

Cultural Translation Strategies of the Western Xia Tombs from the Perspective of World Heritage: From the Protection of Earthly Sites to the Construction of a Digital Cultural Tourism Ecosystem

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Abstract: This research is based on the dual propositions of world cultural heritage protection and cultural inheritance in the digital age, using the Western Xia Mausoleum as the research subject, to propose a dynamic framework of "cultural translation." Through the three-dimensional collaboration of material heritage protection, digital technology empowerment, and cultural value reconstruction, a dual pathway is constructed from the protection of the earthen site itself to a digital cultural tourism ecosystem. Theoretically, this study deepens the integrated academic paradigm of "protection-research-utilization" of cultural heritage; practically, it provides a replicable digital solution for the revitalization of earthen sites. The research confirms that contemporary translation of cultural heritage must pivot on technology, utilize scenes as carriers, and co-create value as its core, establishing a dynamically balanced digital cultural tourism ecosystem, which holds significant reference value for the protection and revitalization of similar cultural heritage globally.

Keywords: World Heritage; Xi Xia Tombs; Cultural Translation; Soil Site Preservation; Digital Cultural Tourism Ecology

1. Introduction

In the context of the global cultural diversity protection and the integration with digital civilization, the inheritance and innovation of world cultural heritage have become focal points of common concern for the international academic and industrial communities. The Western Xia Tombs, located on the eastern foothills of the Helan Mountains in Yinchuan City, Ningxia Hui Autonomous Region, are the royal burial grounds of the Western Xia Dynasty (1038-1227 AD). They were successfully inscribed on the UNESCO World Heritage List on July 11, 2025, becoming China's 60th World Cultural Heritage site. ^[1]As the largest, most prestigious, and best-preserved archaeological site from the Western Xia Dynasty in the 11th to 13th centuries, the burial area covers approximately 50 square kilometers and includes 9 imperial tombs, 271 accompanying burial sites, one large architectural ruin, and 32 flood control engineering remains. Its layout follows the Tang and Song dynasty burial systems, incorporating Buddhist elements and the characteristics of the Tangut people, resulting in a unique '凸' shaped plan, often referred to as the 'Eastern Pyramid.' ^[2]Its distinctive earthen site forms and the diverse cultural genes of the Western Xia, Central Plains, and the Silk Road not only provide a typical example for cultural heritage protection, but also face challenges in balancing 'preservation' and 'utilization' due to issues such as material fragility, fragmented information, and the singularity of revitalization pathways. The question of how to achieve value transformation of cultural heritage from physical spaces to digital ecologies through technological empowerment and theoretical innovation has become a core proposition in the global field of earthen site protection. This study centers on 'cultural translation' and proposes a three-dimensional collaborative framework for the protection of tangible heritage, empowerment through digital technology, and reconstruction of cultural value. By deepening the understanding of the functional attributes of digital media from a new perspective, it aims to facilitate the digital dissemination of intangible cultural heritage and provide clearer ideas for its creative transformation and innovative development in modern economic society. ^[3]The Western Xia Tombs are not only a cultural treasure of the Chinese nation but also a shared historical

memory of all humanity. Their successful application for heritage status further highlights the unique value of Chinese civilization in the history of world civilization.

