

Research on Palace Museum Cultural Creative Product Design from the Perspective of Spatial Triad Theory

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Abstract

With the continuous enhancement of China's cultural soft power, the cultural and creative (cultural-creative) industry has become a crucial pathway for disseminating the national image. The Palace Museum's cultural-creative products, as a representative case, play a distinctive role in international cultural communication. However, current research predominantly focuses on visual symbols and marketing strategies, lacking a deconstruction of its cultural communication logic from the perspective of social space. Based on Henri Lefebvre's spatial triad theory, this paper constructs an analytical framework of "spatial practice—representations of space—representational spaces". Through case studies and data mining of Taobao customer reviews, it explores the spatial attributes of the Palace Museum's cultural-creative products. The research indicates that these products achieve the modern translation of traditional culture through three dimensions: daily usage scenarios, cultural narratives, and emotional identification. Furthermore, it proposes cultural-creative design strategies centered on "form—meaning—emotion".

Keywords

Spatial Triad; Palace Museum Cultural-Creative Products; Cultural Communication; National Image; User Review Analysis

1. Introduction

In recent years, with the proposal of the "cultural confidence" strategy, China's cultural-creative industry has entered a phase of rapid development. According to data from the 2022 China Cultural and Related Industries Statistical Yearbook, the output value of cultural-creative products has been rising annually, particularly in sectors such as museum cultural-creative products, intangible cultural heritage (ICH) cultural-creative products, and local specialty products, forming a diversified and multi-layered development landscape. Leveraging its profound cultural heritage and innovative design concepts, the Palace Museum has become a benchmark in the cultural-creative industry. Its product series, such as the "A Thousand Li of Rivers

and Mountains" stationery and the "Imperial Cats" collection, have not only sold well in the domestic market but also garnered significant attention in international communication.

Within the context of globalization, cultural communication is no longer confined to linguistic media. Multimodal forms such as physical design, visual imagery, and interactive experiences have become vital channels for conveying cultural meanings. As national cultural communication shifts from singular linguistic narratives towards visual symbols and physical design, cultural-creative products are increasingly becoming important media for "non-verbal communication," shouldering the dual mission of national image construction and cultural output. From "landscape paintings in stationery" to "imperial cats in bags," these designs possess not only aesthetic value but also represent the extension of cultural subjectivity.

However, existing research largely concentrates on the semiotic analysis of visual symbols, marketing strategies, or the industrial value of the Palace Museum's cultural-creative products, neglecting a deconstruction of the underlying cultural logic from a social space perspective. The French philosopher Henri Lefebvre, in *The Production of Space*, proposed that "space is a social product" and revealed the dialectical relationship between space and social relations through the triadic structure of "spatial practice—representations of space—representational spaces". This theory provides a novel perspective for re-understanding the cultural function of cultural-creative products.

This paper attempts to introduce the spatial triad theory into research on the Palace Museum's cultural-creative design. Through case analysis and user review data mining, it reveals how these products achieve cultural communication through spatial logic and proposes strategy recommendations for design practice.

2. Theoretical Framework and Literature Review

Lefebvre states in *The Production of Space*: "Space is a social product." (Lefebvre, 1991, p.26). He emphasizes that space is not merely a physical container but rather the outcome of the interweaving of social relations, power structures, and cultural ideologies. For cultural-creative products, their design concerns not only function and aesthetics but also the materialization of cultural space and the reproduction of social relations.

Lefebvre proposed the triadic relationship of "perceived—conceived—lived" space (Lefebvre, 1991, p.38), providing a methodological framework for cultural product research:

Spatial Practice (Perceived Space): User usage behaviors, daily experiences, and life contexts. Representations of Space (Conceived Space): Designers' cultural narratives, design planning, and symbolic construction. Representational Spaces (Lived Space): Users' emotional experiences, cultural identity, and symbolic meanings.

Furthermore, he stresses: "Space is not an empty container, but is filled with ideol-

ogy, power, and symbols, and is materialized through objects and actions." (Lefebvre, 1991, p.229). This provides a theoretical explanation for the cultural function of the Palace Museum's cultural-creative products: they are not merely consumer goods but also carriers of cultural identity and historical narratives.

Since its proposal, the spatial triad theory has been widely applied in sociology, anthropology, urban studies, and cultural studies. Some scholars note that in practical analysis, the three types of space often cannot be completely distinguished. Therefore, Edward Soja proposed the concept of "Thirdspace," advocating for attention to the fluidity and generative nature between spaces (Soja, 1996). In the context of this paper, this theory can reveal how cultural-creative products are both the crystallization of cultural design and the medium for user practice and identity construction.

3. Research Methodology

This chapter aims to clarify the overall research design, methodological approach, and technical details of this study. To validate the applicability of the spatial triad theory to research on the cross-cultural communication of cultural-creative products, this paper constructs a tripartite research scheme: "literature analysis + case analysis + user review data mining".

3.1. Literature Analysis: Theoretical Foundation Building

This study adopts a parallel path of multiple methods: theoretical construction—case verification—data analysis. The specific process is as follows: Through systematic literature review and categorical induction, this research clarifies the theoretical connotation and evolutionary path of the spatial triad theory. It selects classic and cutting-edge literature relevant to cultural communication, cultural-creative design, and user experience to form the theoretical foundation. Database sources include CNKI, Web of Science, JSTOR, and Google Scholar.

