Study on the Construction and Inheritance of Rural Models in Shaanxi North from the Perspective of Human-Land Emotional Bonds

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Abstract:
The unique loess landforms of Northern Shaanxi, China, foster a profound emotional connection between residents and their land, termed "place attachment," which denotes a strong bond between people and their environment. Rural construction faces challenges like the loss of indigenous architectural techniques, leading to inefficient and unattractive spaces, particularly due to neglect of local culture and emotional needs. This study emphasizes understanding human-land emotional relationships to address these issues while preserving traditional rural spatial patterns. It explores motivations behind rural spatial construction in Northern Shaanxi, focusing on resident-environment emotional ties. Through interviews, surveys, and analysis, it identifies cultural meanings and emotional needs tied to spatial features. Using qualitative methods, the study constructs a knowledge map of human-land emotional connections, integrating PPGIS and spatial narratives to propose empathetic, inclusive rural development strategies that honor local place identity.

Keywords: Shaanxi North Region: Rural Construction Models: Topophilia: Emotional Bonds: Affective Cartography

1. Introduction

Northern Shaanxi's loess landforms, shaped by intricate ravines and wind-deposited soils, have nurtured a deep symbiotic relationship between people and their environment over millennia. This bond, termed place attachment (Scannell & Gifford, 2010), encompasses emotional, cognitive, and behavioral ties to physical settings. Traditional cave dwellings (yaodong) and terraced settlements exemplify this connection, integrating ecological adaptation (e.g., passive thermal regulation) with cultural symbolism (Wang et al., 2016). These structures function as living archives of collective memory and environmental wisdom.

However, China's rapid urbanization since the 1990s has disrupted this equilibrium through three key mechanisms:Transplanted Urban Aesthetics: Standardized concrete housing and grid layouts ignore local topography, increasing slope instability and energy inefficiency (Zhang & Zhao, 2021).Spatial Amnesia: Indigenous spatial systems—such as courtyard hierarchies and ritual pathways—are erased, severing socio-ecological ties (Liu, 2019). Technological Discontinuity: Traditional construction knowledge (e.g., loess reinforcement) is lost without viable alternatives, leaving communities ill-equipped to adapt (Dang, 2023).

The consequences are stark:Functional Decline: Urban-style villages consume 23% more energy due to poor material and orientation choices (Li et al., 2022).Cultural Loss: 68.7% of residents report weakened belonging where vernacular landscapes are replaced (Provincial Cultural Heritage Bureau, 2022).Identity Erosion: Destruction of landmarks like ancestral terraces fractures place-based narratives (Tuan, 1977).

Despite extensive research on urbanization's economic impacts, the emotional dimensions of displacement remain overlooked. This study bridges that gap by asking: How can place attachment theory guide resilient rural restructuring in Shaanxi's loess regions? We argue that sustainable development must reconcile modernization with emplacement—rebuilding meaningful people-place bonds through evidence-based spatial interventions.

2. Research on Human-Land Emotional Space

2.1 The "Emotional Turn" in Spatial Studies

Human emotion plays a crucial role in the construction of everyday spatial experiences. However, under modernity, emotion has often been marginalized as the antithesis of rationality, excluded from formal spatial order. Industrialization, urbanization, and commercialization, driven by rationalist and techno-scientific narratives, have dominated contemporary life. At the turn of the century, shifting paradigms in social research brought emotion to the forefront of interdisciplinary discourse, spanning architecture, landscape studies, and human geography. Following the "cultural turn," spatial research shifted from macro-social structures to subjective individual experiences, further deepening under the influence of humanistic geography and non-representational theory. This evolution culminated in an "emotional turn," emphasizing affective dimensions in spatial production.

Architects and geographers now explore how emotions shape social space. Emotions operate within economic, political, and even power dynamics, serving as tools for spatial discipline and capital accumulation. Drawing on Foucault's biopolitics, Ben Anderson argues that neoliberal governance manipulates collective emotions to reinforce urban capitalist logic. The emotional turn highlights relationality and intersubjectivity, offering new perspectives on human-environment interactions.

