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FROM CULTURAL HERITAGE TO INNOVATIVE DESIGN: APPLICATION OF NARRATIVE DESIGN THEORY IN PRESERVATION AND DEVELOPMENT OF HUAIYANG MUD DOG

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ABSTRACT

As an important intangible cultural heritage of Henan Province, China, the Huaiyang Mud Dog embodies rich historical and cultural connotations and unique artistic value. This study systematically explores the historical background, types, styles, and production process of the Huaiyang Mud Dog, proposing a theoretical framework for innovative design based on narrative design theory. By employing a combination of qualitative and quantitative methods, including literature review, field investigations, case studies, and in-depth interviews, the cultural significance, artistic features, and value of the Huaiyang Mud Dog are analyzed, revealing its current development status in modern society. The results indicate that narrative design theory can effectively enhance the cultural value and market competitiveness of Huaiyang Mud Dog souvenirs, strengthening users' emotional resonance and cultural identity. The conclusions provide a theoretical and practical foundation for the protection and inheritance of the Huaiyang Mud Dog, while also offering beneficial insights for the modernization and innovative development of other intangible cultural heritages.

Keywords: Huaiyang Mud Dog, Narrative Design, Innovative Design

INTRODUCTION

The Huaiyang Mud Dog is a clay toy that has been passed down through generations at the Fuxi Taihao Mausoleum Fair in Huaiyang District, Zhoukou City, Henan Province, China. In 2014, it was listed in the first batch of national intangible cultural heritage representative projects in China. As a product of the ancient Fuxi faith, the Huaiyang Mud Dog exhibits specific regulations in shape, color, material, and craftsmanship, reflecting people's historical memories, understanding of the world, and aspirations for a better life. This study systematically investigates the historical background, types, styles, and production process of the Huaiyang Mud Dog, enriching academic materials on the subject and providing a theoretical and practical basis for the inheritance of its craftsmanship. Additionally, based on narrative design theory, a theoretical framework for the innovative development of Huaiyang Mud Dog souvenirs is constructed, offering new perspectives and theoretical support for the research of Huaiyang Mud Dog souvenirs. This also provides valuable references for the modernization and innovative development of other intangible cultural heritages.

Research Objectives

This study aims to systematically investigate the historical background, style types, materials, and production processes of Huaiyang Mud Dog. From the perspective of modern design, the study utilizes narrative design theory to develop a theoretical model for innovative souvenir design related to Huaiyang Mud Dog.

LITERATURE REVIEW

1. Huaiyang Mud Dog

Research on Huaiyang Mud Dog is relatively sparse. It was not until the 1980s that scholars began to pay attention to it, focusing on five main aspects:

1.1 Cultural Connotations of Huaiyang Mud Dog

Scholars believe that the cultural significance of Huaiyang Mud Dog stems from totem worship, ancestor worship, and fertility worship. Liu Guomei (1987) and Wang Ruyin (1989) argued that Huaiyang Mud Dog embodies totem worship and elaborated on its connotations. Du Zhun (2008) and Zhao Xudong (2013) considered Huaiyang Mud Dog as primarily reflecting the fertility worship of early ancestors. Ancestor worship is also a common viewpoint among scholars: Li Yanfeng (2007) suggested that Huaiyang Mud Dog is closely related to folk beliefs, while Gu Tao (2016) saw it as a symbol of ancestral worship, and Xi Yu (2008) viewed temple fairs as the survival space for Huaiyang Mud Dog.

1.2 Artistic Features of Huaiyang Mud Dog

Regarding themes and forms, scholars such as Wang Yueqin (1992), Ni Baocheng (2019), and Peng Xichun (2006) generally agree that Huaiyang Mud Dog is a large animal group image, primarily derived from the "Shan Hai Jing" and Fuxi culture. Liu Weibang (2021) believed that Huaiyang Mud Dog uses imaginative animal storytelling as its main characteristic. In terms of color, scholars like Yang Xiaokun (2008) agreed that the color usage of Huaiyang Mud Dog aligns with the traditional "five-color view" of the Chinese nation, reflecting the traditional Chinese view of black as the basic color.

