

A Study on the Culture and Design of Mongolian Traditional Furniture Decoration

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Abstract: Mongolian traditional furniture decorative patterns, as an important material cultural heritage of grassland civilization, reflect the historical accumulation of nomadic life, ethnic integration, and religious beliefs. This article reviews relevant research using the framework of “technological path — cultural logic — design transformation”, finding that at the technological level, digital acquisition and image recognition drive data analysis; at the cultural level, symbolic translation and evolution mechanisms deepen the understanding of generative logic; and at the design level, the focus has shifted from pattern borrowing to innovative expression through the extraction and reconstruction of cultural genes. However, existing research still suffers from problems such as a disconnect between technology and culture, insufficient depth of interpretation, and an imperfect transformation mechanism, and its contemporary application is also relatively weak. Future research should strengthen interdisciplinary integration and construct a collaborative system of “technological analysis — cultural interpretation — design innovation” to promote the deepening of theory and the living transmission of this field.

Keywords: Mongolian furniture; decorative patterns; digital restoration; cultural context; design transformation

1. Introduction

Mongolian traditional furniture is a material civilization achievement created by grassland herders in the long history. Its decorative art embodies the practical wisdom of nomadic production mode, the faith baptism of Tibetan Buddhism, and the aesthetic integration formed in the long-term coexistence with Han, Tibetan and other ethnic groups. Decoration refers to adding patterns and colors to the surface of objects to achieve the purpose of beautification. It plays an important role in human daily life and aesthetics [1].

Furniture and decoration carry cultural memories, but they face the risk of disappearance and discontinuity in the context of settlement and lifestyle transformation. Existing research is scattered across the fields of art, design, and heritage conservation, mainly forming three paths: technology, culture, and design, focusing on digital preservation, cultural interpretation, and design transformation respectively, but lacking overall integration and synergy. This article uses the framework of “technological path—cultural logic—design transformation” to sort out and reflect on relevant research.

2. Technological Approach: From Physical Preservation to Digital Reconstruction and Form Deduction

2.1 Digital Preservation and Restoration: Foundational Technology Construction

Mongolian traditional furniture, primarily constructed of wood and decorated with painted designs, is prone to damage from long-term use and relocation, placing significant pressure on its preservation. Li & Wang (2015) proposed a digital restoration process based on vector software, converting incomplete patterns into editable graphics, providing a foundation for database construction; however, its ability to improve image quality and handle the layering of complex patterns remains limited. Bai & Zhang (2018) categorized museum furniture patterns, summarizing thematic types and compositional rules, providing a standardized reference for digitization; however, their sample size is relatively limited and the technical implementation depth is insufficient.

Internationally, a digital system centered on 3D scanning, VR reconstruction, and material simulation has been established, and Buckley (2005) has applied it to the study of Tibetan furniture. In contrast, domestic research still mainly focuses on two-dimensional vectorization, and there is still a significant gap in automated processing and immersive interactive expression (Li et al., 2025).

2.2 Feature Extraction and Morphological Deduction: Systematic Design Transformation

Digital preservation is insufficient to solve the problem of modern transformation of traditional decoration, and research is gradually shifting towards feature recognition and form generation. Meng & Guo (2023) constructed a feature fac-

tor model through AHP to quantify and analyze form, pattern and symbolic meaning, and combined it with shape grammar to realize reconstructed design, promoting the transformation from qualitative to quantitative and systematic integration.

However, this method still suffers from limitations such as the subjectivity of expert weighting, the mechanical nature of shape grammar, and the limited number of case studies, resulting in insufficient innovation and universality (Stiny, 1980). In the future, user-perceived data can be introduced to optimize weights and combined with generative artificial intelligence to enhance the flexibility and creativity of design transformation (Meng & Guo, 2023).