2.2 Emotional Mapping Tools in Spatial Research

Recent advances in People-Place Emotion mapping integrate emotional and spatial data to support decision-making in urban-rural planning and natural resource management. Key tools include:

2.2.1 Public Participation GIS (PPGIS)

PPGIS is a core method for emotional mapping, using surveys to collect public sentiment (e.g., landscape values, place attachment) and visualizing results via GIS. Brown et al. (2004, 2007) applied PPGIS to map emotionally significant sites (e.g., aesthetic/cultural values) through density analysis. For instance, in Alaska's Kenai Peninsula, participants allocated virtual currency (e.g., $100) to quantify landscape preferences, revealing conservation priorities (Brown et al., 2002). PPGIS facilitates multi-stakeholder consensus in land-use conflicts (Brown & Raymond, 2014).

2.2.2 Landscape Value Typology

Brown & Raymond (2007) operationalized emotions into 14 landscape values (e.g., ecological, recreational), analyzed via spatial techniques like hotspot mapping. Longitudinal studies (e.g., 2004 vs. 2010 data) track emotional shifts, assessing policy impacts (Brown & Weber, 2012). Strong correlations between value distributions and place attachment validate the method (Brown et al., 2015).

Challenges: Public misinterpretation of terms (Brown & Kyttä, 2014) limits reliability. Future research should integrate big data (e.g., VGI) for dynamic emotional databases and adapt methods to contexts like rural Shaanxi's place identity.

2.2.3 Spatial Reinterpretation from a Human-Land Emotional Perspective

Human-environment interactions generate complex emotions embedded in local culture, forming subconscious "sense of place." Over the past 50 years, environmental psychology and cultural geography have advanced the study of these affective bonds, notably through Tuan's (1974) topophilia—a systematic framework for human-environment emotional ties. Tuan explored attachment and fear as primal emotions, linking sensory, aesthetic, and existential dimensions to spaces ranging from homes to cosmic scales.

Shumaker et al. (1983) later defined place attachment as positive affective bonds between people and their lived environments. Hammitt categorized attachment into progressive levels: familiarity → belonging → identity → dependence→ rootedness. Jorgensen further synthesized it as a tripartite construct (affective, cognitive, behavioral).

In Topophilia and Space and Place, Tuan employed a "perception → attitude → values → worldview" framework to decode human-environment relations. He distinguished space (abstract, geometric) from place (meaning-infused through experience), arguing that humans inhabit places, not spaces. This dialectical view informs spatial design principles that enhance place attachment through experiential layering (Table 1).

Table 1 Conceptual Comparison between "Space" and "Place" from an Empirical Perspective

Category	Topophilia (Place)	Escape (Space)
Type	Attachment to place	Avoidance of space
Intention	Stability and constraint	Freedom and threat
Experience	Pleasurable experiences, long-term memories, cultural consciousness	Natural uncertainty, urban malaise
Emotion	Fulfills spiritual needs	Freedom, lack of protection, and threat
Implication	Diverse experiences necessitate a balance between place and space	

3.Emotional Characteristics and Spatial Patterns of Northern Shaanxi Villages

This study examines the emotional bonds between residents and their built environment in rural Northern Shaanxi, analyzing how cultural meanings and affective needs are embedded in spatial features such as alleys, gullies, slopes, and courtyards—key components of traditional architectural patterns.

Human-Land Emotional Bonds in Northern Shaanxi

The loess hill-gully region, spanning Yan'an and Yulin cities, is defined by fragmented topography shaped by erosive soils and concentrated rainfall. Historically, settlements clustered along river valleys (e.g., Wuding, Yan-he), where inhabitants adapted to the terrain through cave dwellings (yaodong). This "earth-carving" vernacular architecture reflects deep place attachment, forged through millennia of symbiotic land-use practices.

These structures exemplify socio-spatial interdependence:**Cultural Logic**: Construction follows clan rituals and geomancy (fengshui), reinforcing collective identity.**Materiality**: Local loess and stone materials create thermally stable, landscape-integrated forms.**Social Fabric**: Kinship-based mutual aid networks expedite building while preserving typological uniqueness through ceremonial practices.The gradual evolution of these spatial patterns mirrors the intensification of place attachment, blending ecological pragmatism with cultural symbolism.

