

Transformation and Innovation of Traditional Chinese High-Stemmed Ceramics in Contemporary Design

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ABSTRACT

High-stemmed ceramics represent a quintessential form in traditional Chinese vessel morphology, whose evolution reflects the interplay of function, aesthetics, and technology. This study aims to systematically explore the pathways for the contemporary transformation and innovation of high-stemmed ceramics. By examining their historical development and aesthetic characteristics, this paper analyzes their diversified development trends in modern design and constructs an innovative methodology integrating systematic and bionic design, spiritual core reinvention, Sino-Western aesthetic dialogue, and sustainability concepts. The research seeks to inject new vitality into high-stemmed ceramics and provide theoretical references and practical directions for the contemporary inheritance of traditional Chinese creation wisdom and design innovation.

Keywords: High-stemmed ceramics, Design, Innovation.

1. INTRODUCTION

The development of high-stemmed ceramics has consistently involved a dynamic balance between function and aesthetics. Their evolutionary trajectory clearly demonstrates a transition from utility-dominance to the integration of practicality and art. Early high-stemmed ceramics primarily took forms such as tableware and storage vessels, focusing on fulfilling daily needs like dining and storage, where practicality was the primary design criterion. With societal structural changes and evolving artistic trends, functions such as ornamentation and ritual use gradually became incorporated into their value system. While retaining practical attributes, they began to carry aesthetic expression and cultural symbolism. The inheritance of traditional craftsmanship and the infusion of modern artistic aesthetics further propelled high-stemmed ceramics to develop a unique characteristic of "function as the foundation, art as the soul" – even though practical function remains a core design directive, the enhancement of spiritual and aesthetic value has become a key driving force in their development.

As a highly distinctive vessel form in ancient Chinese ceramics, the persistence and evolution of high-stemmed ceramics are driven by both internal motivations and external conditions. Innovations in lifestyle and shifts in aesthetic perceptions constitute the internal logic for their formal iterations. Meanwhile, socio-economic development and breakthroughs in porcelain-making technology provided the external foundation for their technical upgrades and functional optimization.

2. OVERVIEW OF HIGH-STEMMED CERAMICS

2.1 Definition of High-Stemmed Vessels

Extensive literature and museum collections indicate that ancient people collectively referred to vessels with stems taller than the cup body as "high-stemmed vessels." The stem of such vessels is higher than the common flat base, typically cylindrical or trumpet-shaped, and tightly integrated with the cup body; some high-stemmed vessels are even monolithic. Additionally, some feature openwork decorations, showcasing unique

craft aesthetics. The emergence of high-stemmed vessels is closely related to the residential lifestyle of primitive societies, and the continuity of their form is also intimately connected to their specific structural design. The modeling design of these vessels often imparts a visual feeling of uprightness and elegance, possessing distinct characteristics. High-stemmed vessels are made from diverse materials, including pottery, porcelain, lacquerware, gold, silver, jade, etc., with ceramic vessels being the most common and holding significant importance throughout historical evolution.

The design of high-stemmed vessels first appeared in the Neolithic Age, serving primarily as food and drink utensils and ritual vessels, typically used by the upper nobility. Ancient people determined the allocation of utensils based on social context, daily lifestyle, and hierarchical systems. Due to the relatively complex manufacturing process of high-stemmed vessels and their association with specific historical contexts, these vessels were predominantly reserved for the upper classes. In historical paintings, we often see literati and upper nobility using high-stemmed vessels in elegant gathering scenes, further illustrating their close association with high social status groups.

2.2 Classification of High-Stemmed Ceramics

High-stemmed ceramics can be classified into two main categories based on function. The first is food and drink utensils, including drinkware and tableware. Drinkware, such as high-stemmed cups, were mainly used for holding liquids like wine and tea; tableware, such as high-stemmed plates and bowls, were used for holding dry fruits or cooked food. The second category is household utensils, primarily including high-stemmed lamps and high-stemmed incense burners, used for lighting and burning incense. [1] Finally, ritual vessels represent an important application of high-stemmed ceramics, their forms and varieties changing with historical periods. For example, the black pottery eggshell cup from the Longshan Culture period combined practicality with spiritual symbolism and was often used in sacrificial ceremonies.

