



## Innovative Product Design for Clay Dogs

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### Abstract

**Background and Aims:** With the development of social modernization, the inheritance and development of "clay dogs" are facing a great impact. Combining "clay dogs" with modern design theory and market demand, and applying it to the design of cultural and creative products can promote the cultural inheritance and protection of "clay dogs". The combination of "clay dogs" with modern design theory and market demand, applied to the design of cultural and creative products, can promote the cultural inheritance and protection of "clay dogs". The purpose of this study is to explore the potential of clay dog culture in cultural and creative product design, reveal its rich cultural and artistic connotation and put forward corresponding design methods and strategies to deeply apply clay dog culture in cultural and creative product design.

**Materials and methods:** This paper uses three research methods: literature research method, field research method, and practice design to explore the design transformation and application of "clay dog" in cultural and creative products by taking the visual elements of "clay dog" as an entry point.

**Results:** The thesis mainly obtained three results, the first analyzed the characteristics and artistic charm of clay dog culture, revealing its unique value in cultural creative product design. Secondly, the shape, pattern, color, material, and composition of clay dogs are extracted, and thirdly, these elements are combined with modern design to create culturally creative products with both market competitiveness and artistic infectivity.

**Conclusion:** The research underscores the distinctive cultural significance of clay dog art, showcasing its intrinsic value in shaping cultural creative products. By dissecting and merging key elements with modern design principles, the thesis highlights the creation of culturally resonant products that seamlessly blend market appeal with artistic allure.

**Keywords:** Clay Dog Culture; Non-heritage Culture; Cultural and Creative Product Design

### Introduction

"Clay dog" is a general term for a kind of clay toy that appears in the temple fair of Taihao Mausoleum in Huaiyang County, Henan Province, with a long history, exquisite craftsmanship, rich cultural connotation, and local characteristics. It is a kind of clay toy with a black background, colorful but not vulgar, with a unique charm among many folk handicrafts, and is regarded as a true totem and a living fossil in ancient times (Zhang, 2022). However, with the development of social modernization, the inheritance, and development of "clay dogs" are facing great challenges. With the enhancement of social and economic strength, China has also begun to pay attention to the improvement of cultural soft power, especially for the protection and inheritance of intangible culture, the state and local governments have invested a lot of time, money, and labor to rescue cultural heritage, and nowadays, the development of clay dogs has been a small success, and Macao has added the "Clay Dogs" on the stamps of the Year of the Dog. " On the stamps of the Year of the Dog to promote the public's





understanding of the culture of the Central Plains (Zhang, 2022). Meanwhile, clay dog works are favored by foreign tourists, and their clay sculptures are exported to Japan, South Korea, and other countries. However, the development of clay dogs is still slightly traditional and backward in comparison and still lacks in-depth excavation and utilization in terms of cultural connotation.

This paper expects to mine the artistic, educational, economic, and social values of clay dogs to give new connotations to the times, extract the visual elements of "clay dogs", combine them with modern design theories, develop cultural and creative products with market competitiveness, expand the way of its protection and inheritance, and inherit traditional culture. Through the study and understanding of traditional culture, we can improve our cultivation and quality, promote the innovation and development of traditional culture, make it keep pace with the times, and better adapt to the needs of modern society.

### Research Objectives

1. Digging cultural depth excavation clay dog cultural value, economic value, extracted shape, pattern, color, material, composition mode.
2. Based on the clay dog culture, the improvement strategy of cultural and creative product design is proposed. By extracting the elements and borrowing modern design innovation concepts, develop relevant cultural and creative products.