2. Construction of the 'Cultural Translation' Model for the Tomb of the Western Xia and Symbol Interpretation

British anthropologist Bronisław Malinowski emphasized the functional role of culture. He pointed out: "Culture is a set of tools and customs—habits of the body or mind—that directly or indirectly satisfy human needs."^[4] Mr. Fei Xiaotong, as a practitioner of Malinowski's cultural functionalism, proposed that "comparative cultural studies cannot exclude China, just as the great achievement of world culture cannot exclude China."^[5] The theoretical framework employed in this article is the three-dimensional theory of culture proposed by scholar Leong: the material level, behavioral level, and non-material level.^[6] The material level refers to the forms in which humans utilize materials; the behavioral level represents the institutional and customary spiritual forms expressed through material carriers; the non-material level mainly refers to the human concepts and consciousness contained within philosophical thought. This is largely consistent with the four carriers of culture summarized in Malinowski's cultural theory: material equipment, spirit, language, and social organization.^[7] "Translating" is a term in the field of linguistics, referring to a special translational act in which one language is translated into another under the influence of a mediating language.^[8] This article focuses on the Western Xia Mausoleum and constructs a cultural translation model based on the three levels of cultural theory. According to Donald Norman's three levels of emotional design theory, public perception of products is divided into three levels: visceral, behavioral, and reflective.^[9] This study analyzes the positive impact of cultural translation on the communicative function of digital media products from these three perspectives. The essence of the cultural translation of the Western Xia Mausoleum is a dynamic transformation process from material remains to cultural value, which can be broken down into three dimensions: the material level focuses on the core protection of the archaeological site, achieved through technological means such as digital archiving, enhancing structural stability and addressing damage; the behavioral level empowers cultural interpretation through technology, typified by the VR technology used in the Western Xia Museum to recreate the construction scene of the tomb tower, allowing the broken stelae to "speak"; the philosophical level aims for the ultimate goal of semantic connection and value reconstruction of multicultural genes, substantiating the unique position of the Western Xia within the diverse unity of Chinese civilization through digital libraries and models of the site.

The symbolic carriers of the material layer, centered around architectural components and artifacts, vividly showcase the fusion of technologies from multiple civilizations. The glazed eagle-head ridge of 152 centimeters in size, produced using Central Plains lead-glazing techniques, transcends the regulations of the Song Dynasty's "Yingzao Fashi" and features exaggerated transformations of dragon head tusks and fish tail dorsal fins to echo the Tangut people's reverence for ferocious beast totems. The 188-kilogram gilded bronze bull, cast using the lost-wax method, bears plow marks inscribed on its body that align with the provisions regarding "official cattle plowing fields" found in the Xi Xia legal code, the "Tiansheng Lüyin," serving as material evidence of the transition in agrarian and pastoral economies. The behavioral layer exhibits cultural practical logic through construction rituals and burial protocol. The layout of the cemetery, built against the Helan Mountain in a "back mountain, facing water" configuration, adheres strictly to the principles of geomancy from the Central Plains in its use of soil levels for shadow measurement. However, the discovered sacrificial pits and sheep bone divinations at the offering hall ruins retain remnants of Tangut shamanistic customs involving "burning wood to communicate with the heavens". The bilingual inscriptions carry deeper significance—the inscriptions in Xixia script assert the dynastic legitimacy through seal script, while the entries in Chinese record "craftsman Gao Shichang," verifying the symbiotic mechanism of technical transmission and symbolic translation in the

collaboration between Han and Xixia artisans. The philosophical layer's symbolic system points to the creative integration of cosmology and power ethics. Within the spatial symbolic system, the axial layout of the cemetery resonates with the order depicted in the "I Ching" where "the sage faces south to listen to the world," but the pyramid structure of the stupa located at the top of the central axis embodies the primal cosmological view of the Tangut as "the divine centered among them." On a deeper cultural logic level, the Xixia tombs realize a "three-tiered recoding" through the technological grafting of the material layer, the ritual juxtaposition of the behavioral layer, and the symbolic resetting of the philosophical layer, ultimately forging a dynastic ideology characterized by the harmonious synthesis of multiple civilizations and highlighting the inclusive essence of Chinese civilization that is "harmony without uniformity." This three-dimensional symbolic system offers historical evidence at the levels of "tool—technique—way" for the pluralistic unity of the Chinese nation.^[10]

