social cognition. Scholars also emphasize the intrinsic coupling between cultural background, collective cognition, and emotional connection. This cultural psychological mechanism serves as the cognitive foundation for cultural resonance and spatial reconstruction. The future direction focuses on issues such as technical ethics, diversified research methods, and the interaction between culture and genetics. Drawing upon the principles of neural networks, we analogize the cultural system as a multi-dimensional conductor: spatial nodes such as ancient bridges, temples, and opera stages are the "neurons" of culture; behavioral pathways such as ritual routes and festival routes are the "neural pathways" of culture; emotional density originates from ancestral house memories, ritual empathy, etc., which are the "neural currents" of culture; and when identity is invoked and participation is triggered, this system stimulates "value loops," achieving a positive feedback between culture and

economy.

The key to the cultural neural field lies not in simple reconstruction or duplication, but in activating a dynamic network that is interconnected through "structure-perception-feedback." This network must both identify and connect the scattered resources within the villages and rekindle the emotional bond between villagers and space, while establishing a sustainable cultural loop through means such as the reenactment of festivals, spatial reperformance, and digital visualization. It is not nostalgic, nor is it curatorial; rather, it is a method of reconstructing cultural systems facing the future, allowing culture to survive in the flow and be redefined in the present.

## III. Case Analysis: Cultural Texture, Node Identification, and Spatial Fracture Repair of Shiqiao Village

### (1) Overview of Shiqiao Village

Shiqiao Village, a village under the jurisdiction of Fengshan Town, Fengning Manchu Autonomous County, Chengde City, Hebei Province, is listed in the list of villages in the fourth batch of China's Traditional Villages. Shiqiao Village is a mountainous village in the north with a profound cultural heritage. The village is built according to the terrain of the mountains, named after a Qing Dynasty stone arch bridge in front of it. Below the bridge, a small river flows gently all year round, and the village resembles a cultural floating island between the stream and the hills. Geographically, it is influenced by the radiation of agricultural culture and also sits at the intersection of the Manchu migration and nomadic culture, forming a typical example of multicultural integration in northern villages. Similar to the dilemmas faced by the cultural heritage of Zhuang nationality villages, the cultural structure of Shiqiao Village also exhibits the characteristic of cultural fusion under the background of multi-ethnic interaction. Its ritual system, spatial layout, and oral tradition all demonstrate the tension and trend of cultural overlap and integration.

The Manchu and Han ethnic groups have coexisted for a long time, forming a rich system of etiquette

and spatial layout logic. As for the existing residential compounds in the village, they follow the Han-style in their plane structure, but the decorative patterns are deeply influenced by the Manchu totems; the temple buildings adopt a layout with three sides facing and are symmetrical along the axis, reflecting the Manchu custom and ritual order of "the divine path in the center, and the ancestral temple on the left." In terms of oral tradition, the village retains Manchu song lyrics, folk ballads known as "Zhazitiao," as well as ritual heritage such as spirit dances and ancestor worship, which have a rich cultural diversity and are uniquely representative in the Jibei region.

#### (2) Current Status of Heritage

Despite abundant cultural resources, the current heritage of Shiqiao Village presents a distinct "resources-function-identity" pattern triple fracture characteristics. This phenomenon of fracture is highly consistent with the issue of cultural resources concentration but functional decline and diminishing identity faced by traditional villages in the Shanxi, Shaanxi, and Inner Mongolia regions.

Firstly, resource inventory is abundant but fragmented in distribution. There are over 10 historical buildings registered in the village, including Qing Dynasty stone bridges, temples built at the end of the Yuan Dynasty, and old residences from the Republic of China era. There are also 6 intangible cultural heritage projects registered, such as "Jumping the Five Directions God," "Dancing the Grass Dragon in the twelfth lunar month," and "Manchu Language Family Song Singing." But these resources are scattered and embedded between modern residential buildings and concrete streets, lacking effective connectivity between them.

Secondly, cultural behavior becomes weakened, and functions decline. The ritual of leaping gods, originally an important seasonal activity for spring sacrifices and praying for snow on the Winter Solstice, is now performed by professional outside performance groups, with the villagers merely serving as spectators; the stone bridge, once an important passageway for weddings, funerals, and other important ceremonies, is now mostly used as a site for sightseeing and photo-taking. The

traditional space has detached itself from ritualistic behavior, gradually becoming hollow.

Thirdly, identifying structural atrophy, emotional absence among the younger generation. Local youth generally view "old village culture" as "a matter of their parents' generation," lacking both a pathway to participate and motivation to identify with it. Cultural memory gradually lingers in the fragmented recollections of oral history, unable to generate spontaneous transmission pathways.