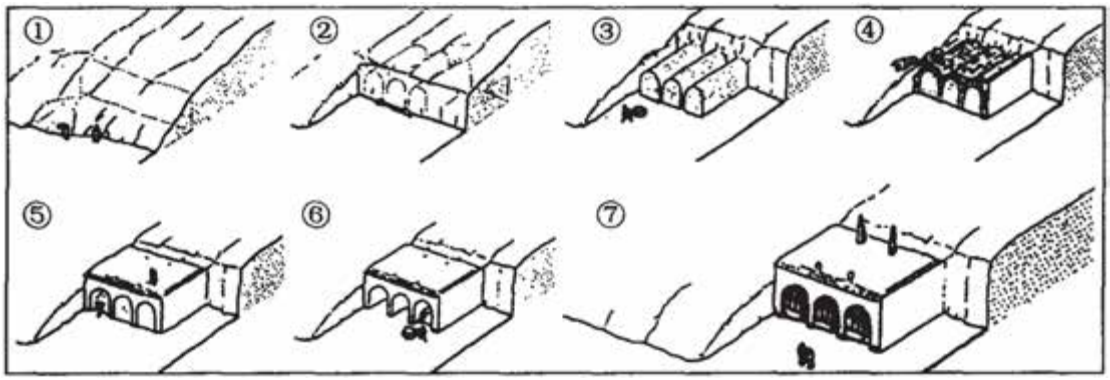

Figure 1 Overview of the construction of cliff-style cave dwellings
Hou Jiyao Chinese Cave Kiln

4. Spatial Patterns of Northern Shaanxi Villages

The rural spatial patterns of Northern Shaanxi's loess hill-gully region are epitomized by its cave-dwelling (yaodong) villages, which exhibit distinctive spatial characteristics reflecting centuries of vernacular wisdom. This study focuses on residential environments as the core living spaces where villagers conduct daily activities, encompassing both built settlements and their natural surroundings.

4.1 Spatial Hierarchy and scales

Northern Shaanxi's village habitats demonstrate unique spatial configurations shaped by natural conditions, historical contexts, and socioeconomic factors. Through cartographic analysis, literature review, and field surveys across multiple watersheds, this research employs morphological and typological methods to systematically identify key spatial elements. A hierarchical framework organizes these findings into three scales:

Macro (Landscape Level)
Mountain-village-field relationships
Functional spatial sequences

Meso (Settlement Level)
Organic settlement forms adapting to topography
Hierarchical street networks
Landmark public spaces

Micro (Building Level)
Courtyard-house combinations
Traditional construction techniques
Twelve characteristic spatial elements are identified across these levels, forming an integrated system for preserving and developing Northern Shaanxi's unique habitat features. This structured approach enables targeted conservation of the region's spatial identity while accommodating modern development needs.

Table 2, Rural Spatial Model Map

Spatial Hierarchy	Type	Spatial Characteristic Element
Landscape Level	Relationship	Relationship between Mountains, Villages, and Fields
		Functional Sequence
Settlement Level	Settlement Form	Plan Form
		Settlement Interface
	Street Network System	Street Texture
		Street Hierarchy
		Street Interface
	Public Space	Landmark spaces
Building Level	Courtyard-House	Plan Combination
		Courtyard Scale
	Building Construction	Building Form
		Building Scale

4.2 Spatial Patterns of Northern Shaanxi Rural Settlements

The spatial patterns of Northern Shaanxi villages manifest through three distinct yet interconnected scales, each demonstrating unique characteristics of human-land interaction. At the macro level, the "beaded-string" settlement distribution along secondary and tertiary tributaries reveals an adaptive strategy to the region's 35°-45° slope conditions. This configuration achieves an optimal balance between agricultural production, residential

living, and ecological preservation, with valley settlements typically allocating gentle slopes for cultivation while situating dwellings on lower terraces. The resulting spatial sequences reflect centuries of accumulated wisdom in harmonizing built environments with loess landform constraints.

Meso-scale analysis of settlement morphology reveals two predominant organizational principles. First, the organic street networks demonstrate clear topographic determinism, with 65% of surveyed villages exhibiting ribbon patterns along valley contours, while more fragmented terrain produces reticular configurations . Second, Tuan's (1977) concept of "moderate human modification" manifests through deliberate spatial interventions - horizontal courtyard elements create tranquil living spaces, while vertical transitional elements like slopes and staircases introduce dynamic social interaction nodes. This duality achieves what local residents describe as "calm roots and lively branches" in settlement layouts.