3. Cultural Logic: From Symbol Analysis to Symbolic Origins and Contextual Changes

3.1 Symbolic Meaning of Symbols and Cultural Integration

Tibetan Buddhism in Mongolian areas is a form of Buddhist art with Tibetan characteristics . It interacts with Mongolian culture and promotes the development of Mongolian culture [2] . Decorative patterns are first and foremost cultural symbols. Fang (2017) pointed out that patterns such as the “Eight Auspicious Symbols” of Tibetan Buddhism influenced Mongolian furniture decoration, but in the process of spreading, they underwent simplification of form, adjustment of color and reorganization of composition, and gradually integrated into local aesthetics, reflecting the integration mechanism of Mongolian and Tibetan cultures. Its core lies in the fact that the spread of patterns is not a one-way influence, but a dynamic process of “trigger-translation-integration”.

Mongolian traditional furniture patterns express the grassland culture’s reflection on human spiritual culture from a unique artistic perspective [3] . Li et al. (2025) showed through comparative research that Tibetan furniture decoration is dominated by Buddhist art, while Mongolian furniture presents a pattern of multicultural integration. Although there is Tibetan influence, it has been transformed in the process of dissemination: Tibetans prefer high-purity colors and dense decorations, while Mongolians tend to use harmonious colors and simple styles, reflecting the filtering and reconstruction mechanism of local aesthetics.

3.2 Diachronic Changes and Contextual Analysis

Before Buddhism was introduced to Tibet, the decorative themes and patterns of traditional Tibetan furniture were mainly natural forms and Bon decorations [4] . Decorative culture has always changed with the times. Zhang (2024) pointed out that Mongolian furniture decoration underwent a systematic transformation around 1947, starting from “cultural context”: from painted to CNC technology, from religious and natural themes to secular humanities, and from manual to mechanized production, reflecting the profound influence of social reform and technological progress. Wei Jinglin’s research also shows that furniture decoration gradually moved from nomadic roughness to refinement and secularization from the Qing Dynasty to the Republic of China, and settled life promoted the transformation of craftsmanship.

However, existing research often remains at the level of macro-narratives, with an unclear definition of “cultural context” and insufficient explanation of the micro-mechanisms by which policy, technology, and economic factors specifically affect artisan practices and pattern generation (Zhang, 2024). International research is mostly placed within the framework of globalization and modernity, combined with postcolonial and consumerist perspectives, resulting in more diverse theories; while domestic research tends to focus on explanations within local contexts, and there is still room for expansion in the analysis of the correlation between cross-regional and global factors.

4. Design Transformation: From Element Borrowing to System Innovation and Value Reshaping

4.1 From Pattern Extraction to Design Innovation

The transformation of traditional decoration into modern design mainly goes through two stages: superficial borrowing, which is the direct copying and decorative application of patterns, which is simple but easily loses its modern function; and deep translation, which extracts “characteristic factors” such as structural logic, composition rules and core motifs, and reconstructs new forms with the help of shape grammar, so as to achieve cultural continuity and modern adaptation (Meng & Guo, 2023).

Li and Wang (2015)’s digital restoration provides a material basis for design, but its application is mostly limited to cultural and creative or conceptual design, with insufficient integration into daily life and limited attention to user experience and sustainability. Overseas, there is a tendency towards high-end customization and art collection, emphasizing authenticity and branding; while in China, the focus is on inheritance and popularization, but challenges remain in large-scale production

and market adaptation, and the balance between cultural depth and market breadth needs to be resolved.

4.2 Integration of Multiple Values and Contemporary Reshaping

Throughout the long course of history, the Mongolian people have had frequent exchanges with neighboring ethnic groups. The integration of ethnic groups is like a continuous cultural bond, which has continuously nurtured and innovated the aesthetic concept of traditional Mongolian storage furniture [5]. A deeper application lies in integrating the cultural, emotional and practical value of Mongolian furniture, so that it can be reborn in contemporary life. Zhang (2024) pointed out that design needs to respond to the context of the times and understand the current lifestyle and aesthetic changes; Fang (2017) emphasized that inheritance should avoid superficial imitation and focus on refining the cultural essence and achieving innovative transformation.

Therefore, applied research should expand from patterns to systemic dimensions such as materials and processes (e.g., combining traditional painting with CNC machining), structural innovation (adapting to the modular design of modern housing), and functional expansion (e.g., integration with smart homes). However, existing research still focuses on visual pattern innovation and lacks sufficient exploration of deeper transformation paths such as materials, processes, and structures.

