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A STUDY ON THE MODERN TRANSFORMATION AND DESIGN OF JIESHOU PAINTED POTTERY PATTERNS FROM THE PERSPECTIVE OF SHAPE GRAMMAR

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ABSTRACT

Jieshou painted pottery is a form of folk art from Jieshou City in China. Despite being listed among China's first batch of cultural heritage sites, its inheritance situation is less than optimistic due to a lack of effective promotion. This study explores the application of Jieshou painted pottery patterns in modern cultural and creative products to safeguard the preservation and development of Jieshou pottery culture and to activate pathways for its inheritance. The research combines Shape Grammar (SG) theory with literature analysis, utilizing computer-aided design to delve deeply into the patterns of Jieshou painted pottery. By creating new derivative patterns through the morphological inference of SG and applying them to cultural and creative designs, these derivative patterns enrich the traditional visual expression of Jieshou pottery patterns and broaden avenues for cultural dissemination and promotion. It also substantially advances effective communication and dynamic inheritance of our country's traditional cultural resources within a contemporary context.

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1. Introduction

Jieshou painted pottery, hailing from Jieshou City in Anhui Province, China, is renowned for its distinctive shapes and richly decorated patterns, often referred to as 'a brilliant pearl of ceramic art in the Central Plains.' Originating from the Tang and Song dynasties, this pottery craft reached its zenith during the Ming and Qing dynasties. It has developed a unique regional character and artistic flair in its modern evolution, leading to its inclusion in the first batch of National Intangible Cultural Heritage by the State Council in 2006. In the 1970s, Jieshou painted pottery, which was showcased in over a dozen countries, including Eastern European nations and Japan, earning recognition as a form unparalleled in decorative richness.

As a significant intangible cultural heritage, Jieshou painted pottery boasts a history spanning thousands of years, with its pattern designs carrying profound cultural implications and historical weight. Thus, studying the application of its decorative elements aids in preserving and perpetuating this cultural gem. The pattern arrangements in Jieshou painted pottery typically follow bilateral and quadrilateral symmetry, lending themselves well to the derivation of regular motifs. Shape Grammar (SG) allows for the generation of regular patterns according to the evolutionary rules of basic shapes inputted by designers, and these motifs, imbued with geometric forms and cultural meanings, can be integrated into cultural and creative product designs. Hence, by applying SG theory and using cultural and creative products as a medium, Jieshou painted pottery culture is embedded, aligning seamlessly with contemporary trends.

2. Literature Review

A comprehensive literature review indicates that the application studies of Jieshou painted pottery predominantly revolve around several theoretical dimensions, including cultural ecology, cultural heritage conservation, and iconography. These research perspectives offer a profound analysis of the artistic characteristics and cultural values of Jieshou painted pottery. They also provide diverse theoretical foundations and practical routes for the modern inheritance and innovative development of this invaluable cultural heritage.

Studies conducted from a cultural ecology perspective include:

Gao Feng, (2010) explored the artistic features and production techniques of Jieshou painted pottery. Hu Jiyan (2015) analyzed and summarized the current survival status and challenges faced by Jieshou painted pottery. This study aims to seek new paths for its creative industrialization from a practical perspective.

Jiang Wenmiao (2015) emphasized the idea of balancing ecological preservation with the expansion of craftsmanship. The paper highlights the importance of building the cultural brand of Jieshou painted pottery and developing marketing strategies for derivative products centered around painted pottery.

Studies from an iconographic perspective include:

Fan Huijun (2015) explored the artistry and deep-seated values of the "Sword-wielding Knight" in Jieshou painted pottery and its relationship to traditional Chinese opera.

Gao Feng (2015) interpreted the reasons behind the formation and artistic features of the opera character patterns in Jieshou painted pottery.

Zhao Yanfei (2015) studied the rhythm and melody of lines in Jieshou painted pottery patterns, as well as the relationship between line shaping and craftsmanship in decorative patterns, exploring their unique charm.

Studies from the perspective of intangible cultural heritage protection and development include:

Chen Jing (2015) analyzed the directions, levels, and strategies of product derivation from the perspectives of product design and tourism culture.

Wang Ziduo (2015), from the perspective of intangible cultural heritage protection and resource development, proposed ideas for deepening the inheritance and development of painted pottery.

Wu Congrui (2011) suggested that to help Jiexiu painted pottery overcome difficulties and dependencies, attention should be given to the support and integration of cultural education, seeking industrial development, and enhancing brand awareness.