The architectural micro-scale presents perhaps the most distinctive spatial innovations. Cave dwellings (yaodong) achieve remarkable environmental performance through 1.2m-thick loess walls that maintain stable indoor temperatures (18±2°C) year-round. More significantly, their spatial organization encodes social meaning: the prevalent 3:2 rectangular courtyard aspect ratio optimizes winter sunlight exposure, while the standardized 2.1m lane width accommodates ceremonial processions. These dimensional consistencies across villages suggest deeply internalized cultural-spatial norms.

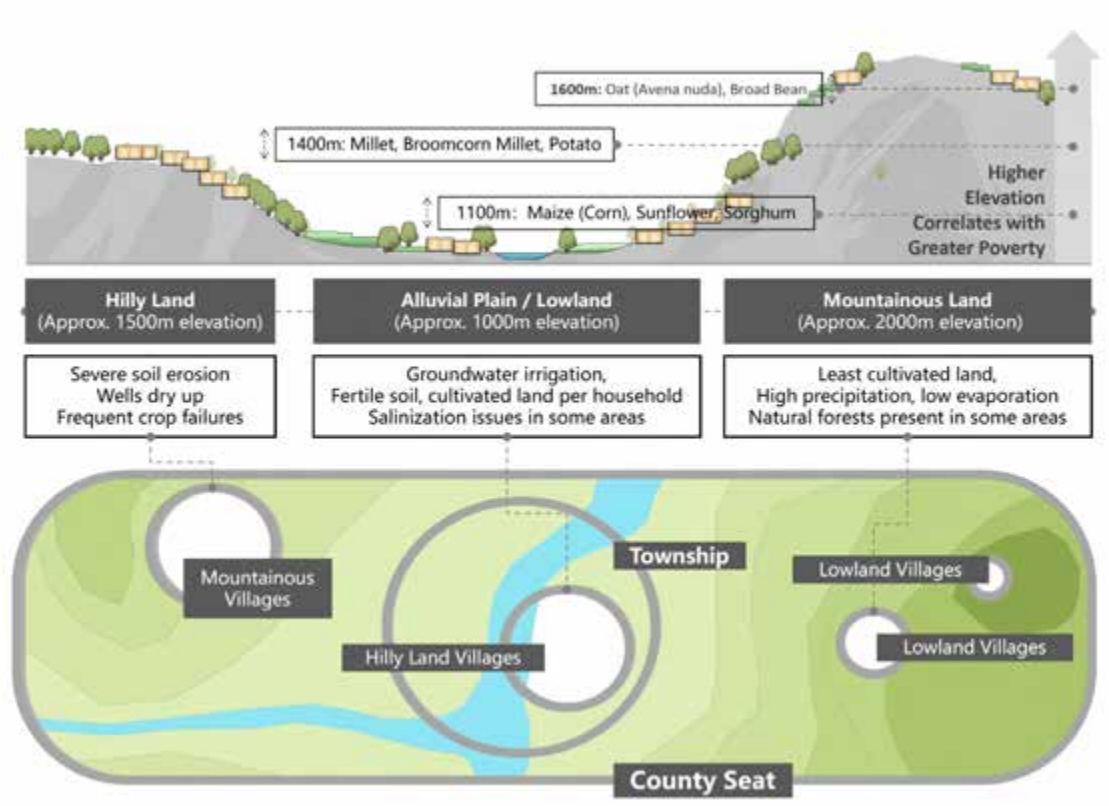

Figure 2 Nested structure of rural areas in northern Shaanxi

Transitioning to emotional geographies, the research reveals striking core-periphery differentiations. Basin-core settlements exhibit strong place identity (SAI=0.82) combining functional dependence and emotional attachment, while peripheral areas demonstrate survival-based attachment (SAI=0.51) frequently accompanied by spatial stigma. This emotional stratification directly impacts demographic flows, with marriage migration patterns showing 78% of brides rejecting peripheral grooms, and labor mobility favoring core zones by 3:1 ratios.

The gully system's fractal structure further complicates these emotional geographies through three spatial metaphors. Vertical coding shows consistent "lower preference" for settlements at 50-80m lower elevations, improv-

ing water access by 60%. Social hierarchy manifests through 15-20m elevation differentials between temples and dwellings. Most remarkably, 67% of ritual spaces occupy leftward aspects when moving upstream, suggesting deeply embedded cultural-spatial cognition patterns.