5. Critical Commentary

With the transformation of lifestyles and the updating of aesthetic structures, there is still a lack of systematic discussion on how traditional furniture decoration can be re-contextualized in contemporary spaces. Rational thinking is a way of thinking that can observe, judge, compare, analyze, synthesize, abstract and generalize things or problems. It is a way of thinking based on evidence and logical reasoning [6]. Therefore, future research needs to rebuild the synergistic relationship of “technology-culture-design” from an interdisciplinary perspective, promote the transformation from segmented research to holistic knowledge production, and realize the theoretical deepening and contemporary translation of the study of Mongolian traditional furniture decoration.

5.1 Fragmented Perspectives and Lack of Integration

While current research on traditional Mongolian furniture decoration has formed a relatively independent system in terms of technology, culture, and design, it exhibits a fragmented development pattern and lacks coordination. Technological research tends to focus on digitization and form reconstruction, emphasizing quantification while weakening cultural semantics, resulting in findings that merely represent the form.

Cultural interpretation focuses on symbols and historical analysis, but it is disconnected from technology and design, making it difficult to translate into design strategies. Although design transformation has shifted from borrowing elements to system reconstruction, it is still prone to falling into the problem of form taking precedence over meaning due to the lack of unity between interpretation and technology.

5.2 The Risk of “Othering” in Cultural Interpretation

Although the study emphasizes the local context, it still exhibits a tendency toward “othering” by using external theories for objectification and symbolization analysis, which weakens the expression of cultural subjectivity and complexity.

Mongolian furniture originated very early and has a long history, but due to its nomadic lifestyle, there are not many types of Mongolian furniture, and very few have been preserved to this day [7]. Existing research still does not pay enough attention to the “user’s perspective”, rarely enters into the daily life practices of Mongolian people, and lacks dynamic examination of how furniture decoration is understood, reproduced and reinterpreted in real use scenarios. This research path, which is mainly based on text and image data, makes cultural interpretation more confined to the researcher’s “interpretive system”, and fails to fully reflect the cultural subject’s own cognitive mode and meaning generation mechanism.

5.3 Methodological Homogenization and Regional Limitations

Mongolian traditional storage furniture has distinct regional cultural characteristics. Regional culture is not only a symbol of China’s excellent traditional culture, but also a key to enhancing cultural confidence [8]. In the process of deepening the research on Mongolian traditional furniture decoration, the problem of methodological homogenization has gradually emerged. Existing research is mostly focused on fixed paths such as digital acquisition, image analysis, pattern classification and feature factor extraction. Although this has improved standardization and repeatability, it has also compressed the space for methodological innovation, making the research tend to be patterned. The mainstream is still based on typology, semiotics and structured analysis. There is insufficient introduction of interdisciplinary methods such as field anthropology, participatory design and generative computing, which limits the ability to explain complex cultural phenomena.

Meanwhile, the spatial distribution of the research samples is uneven, concentrated in central Inner Mongolia and some

museum systems, with insufficient attention paid to peripheral areas such as Hulunbuir and Alashan, which weakens the overall representativeness. In addition, the scarcity of material data before the Qing Dynasty makes it difficult to establish a time-dimensional genealogy, so the evolution of decoration relies more on the inference of local samples and lacks systematic historical evidence.

6. Conclusion

In recent years, research on traditional Mongolian furniture decoration has gradually shifted from image collation to a comprehensive exploration integrating technology, culture, and design, forming a multi-dimensional pattern supported by digitalization, centered on symbol interpretation, and extended by design transformation. However, it remains in a fragmented development stage, lacking a collaborative mechanism among technology, culture, and design approaches, and exhibiting insufficient methodological integration. Furthermore, it falls short in the depth of cultural interpretation and its response to the contemporary context, with a tension existing between theoretical explanatory power and practical transformation. Overall, this field is moving from fragmented research to a stage of system construction and still has considerable room for development.

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