The application research of Jieshou painted pottery patterns is a multi-disciplinary topic encompassing history, art, design, and cultural preservation and transmission. While notable advancements have been made, significant potential for further exploration exists, especially concerning the utilization of modern technology for digital conservation, the active continuation of cultural traditions, and smart design innovations. Therefore, to effectively perpetuate and evolve its cultural legacy, Jieshou painted pottery's visual culture elements must harness cutting-edge technologies. Moreover, integrating these efforts with commercial strategies is crucial for achieving long-term sustainability and profound impact.

3. Methodology

3.1 Literature Review Method

A systematic categorization and organization of the historical evolution and artistic characteristics of Jieshou painted pottery are conducted through relevant books and online resources. Based on the literature review, related books and documents to the article's theme are consulted, including titles like "Jieshou painted Pottery," "China's painted Pottery," "The Path of painted Pottery," "Chinese painted Pottery Catalog," and "China's Primitive painted Pottery." These materials provide a comprehensive introduction to the development history and artistic style characteristics of painted pottery across different regions in China, serving as a basis for subsequent summaries of Jieshou painted pottery's artistic style and element analysis.

3.2 Field Investigation Method

Conducting a field investigation of the painted pottery art in the Jieshou region aims to gain an in-depth understanding of the craftsmanship involved in creating Jieshou painted pottery. Based on preliminary literature research, extensive exchanges with artisans engaged in Jieshou painted pottery were conducted. By observing their creative processes, gaining firsthand experiences, and further understanding the technical details, an in-depth exploration of the artistic characteristics of Jieshou painted pottery was conducted.

3.3 Case Study Approach

Representative examples of Jieshou painted pottery are selected as subjects for study, utilizing the theory of form grammar alongside professional computer software to precisely extract design elements from Jieshou painted pottery decorations. Through analysis and re-creation, patterns that meet modern esthetic standards are generated and applied to the design of cultural and creative products.

4. Results

4.1 Artistic Characteristics of Jieshou Colored Pottery Decoration

Types and Characteristics of Jieshou Colored Pottery Decoration

The decorative patterns of Jieshou painted pottery are rich in content and diverse in origin. The primary compositional styles include symmetrical patterns, two-way and four-way

continuous pattern layouts, independent unit patterns, and rotational patterns. These patterns can be broadly categorized into plant motifs, animal motifs, and human story motifs.

The decorative techniques of Jieshou painted pottery are unique, employing intricate carving methods. After applying a slip to the pottery body, the surface is carved, revealing a strong color contrast of ochre, yellow, or ochre-white by removing parts of the slip. This ensures the clarity and dimensional richness of the pattern lines, creating an artistic beauty where points, lines, and surfaces are highly integrated. Additionally, Jieshou painted pottery not only inherits the excellent craftsmanship of Tang Dynasty tri-colored ceramics but also ingeniously incorporates the esthetic qualities of traditional Chinese paper-cutting art and woodblock New Year paintings. This results in patterns that retain the ancient and profound traditional style while exuding a strong sense of folk life and vibrant energy.

In terms of color treatment, Jieshou painted pottery skillfully uses various glaze colors to complement each other, producing bright but not overly garish hues. This highlights a visually striking impact similar to Tang tri-colored ceramics and creates a uniquely characteristic glaze charm. Regarding the expression of lines, the artistry highlights the skillful and free-flowing craftsmanship of the artists. They draw on the essence of paper-cutting art, producing smooth and harmonious lines that balance softness and strength—both delicate and intricate outlines and bold, exuberant strokes—endowing the painted pottery with vivid vitality and a strong sense of movement.

Overall, the patterns, forms, and creative techniques of Jieshou painted pottery are deeply rooted in folk traditions, laden with unique local customs and rustic charm. The distinctive allure of Jieshou painted pottery lies not only in its superb craftsmanship and meticulous production process but also in its faithful inheritance and innovative expansion of traditional artistic spirit, as well as its profound exploration and recreation of folk cultural and artistic heritage.