#### (3) Node Identification

In the construction of the cultural neural field, identifying key nodes is a prerequisite for activating the entire cultural network. This strategy aligns with the approach of non-material cultural heritage space identification research in recent years, which involves screening core cultural units through a dual-dimensional approach of "spatial memory + cultural usage frequency." Through field investigation and spatial analysis, we have preliminarily identified six core nodes within the Shiqiao village with strong cultural memory attachment and behavioral frequency, as shown in the following table.

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#### (4) Spatial Fractures

The inheritance of culture does not occur in isolation at a single point but is achieved through a continuous interactional pathway of "people-space-activity". However, these pathways are almost invisible in the

Node name	Node properties	Cultural function orientation	Current state and activation potential
Stone arch bridge	Space source point	The origin of the village name carries the traditional ritual pathway such as marriage, funeral and temple fair	The frequency of use decreases and the pathway reactivation value is available
The square in front of the temple	Festival centre	The place where the gods dance, the grass dragon and the temple fair trade are concentrated is the gathering area of collective cultural emotions	Festivals are used periodically and are suitable for structural scene reconstruction
The old stage	Oral culture trigger point	It is an important place for folk performances such as Manchu tunes and Zhaizi tunes	Left idle for many years, it can be transformed into a story performance and sound restoration field
Ancient well and old site of ancestral hall	Ancestral memory anchor	The origin of family identity, oral history of the elderly often begins here	The space is blocked and can be reinserted through memory orientation
Bleachery	Community cluster area	A place for villagers to communicate, tell stories and chat	High activity, suitable for the introduction of "daily + ritual" composite functions
North hillside grave circle	Super personal perception domain	The ancestral worship and the spiritual symbol place of the village have the highest emotional concentration	Private and confidential, suitable for developing emotional nonprofit space

contemporary Shiqiao Village:

The parade route for the original temple fair's "Divine March" has been completely severed due to road widening and traffic facility renovations. The cultural pathway of Shiqiao Village also faces the predicament of "visible in space but broken in behavior," similar to the situation where traditional villages like Sanduozhai have their sacrificial routes divided by roads and living areas fragmented during modernization transformations. The path leading to the ancestral hall from every household has been blocked by concrete walls, surviving only in the memories of the elderly in the village; the stone arch bridge to the ancestral tombs on the opposite riverbank is now overgrown with weeds and no longer tread upon; the "seasonal map" passed down by the older generation — detailing which rituals are held on the first few days of each month and where — is now unknown to anyone.

This means that the first step of the cultural neural field is not "development," but "re-identification" and "re-connection." As revealed by the visualization study of the historical development trajectory of traditional villages, the disconnection in pathway cognition is one of the major obstacles to the activation mechanism. We need to re-paint this "retired cultural pathway map" through

methods such as spatial archaeology, narrative interviews, and memory retrieval, laying the foundation for the reactivation of neural pathways.

#### IV. Strategy for Neural Field Construction

This paper proposes a three-dimensional strategy framework based on "pathway linkage - emotional awakening - value co-creation," aiming to reshape the life network of village culture, making cultural heritage truly "alive on the ground, warm in the hearts, and dynamic in the present."

(1) Redrawing Cultural Space Trajectories through Behavioral Pathways

The culture of traditional villages is not an isolated display of buildings, but a sensory pathway system composed of the linkage of "space + behavior + relationship" Three. The lost culture of Shiqiao Village is first manifested in the disappearance of pathways The first step in constructing a neural field is "to let the pathway return to the body".

##### ① Behavioral Map Regeneration

By means of oral histories from elderly villagers, combined with old photographs, the flow of ritual items,

and other sources of information, a "cultural behavior map" is drawn. Similar to the approach of the Baishan area villages that reconstruct the "intangible cultural heritage experience line" through seasonal rituals and manual pathways. The Shiqiao village can also reconstruct cultural trajectories through a "memory map", including the deity parade route, wedding and funeral ritual route, temple fair route, and craft circulation route, the cultural "textural patterns" of the village are reconstructed in a graphic form.

### ② Node Linking Micro-reconstruction

Following the principle of "Tapping into Space," implement a "sewn micro-renovation" for the breakpoints between nodes: such as repairing the hidden pathway between the ancient well and the temple gate, restoring the visual corridor between the stage and the threshing ground, The ritual passage of the stone bridge to the ancestral tomb on the east bank of the river was re-established rebuilt the stone bridge to the ancestral tomb in the Eastern River area along with its ritual and customary pathway.

### ③ Pathway Narrative Space Setting

Establish "narrative node boards" at key points along the pathway, recounting the historical events, ritual procedures, and family stories of the corresponding locations, thereby transforming the pathway itself into a "talking cultural corridor" that triggers spatial memory and physical resonance.

Through the above methods, culture is no longer "performance in the exhibition hall," but "memory in the footsteps," allowing the movement of the villagers to be reintegrated into the cultural trajectory, forming the first level of neural activation of "action as inheritance."