2.3 Evolution of High-Stemmed Ceramics

The development of high-stemmed ceramics underwent multiple generations of evolution, with materials and styles iterating continuously

according to the needs of the times. From the Shang-Zhou to Qin-Han periods, daily utensils were primarily made of bronze, lacquer, and jade, mostly used by the nobility, and ceramics had not yet become mainstream. By the Song Dynasty, vessel shapes innovated based on influenced by foreign styles from the Wei, Jin, Northern and Southern Dynasties to the Sui and Tang, shedding extravagant decorations and exhibiting rational elegance, aligning with the simple and restrained aesthetics of the literati and scholar-officials; the craftsmanship and decoration of high-stemmed vessels also achieved breakthroughs. The high-stemmed porcelain cup in the true sense appeared in the Sui Dynasty, benefiting from the unification of north and south, leading to porcelain that blended northern and southern celadon styles; high stems became sought after from then on, and high-stemmed plates were also produced in large quantities during the Northern and Southern Dynasties, becoming common vessels in the Sui Dynasty. Tang Dynasty high-stemmed vessels inherited characteristics from previous generations, made from ceramics and metal, primarily used for serving wine and drinking tea; deeply influenced by foreign styles in the early period, they developed a unique style later. Song Dynasty high-stemmed cups incorporated bionic designs like flared mouths and curved belly openings, with rich decorative techniques and diverse patterns; the white-glazed flared-mouth high-stemmed cup represents the peak of Song white porcelain firing technology.

The Yuan Dynasty saw political stability and government support for handicrafts; high-stemmed cups became representative vessels, employing various forming techniques; the columnar design at the joint facilitated carrying by nomadic peoples, meeting portability needs. During the Ming and Qing periods, the forms, glaze colors, and craftsmanship of high-stemmed cups reached their historical peak. Imperial kilns produced porcelain exclusively for the royal court; official kilns served the upper classes with refined styles, while civilian kilns focused more on practicality with sturdy and simple forms. During this period, high-stemmed cups continued previous styles; from the Ming Dynasty onwards, white porcelain became mainstream, decorated primarily with blue-and-white and five-color. High-stemmed cups, bowls, plates, etc., retained traditional forms while optimizing practicality. Traditional high-stemmed daily utensils combine modern aesthetics with practicality, embodying the concept of "form follows function." In the current industrial context,

designers must balance utility and aesthetics while inheriting the value and connotation of traditional culture.

3. ANALYSIS OF CONTEMPORARY HIGH-STEMMED CERAMIC DESIGN

3.1 *Aesthetic Characteristics of High-Stemmed Ceramics*

Since the reform and opening-up, the domestic ceramic market has gradually become standardized, related enterprises have continuously developed and expanded, the variety of high-stemmed ceramic products has increasingly enriched, showing a diversified and distinctive trend. In the past, high-stemmed ceramic products primarily met basic living needs, with functionality being the core of design. However, with the deepening of design theory and the improvement of public aesthetic standards, modern designers focus not only on product practicality but also on infusing them with spiritual connotation, aesthetic value, and symbolic meaning. This shift reflects the balance between function and art in ceramic design.

Many products incorporate the high-stem structure in their design. For example, SHANG XIA's Bamboo-Wrapped Porcelain High-Stemmed Pair Cups use the classic "high-stemmed cup" as a creative prototype(See "Figure 1"), featuring a lightweight form and flowing lines. The proportion between the teacup and the saucer is perfectly balanced, cleverly integrated, fully displaying lively grace. They combine bamboo weaving craftsmanship with high-temperature white porcelain, utilizing a bridge-shaped knob derived from ancient traditional vessel forms. [2] The white porcelain teacups are fired at over 1300 °C, resulting in a sturdy and fine texture.



Figure 1 Bamboo-Wrapped Porcelain High-Stemmed Pair Cups.

The Jingdezhen Hand-Painted High-Stemmed Ceramic Coffee Cup features a glaze color resembling the gradient of dawn sky(See "Figure 2"), where colors blend to form starburst spots, metaphorically representing new life and hope. The glaze is based on underglaze color technique fired at 1380 °C, giving the color the cool luster characteristic of mineral crystals. The designer used the blue-and-white fenshui technique to simulate oil painting glazing methods, applying 5-7 layers of glaze on the bisque body, with each layer forming a semi-transparent color gradation after firing.



Figure 2 Jingdezhen Hand-Painted High-Stemmed Ceramic Coffee Cup.