1.3 Value of Huaiyang Mud Dog

Zhao Lamei (2007), Zhai Shangmei (1994), and Meng Lan (2011) believed that Huaiyang Mud Dog holds ornamental, entertainment, cultural, and economic values. Wu Gaofei (2013) explored the feasibility and methods of achieving creative transformation of the value of Huaiyang Mud Dog. Yuan Jianxia (2013), Cao Yeqing (2016), and Liu Chengjun (2023) discussed the practical application of Huaiyang Mud Dog elements in tourism souvenirs, clothing design, and interior design.

1.4 Current Development Status of Huaiyang Mud Dog

Currently, Chinese intangible cultural heritage is transitioning towards dual social attributes of cultural industry and cultural enterprise, presenting unprecedented development opportunities for Huaiyang Mud Dog. Researchers have analyzed its development status in the current social environment from four dimensions: policy support, cultural strategy deepening, social development activation, and self-awareness of its development choices.

1.5 Innovative Development of Huaiyang Mud Dog

As an ancient form of intangible cultural heritage, Huaiyang Mud Dog has continuously adapted to modern societal needs, undergoing technological innovation through

material and craftsmanship improvements (Zhang, 2022), and reinterpreting and reconstructing traditional cultural elements to integrate them into cross-disciplinary product design (Zhang, 2023). These innovative developments not only promote the modernization of traditional craftsmanship but also enhance market competitiveness, opening new pathways for the inheritance and development of traditional culture.

2. Narrative Design

Narratology is a method of studying "intangible cultural heritage" and is considered one of the three major theoretical pillars of the 20th century. In the 1990s, narratology was introduced into the design field, usually in the form of "narrative design." Research and practice in narrative design have become focal points in the design and academic communities.

2.1 Research on the Relationship between Design and Narrative

Scholars generally believe that integrating "narrative" with "design" provides new methodologies for design. Shen Guandong (2016) argued that the media stance of narratology and the interdisciplinary integration of design science is inevitable. Daniel Brown (2003) pointed out that "narrative design means using narrative as a means of expressing a sense of place in design to achieve information exchange between people and the environment, thereby obtaining psychological reactions and experiences." Wu Wei and Li Lijunxiong (2021) believed that narrative design, by reorganizing and arranging design objects, user behavior, and usage environments, should satisfy the basic functional properties of products while conveying their cultural connotations.

2.2 Research on Narrative Design Elements

Narrative design encompasses both expression (narration) and content (story). Designers (narrators) use storytelling (medium) to persuade and affect users (recipients), making them loyal users and appreciators of the product. Generally, narrative design comprises three elements: narrator, narrative text, and recipient. The two main processes are the construction by the narrator and the interpretation by the reader.

2.3 Research on Narrative Design Strategies

Narrative design strategy research is a key focus of current narrative design studies. Zhang Yu (2013) proposed three narrative design methods: temporal organization design of sequential and non-sequential designs; spatial sequence design of plot sequences, repetition, and juxtaposition; and cultural perception design through symbolism, metaphor, stability, change, and spatial guidance. Shen Guandong (2016) studied narrative design strategies from conceptual, structural, and procedural levels. British scholar Andy Bardill (2017) proposed methods for enhancing excitement in product and service interactions through narrative design. Li Wenjia, Gao Yaoyao, and Zhang Zaiyu (2021) explored methods for narrative construction through cognitive experience from a cognitive perspective. Ma Quanfu studied narrative design strategies from the perspective of image narrative using diachronic and synchronic methods. Xu Congyao and Xu Xiwen (2022) constructed interactive narrative scenarios through the interaction process of narrative elements. Lv Xin (2022) analyzed the aesthetic and cultural levels of narrative design, examining the hierarchical structure of narrative expression from the perspectives of aesthetic attribution and cultural identity.

2.4 Research on Different Methods of "Narrative Design"

There are three main approaches: research on narrative methods from design positioning, with Xu Ping (2013) proposing a "rationality-based performance" narrative method and constructing the framework of Chinese design narrative; research from the perspectives of design semantics, rhetoric, and formal language, with Yang Yufu (2011) emphasizing the importance of cultural context for narrative design research, such as the summoning structure of reception aesthetics theory and the interpretation of narrative works through semiotic theory; and research on narrative design methods from the perspective of narrative media. Zhang Xuedong (2013) believed that in contemporary consumer society, design narrative should focus on audience needs and emphasize the interaction between audience and works.