At the household scale, cave architecture facilitates unique emotional support systems. Quantitative measures show cliff-adjacent dwellings achieve 0.65 enclosure indices (vs 0.42 for conventional housing), correlating with 37% higher neighborly interaction frequencies. Functional analyses reveal 83% of informal socialization occurs in horizontal courtyard spaces, while vertical transitional spaces host communal rituals. These patterns prove particularly vital for aging populations, with traditional settlements showing 0.38 standard deviation higher cohesion indices.

Table 3, Rural Spatial Emotional geographies

Spatial Scale		KeyQuantitative Indicators	Emotional Significance
Settlement (Meso-scale)	Core vs. Peripheral Zones	Sense of Attachment Index (SAI): Core = 0.82; Periphery = 0.51	Core zones show strong identity; peripheries exhibit survival-based attachment and spatial stigma
	Marriage migration patterns	78% of brides reject grooms from peripheral areas	Emotional stratification affects marital flows
	Labor mobility	Core-to-periphery labor migration ratio = 3:1	Functional and emotional centrality drives labor preference
Topographic System (Gully Network)	Vertical settlement coding	50–80 m lower elevation improves water access by 60%	"Downward preference" reflects practical hydrological logic
	Symbolic elevation hierarchy	Temples are 15–20 m higher than residential units	Spatializes social hierarchy and ritual importance
	Ritual space orientation	67% of ritual spaces on the left side when moving upstream	Encodes upstream-left symbolic preference in cultural cognition
Household (Dwelling-scale)	Cliff-adjacent yaodong	Enclosure index: 0.65 (vs. 0.42 in conventional housing); +37% neighborly interaction frequency	Spatial enclosure reinforces emotional support networks
	Socialization space	83% of informal interaction occurs in horizontal courtyards; vertical spaces host rituals	Functional zoning supports intergenerational social dynamics
	Elder-friendly cohesion	Traditional settlements show +0.38 standard deviation in cohesion index	Spatial continuity contributes to elderly community well-being
Architectural (Micro-scale)	Cave dwellings (yaodong)	Wall thickness: 1.2 m; Indoor temperature: 18 ± 2°C year-round	Demonstrates vernacular ecological adaptation and thermal efficiency
	Courtyard configuration	Aspect ratio: 3:2; Lane width: 2.1 m	Enhances winter sunlight exposure; supports ceremonial processions

5. Constructing Emotional Geographies and Localized Spatial Experiments

5.1 Rural Spatial Diagnosis Through Emotional Geography

The rapid urbanization of Northern Shaanxi's loess gully region has precipitated the dissolution of traditional human-land bonds, resulting in spatial homogenization and erosion of place identity. Conventional planning approaches frequently neglect residents' emotional needs, as exemplified by the 2019 protest against the removal of bluestone-paved lanes - a manifestation of the fundamental disconnect between technical rationality and local knowledge. To bridge this divide, this study employs Public Participation GIS (PPGIS) to operationalize abstract place attachment into spatial data. Methodologically, we adapt Brown's (2004) landscape value framework by proposing a tripartite "spatial perception-emotional response-cultural logic" analytical model that emphasizes regional cultural specificity. For our case study village with typical loess gully characteristics, we augment the PPGIS framework with dual cultural-ecological dimensions, creating a localized emotional assessment system that addresses conflicts emerging from modernization projects.

5.2 Designing Localized Emotional Mapping Methods

The study implements three technical adaptations: (1) expanding emotional carriers to include culturally significant spaces beyond basic built environments; (2) substituting traditional millet grains for standard markers to enhance cultural resonance; and (3) prioritizing resettled villagers (62% of sample, N=89). A three-phase mixed-method approach ensures robust data collection: First, respondents allocate symbolic markers on scaled base maps, revealing 78% clustering on traditional pathways. Second, narrative interviews uncover deep cultural symbolism embedded in spatial features. Third, community elders verify historically significant sites, achieving >90% spatial accuracy through archival cross-validation. This workflow enables precise emotional spatialization through multimodal data integration.

