

Research on the Discrepancy and blending of Lacquer Ceramic Art

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Abstract. The rich historical use of lacquer in China and the enduring tradition of Oriental pottery have laid the foundation for preserving traditional handicrafts. This research seeks to uncover the cultural significance of lacquer items and innovative pottery, delving into their artistic elements to preserve their cultural essence. By examining the interaction between lacquer and pottery within an artistic framework and exploring the expert fusion of lacquer craftsmanship, this study provides valuable insights to foster the contemporary growth of traditional craft design. The research findings demonstrate that a precise integration of design elements inspired by the aesthetic qualities of lacquer artifacts into lacquer products effectively conveys cultural heritage in the present era. The design process for creative products evolves through the innovative amalgamation of lacquer and ceramic techniques, resulting in the creation of unique lacquer and ceramic pieces. The primary goal of this study is to inspire emerging designers to contribute to the ongoing innovative development of lacquer pottery products.

Keywords: Lacquer Ceramic Art; Blending; Design evaluation.

1. Introduction

The history of lacquerware and ceramics in ancient China is a fascinating journey of artistic evolution and cultural significance. From the earliest appearance of lacquer ware to its heyday during the Warring States period, and then to the continuous development and changes of subsequent dynasties, early lacquer and ceramic decorations, though simple, marked an important advance in human civilization, adding convenience and beauty to people's lives. Even today, they still have great aesthetic appeal (Table 1).

Table 1. Artistic Characteristics of the Combination of Lacquer and Ceramics.

Age	Artistic Characteristic
Neolithic Era	Excavations from earlier periods, such as the Neolithic and Bronze Age, show that the use of lacquer on ceramics was very limited. Lacquer may have been used primarily for protective purposes or as a simple decorative element.
The Shang and Zhou periods (c. 16th-11th century B.C.)	Artisans began experimenting with lacquer on ceramic vessels to enhance their appearance and durability. Lacquer was used as a protective layer to make ceramics more resistant to moisture and wear. Lacquer was also used for decorative purposes, with incised patterns and contrasting colors adding artistic value to ceramic vessels.
Eastern Zhou (770-221 B.C.)	The combination of lacquer and ceramics became more prominent. Lacquer was used as a coating to enhance the appearance of pottery and introduced new decorative techniques.
The Qin (221-207 B.C.) and Han (206 B.C.-220A.D.) periods	The combination of lacquer and ceramics reached its peak during the Qin and Han Dynasties. Lacquer was used as a protective coating for ceramic vessels, enhancing their durability and adding luster. The lacquer painting techniques used on ceramic surfaces in the Terracotta Warriors demonstrate the innovative and diverse applications of lacquer throughout history.
Northern and Southern Dynasties (420 - 589)	The combination of lacquer and ceramics made intricate and detailed designs possible, and lacquer was used to create inlays and add vibrant colors to ceramics. The introduction of monochrome glazed pottery further enriched the decorative possibilities.
Sui (581-617) and Tang (5 Dynasties)	Lacquer and ceramics continued to evolve, with innovations in glazing techniques and decorative styles. These two art forms interacted with each other, and the "Tang Three Colors" were applied in splashes or drips to produce stunning mottled effects, creating vivid and lively patterns.
Song and Yuan Dynasties (960 - 1279)	Lacquerware and ceramics still maintain their prominence. Song Dynasty ceramics are known for their delicate shapes and fine glazes, while Yuan Dynasty ceramics exhibit more vibrant colors and bold designs.
The Ming (1368-1644) and Qing (1644-1911) Dynasties	The Ming and Qing dynasties witnessed a boom in the art of lacquerware and ceramics. Intricate lacquerware (such as Zisha pottery) was favored by the literati, while ceramics of the Ming and Qing Dynasties were highly prized for their varied shapes and exquisite craftsmanship.