Analysis of the Forms in Jieshou Painted Pottery Patterns

Plant motifs are the most widely used decorative patterns in Jieshou painted pottery, influenced by the local geographical environment and folk art. Common designs include peony patterns, chrysanthemum patterns, fennel petal patterns, and grass leaf patterns, all of which carry distinct local characteristics. The peony pattern typically centers around a full and plump flower, accompanied by curling and spreading leaves. It often follows a two-way continuous layout, with lively and natural lines that fully display the peony's elegant and magnificent demeanor. Notably, the chrysanthemum patterns are similar to peony patterns and are primarily realistic in style. Meanwhile, designs like scroll grass patterns, fennel patterns, and geometric patterns are mostly arranged in two-way or four-way continuous frameworks, creating a repetitive visual form with a unique esthetic effect.

Note that animal motifs in Jieshou painted pottery are generally derived from the Jianghuai region. These animal patterns rarely appear alone; they are often paired with cloud patterns, ground patterns, flowers, and other auxiliary elements to form a complete scene. Typical animal motifs include fish, birds, horses, and oxen, which are rich in local cultural flavor. For example, the fish pattern is depicted realistically, shaping a vivid and powerful fish outline with fluid and graceful lines. The fish motif also symbolizes good fortune and abundance.

Human motifs commonly include historical stories, opera characters, and maidservants. These are usually decorated using techniques like carving and floral detailing. The scenes are lively and rich in storytelling, reflecting the life scenes, folk customs, and vivid imagination of ancient people.

The highly regarded "warrior on horseback" motif in Jieshou's painted pottery is a prime example of this art form. Moreover, it typically depicts brave generals riding horses or fierce battle scenes, with bright and vibrant colors and smooth, flowing lines. This fully demonstrates the dynamic texture of the figures' skin and a strong artistic appeal, showcasing the outstanding creativity of folk artists and their profound traditional cultural heritage.

Color Analysis in Jieshou Painted Pottery Patterns

Jieshou painted pottery is renowned for its vivid colors and unique decorative patterns. The rich color palette and application in Jieshou pottery reflect distinct local characteristics and the esthetic preferences of the era. The colors used in Jieshou pottery patterns typically feature strong contrasts, including various glazes such as red, yellow, green, white, and black. After high-temperature firing, these colors produce bright and stable, magnificent hues. Therefore, traditional Jieshou pottery often employs the "three-color" or "five-color" glazing techniques, resulting in a layered and staggered visual effect on the pottery surface.

In specific pattern designs, color is not only limited to representational imagery but also carries deeper emotional significance and conveys symbolic meanings. For instance, red may symbolize passion and good fortune, green represents the vibrant forces of nature, and yellow often signifies fertile land and imperial authority. Through carefully arranged color combinations and meticulous filling techniques, the patterns on Jieshou's painted pottery vividly display the simplicity and vitality of folk art while deeply imprinting rich cultural heritage and the expression of auspicious wishes.

4.2 Overview of Shape Grammar Theory and Its Application in Jieshou Painted Pottery Patterns

The Origin and Development of Shape Grammar Theory

SG is a formal design theory and method that originated in the field of architectural design. It is used to describe and generate geometric shapes, structural layouts, and their combinatorial rules. The theory was first proposed by George Stiny, who drew inspiration from Avram Noam Chomsky's linguistic theories, particularly the concept of generative grammar, successfully adapting it to the analysis and creative design process of visual and spatial forms. Furthermore, SG describes the transformations and evolutions between shapes through a set of rules, allowing designers to systematically derive a series of two-dimensional graphics or three-dimensional works.

Basic Concepts and Principles of Shape Grammar Theory

As a design modeling tool, the primary task of SG is to establish a system of basic shape units comparable to a vocabulary in linguistics, encompassing a diverse range of elements from simple points, lines, and planes to complex aggregates. These elements form the foundational modules for all possible designs. Correspondingly, the generation and proliferation of shapes follow a recursive and non-linear logical structure: designers progressively build increasingly complex and refined geometric frameworks sequentially and cumulatively using basic elements and existing shape resources. This process is rich in branching and cyclic characteristics, resulting in a diverse spectrum of morphological outcomes. In addition, SG provides a framework that enables designers to manipulate basic shape units through abstract rules, systematically generating a series of shapes that conform to specific rules or aesthetic standards. According to George Stiny, SG is defined by a four-tuple formula: $SG = (S, L, R, I)$, where S is a finite set of shapes; L is a finite set of symbols; R is a finite set of rules; and I represents the initial shape. The shapes

generated by SG should be derived from the initial shape through the application of shape rules. At the same time, the derivation rules of SG can be divided into generative and derivative derivations. Notably, generative derivation creates new shapes by adding, deleting, replacing, or reorganizing geometric elements. Derivative derivation includes scaling, mirroring, copying, rotating, shearing, and Bezier curve transformations.