3.2. Case Analysis: Cultural Gift Spatial Structure Coding

Selection criteria for cases: 1) Strong national representativeness and clear cultural identity characteristics; 2) Used as official/diplomatic gifts or having transnational communication records; 3) Products can be deconstructed into specific perceived-conceived-lived dimensions. The "A Thousand Li of Rivers and Mountains" stationery series and the "Imperial Cats" product series were selected as research objects. They were analyzed from the three dimensions of spatial practice, representations of space, and representational spaces.

3.3. User Review Data Mining: User Perceived Space Identification

Using reviews from the "Palace Museum Official Flagship Store" on Taobao as the data source, this study extracts information related to user experience and cultural identification through Natural Language Processing (NLP) and sentiment analysis techniques. The review data used in this research are all sourced from public plat-

forms and do not involve any user privacy or account data. All textual content underwent anonymization and desensitization before use, adhering to international data regulations such as GDPR.

4. Case Analysis: Spatial Dimension Mining Based on Taobao Reviews

4.1. Data Source and Preprocessing

This study scraped 3,500 cultural-creative product reviews from the "Palace Museum Official Flagship Store" on Taobao, covering representative products such as the "A Thousand Li of Rivers and Mountains" series and the "Imperial Cats" series. After cleaning and deduplication, 3,000 valid samples were obtained. Data preprocessing steps included: removing advertisements and invalid comments; Chinese word segmentation and high-frequency keyword statistics; sentiment classification (positive, neutral, negative) based on sentiment dictionaries; mapping reviews to the three dimensions of the spatial triad based on content. Python and Jieba were used for word segmentation. Polarity was annotated using sentiment dictionaries (BosonNLP, NTUSD). The Latent Dirichlet Allocation (LDA) model was employed for topic identification and analysis.

4.2. Results and Analysis

Table 1. Spatial Dimension Analysis of Palace Museum Cultural-Creative Products.

Spatial Dimension	Number of Reviews		Avg. Rating (1-5)	High-Frequency Keywords
Spatial Practice	1,280	4.4		practical, convenient, good quality
Representations of Space	1,120	4.6		exquisite, beautiful colors, design sense
Representational Spaces	600	4.8		cultural, gift-giving, sense of ritual

- (1) Spatial Practice: Accounted for the largest proportion of reviews (42.6%). Users focused on functionality and ease of use, reflecting the life-embedded characteristics of cultural-creative products.
- (2) Representations of Space: Had a relatively high average rating (4.6). Keywords like "exquisite" and "design sense" indicate user recognition of the cultural narrative. Designers successfully achieved contemporary expression of cultural symbols.
- (3) Representational Spaces: Quantity was relatively small (20%), but the average rating was the highest (4.8). Keywords like "sense of ritual" and "gift-giving" indicate that products serve as mediums for cultural identity and emotional exchange. Typical comments include: "The color matching is stunning. 'A Thousand Li of Rivers and Mountains' was already my favorite painting, now I can see it every day"; "Gave it to a foreign friend, she said this pen truly captures the 'essence of Chinese culture'".

5. Case Analysis: Spatial Triadic Interpretation of Palace Museum Cultural-Creative Products

The "A Thousand Li of Rivers and Mountains" stationery prioritizes portability and practicality as core design objectives, embedding traditional art into daily life scenes like study and office work. Users participate in cultural reproduction through usage. For example, notebooks use hot-pressed textures to replicate the feel of the painting, with thick paper suitable for daily writing, enhancing the usage experience.

The "Imperial Cats" series constructs a cultural context through imperial symbols, color schemes, and anthropomorphic narratives. The "cute pet + imperial court" model in the design language captures the interest of young consumers while enabling the modern reconstruction of cultural symbols. Products like cushions and keychains utilize materials associated with traditional crafts such as Yunjin brocade and enamel, adding a sense of historical gravitas.

Users gain cultural identity confirmation and emotional resonance through the processes of gift-giving or collecting. Some products incorporate AR features allowing users to scan QR codes to learn historical background, enabling users to complete the self-narration of cultural meaning through "gift-giving" and "identification". The Palace Museum also expands the communication space of its cultural-creative products through digital tools like the "Palace World" App and short video platforms, stimulating user-generated content and forming a cultural ecosystem chain of "design—cognition—participation".

6. Conclusions and Design Strategies

Based on the spatial triad theory, this paper constructed an analytical framework for the Palace Museum's cultural-creative products and validated the applicability of "spatial practice—representations of space—representational spaces" through Taobao review data. The research found that these products achieve the modern translation of traditional culture in three aspects: functionality, cultural narrative, and emotional identification.

Design Strategies:Strengthen Spatial Practice: Enhance product practicality and life-embeddedness, allowing culture to integrate more naturally into users' daily lives.Deepen Representations of Space: Construct cultural contexts through color, imagery, and storytelling, making cultural symbols more perceptible and understandable.Activate Representational Spaces: Incorporate elements of identity confirmation and emotional connection mechanisms, enabling users to affirm their "cultural self" through usage.Expand Digital Interaction Fields: Utilize social media, AR, etc., to enhance user participation, promoting culture to be "visible + playable + spreadable".

Implications for Cultural Communication and the Design Industry:Cultural-creative design should shift focus from "product" to "scenario," integrating user experience with cultural space design.Multi-context communication strategies need to be constructed to enhance the readability and affinity of cultural-creative products within international contexts.Beyond creative drive, cultural understanding and emotional

connection are essential foundations.

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