Throughout history, with the progress of human life, the development of science and technology, the maturity of craftsmanship and the use of new materials, lacquerware and pottery have evolved from unitary to multifaceted, from rough to exquisite, from simple to complex, from practical to aesthetic. From the initial focus on simple decoration and protection, they have developed into the mature development of pure art forms today. History is the witness of artistic wisdom, lacquer and ceramics in the long river of history reveals the ingenuity of ancient Chinese craftsmen, in order to meet the material needs of the people of the era in which it is located, the spiritual pursuit and aesthetic pursuit, to keep pace with the times, highlighting the versatile charm of this fusion of arts. The ancient Chinese craftsmen constantly explored porcelain making techniques, reformed the formula of porcelain clay and glaze, innovated the firing process, and created new artistic products. The combination of these two media has left an indelible mark on traditional Chinese culture, producing a rich and varied artistic heritage. The enduring legacy of lacquerware is important in the contemporary preservation and development of traditional craftsmanship. After the Tang and Song Dynasties, with the development of porcelain, lacquerware gradually went to the edge, and its practicality continued to diminish. In contemporary times, lacquerware has completely faded out of people's lives, on the one hand, high-end and luxury development, being used as handicrafts for collection, investment and trading; on the other hand, technological and superficial development, lacquer craftsmen pay too much attention to the expression of technology and the display of eye-catching surface effects, and do not pay attention to the actual utility of the work, which has made lacquerware lose its value of use. On the other hand, the technical and superficial development, the lacquer craftsmen pay too much attention to the expression of technology and the display of eye-catching surface effect, do not pay attention to the actual function of the work, also make the lacquer lose the value of use.

2. Objectives

2.1 To sort out the cultural essence within the blend of lacquer and pottery, capturing their aesthetic qualities in a contemporary context, emphasizing its design value.

2.2 To explore the synergy of lacquer and pottery materials and techniques to create pioneering lacquer pottery products by seamlessly merging their design elements.

3. Methods

This study combines qualitative and quantitative methods to address the research questions in the process of designing and practising lacquerware creative products.

1) Define the product design theme, Fig into the aesthetic symbols in the creative product design, and explore the source of creativity.

2) Creative product design process, search for modelling elements from Chinese landscape painting graphics, and gradually improve the design scheme.

3) Analysis the cultural characteristics of the fusion of lacquer and ceramics, the aesthetic qualities of lacquer and ceramic relics in the contemporary translation of the design value.

4. Research Result

4.1. Conceptualization of the Idea

The landscape of Yadan is a source of inspiration - the ever-changing landscape bears witness to the various dynamics that have tirelessly shaped it over time (Fig 1). At the heart of this exploration is the profound phenomenon of wind erosion - the sculptor of the landscape that gives the Adamant its unique personality. Through careful study, we have discovered the true nature of wind erosion - an essence utilized and infused into the core of artistic expression. By refining the natural forms and intricate details inherent in the Yadan landscape, the undulating patterns, twists, and turns carved into

the terrain by wind erosion, a design conception was born that perfects the undulating and interlocking lines. These design elements are reminiscent of the wind-eroded landforms, subtly capturing the impact of the elements that shaped them.



Fig 1. The landscape of Yadan.

4.2. Sketch Design

The design sketches serve as a vessel to distill the erosion narrative into a tangible piece of lacquer pottery. Its purpose is to bridge the gap between the observer and the natural world, prompting reflection on the imperceptible forces that shape the landscape. The conceptual elements of the work are reminiscent of the contours of the Yadan Mountain range, with undulating curves and peaks mirroring the organic topography. Delicate lines emerge from the foundations, carefully etched to replicate the intricate marks carved by wind erosion. These lines intertwine to distill the essence of the forces that painstakingly shaped the Yardang Mountains. These intricate lines of design pay homage to nature's mastery and inspire curiosity. Through this artistic lens, the subtle elegance of the dance of erosion is perpetuated, a reminder of the endless interplay between time and the natural world (Fig 2).

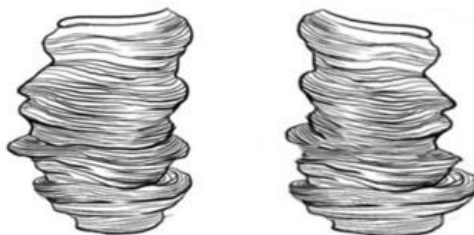


Fig 2. Lacquer ware Inspired by Erosion.

4.3. Design Process

Step 1: Before fabricating the unglazed pottery, a thorough evaluation of various molding techniques was conducted, considering multiple objective variables. After determining the potential risks associated with high-temperature firing, a pragmatic method, mold molding, was used because of its convenience and minimal risk (Fig 3).



Fig 3. Mold Forming.