2.5 Application Research of Narrative Design

Research on the application of narrative design theory presents three main threads: the introduction and imitation of interdisciplinary theories, leading to the construction of strategies and methods based on design disciplines, focusing more on the significance of narrative and the value given to design through narrative; the interpretation of design concepts through linguistic symbols, shifting to meaning construction based on complex experiences, moving from theoretical levels to design practices emphasizing experience; and extending from spatial themes to service design, interactive design, and cultural and creative products, showing comprehensive development trends.

RESEARCH METHODOLOGY

This research employs a mixed-methods approach, combining qualitative and quantitative methods to ensure the comprehensiveness and scientific rigor of research findings. The methodology includes the following steps:

1. Data Collection

Researchers collected data using the following methods and tools:

Literature Review: A systematic review of literature on the historical background, types, materials, production processes, and current development status of Huaiyang Mud Dog. This review establishes the historical and theoretical foundation for the study. Additionally, relevant literature on narrative design theory was gathered to support the innovative design of Huaiyang Mud Dog souvenirs.

Field Investigations: Researchers conducted field visits to villages in Huaiyang where Huaiyang Mud Dogs are made, as well as to production and sales sites and exhibition halls. These visits provided firsthand information, including the creators' design concepts, production techniques, and the cultural connotations behind the process. The influence of narrative design on consumer experience and the conveyance of product cultural content was also explored.

Case Studies: Collection and analysis of innovative design cases related to Huaiyang Mud Dog.

In-Depth Interviews: Semi-structured interviews with Huaiyang Mud Dog inheritors, producers, and stakeholders were conducted. Interview topics were predetermined based on the research questions.

2. Data Analysis

Literature Analysis: Content analysis was used to categorize and summarize key concepts, theories, and trends in the literature on the history, cultural background, production

techniques of Huaiyang Mud Dog, and narrative design theory, forming an interdisciplinary theoretical foundation.

Field Data Analysis: Systematic coding and in-depth thematic analysis were conducted to accurately identify key characteristics of Huaiyang Mud Dog's production techniques, such as clay selection, molding techniques, drying processes, and color decoration. The narrative elements and cultural meanings in the production process were also examined. Triangulation was used to compare data from field observations, in-depth interviews, and literature reviews, ensuring the accuracy and consistency of the research findings.

Case Study Analysis: Comparative analysis of case study data was used to assess the practical application of narrative design theory in the innovative design of Huaiyang Mud Dog. Integrative analysis methods for qualitative data combined insights from qualitative data with quantitative analysis results, providing a comprehensive research perspective.

Interview Data Analysis: Qualitative content analysis and narrative analysis were used to systematically code and summarize interview transcripts, identifying core themes such as the historical background, style types, materials, production processes, contemporary value, and innovative practices of Huaiyang Mud Dog. Framework analysis was introduced to systematically compare the viewpoints of Huaiyang Mud Dog inheritors and producers, especially on the complex issues of production techniques and innovative practices, and application value of narrative design in heritage innovation.

Additionally, the study employed integrative analysis methods for qualitative data, using qualitative analysis software (e.g., NVivo) to process and analyze responses to open-ended questions. This assisted in coding and theme extraction, combining qualitative insights with quantitative analysis results to achieve a more comprehensive research perspective.

RESEARCH RESULTS

1. Styles of Huaiyang Mud Dog

The Huaiyang Mud Dog features a wide range of themes and diverse forms (Table 1), which can be categorized into four types: realistic, fantastical, composite, and modern.

Table 1 Analysis of Huaiyang Mud Dog Styles

Туре	Prototype Modeling Technique		Artistic Features	Representative Images	
Realistic	Real animals	Retain basic shape, add decorative patterns	Combination of realism and artistry, depicting ancient understanding of animals and harmonious coexistence with nature	Birds, fish, frogs, snakes, bats, lizards, geckos, eagles, monkeys, turtles, dogs, tigers, etc.	
Fantastical	Folk tales, myths	Combine characteristics of various animals, endow with supernatural abilities and symbolic meanings	Breaks traditional rational order, showcasing strong imagination and solemn, mysterious beauty	Dragons, qilins, unicorns, pentacorns, etc.	