### Literature Review

The current status of research on cultural and creative product design of "clay dog"

At present, handmade clay dog creative products are not common in shops in Huaiyang, and the workmanship is not as delicate as traditional clay dog products, which cannot reflect the cultural accumulation of clay dog creative products and is not conducive to the development of clay dogs. Existing literature in China tends to stay on the surface of these connotations, lacking in-depth analysis and exploration. In terms of creativity, it is often simply described and recorded, lacking exploration and discovery of the novelty and uniqueness of clay dog culture. However, Shi (2023) analyses clay dogs from three aspects: form, pattern, and color, and proposes the method of clay dog packaging design after conducting time research to address the problems of clay dog packaging design in the market. Liu (2022) starts from an artistic point of view and analyses the artistic characteristics of clay dogs in depth from the appearance of the shape, totem symbols, expression methods, and color concepts. Although the method of design innovation is proposed, which has certain reference significance, this paper believes that the material of clay dog is also a visual element that cannot be ignored, and the visual elements proposed by the existing design are not comprehensive, so this paper chooses form, pattern, color, composition, and material as the basis of the design when carrying out visual element extraction. Furthermore, in the modern design of clay dogs, Li & Gao (2023) summarized and explored the cultural genes and aesthetic symbols in the traditional culture of clay dogs, excavated the distinctive regional characteristics and cultural implications and put forward the design translation from three levels: material level, cultural level, and spiritual level. Inspired by Li Xuexue and Gao Bo's articles, this paper thinks that it is very important to embody the regional characteristics and cultural implications of clay dogs in Wenchuang products. The fly in the ointment is that Li Xuexue and Gao Bo only put forward



the theory and did not practice it, which makes the article unconvincing. Li & Li (2023) combined the characteristics of clay dog culture and art with function and form, deconstruction and reconstruction, inheritance and innovation of modern design methods, and carried out derivative design practice on clay dog culture and art. This design method effectively combines modern design methods with traditional culture, which can also be used for reference in this paper. However, the degree of deconstruction and reconstruction needs to be properly grasped. Although Nie Shou's clay dog cultural and creative products are innovative, they make insufficient use of the visual elements of clay dog culture and cannot show the uniqueness of clay dog culture. In this paper, elements such as pattern, color, composition, and modeling are made full use of in design to avoid homogenization of cultural and creative products.

### Conceptual Framework

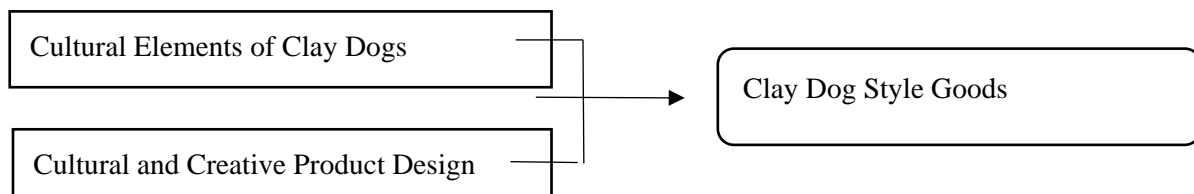


Figure 1 Conceptual Framework

### Methodology

Step 1: Conduct a comprehensive analysis and collation of relevant literature, books, and research reports. To understand the history, characteristics, techniques, and other aspects of clay dog culture, as well as its application and development in creative product design.

Step 2: Visit clay dog workshops, cultural and creative industrial parks, cultural and art exhibitions, etc. And have in-depth exchanges and interviews with clay dog inheritors, cultural and creative designers, and cultural and creative enterprises. Understand their understanding and application of clay dog culture and the problems of clay dog cultural and creative products on the market.

Step 3: Through the theoretical support of the first step and the interview suggestions of the second step, explore the integration of clay dog culture and modern design, and extract the clay dog shape, color, material, pattern, and composition characteristics from the visual elements. We endeavor to create creative clay dog products with both market competitiveness and artistic influence. In design practice, innovative design concepts, technologies, and material choices can be applied to meet the needs and aesthetics of modern consumers.

Due to the cultural nature of this paper and the potential bias in data collection and interpretation, this paper reduces the bias in data collection through a combination of qualitative and quantitative analyses.