Step 2: Given the necessity of firing at 1,280°C using a gas kiln, careful consideration was given to minimizing clay shrinkage. Plain grey clay was chosen for the clay molding to give a smooth surface after firing and facilitate subsequent coloring. After demolding and drying, the raised imperfections at the mold joints were meticulously repaired (Fig 4).



Fig 4. Stripping.

Step 3: During the glaze selection phase, the glaze chosen style is paramount. Three glazes, "Sunset Yellow Sand", "Pottery Black Dot Leopard White", and "Sand Basin White Dot" were meticulously considered and evaluated in order to emphasize the appearance of wind-etched mottling and the signs of the passage of time (Fig 5). White and black cosmetic clays were also explored as secondary options.



Fig 5. Three Glazes.

Step 4: Glaze Test Piece Selection (Fig 6) was critical in the design process. The three glazes from Option 1 were meticulously applied to test pieces 1, 5, and 6. At the same time, the black and white makeup clays of Option 2 were applied to test pieces 2, 3, and 4. After firing in the kiln at 1,280°C, it was observed that the visual effect of the "Sunset Yellow Sand" and "Sandpoint White Dot" glazes from Scheme 1 was not satisfactory when viewed from a distance. In addition, the harsh colors and lack of matte texture of these two glazes did not harmonize with the glossy, flat texture of the final lacquerware, creating an incongruous composition, and were therefore excluded from consideration. The black-and-white makeup clay of Option 2 turned gray-black and off-white at the high temperatures of the kiln, a far cry from the intended hue. Therefore, Option 2 was also discarded. Ultimately, test No. 5 from Option 1, characterized as "Pottery Black Spotted Leopard White," was the best choice. The mixture of matte and glossy textures creates a tactile experience that evokes the sensation of touching the wind-eroded rock.

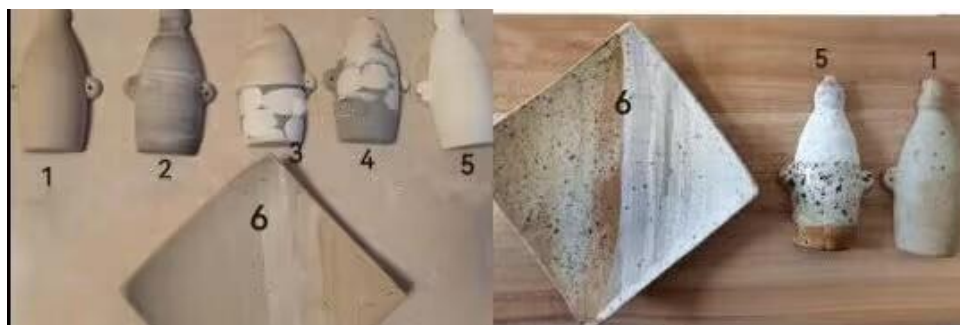


Fig 6. Glaze Test Piece.

Step 5: Glazing consisted of using matte "Sandpoint White Spot" for the interior and layering "Ceramic Black Spot Leopard White" for the exterior. Earth tones of warm browns, soft grays, and light ochres evoke memories of a serene and beautiful landscape (Fig 7).



Fig 7. Glazing.

Step 6: The kiln-fired result demonstrates the rich variations of iron flakes that enhance the three-dimensionality of the piece. The decorative effect achieved is consistent with the desired result and effectively highlights the wind erosion's simplicity and dynamism. The shape of the work skillfully captures the essence of the wind's movement, while the irregular glaze variations interpret the subtle fluctuations of the wind (Fig 8).



Fig 8. Firing in the Kiln + After Firing.

Step 7: The subsequent stage is the application of Lacquer, which is baked at a temperature of 150°C for 50 minutes to form a strong adhesion between the Lacquer and the surface of the pottery, laying the foundation for the subsequent decoration and painting (Fig 9). To emphasize the core features of wind erosion, a mixture of black Lacquer and fine tile ash was used and applied using the leached-line wrinkle technique. This was done to create the impression of wind over the hills and to reflect the granular texture inherent in wind-eroded landforms, creating patterns, textures, and finishes that emphasize the strengths of both materials.



Fig 9. Brushing Raw Paint + Leach Line.