The Yingqing Underglaze Red Fridge Magnet prototype is the Yuan Dynasty Yingqing Underglaze Red High-Stemmed Cup(See "Figure 3"), a "treasured collection" of the Hangzhou Museum. [3] The prototype is 9.7 cm high with a 12 cm mouth diameter, featuring a flared mouth, deep belly, and splayed high stem, combining practicality and artistry, showcasing the typical characteristics of the Yuan Dynasty nomadic "horseback cup." This cup uses Yingqing glaze as the base, with underglaze red applied from the rim to the base, with the glaze color appearing bluish with hints of red, the interior base shows deep blue where glaze accumulates, while the exterior wall exhibits a gradient pink due to glaze diffusion.



Figure 3 Yingqing Underglaze Red Fridge Magnet.

In recent years, consumer aesthetics have increasingly inclined towards Chinese style. Many daily-use porcelain products gradually exhibit confidence in national traditional culture, reflecting changes in contemporary aesthetics and value pursuits. In terms of modeling, the high-stem structure has become a notable trend.

3.2 Application Analysis of High-Stemmed Ceramics

The core value of everyday objects is reflected in their "universality" and "everydayness." They not only possess practical functions but also carry ways of understanding the world and human thought. The design of modern daily-use ceramics emphasizes not only exterior beauty but also the underlying cultural connotation. In the process of ceramic product design, modeling is the most crucial, adhering to the design philosophy of 'the unity of heaven and humanity.' The charm of design lies in truly serving people, being human-centered. [4] Hang Jian stated in *The Thought of Craft*: "An item that has developed continuously for thousands of years, through ideological, religious, economic, folk, and ethnic factors, must have its reason for existence. The basis of this reason is function, and the charm it embodies." [5] Among numerous everyday objects, cups and plates are undoubtedly the items most closely connected to human life. Their history of use is long, accompanying almost every stage of human societal development. "Design is a product of a specific era, differing with temporal development and regional variations, thus possessing temporality and locality." [6] Currently, many design industries often adopt practices that attract consumers through excessive stylistic modification. This trend may lead to an over-

pursuit of technical skill and superficial "complexity." However, ideal design should organically combine "technical skill" and "thoughtful ingenuity," because "the form itself is the medium of the product's visual language." [7]

4. CONTEMPORARY INNOVATIVE DESIGN PATHWAYS FOR HIGH-STEMMED CERAMICS

Building upon the inheritance of traditional creation wisdom, the contemporary innovation of high-stemmed ceramics is a systematic project integrating design thinking, cultural philosophy, global aesthetics, and sustainability concepts. This section will systematically elaborate on the innovative design pathways for high-stemmed ceramics oriented towards modern life and the global market from four dimensions: design methodology, spiritual core, aesthetic dialogue, and sustainable responsibility, aiming to endow them with enduring vitality.

4.1 Towards Systematism and Bionics

The contemporary design paradigm is undergoing a profound shift from "object" to "event." Designers' focus has expanded from the product's own function and form to broader social needs, user experience, and emotional connection. This transformation provides a diversified methodology for the innovation of high-stemmed ceramics.

4.1.1 Systematic Design Thinking

The design of high-stemmed ceramics can break through the limitations of single vessel forms and shift towards constructing a serialized product ecosystem covering multiple scenarios. For example, a series linking "coffee set - tea set - dinnerware - wine vessels" could be designed, where the wine vessel series can be subdivided into warmers, cold dish plates, fruit plates, etc., matching different types of wine. This systematic design not only meets the diversified and refined needs of modern life but also, through the functional correlation and formal unity among the vessels, enhances the sense of ritual and integrity in use, promoting interaction among family members.

4.1.2 Infusing Vitality through Bionic Design

Bionic design provides a source of innovation for high-stemmed ceramics in terms of materials, structure, form, and sustainability. Designers can draw inspiration from the organic forms, efficient structures, and ecosystem wisdom of nature. Applying these elements to high-stemmed ceramics can optimize their mechanical performance, create holding experiences more aligned with ergonomics, and endow the works with vibrant vitality and unique emotional value, establishing an emotional bond between the user and nature.

4.1.3 Creative Application of Process Addition and Subtraction

Through the comprehensive application of process addition and process subtraction, designers can greatly enrich the visual language and spatial layers of high-stemmed ceramics. Process addition primarily involves techniques like low-relief, body splicing, and special glazes to achieve morphological augmentation and construction; whereas process subtraction focuses on material reduction and reshaping through techniques like cutting, openwork, and arranging. These two approaches are not merely formal creation but also an in-depth exploration and artistic dialogue with the essence of ceramic materials, ultimately shaping contemporary vessels that possess both personalized aesthetic value and practical function.