Application Design Process of Jieshou Painted Pottery Patterns

First, representative Jieshou painted pottery patterns are collected from related books, literature, and internet resources. Consequently, in-depth summarization and analysis of these patterns are conducted, and design factors such as main pattern styles, shape characteristics, and color features are extracted. Second, based on the extracted design factors, SG theory can be used to generate application patterns through generative and derivative derivations that align with contemporary design aesthetics. Finally, user needs are analyzed to apply the generated patterns to relevant cultural and creative products, forming products with distinct cultural characteristics of Jieshou painted pottery.

4.3 Jieshou Painted Pottery Pattern Application and Derivation Design

Determining the Objects of Derivation

By adopting both online and offline methods, a carefully selected collection of highly representative Jieshou painted pottery pattern samples was gathered as the core objects for derivation and analysis. Using computer software technology, the typical pattern characteristics exhibited by these Jieshou painted pottery samples were deeply explored and digitally sampled, specifically encompassing aspects such as their morphological structure and color analysis.

Extraction of Design Factors

In the pattern design of Jieshou painted pottery, the morphological factors mainly include three categories: geometric patterns, plant patterns, and animal patterns. Plant patterns are the most abundant, widely applied, and often ingeniously combined with other thematic patterns. In terms of color, Jieshou painted pottery draws on the glazing techniques of Tang Dynasty tri-colored pottery, using a variety of bright colors such as red, green, yellow, white, and blue to create strong contrasts and rich visual impact. Regarding pattern layout, Jieshou painted pottery strictly adheres to the principles of traditional Chinese aesthetics, achieving a balance of complexity and simplicity and an orderly distribution of density. This ensures the patterns are evenly distributed and varied, achieving visual balance and harmonious beauty.

Using graphic processing software (Illustrator), the "Pen Tool" was employed to outline and analyze the representative patterns of Jieshou painted pottery. Through meticulous digital processing techniques, six of the most representative morphological factors were successfully extracted from the complex patterns labeled H1, H2, H3, H4, H5, and H6 (see Table 1 for specific morphological factors). Similarly, the color picker tool in Illustrator was used to extract colors from four representative pottery jars labeled S01, S02, S03, and S04. Six color points were extracted from each piece of painted pottery, represented by CMYK values (see Table 2). This laid the foundation for further color analysis and design research.

Table 1
Extraction of Morphological Factors of Patterns

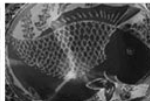
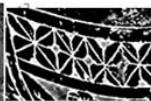
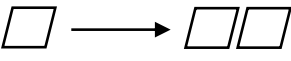
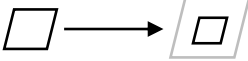
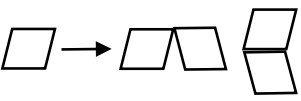
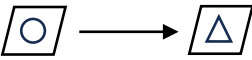
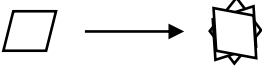
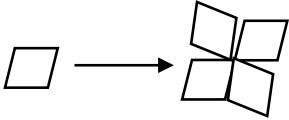
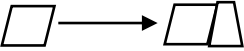
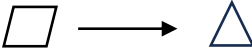
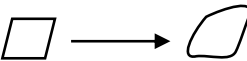
Pattern Material 1	Pattern Material2	Pattern Material3	wrinkles of fish	geometric pattern	Straw pattern
					
Figure1	Figure2	Figure3	Figure4	Figure5	Figure6
					
Form factor H1	Form factor H2	Form factor H3	Form factor H4	Form factor H5	Form factor H6
					

Table 2
Extraction Library of Initial Color Factors of Jieshou Painted Pottery Decoration