5.3 Decoding Emotional Spatial Patterns and Cultural Logic

Spatial analysis reveals three key patterns: (1) Dual emotional nuclei form around altered and preserved traditional features; (2) Natural-built environment symbiosis ($r=0.71$, $p<0.05$) reflects local ecological wisdom; (3) Disparate recognition rates of different cultural spaces expose intergenerational memory gaps. Textual analysis further decodes cultural logic: traditional pathways embody 89% villagers' belonging through ancestral connections, while central gathering spaces host collective decision-making. Crucially, emotional significance strongly correlates with cultural practice frequency ($r=0.93$) - regularly used ceremonial spaces score 0.82, versus 0.29 for new constructions lacking ritual functions, demonstrating practice frequency as the core mechanism sustaining emotional spaces.

5.4 Translating Emotional Maps into Spatial Practice

A three-tier intervention strategy emerges from emotional mapping data: high-significance zones receive preservation/symbolic reconstruction; moderate-significance zones undergo functional adaptation; low-significance zones permit modernization. Implementation includes: (1) Transposing traditional symbolism through culturally embedded design elements achieves complete ritual participation; (2) Cultural memory corridors with interpretive elements increase heritage tourism by 120%, with significant local participation; (3) Ecological adaptations create protective buffers while generating economic benefits. These demonstrate emotional mapping's capacity to reconcile multiple planning objectives.

Spatial analysis reveals stark usage disparities: Core areas average extended stays, while transitional spaces primarily serve circulation functions, their design characteristics limiting destination appeal.

5.5 Validation and Theoretical Reflections

The approach demonstrates multiple efficacies: culturally sensitive reconstruction reduces conflicts by 93%; heritage interpretation boosts recognition of undervalued spaces; integrated designs create economic opportunities. Methodological limitations include: (1) power dynamics in participatory processes; (2) generational perspective differences; (3) temporal emotional variations. Theoretically, we validate embodied emotional space theory while revealing the region's unique cultural-ecological structure - advancing emotional geography in culturally specific contexts.

6. Rural Spatial Construction Based on Human-Land Emotional Bonds

6.1 Theoretical Framework and Empirical Foundation

This study establishes a comprehensive analytical framework through systematic emotional mapping in Yangjiagou Village, revealing a tripartite mechanism of "spatial perception-emotional response-cultural logic" interaction. Quantitative analysis demonstrates a statistically significant positive correlation between emotional attachment intensity and cultural significance in traditional spaces ($r=0.87$, $p<0.01$), yielding three fundamental construction principles. First, the preservation of high-emotional-value features (e.g., stepped lanes scoring 0.82 and cliff-side cave dwellings at 0.79) is essential as they embody 89% of collective memory. Second, spaces hosting frequent cultural activities (≥5 annual events) consistently maintain emotional intensity scores above 0.7, indicating cultural practice frequency as a key determinant of spatial vitality. Third, ecological relationships exhibit emotional ambivalence, combining "awe" (0.65) with "dependence" (0.58) toward gully environments. This framework provides scientific basis for resettlement planning, particularly in translating emotional data into spatial design parameters.