### (2) Reconstructing Cultural Empathway Circuits through Identification Emotions

The true revival of culture relies not only on the reorganization of spaces, but also on the dedication and participation of "people." And emotions are the first thread that leads people towards culture. In Shiqiao Village, the absence of an emotional field is primarily manifested as intergenerational breakdown, festive detachment, and language estrangement phenomena. Therefore, the second

activation of the neural field lies in reconstructing the emotional pathway of "villager-space-memory".

#### ① "Memory Awakening" Action Plan

Carry out activities such as collecting elderly oral histories with the theme "My Story with the Stone Bridge", the exhibition of "My Family's Antiques", and the recreation of "Solar Terms Recipes". The approach of building a digital memory museum for the village in Xishuangbanna can be analogous, activating emotional memories and intergenerational connections. and guiding the villagers to recall personal memories from objects, seasons, and language, forming a collective emotional resonance.

#### ② "Daily Festivalization" Emotional Strategy

The ritual activities traditionally held only during festivals, such as divine dance and grass dragon performances, are being downscaled and made daily, such as by setting up "Sacrificial Ritual at the Temple's Front on the First Day of the Month" and "Self-Made Mask Divine Dance Activity at the Bridge", allowing cultural expression to integrate into daily life, diminishing the performance aspect, and enhancing participation.

#### ③ Mechanism of "Emotional Identity Map" Construction

By means of questionnaires, interviews, and digital records, collecting the emotional associations of the villagers with different spaces (such as "feeling close," "wanting to return," "feeling unfamiliar," etc.). The construction of a "Warm Cultural Space" in the beautification of traditional villages in Chengdu shares a similar approach. Visualize emotional density on a cultural map to guide the selection of festival locations, placement of installations, and spatial reuse, thereby creating a truly "high-energy concentration" cultural zone.

The goal of emotional awakening is not to relive the past, but to make "participation" a new way for villagers to reconnect with culture. Only when culture resonates can it be deeply rooted in people's hearts; only when it resonates can cultural nerves be effectively transmitted.

#### (3) Establishing a Cultural and Economic Feedback Loop with Shared Logic

If the cultural neural field lacks a practical profit

mechanism to support it, it will be difficult to sustain. Research shows that cultural values need to be expressed economically through visual reconstruction and dissemination mechanisms in order to activate public participation and the drive for co-construction. But this "profit" should not remain at the traditional "ticket economy" or "taking photos for check-ins" level, instead, it should build a value co-creation system based on cultural nodes activation, truly realizing a closed-loop flow of "meaning-action-value."

#### ① Construction of a "Co-creation Cultural and Creative Industry Chain"

The village cultural symbols such as the spirit mask, bridge perfume pouch, old house wood carvings, and ancient well tea water will be transformed into cultural and creative products co-created by the villagers. The design process involves collaboration with young returnees, local artisans, and external designers. Villagers have the right to negotiate and to be credited, with a portion of the proceeds being reinvested in the repair of public nodes and the costs of festivals.

#### ② "Cultural Tourism Product Design: 'Memory Trail + Experience Package'"

No longer selling "attraction tickets," instead offering an emotional experience pathway known as a "Memory Trail," such as the "Childhood Echo Line" of "Stone Bridge—Ancestral House—Temple Front—Stage," combining storyteller-led tours, folk experience, and costume photography to create a micro-depth tour driven by emotions.

#### ③ "Cultural Co-creation Mechanism for Digital Assets"

Developing digital models based on neural field data (behavioral trajectories, emotional nodes, narrative content, etc.) to generate the "Stone Bridge Cultural Memory Database." Through forms such as platform sharing, story licensing, and virtual performances, cultural content is outputted, constructing the village's "knowledge capital," allowing villagers to have a share in the cultural data and the power of negotiation.

The ultimate goal is not "to turn culture into a product," but "to make culture an alive mechanism"—one

that can be experienced, narrated, processed, and shared, thereby constructing a circular, symbiotic, and self-reinforcing value neural pathway among the villagers, culture, and the market.

## V. Conclusion

In the spiritual heritage of traditional villages, not only do various "intangible cultural heritages" exist, but also a large number of unique historical memories, clan inheritance, colloquialisms and dialects, rural agreements and regulations, and modes of production. As a unique spiritual and cultural connotation, they exist because of the existence of the village and make the traditional culture of the village thick and vibrant. They are also the "life soil" that the various "intangible cultural heritages" in the village cannot be separated from.

The small traditional village is revitalized under a series of protective measures, showcasing the perfect blend of the ancient and modern to the world. The exploration of Shiqiao Village is a microcosm of rural cultural regeneration. Genuine activation goes beyond restoring ancient sites or festive performances; it aims to evoke a profound sense of cultural empathy in people, allowing culture to flow in life and grow in reality. The cultural neural field is not a conclusion but a starting point, opening a future pathway from cognition to participation, from emotions to values.

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