Step 8: Once the leach line was applied, the coloring process began, with 15 layers of paint added in sequence. The final step is careful sanding and leveling with sandpaper of different grits: 600#, 800#, 1000#, 1500#, and 2000#. This step is essential to achieve harmony between the decoration and the glaze. The upper part of the work is intentionally blurred, creating a fleeting effect that suggests the passage of time. This soft blurring effect blends seamlessly with the clear lines below, symbolizing the ephemeral nature of the art of erosion. This process not only perfectly renders the natural form but also incorporates the artist's emotions into the work through the textural qualities of the lacquer Fig 10).



Fig 10. Before Sanding in Different Colors.

4.4. Design Results

The primary purpose of this creation was to show the grandeur and complexity of the Northwest Danxia landscape. However, the initial firing results did not meet the expected standards. Subsequent glaze polishing and secondary firings were intended to enhance glaze texture and color integration, but challenges remained. These obstacles led to exploring unconventional firing techniques, resulting in unique textures that add a distinctive flavor to the piece. A strategic design approach was born in response to the problems encountered during the two small-scale firings. Integrating multiple mountainous sections on either side of the piece was one solution. Utilizing the power of Lacquer, an intricate pattern resembling rhinoceros' skin was etched into the surface of the ceramic using black, red, and gold colors. This method not only solves the problem of imperfections but also breaks the uniformity of the mixed glaze colors and introduces a dynamic visual element. The harmonious interaction between the Lacquer's brightness and the ceramic's tactility became a central achievement. These techniques pushed the boundaries of traditional craftsmanship and created a coherent unity between Lacquer and glaze. Although the color textures are similar, subtle variations emerge, highlighting the combination of shapes and tones. An iterative approach to refinement and innovation remains integral, facilitating the exploration of new techniques, materials, and cultural elements (Fig 11).



Fig 11. The Melody of the Work Wind Erosion.

4.5. Validation of the Study

The fusion of Lacquer and pottery, as well as the skillful maintenance of textural consistency, is to be commended. The project was praised for its successful portrayal of the essence of Danxia and its ability to narrate the forces of nature and the passage of time. The clear communication of the concept of wind erosion was also emphasized, as well as the communication of global cultural identity. Together, these insights enhance the artistic and cultural impact of the project, expanding its significance and potential scope. The experts provided a valuable feedback matrix highlighting the potential of the project and avenues for improvement (table 2). They suggested exploring a more

comprehensive range of materials to enable more accurate simulations and to ensure consistent coloration of natural textures such as rhinoceros' skin. They suggested digging deeper into cultural narratives to enhance audience engagement and urged the incorporation of cross-cultural elements to deepen empathy.

Table 2. Experts' Opinions on the Project.

Master	Keywords	Feedback
1	Material experiment	It is recommended that a broader range of materials be explored to simulate the desired effects of wind erosion better. Experimenting with different clays and glazes may give more accurate results.
2	Color consistency	Color selection must be more consistent, especially when simulating natural textures like rhinoceros skin. It is vital to ensure that the color matches the desired effect.
3	Cultural depth	It is recommended that the cultural symbolism and storytelling potential of combining Lacquer and pottery be explored in depth. Adding layers of cultural narratives can enrich the viewer's experience.
4	Cross-cultural integration	Exploring cross-cultural integration beyond aesthetics is encouraged. Incorporating cultural elements to convey deeper meanings and resonance can enhance the work.
5	Innovative approaches	The project's innovative approach to combining Lacquer and pottery was commended. The use of non-traditional firing methods and the incorporation of rhinoceros-skin lacquerware patterns demonstrate a new creative perspective.
6	Coherent change	The incorporation of different color textures while maintaining consistency was appreciated. The excellence of the production process and the attention to subtle variations resulted in a comprehensive visual experience.
7	Cultural resonance	The project's ability to capture the essence of the Danxia landscape through texture and color was emphasized. The incorporation of lacquer techniques to depict natural elements resonates well with the theme.
8	Narrative	Appreciate the narrative nature of the work, evoking the power of nature and the passage of time. Using lacquer techniques to represent wind erosion adds depth to the storytelling.
9	Conceptual clarity	Emphasized the importance of clarifying the concept of the wind erosion effect to ensure effective communication of the narrative and symbolism to the audience.
10	Identity	The project's role in conveying national identity through Lacquer and pottery was emphasized. They emphasized the importance of presenting traditional folk culture and practices to a global audience.

The symposium emphasized the contemporary significance of combining ceramics and Lacquer, exploring this fusion through various academic perspectives and highlighting the intersection of design and artistic expression.