Serial No	Sample name	extraction zone	Color Extraction					
S01	Pottery jar withflower pattern			C: 51 M:82 Y:85 K:32		C: 81 M:52 Y:100 K:31		C: 38 M:18 Y:47 K:0
				C: 54 M:67 Y: 73 K:12		C: 30 M:59 Y: 46 K:0		C: 25 M:60 Y: 20 K:0
S02	Kiln green glazed jar			C: 87 M:58 Y: 45 K:33		C: 91 M:60 Y: 100 K:42		C: 85 M:5 Y: 89 K:17
				C: 39 M:57 Y: 68 K:0		C: 51M:67 Y: 82 K:10		C: 76M:39 Y: 75 K:1
S03	Pottery Jar with Figures			C: 8 M:56 Y: 75 K:0		C: 45 M:96 Y: 80 K:14		C: 61M:33 Y: 69 K:0
				C: 33 M:50 Y: 73 K:0		C: 27 M:19 Y: 27 K:0		C: 28 M:67 Y: 73 K:0
S04	Crossword Puzzle Pottery Jar			C: 53 M:90 Y: 98 K:33		C: 47 M:82 Y: 100 K:14		C: 56 M:95 Y: 100 K:47
				C: 78 M:44 Y: 87 M:4		C: 65 M:63 Y: 93 M:27		C: 58 M:68 Y: 82 M:22

Table 3
Rule Derivation Process

R1 Replication	R2 Resizing	R3 Mirroring
		
R4 substitution	R5 Center Rotation	R6 Endpoint rotation
		
R7 increase	R8 deletion	R9 Bessel curve
		

Derivation Design of Jieshou Painted Pottery Patterns

Using the basic morphological factors of Jieshou painted pottery patterns, derivation designs are conducted using SG, which includes generative and derivative derivations. The process is as follows:

Figure 1: Select morphological factor H2 from Table 1 as the research object; perform derivation design using SG. First, the H2 shape is imported into computer software. Execute the R8 (delete) command on Figure 1a to obtain Figure 1b. Consequently, the R5 (central rotation) command was applied to Figure 1b to create Figure 1c. This is continued with the R9 (Bezier curve) command on Figure 1c to smooth it further into Figure 1d. Simultaneously, the R1 (copy) and R3 (mirror) commands are applied to Figure 1d to obtain Figure 1e. Next, execute the R5 (central rotation), R1 (copy), and R3 (mirror) commands in Figure 1e to obtain Figure 1f. Proceed with the R1 (copy) and R3 (mirror) commands in Figure 1f to generate the basic Figure 1g suitable for use in corresponding cultural and creative products.

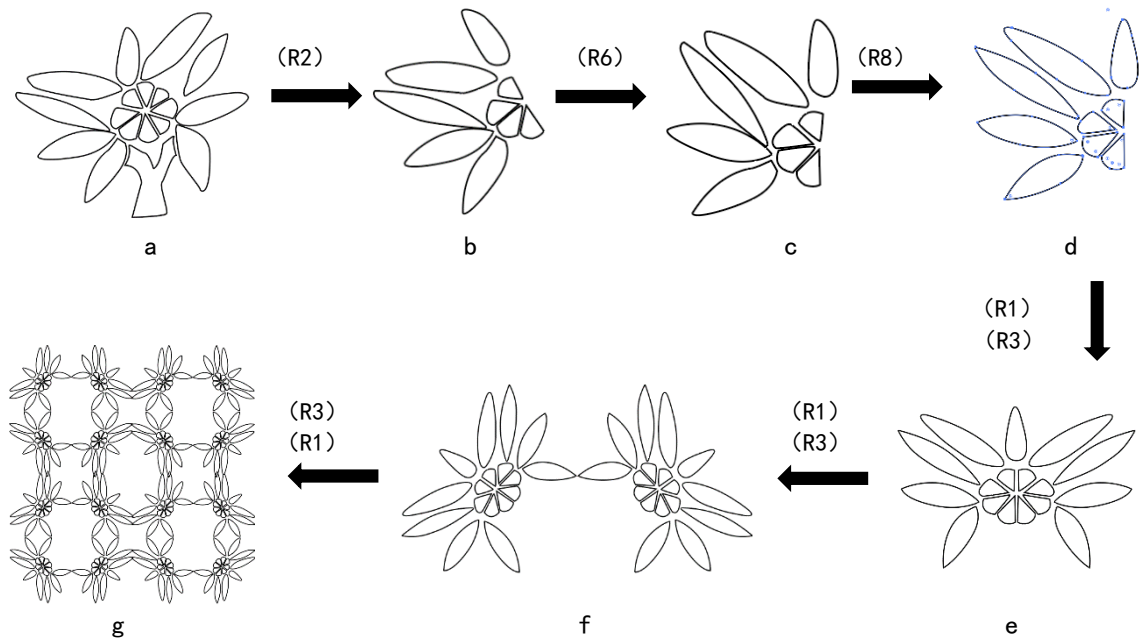


Figure 1. Jieshou Painted Pottery Pattern Derivation (Part One)