4.2 Reinventing the Spiritual Core

The highest realm of design lies in transcending mere physical form and touching deep spiritual connotations. The innovation of high-stemmed ceramics must return to the Eastern philosophy of creation, "the unity of Dao and Qi." As stated in Huainanzi: "For humans having form, and form having capability, it is filled by Qi and directed by Spirit." This statement also applies to design. A vessel is not only a carrier of "form" and "capability" but also requires the fullness of "Qi" and the guidance of "Spirit."

In design practice, this means that the innovation of high-stemmed ceramics needs to pursue a threefold alignment: First, the high alignment of the vessel's form with its functional principle; second, the alignment of the design with contemporary human physical and mental needs; finally, the harmonious coexistence of the product

with the environment. Therefore, designers need to infuse high-stemmed ceramics with spiritual qualities such as tranquility, elegance, and resilience that align with modern aesthetics, elevating them from everyday objects to mediums carrying humanistic spirit and life philosophy.

4.3 Promoting Sino-Western Dialogue

In the context of globalization, the innovation path for high-stemmed ceramics should shift from unidirectional traditional replication to bidirectional, open international cultural dialogue. Traditional Chinese high-stemmed vessels contain dignified, elegant Eastern etiquette norms, while Western stemware and dessert stands reflect a dining culture and aesthetic taste characterized by transparency and lightness.

Modern design innovation precisely aims to establish creative connections between these two. Formal translation can blend the solemn aura of Chinese high-stemmed cups with the dynamic lines of Western stemware; functional grafting can combine the social function of Western "dessert stands" with the multi-layered, modular concept of the Chinese "Lian with Nine Boxes." Through this cross-cultural design language conversion, products can be created that contain Eastern philosophical wisdom while conforming to global usage habits and aesthetic consensus, thereby enabling high-stemmed ceramics to achieve genuine "living" inheritance and cultural resonance in modern life and on the international stage.

4.4 Practicing Sustainable Design

The contemporary "human-centered" design concept has evolved from satisfying users' immediate functional needs to comprehensively addressing long-term human well-being and the Earth's ecological environment. Against the backdrop of sustainable design, the innovation of high-stemmed ceramics must incorporate the product's full lifecycle impact into its core considerations.

This requires designers to pursue green innovation on multiple fronts: First, at the material end, actively explore the application of eco-friendly clays and natural glazes. Second, at the production and consumption end, promote the closed-loop recycling and reuse of ceramic waste and discarded products. By establishing sound recycling systems and developing efficient reprocessing technologies, transforming production waste and discarded

products into new raw materials can not only significantly reduce resource consumption and environmental pollution but also endow the materials with new stories and value. Ultimately, this pursuit of sustainability will guide the high-stemmed ceramics industry towards a green, low-carbon, circular development path, making it a model for future life that integrates aesthetic value, practical function, and environmental responsibility.

5. CONCLUSION

This study systematically reviewed the historical context of high-stemmed ceramics and, based on a contemporary design perspective, proposed a multi-dimensional, systematic framework for their future innovative development. The research indicates that the contemporary value of high-stemmed ceramics far exceeds their practical function alone; they are both material carriers of the Eastern creation philosophy "the unity of Dao and Qi" and an excellent medium for cross-cultural aesthetic dialogue.

The path to innovation lies in balancing inheritance and breakthrough. By introducing systematic and bionic design, high-stemmed ceramics can transition from single products towards a product ecosystem satisfying modern diversified life scenarios; through reinventing the spiritual core, they ensure the continued conveyance of tranquil, elegant Eastern temperament in a rapidly changing society; by promoting Sino-Western dialogue, creative translation of traditional forms and modern international aesthetics is achieved, broadening their cultural acceptance and application boundaries; finally, by practicing sustainable design principles, their innovation is rooted in long-term considerations of environmental and social responsibility, ensuring sustainable development.

In summary, the contemporary transformation of high-stemmed ceramics is a systematic project integrating design thinking, cultural philosophy, and technological ethics. The innovation pathways proposed in this paper not only provide specific methodologies for the design practice of high-stemmed ceramics but are also expected to stimulate deeper discussion in academia and industry on the modernization of traditional craftsmanship, jointly promoting Chinese design to confidently move towards the future while holding fast to its cultural roots.

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