Type	Prototype	Modeling Technique	Artistic Features	Representative Images
Composite	Humans and animals, combination s of animals	Exaggerated shapes, abstract forms, complex structures	Reflects ancient coexistence of humans and animals, portraying fantastical composite structures	Multi-headed monsters, Four Not-Alikes, Ten Images, Fuxi riding a lion, Nüwa, monkey- headed swallows, etc.
Modern	Real life	Diverse creative forms	Breaks traditional concepts, reflects personal thoughts and individualized creation	Bao Gong, fortune fish

Source: Linlin Xin

2. Decorative Patterns of Huaiyang Mud Dog

The decorative patterns of Huaiyang Mud Dog can be broadly classified into five categories: dot-line patterns, vulva patterns, sun patterns, floral patterns, and other patterns. These patterns are meticulously drawn by craftsmen based on the structural characteristics and spatial layout of the animals, reflecting the pursuit of aesthetic order and the interdependence of patterns. Due to their complete reliance on hand-painting, each piece is unique, with varying line thicknesses, degrees of curvature, and dot sizes and densities. The style of patterns is naturally rustic, possessing unique artistic charm and cultural value.

2.1 Dot-Line Patterns

Dot-line patterns (Table 2) are the most basic and widely used patterns in Huaiyang Mud Dog. They exhibit a rich variety through the diversity of lengths, solid and void forms, and combinations. Scholars believe that dot-line patterns originate from the Hetu and Luoshu created by Fuxi after observing the myriad phenomena of heaven and earth, embodying the philosophical concepts of yin-yang and the eight trigrams. Long solid lines represent "Qian," dots or short solid lines represent "Kun," and the combination of "Qian" and "Kun" symbolizes the creation of all things, expressing the principle of yin-yang interaction. These dot-line designs deeply reflect the cultural and philosophical ideas behind the patterns of Huaiyang Mud Dog.

Table 2 Analysis results of some dot and line patterns

Dot line pattern	Line draft extraction	Dot line pattern	Line draft extraction	
WHITE THE PARTY OF	<u></u>			

Source: Linlin Xin

2.2 Reproductive symbols

Reproductive symbols directly draw on the image of the reproductive organs and are divided into two categories based on gender: female (Table 4) and male reproductive symbols, carrying the worship of life reproduction.

Table 4 Analysis results of female reproductive symbols

Human ancestor monkey	Three headed sheep	Extraction of Female Reproductive Symbol Lines
Control of the contro		

Source: Linlin Xin

2.3 Sun Patterns

Sun patterns (Table 5) are characterized by a basic form of white circles, with red dots inside the circles symbolizing the hot core of the sun. The white lines radiating outward from the circles represent the sun's rays. Additionally, some sun patterns are surrounded by several small circles, imitating the astronomical phenomenon of planets orbiting the sun. The "\(\subseteq \subseteq \subseteq \text{symbol} not only expresses reverence for the sun but also signifies deep worship of Fuxi, reflecting the ancient people's profound understanding of the laws governing the universe.

Table 5 Analysis results of sun patterns

Pattern legend

Line draft extraction













Source: Linlin Xin

2.4 Floral Patterns

Floral patterns (Table 6) are composed of arcs of varying lengths and thicknesses, with flower shapes ranging from three to six petals, often adorned with leaves or stamens. The petals are outlined with white lines and filled with colors such as red and yellow. Green lines or leaf-shaped patterns are used to decorate the spaces between the petals, while short yellow lines radiate outward from center. These floral patterns symbolize cycle of life and renewal, reflecting an admiration for boundless vitality and fertility.

Table 6 Analysis of Floral Patterns

Pattern example	ine drawing extraction	Floral pattern	Line draft extraction
	333		

Pattern example	ine drawing extraction	Floral pattern	Line draft extraction
			00 00 00

Source: Linlin Xin

2.5 Other Patterns

In addition to the common patterns mentioned above, Huaiyang Mud Dog also features many other patterns (Table 7), such as Bagua patterns, meander patterns, two-way continuous patterns, fish scale patterns, cross patterns, flame patterns, and auspicious character patterns.