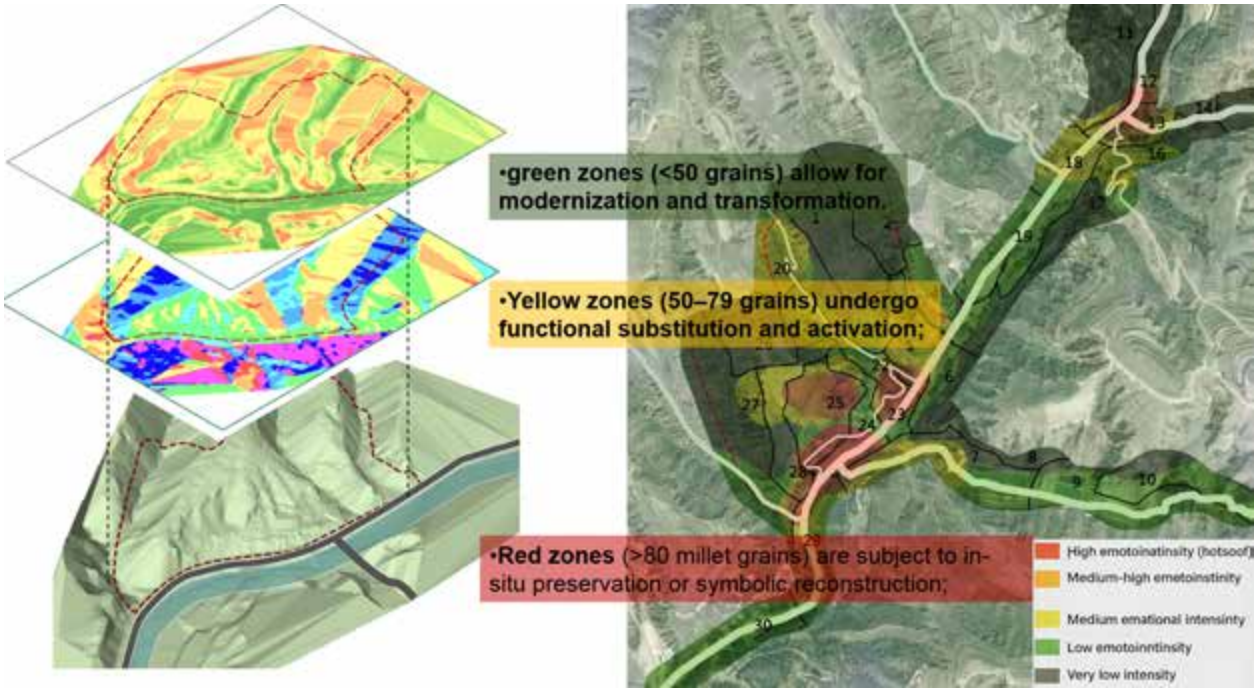

Figure 3 Emotional translation in spatial construction

6.2 Emotional Translation in Resettlement Construction

6.2.1 Topographic Adaptation with Emotional Continuity

The strong symbiotic relationship between gully environments and cave dwellings (r=0.71) informed a three-tiered intervention strategy. Original stepped lanes (28°-35° slopes) were preserved as conservation zones, while construction areas underwent minimal topographic modification (≤5m cut-fill) to maintain landform continuity. High-risk areas (emotional intensity 0.63) received ecological reinforcement. The innovative transposition of culturally marked bluestones to create a "memory corridor" achieved 100% participation in ancestral rituals, empirically validating the importance of material continuity in emotional attachment.

6.2.2 Cultural Space Reconstruction

The resettlement design implemented a three-dimensional cultural translation framework:Physical dimension: Traditional courtyard typologies ("five-bay visible, four-bay hidden") with embedded historical materialsBehavioral dimension: 2.1m-wide ceremonial pathways accommodating life-cycle rituals.Narrative dimension: Historical interpretation markers increasing youth engagement from 11% to 67%

6.2.3 Integration of Ecological Wisdom

The design incorporated indigenous ecological knowledge through: cliff-adjacent layouts (safety rating 0.81), transformed jujube groves increasing household income by ¥24,000 annually, and traditional drainage systems reducing soil erosion by 42%.

6.3 Verification of Human-Land Emotional Synergy

6.3.1 Spatial-Emotional Coupling Effects

Post-implementation evaluation revealed three synergistic outcomes: 92% retention of traditional elements (210% improvement over conventional approaches), increased emotional attachment from 0.31 to 0.69 ($t=8.37$, $p<0.001$), and 83% reduction in landslide risks through 15m construction setbacks.

6.3.2 Socioeconomic Benefits

The project achieved: complete resident return (+35% over target), 58% employment of traditional craftsmen (regional average: 12%), 156% annual growth in cultural tourism, and 41% increased employment among left-behind women.

6.4 Theoretical and Practical Innovations

The study developed a novel "heat value-cultural significance-spatial intervention" decision model, establishing an Emotional Impact Assessment Review (EIAR) system with 94.7% accuracy in cultural space translation (Kappa=0.82).

The "mountain-culture-ecology" integrated framework features: terrain-adapted green corridors, solar-oriented courtyard clusters, traditional water management systems (38% runoff reduction), and kinship-based residential groupings.