Figure 2: Select morphological factor H5 from Table 1 as the research subject; conduct SG derivation design. First, the H5 shape is imported into computer software. Execute the deletion (R8) command on Figure 2a to add or delete elements, resulting in Figure 2b. Apply a Bézier curve (R9) to Figure 2b to obtain Figure 2c. Mirror Figure 2c (R3) to create Figure 2d. Simultaneously, copy (R1) and mirror (R4) operations are performed in Figure 2d to produce Figure 2e. Correspondingly, the copy (R1) and mirror (R3) are executed to obtain the base Figure 2f, which is suitable for the corresponding cultural and creative products.

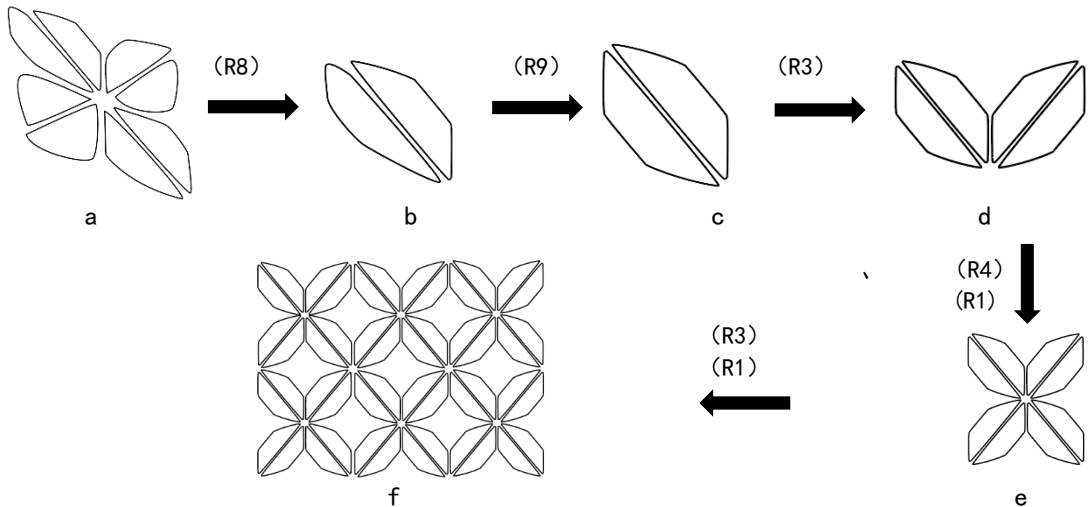


Figure 2. The Second Derivation of Patterns in Jieshou Painted Pottery

Figure 3: Select morphological factor H6 from Figure 1 as the research subject; conduct SG derivation design. First, the H6 shape is imported into computer software. Execute the deletion (R8) command on Figure 3a to create Figure 3b. Apply the rotation (R5) command to Figure 3b to obtain Figure 3c. Use the Bézier curve (R9) command on Figure 3c to produce a smoother Figure 3d. Perform copy (R1) and vertical mirror (R3) operations on Figure 3d to obtain Figure 3e. Continue with copy (R1) and mirror (R3) to generate the base Figure 3f, suitable for the corresponding cultural and creative products.