3. Translation Strategies of the Xixia Tomb Culture

3.1 Protection of Earthen Sites: A Strategy for 'Ontological Translation' Empowered by Technology

The preservation of the rammed earth body of the Xixia Tombs is achieved through the integration of multidisciplinary technologies, resulting in the 'stability translation' of fragile materials. The technology developed by the Dunhuang Research Institute, utilizing 'bamboo anchorage with high-modulus potassium silicate solution spraying', can replace traditional steel components with flexible materials, creating a transparent 'armor' through chemical composition adjustments to effectively resist wind erosion. In addressing the issues of salt and alkali erosion, the exploration of microbial mineralization reinforcement technology aims to cultivate 'biological crusts' to enhance the weathering resistance of the rammed earth surface, thereby achieving ecological restoration. The HIST team has also made new discoveries of 74 flood control engineering sites through remote sensing archaeology and hydrological simulations, which include 65 levees, 5 flood dams, and 4 diversion channels, totaling a length of 7,715 meters. By simulating extreme precipitation hydrological processes, the scientific nature of ancient flood control systems is validated, and these engineering works are incorporated into the preservation of heritage entities, forming a disaster prevention and control system that utilizes 'ancient wisdom today.' Furthermore, utilizing multispectral imaging and 3D printing technologies, damaged components are virtually assembled, such as the recombination of 276 fragments of Xixia inscriptions to create a translated version of the 'Classic of Filial Piety' and physical replicas to avoid direct intervention with the fragile body. A deep learning model is constructed to develop the 'Helan Mountain Alluvial Fan Index (HALF)', quantifying natural risks and providing data support for protection decision-making.

3.2 Digital Cultural Tourism Ecosystem: Immersive 'Experience Translation' Strategy

The concept of "mutual existence of reality and illusion" is used to build a digital cultural tourism matrix, transforming static heritage sites into participatory cultural narrative spaces. In the immersive technology layer, a dual-track system of "VR Tomb Exploration and AR Cemetery Restoration" can be developed—visitors wearing headsets can follow a virtual "Miaoyin Bird" through the Sacred Way, interacting to decode Tangut symbols in the XR project "Seeking the Western Xia"; the digital experience center will interpret the Tangut stone inscriptions using AI, transforming the "heavenly script" into an interactive, living text. In the industrial collaboration layer, a film and tourism integration plan will be launched, centered around the adaptation of the historical novel "The White Seal" into film, utilizing AI generation technology to restore the markets of Xinqingfu, linking it with on-site filming of the Helan Mountain scenery. The creation and development phase will achieve the "symbol to product" translation, with the Chiwen ice cream serving as an "edible symbol" to spark social media dissemination, resulting in the formation of a consumer-grade cultural carrier with 760 derivative products such as bookmarks featuring Summer

state sword characters and fridge magnets styled after the Lishi stele. In the educational dissemination layer, a dual-path of "research and study - gamification" will be established. The design of the top fifty national research study routes includes practical courses like wood movable type printing and pottery shard assembly, allowing young people to understand cultural integration through hands-on experiences; meanwhile, the "Tangut Code Decoding" AR game will attract the post-2000 generation to complete cultural translation through social sharing, making the cemetery an open classroom across generations.

4. Summary

The 'cultural translation' strategy of the Xixia Tomb employs a dual-track approach to achieve the regeneration of world heritage value. The protection layer of the earthen site is constructed through technological translation, activation of ancient systems, and digital persistence, creating a sustainable guardianship paradigm for fragile rammed earth. The digital cultural tourism layer leverages immersive experiences, industrial linkage, and educational activation to complete the contemporary narrative of cultural genes. This practice not only balances the contradictions between protection and utilization through 'symbiosis of the virtual and the real,' but also innovates from the interpretation of 'authenticity' in the Nara Document to 'heritagization of disaster risk management,' further highlighting the inclusive wisdom of Chinese civilization characterized by 'harmony in diversity.' When the rammed earth site narrates the intertwining history of Silk Road civilization to the world through a digital ecosystem, the Xixia Tomb has become an eternal witness to the diverse yet unified process of the Chinese nation, providing a Chinese solution of 'technological restoration - value reconstruction' for the multi-ethnic heritage of the Belt and Road Initiative.

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