## Results

This paper discusses the application of clay dog culture in the design of cultural and creative products, combined with modern design theories, integrating the visual elements and cultural connotations of clay dogs into the design of cultural and creative products, so that the cultural and creative products not only cater to the needs of the current market, but also reflect the cultural characteristics of the clay dog, increase the "added value" of the cultural and creative products to meet the cultural needs of consumers at different stages of the process. It also increases the "added value" of the products and meets the cultural needs of consumers at different stages.

This paper studies the design application of clay dogs in cultural and creative products from the following three aspects:

1. Investigate the current development status of cultural and creative products, analyze excellent cases, and provide a theoretical basis for the next design practice. The research found that the current market of clay dog creative products in the form of a single, innovative design can draw on other outstanding creative products, such as Dunhuang Museum's creative products, anthropomorphizing of cultural relics, decorative formation of modern aesthetics and traditional culture combined with the cultural and creative products.
2. Analysis and extraction of visual elements of clay dogs. This paper extracts and categorizes the five types of elements, namely, shape, pattern, color, material, and composition of clay dogs, which facilitates the later use of the visual elements of clay dogs in design.
3. Combining the contemporary design theory with the cultural connotation of "clay dog", the idea of applying clay dog in cultural and creative products is proposed. Using contemporary design theories to express the auspicious and fortune-seeking aspects of the clay dog, we create cultural and creative products that meet the aesthetic needs of contemporary people while preserving the cultural characteristics of the clay dog.
4. The practice of using clay dogs in cultural and creative products. Design a set of Finally, the extracted visual elements and contemporary design theories were used to create the "Yu Nai Play" board products and picture books.

## Discussions

### 1. Clay dog design elements extraction

#### 1.2 Modelling analysis

Clay dog modeling is ancient, grotesque, and colorful, with a black background, surrounded by colorful decorations, simple and elegant modeling, style thick and natural, not decorated with carvings and exquisite craftsmanship. Clay dogs are made of local yellow clay, mostly with strange birds and beasts as the theme, and a wide variety of extremely rich mythological colours.





Figure 2 Clay Dogs

The clay dog is characterized by "stability in motion". Its form is mainly sitting and standing. From these shapes, it can be divided into native type, elf type, composite type, and modern type (Liu, 2023). Different shapes will convey different temperaments and feelings of the product, which is also the design focus to attract consumers and make the product more recognizable.

Table1 Classification of clay dogs



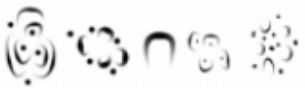





Typology	Specificities
Native type	Primitive clay dog belongs to the most common and the largest number kind of clay play, characterized by a more realistic, figurative, appearance of the shape from the natural world of the original shape of birds and animals.
Elfin	Elf-type clay dogs are not human, not beasts, or a mixture of human and animal forms, and can be said to be grotesque, mysterious deities or elves according to the artist's aesthetic interests.
Flammable	This type of clay dog is the artiste's wild and unrestrained creation, the expression of exaggerated, deformed, combined with the structure of illusory, bold, works full of mystery and tension.
Modernity	With the development and change of the times, the folk artist's creative concept is also gradually "personalized", in the process of shaping gradually lost the traditional clay dog God consciousness and folklore consensus, in modern life feel free to create.

## 1.2 Pattern analysis

"Tattoo" refers to the graphic elements in the clay dog cultural resources, which is the carrier of the clay dog cultural symbols, and the connotation information of the clay dog tattoo symbols is deeply excavated. To summaries the decorative pattern symbols of clay dogs, there are female yin patterns, sun patterns, triangle patterns, horseshoe patterns, dot patterns, line patterns, and so on. The female yin pattern, sun pattern, dot pattern, and line pattern are the main types. Their decorative patterns carry certain cultural meanings and connotations (Peng, et al, 2023). Patterns are often associated with specific cultures, traditions, or stories. By choosing a pattern element that matches the cultural context or story theme represented by the product, the product can be made

more unique and culturally distinctive. Well-designed tattoo elements can add beauty and decorativeness to a product, making it more appealing to the eye.