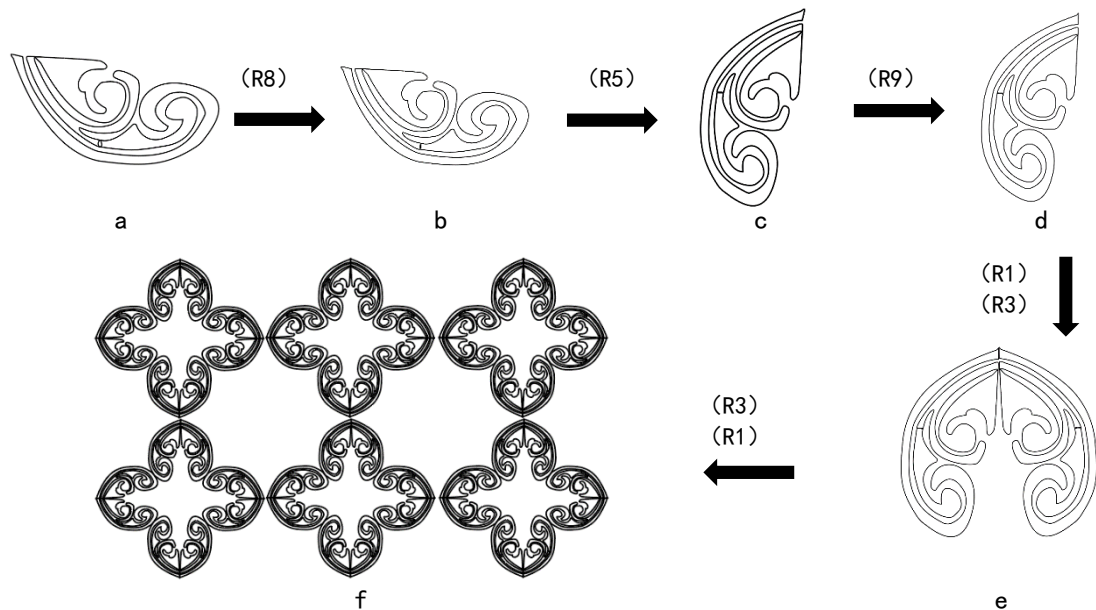


Figure 3. The Third Derivation of Patterns in Jieshou Painted Pottery

Figure 4: Select morphological factor H3 from Table 1 as the research subject; conduct SG derivation design. First, the H3 shape is imported into the computer. Execute the deletion (R8) command on Figure 4a to obtain Figure 4b. Continue with deletion (R8) and Bézier curve (R9) commands to obtain Figure 4c. Perform copy (R1) and vertical mirror (R3) commands on Figure 4c to obtain Figure 4d. Execute the addition (R7) command on Figure 4d to obtain Figure 4e. Finally, copy (R1) and mirror (R3) commands in Figure 4e are applied to generate the base Figure 4f, which is suitable for the corresponding cultural and creative products.

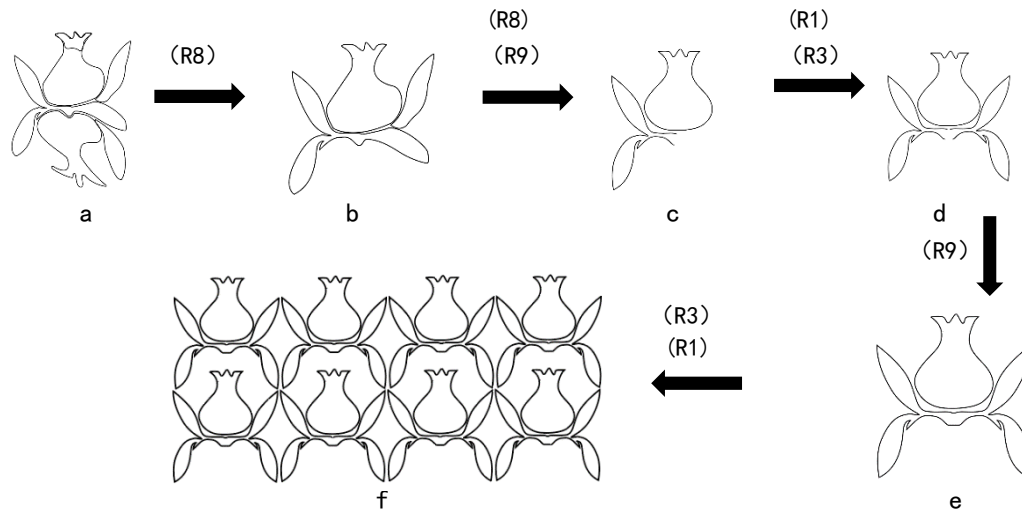


Figure 4. The Fourth Derivation of Patterns in Jieshou Painted Pottery

4.4 Design Application of Jieshou Colored Pottery Ornamental Culture Products

Jieshou colored pottery, as an ancient traditional art form, embodies profound cultural heritage and historical sediment in its ornamental patterns. Notably, integrating these patterns, marked by the traces of time, into modern cultural product designs preserves and inherits traditional cultural heritage. Moreover, it also revitalizes these traditional patterns with innovative design techniques, adapting them to contemporary esthetic demands and social environments.

Continuation of Cultural Genes

The ornamental patterns of Jieshou colored pottery, depicting a rich cultural landscape of the Chinese nation over the past millennium, encapsulate the wisdom and esthetic sense of generations of laborers and artists. Thus, incorporating these patterns into the design of cultural creative products essentially translates cultural genes deeply, allowing Jieshou colored pottery ornamental art to flourish and innovate in design mediums.