1) Integration of cultural development: The symposium emphasized the cultural evolution of traditional lacquer art, advocating the integration of various crafts with modern life, market trends, and the aesthetic preferences of the younger generation. The aim is to ensure its continued development by adapting the aesthetic to the contemporary environment by drawing on material progress and historical traditions.

2) Expanding the horizons of traditional ceramics: The discussion explored the challenges of the limited diversity of traditional ceramics. The inherent plasticity of clay grants create flexibility in their artistic endeavors. Pottery encompasses a variety of forms, including glazes and greenware decoration. In addition, artists' in-depth exploration of pottery forms gives it a distinctive uniqueness.

3) Overcoming technical limitations: The discussion emphasized the common ground between traditional and modern lacquerware regarding artistic concepts, forms, and techniques. However, it emphasized the crucial role of craft materials in shaping artistic expression. Introducing lacquer

techniques into ceramics requires drawing on lacquer techniques such as carving, engraving, and inlay. Various lacquer materials can be utilized, such as colored Lacquer, silver lacquer, and gold lacquer. This intervention combines the unique properties of both Lacquer and ceramic materials. Combining Lacquer with contemporary ceramics expands the realm of creative expression and promotes a diverse outlook for lacquer pottery.

5. Discussion

1) The importance of experimentation and adjustment in achieving the desired results was emphasized. Using different colors to simulate the effect of rhinoceros skin lacquer and blend different parts of the mountain design demonstrates an innovative approach to overcoming firing challenges. This strategy corrected the imperfections and introduced textural visual elements that enhanced the overall aesthetic. Despite the strong market support for policies on traditional crafts, craftspeople, inheritors, operators, consumers, and researchers working on related studies often hold different goals. These different interpretations of the culture at the heart of different craft forms lead to different assessments of the problem and suggested solutions. These different perspectives bring complexity to the revitalization of crafts, including the innovative fusion of lacquerware and ceramics.

2) The fusion of lacquer painting techniques in the field of lacquer art with the inherent delicate shapes of ceramics was well received by the experts. This fusion demonstrates the project's ability to harmonize traditional craftsmanship with modern aesthetics. The seamless interaction between lacquer and glazed ware, each presenting subtle color textures, attests to the project's success in creating a coherent and multifaceted visual experience.

3) The experts clearly recognized the utility and value of this experimental project and considered the combination of lacquer and pottery a promising path. They praised the project's ability to combine tradition and innovation to produce crafts that reflect tradition and modern artistry. The production stage requires skilled craftsmanship, with artisans meticulously applying lacquer, shaping ceramic structures, and employing precise firing techniques to create fused products. A strong commitment to detail, precision, and traditional craftsmanship remains critical to achieving high-quality results.

6. Implication and Further Research

1) The rise of cultural products has created an illusion of a thriving crafts sector. The current popularity of branding, while appropriate for specific crafts, carries the inherent danger of diluting the true essence of time-honored crafts. This trend has led to so-called "fashion products," in which "traditional" elements are grafted onto surfaces through mechanized processes. In many cases, this involves the implantation of "traditional" symbols into artistic creations, often at the expense of their intrinsic cultural core. This trend continues the "playing with tradition" theme in the commercial sector. The deceptive veneer of industrial progress can mislead observers into believing that traditional crafts, including innovative hybrids such as lacquerware and ceramics, have flourished. At this point, the fusion of lacquer and ceramic product styles becomes a specious justification.

2) Effective communication of artistry is crucial when developing cultural and creative products. Recognizing the significance of cultural diversity is crucial, especially when integrating elements such as symbols. These elements may have different meanings in different cultures. Therefore, careful consideration is necessary to avoid misunderstandings due to cultural differences. Ensuring the design style harmonizes with the local consumers' cultural background is essential for fostering goodwill towards the product.

Given these challenges, innovation and development of lacquerware and ceramics require a concerted effort to deal with the complexities of different perspectives and the lure of industrialization. Moving forward, there is a need for a balanced approach that preserves authentic cultural cores while embracing innovation to ensure that the fusion of these two exquisite art forms is both grounded in their rich traditions and adapted to contemporary needs.

Acknowledgements

The authors gratefully acknowledge the financial support from Jiangxi provincial culture and art science planning project (research on the flow and intergrity of lacquer pottery art YG2021043) funds.

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