Table2 "Clay dog" decorative pattern symbols





Name	Pattern	Name	Pattern
Striae vulvae		Solar stripe	
Horseshoe print		Triangular grain	
Floral pattern		Similar striae	
Polka dot		Linear grain	

### 1.3 Colour analysis

Clay dog colors are mainly black as the base, red, yellow, green, and white as a supplement, later to join the pink evolved from the red system, as well as blue evolved from cyan, its color is rich in regularity and rhythm, in addition to the black as the base, in the colors of the white mainly play a role in coordinating and interspersing, the other pairs of the stronger colors in the color of each other balanced and uniform distribution to form a bright contrasting effect, the effect of the color intention style is also different (Han & Ren, 2022). Color is inextricably linked with specific culture, tradition or meaning, and human emotion. By choosing color elements that match the cultural background or story theme represented by the product, the product can be made more unique and culturally distinctive. Color can add beauty and decoration to a product. Choosing colors with visual impact, using color matching, and other techniques to make clever combinations can effectively enhance the attractiveness of the product.

Table 3 Colour analysis of clay dogs

Type	Prototype	Color	Intentional Style
Native type			Cute, and compact.
Flammable			Old-fashioned and rough

Type	Prototype	Color	Intentional Style
Elfin			Grotesque. Charming.
Modernity			Vivid ori.








#### 1.4 Material Analysis

The raw material of the clay dog is yellow rubber clay, which is fine, less porous sticky, and hard, so that the clay dog will not be cracked or deformed. It is made by hand or mold in small workshops, the production process is very complicated, the output is limited and the labor cost is high. The material can affect the overall appearance, texture, and feel of the product, thus adding to the aesthetic and tactile effect of the product. Design elements are enriched by choosing material elements with a unique texture, rich texture, and high quality.

#### 1.5 Analysis of composition modalities

The planar components of clay dogs are mainly based on dots and lines, and in the process of drawing decorative motifs, the dots and lines symbols play a very important role, and artists use the regular arrangement of dots and lines to enhance the decorative and visual effects of the decorations when hand-painting (Wang & Zhu, 2022). In this paper, we study the distribution law of dots and lines for each part of the clay dog composition using the human ancestor monkey as an example. Different compositional elements, such as shapes, lines, and proportions, are often associated with specific cultures, traditions, or artistic styles. By choosing compositional elements with unique shapes, smooth lines, and reasonable proportions, an impressive product appearance can be created.

Table 4 Dot and Line Composition Patterns

Two-winged Primitive monkey	Constituent element	Irregular point	Exactly around the point	Elliptic dot	Longline	Long arc	Short arc
	Occupancy rate	20 %	5%	10%	15%	25%	25%
	Common Parts	neck, feet, abdomen	eye	mouth, tongue	abdomen	Wings, neck	Legs, all parts interspersed
	legend (of a map, etc.)						

This paper chooses five aspects of modeling, ornamentation, color, material, and composition law in the extraction of elements of clay dogs. Most of the existing papers extract the color, ornamentation, and modeling of clay dogs, and tend to neglect the extraction of elements of material and composition law of clay dogs. The extraction method was borrowed from Li (2019) and Li (2023), and the decorative art characteristics of clay dogs were analyzed from three aspects: color, shape, and pattern.










## 2. Cultural and Creative Product Design Practice of Clay Dogs

Through careful observation of the characteristics of the modeling elements of the "clay dog", the author found that there are some laws, and generalized, summarized, and concluded these laws to design a visual image that meets the aesthetic needs of the public.

### 2.1 "Yu Clay Play" Series Designs

In this paper, three different shapes of clay dogs are extracted for a series of cultural and creative designs, namely: human ancestor monkey, straw hat tiger, and monkey head swallow.