Expansion of Decorative Arts

The application of Jieshou colored pottery ornamental designs in modern cultural creative products represents a transformative reinterpretation of traditional artistic essence and symbolic meanings accumulated over the years. By skillfully integrating these patterns into contemporary cultural product design concepts, it maintains the purity and spiritual core of traditional cultural foundations while injecting fresh vitality and innovative thinking into the field of modern design.

Furthermore, this interdisciplinary design approach helps expand the influence of Jieshou colored pottery culture, exposing more people to and fostering an appreciation for this traditional art's charm in daily life. This practice also interprets Chinese traditional craftsmanship and folk art in a modern context, vividly showcasing the continuous evolution and innovative power of decorative arts across different cultural contexts.

Industrial Upgrading and Market Expansion

As a cultural symbol, Jieshou colored pottery ornaments enhance the cultural value and artistic taste of cultural creative products. In addition, it facilitates the transformation of the entire cultural creative industry from simple product manufacturing to brand building with cultural added value. This shift drives the improvement of related industry chains, including raw material supply, product research and development, design services, and marketing, among others.

The integration of Jieshou colored pottery ornamental designs into modern designs has successfully attracted a wide range of young consumers pursuing personalized and high-quality lifestyles, significantly expanding market share. Simultaneously, promoting Jieshou colored pottery ornamental cultural products in the international market showcases the charm of Chinese traditional culture, promotes cultural exchanges and cooperation, expands overseas markets, and facilitates the internationalization of the cultural creative industry.

Generation of Design Application Plans

By refining and evolving unique design elements of Jieshou colored pottery and combining them with in-depth market demand analysis, women's scarves are selected as the creative medium. Jieshou colored pottery, as an artistic gem rich in traditional Chinese aesthetics and regional cultural heritage, demonstrates extensive adaptability and innovation in the field of modern fashion design. When its exquisite patterns are ingeniously integrated into the blueprint of women's scarf designs, it undoubtedly creates a unique product series that combines classical charm with contemporary flair.

Derived from reimagined designs of accepted colored pottery ornaments, these patterns embody various profound cultural connotations, such as auspicious symbols of good fortune and longevity. When these meaningful patterns are reproduced and inherited in scarf designs, they transcend mere decorative function, elevating scarves into fashionable accessories with deep cultural significance, further enhancing their value in everyday esthetic and spiritual realms.



Figure 5. Product Application Visuals



Figure 6. Product Packaging Visuals

5. Discussion and Conclusion

Morphological grammar has infused new vitality into the innovative design of Jieshou painted pottery patterns. It not only provides designers with systematic theoretical support but also, by deeply analyzing the morphological characteristics and geometric composition of pattern elements, extracts basic morphological elements and combination rules that can be flexibly applied. This method effectively guides the generation of design elements, allowing designers to adhere to traditional esthetic principles while incorporating personal creativity, thereby achieving an innovative interpretation of Jieshou painted pottery art.

Hence, recreating Jieshou painted pottery patterns using SG tools means modern reconstruction on the basis of preserving traditional artistic style and cultural connotations. This attempt to combine traditional craftsmanship with modern design concepts not only breathes new life into ancient art but also endows it with broader practical and esthetic value. Consequently, it becomes a bridge connecting the past and the future, highlighting the unique charm of the perfect fusion of traditional culture and modern design.

Furthermore, applying morphological grammar to Jieshou's painted pottery pattern design also embodies the living heritage of traditional crafts. It encourages designers to explore and innovate on the basis of respecting and understanding tradition. Through continuous experimentation and practice, they can explore more possibilities in paper-cutting art. This creation, based on but transcends tradition, helps cultivate cultural confidence in the new generation of designers. It also promotes the effective dissemination and sustainable development of traditional cultural contexts in modern society.

In summary, integrating morphological grammar into the modern transformation design application of Jieshou painted pottery patterns enriches the traditional visual expression of these patterns and broadens their cultural communication and promotion paths. Accordingly, it substantially promotes the effective dissemination and living heritage of Chinese traditional cultural contexts in the contemporary setting.

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Conflict of Interest

The work described has not been submitted elsewhere for publication, in whole or in part, or is not under review process in another journal, and all the authors listed have approved the manuscript enclosed.

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