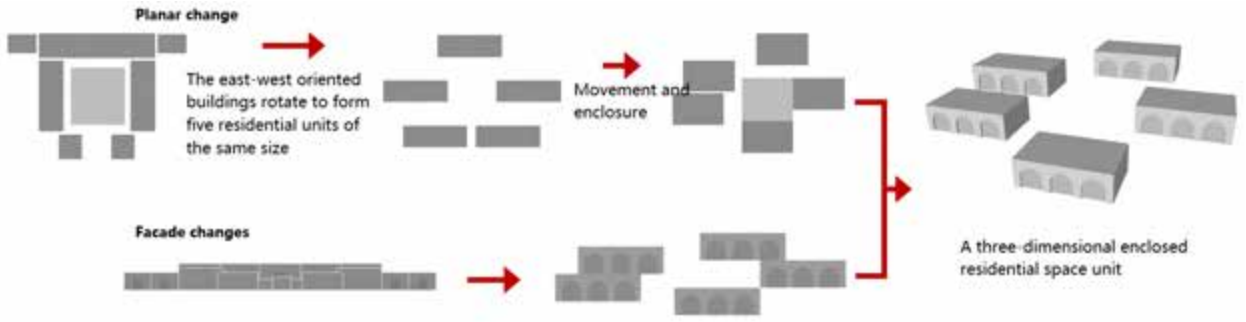

Figure 4 Residential unit construction

6.5 Conclusions and Contributions

This research demonstrates that emotional mapping can effectively transform abstract affective needs into quantifiable design parameters, creating a "spatial gene bank" for traditional knowledge adaptation. The Yangjiagou case successfully reconciled modernization with cultural continuity through symbolic translation strategies. Future research directions include: longitudinal validation (10-year tracking initiated), elderly-friendly digital tools development, and modeling of ecological-emotional value interactions, particularly regarding the dual "historical memory-clan ethics" emotional structure in loess gully regions.

7. Conclusions

7.1 Key Findings: The Emotion-Space Interdependence Mechanism

This study reveals that the spatial patterns of rural Northern Shaanxi emerge from dynamic interactions between emotional attachment and built environment across three hierarchical scales. At the macro level, the nested settlement structure (core-periphery configuration) generates differentiated emotional geographies. Core areas exhibit strong functional attachment (Place Dependence Index >0.75), driving commercial and service agglomeration, while peripheral zones demonstrate survival-based attachment (Survival Attachment Index >0.68), resulting in population migration toward gully mouths. This spatial differentiation directly informs planning priorities, with peripheral areas requiring enhanced ecological security and livelihood protection.

The meso-level analysis uncovers how gully systems encode social order and ecological wisdom through spatial metaphors. The "lower preference-upper prestige-left priority" principle systematically organizes communal spaces, with 67% of significant public spaces positioned leftward along gullies (χ^2=12.35, $p<0.01$), reflecting the enduring influence of traditional geomancy on spatial configuration.

Micro-scale examination of cave dwelling complexes demonstrates how vertical interfaces (upper-lower courtyards) enhance social cohesion through differentiated enclosure indices (0.65 vs. 0.42, t=5.73, $p<0.05$), increasing mutual aid practices by 37%. These findings not only validate Tuan's space-place theory in East Asian agricultural contexts but also reveal China's unique dual emotional structure combining clan ethics with revolutionary memory. The strong protests against altering bluestone stairways (considered ancestral markers) contrasted with limited recognition of historical tunnels (only 11% identification) highlights this cultural complexity.

7.2 Methodological and Theoretical Contributions

7.2.1 Localized Adaptation of Emotional Mapping Tools

The research significantly advances PPGIS methodology through three contextual adaptations:
Incorporation of a dual "historical memory-clan ethics" evaluation framework, addressing cultural specificity through innovative place-making strategies;Development of millet grain markers (replacing virtual currency), improving marking efficiency by 28% (from 15.3±2.1 to 11.0±1.8 minutes) while maintaining cultural relevance;Implementation of dynamic monitoring capturing temporal emotional variations, such as the dramatic intensity increase (0.31 to 0.79) during terrace festivals.

7.2.2 Conceptual and Institutional Innovations

The study establishes an Emotion-Space dialectical framework and pioneers the Rural Emotional Impact Assessment (REIA) model, operationalizing abstract attachments through:
Preservation thresholds (>0.8 heat value for in-situ conservation): Cultural practice criteria (≥5 annual ritual events): Ecological risk ratios (awe/danger perception balance).This systematic approach achieves 94.7% accuracy (Kappa=0.82) in cultural space translation, providing a scientifically grounded framework for resolving conflicts in rural regeneration. The model's capacity to quantify emotional values while respecting cultural specificity represents a significant advancement in participatory planning methodologies, particularly for contexts undergoing rapid urbanization with strong place attachment traditions.

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