Table 7 Analysis results of some other patterns

Name	Pattern legend	Symbol line extraction	Name	Pattern legend	Symbol line extraction
Fish Scale Pattern			Horseshoe pattern	1	
Gourd pattern		8	Cross Pattern		
Meander Pattern I		5252	Meander Pattern II	30	
S Pattern			Flame Pattern		M

Source: Linlin Xin (March, 2023)

Through the analysis of these decorative patterns, it is evident that the design of Huaiyang Mud Dog not only exhibits high artistic value but also contains rich cultural connotations. These patterns are not merely decorative but are concrete expressions of ancient philosophical thoughts, religious beliefs, and views on nature.

3. Colors of Huaiyang Mud Dog

This study uses cluster analysis to statistically select the most common Huaiyang Mud Dog designs based on field surveys, analyzing their color patterns (Table 8). Huaiyang Mud Dogs typically use black as the base color, supplemented by red, yellow, green, and white for the decorative patterns, creating a solemn and harmonious yet contrasting visual effect.

Table 8 Color Analysis Atlas of Huaiyang Mud Dog



Source: Linlin Xin (2023)

4. The Production Process of Huaiyang Mud Dog

The production process of Huaiyang Mud Dog (Figure 1) reflects a rich tradition of folk art. Although craft has not formed a unified standard, it has been passed down through oral instruction and hands-on teaching among artisans, establishing a set of relatively fixed steps. Crafting process generally involves six stages: Mud selection, Mud preparation, Mud shaping, molding, dyeing, and painting.

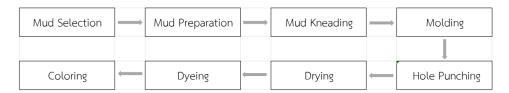


Figure 1 The traditional Production Process of Huaiyang Mud Dog Source: Linlin Xin (2023)

5. Structure and Application of Narrative Design

Narrative design consists of three main components: the narrative subject (designer), the narrative medium (design product), and the narrative object (user). As the narrative subject, the designer uses unique cultural ideas, life experiences, and aesthetic pursuits, along with their design skills and narrative techniques, to convey the narrative content within the design product to the user. The core elements of narrative design include the narrative theme, narrative elements, narrative structure, and narrative methods. These elements are presented through the design product to achieve deep interaction and communication between the user and the design product. For example, in product design, designers can enhance the narrative aspect of the product by incorporating storylines, using symbolic elements, and designing multi-sensory experiences. This approach not only improves the emotional resonance and user experience but also emphasizes the emotional and cultural transmission of the product. Specifically, designers can embed culturally meaningful stories into the product and create an immersive narrative environment through visual, auditory, and tactile experiences, enabling users to feel a deep cultural and emotional connection during product use.

CONCLUSIONS AND DISCUSSION

The study finds that Huaiyang Mud Dog is deeply rooted in traditional Chinese culture and the historical background of the Huaiyang region. It showcases unique artistry and rich cultural connotations in its form, patterns, colors, and production techniques. Huaiyang Mud Dog reflects the personal emotions and aesthetic pursuits of folk artists and conveys reverence for nature, admiration for vitality, and contemplation of the cosmic order.

The study on the current development status of Huaiyang Mud Dog reveals that this ancient intangible cultural heritage has undergone an adaptive transformation in the context of diverse modern influences, achieving both preservation and innovation. This process not only reflects the profound changes in China's intangible cultural heritage protection and development strategies but also demonstrates the ability of Huaiyang Mud Dog, as a living art form, to respond to the changes of the times and societal needs through innovative choices.

The innovative development of Huaiyang Mud Dog involves modernizing traditional materials and techniques and reinterpreting and innovatively applying traditional cultural elements. Applying narrative design theory to the innovative design of Huaiyang Mud Dog is both feasible and significant. The rich cultural heritage and unique artistic value of Huaiyang Mud Dog provide abundant material for narrative design. By introducing storylines and multisensory design, designers can enhance the cultural depth of the products, improve their market competitiveness, and generate strong emotional resonance with users. Narrative design theory not only offers new ideas for the innovative design of Huaiyang Mud Dog but also opens up new perspectives and possibilities for the modernization and sustainable development of other intangible cultural heritages.

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