Table 5 Design process of the "Yu Clay Play" series

Name (of a thing)	Original form	Withdraw (from a bank or warehouse)	Deformity
Human ancestor monkey			
Straw Hat Tiger			
Monkey's head swallow (TCM)			

The "Ancestor Monkey" is the most representative work in the "Clay Dogs" series of fertility cults, with the Ancestor Monkey resembling a man but not a man, and an ape but not an ape. The "Straw Hat Tiger" is also a representative work of fertility worship. The "Monkey Head Swallow" belongs to the "Swallow", which comes from the bird of paradise, and is a tribal totem in the "Clay Dogs", expressing the dream of ancient mankind to fly to the sky.

In terms of the choice of vehicle, this series has chosen mainly children's coloring picture books and chess.

#### Coloring picture books for children

The design of the "Yu Clay Play" children's picture book is to play the role of cultural and educational dissemination to the consumers - children using drawing, so the overall drawing is based on the pattern of "Clay Dog". Therefore, the overall drawing is based on the "Clay Dog" pattern, and the "Clay Dog" female yin pattern, sun pattern, flower, and grass pattern elements are extracted, deconstructed, reorganized, and arranged in four directions to form a new pattern as the auxiliary graphics.



Figure 3 Children's Picture Book "Yu Mud Play"

#### 2.2 "Yu Nai Play" chess and card products

This series of works is a combination of the "clay dog" through the form of contemporary illustration and the popular form of entertainment, selected representative of the three "clay dog" shapes applied to play cards, and in the graphics of the lower part of the QR code, through the WeChat scanning code can learn the folklore behind the corresponding clay shape. The three representative "clay dog" shapes are used in the playing cards, and there is a QR code underneath the shapes, which can be scanned by WeChat to learn the folklore behind the corresponding clay shape.



Figure 4 "Yu Mud Play" board game products



The design of this paper is more of a continuation of Sun Junjun's idea that clay dogs, as a kind of local characteristic folk handicraft, have unique aesthetic features such as form, color, and pattern. By applying these characteristics and combining them with contemporary design concepts and technical means, the idea of combining the cultural and visual elements of clay dogs to create local tourism cultural and creative products with a sense of fashion and commercial competitiveness is presented.

Currently, on the market the existence of clay dog products, there are no clay dog elements extracted from the design, most of them are rough the traditional clay dog image planarized printed on clothes, hats, or made into pendants, this is not combined with the times of the product and no market competitiveness, and this paper retains the characteristics of the clay dog at the same time for the re-design of the traditional and innovative fusion, more in line with the aesthetics of the modern people.

## Recommendation

### 1. Policy support

The Government can formulate relevant policies and plans to strengthen the inheritance and protection of the "clay dog" culture and establish relevant cultural institutions and professional teams to carry out research and promotion of the "clay dog" culture. At the same time, the government can also provide financial and resource support for the inheritance and protection of the "clay dog" culture and promote the development of the "clay dog" cultural industry. For example, Heilongjiang has introduced the "Support Measures for Promoting the Development of New Cultural and Creative Industries in Mudanjiang City", which has introduced various top talents in the new cultural and creative industries to form a complete and advanced cultural and creative industry chain.

### 2. Optimize the process of cultural and creative product development

Firstly, conduct market research to understand the needs and preferences of the target consumer group. Through questionnaires and key interviews, customer feedback and opinions are collected to provide guidance and inspiration for product design. Then, extract the clay dog elements and design them according to the product type, specification, and function, combined with DIY elements, technological elements, and cultural elements. Conduct prototyping. According to the design planning, prototyping work is carried out, tested, and improved until the expected effect is achieved. Next, determine the production process and manufacturing methods. Ensure product quality and consistency. Work with suppliers or manufacturers to ensure on-time delivery and on-budget. In addition, develop promotion and marketing strategies. Advertise and promote the new clay dog product to target consumer groups. Finally, track product sales and user feedback for continuous monitoring and evaluation to form a complete industry chain. Make timely improvements and adjustments according to market responses and customer needs. It can also co-operate with hip toy shops, museums, folk artists, and research institutions to expand the scale of production and increase the quality and quantity of products.



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