

Study on the Compatibility of Jade Carving Traditional Craftsmanship and Modern Cultural Style

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Abstract: As an important carrier of Chinese civilization, jade carving carries thousands of years of technical wisdom and humanistic spirit. Under the wave of globalization and modernization, traditional craftsmanship is facing a crisis of inheritance and a challenge of innovation, while the rise of modern cultural styles has injected new vitality into jade carving, but has also brought about the hidden worry of the dilution of cultural connotations. Currently, the industry is in dire need of exploring the balance between traditional craftsmanship and modern aesthetics, in order to maintain the craftsmanship essence of jade carving while meeting the diverse needs of contemporary society. The study focuses on the path and strategy of integrating the two, and reveals the synergistic logic of technology, aesthetics and cultural values in the process of integration by analyzing the characteristics of traditional techniques and the nature of modern cultural styles. This is not only about the survival and renewal of the art of jade carving, but also a practice of creative transformation of traditional culture in the contemporary context. The study aims to provide the industry with references with both theoretical depth and practical value, and to promote the transformation of traditional crafts from “museum exhibits” to “living artworks”.

Keywords: jade carving; traditional craftsmanship; modern cultural style; compatibility

1. Introduction

Jade carving is a treasure of traditional Chinese craftsmanship, whose history can be traced back to the Neolithic Age, and whose techniques have evolved through the simplicity of the Shang and Zhou Dynasties, the splendor of the Tang and Song Dynasties, and the refinement of the Ming and Qing Dynasties, forming a unique artistic language and cultural symbols. However, in today's industrial civilization and digital technology-dominated world, the living space of jade carving has been compressed, and the young generation's detachment from traditional craftsmanship contrasts sharply with their pursuit of modern culture. Modern cultural styles emphasize simplicity, abstraction and cross-border fusion, and there is a potential fit between its kernel and the pictorial and symbolic nature of jade carving, but simple grafting often leads to cultural disconnection. For example, some of the works are over-pursuing formal innovation in order to cater to the market, ignoring the warmth of the jade material itself and the metaphorical significance of traditional motifs, and falling into the predicament of “similarity of form but not of God”. At the same time, traditional craftsmen stick to ancient methods but lack modern design thinking, making it difficult for their works to be integrated into contemporary life scenes. This contradiction reflects a deeper cultural proposition: how to innovate in the right direction, so that jade carving not only continues the oriental aesthetic gene, but also carries the spirit of the times [1].

2. Overview of Jade Carving Traditional Crafts

2.1. Types of Jade Carving Traditional Crafts

The types of traditional craftsmanship in jade carving reflect the philosophical thinking of Chinese civilization about materials and techniques, and have condensed into four classic paradigms throughout history. Round carving centers on the three-dimensional creation of objects, with the layered divine faces of the Shang and Zhou jade congs and the jagged peaks and valleys of the Ming and Qing shanzi

relying on the natural form of the jade material to construct a spatial narrative of interplay between the real and the imaginary, and this type of full-dimensional carving alludes to the ancient cosmology of "heaven is round and earth is square. Relief carvings interpret three-dimensional layers in a two-dimensional plane. The valley patterns (grain motifs) adorning the Han Dynasty jade annulus convey ritual symbolism through their meticulously arranged geometric projections, while the ground-alternating technique of raised relief and recessed carving seen on Tang and Song belt plaques renders avian and floral motifs with an ink-wash-like density, epitomizing artisans' masterful manipulation of light and shadow dynamics. Translucent carving breaks through the limitations of solidity. The intertwined forms of the openwork dragons and phoenixes of the Warring States period rely on a deep understanding of the mechanical structure of jade, while the light-transmitting holes in the jadeite flowers of the Qing dynasty produce a veil-like visual illusion of the hard material, confirming the aesthetic principle of "the real and the imaginary are mutually reinforcing". Line carving uses the blade of a knife as a brush, and the abstract arc of the red jade pig dragon outlines the mysterious power of primitive totems, while the poems and paintings of the Ming Dynasty Zigang plaques let the shaded lines carry the interest of the literati, revealing the spiritual core of oriental art, which is "simplicity and mastery over complexity". Each type of craftsmanship is the crystallization of the aesthetic paradigm and technical wisdom of a particular era, which together build up the genetic map of jade carving [2].

2.2. Techniques and Characteristics of Jade Carving Traditional Crafts

The technique system of traditional jade carving originates from a deep understanding of the material characteristics of jade and the fusion of humanism, the core of which lies in the creative philosophy of "applying the art according to the material". The yin carving technique uses the blade of the knife to travel between millimeters. The kui dragons on the surface of Shang and Zhou jade artifacts are as thin as a hair, the depth of which is controlled by the craftsman's wrist, and the rigidity and flexibility of the lines conveys the majesty of the totem; the yang carving highlights the pattern by eliminating the ground, and the chi dragons on the Han Dynasty jade swords use a sloping knife to make the edges of the relief carvings show the gradation of the flowing shadow and light effects. The valley patterns (grain motifs) adorning the Han Dynasty jade annulus convey ritual symbolism through their meticulously arranged geometric projections, while the ground-alternating technique of raised relief and recessed carving seen on Tang and Song belt plaques renders avian and floral motifs with an ink-wash-like density, epitomizing artisans' masterful manipulation of light and shadow dynamics. The polishing process implies the Taoist wisdom of "great ingenuity is like clumsiness", and the surface of Liangzhu jade cong has been repeatedly ground with animal skin and charcoal, ultimately presenting a warm and restrained matte texture, which is aesthetically different from the mirror effect of the later generation's mechanical polishing. Together, these techniques build up the creative logic of "the unity of heaven and mankind", whereby the craftsman, on the basis of respecting the natural form of jade, transforms cultural symbols into material entities with the help of tools, making each piece of work not only a condensation of skills, but also a physical expression of the spirit of the times [3].

3. Characteristics and Expressions of Modern Cultural Style

The penetration of modern cultural styles in the field of jade carving is reflected in the deconstruction and reorganization of traditional symbols, with the core feature of breaking through the inherent paradigm and reconstructing the logic of visual narrative. The trend of minimalism has given rise to geometric block cutting techniques, such as the angular cubic jade plaque, which abandons complicated ornamentation and conveys spatial philosophy only through the light transmission and texture of the material itself, alluding to the Bauhaus design concept of "less is more". Abstract expression transforms concrete objects into emotional symbols. Drawing on the multi-dimensional perspective of Cubism, the jade sculptor disassembles the traditional form of the auspicious beasts into a collection of flowing curves, so that the viewer can capture the contemporary translation of the oriental auspicious imagery in the fragmented form. The intervention of digital design tools has reshaped the creative process, with three-dimensional modeling techniques aiding in the realization of topologies that are traditionally inaccessible by hand, such as the hollowed-out jade lamps launched by the Forbidden City Cultural Creative Industries in Beijing, which use parametric algorithms to generate antique window lattice motifs. These practices reveal that modern cultural style is not a departure from tradition, but rather a new grammatical system that activates the vitality of jade carving art [4].

4. Problems Existing in the Process of the Compatibility of Jade Carving Traditional Crafts and Modern Cultural Style

4.1. Traditional Crafts Talent fault predicament

The dilemma of traditional craft talents is essentially a structural conflict between the inheritance mechanism of agrarian civilization and the production logic of industrial society, which is manifested in the breakage of the chain of skills transmission and the dilution of cultural genes. The traditional teacher-training system relies on the workshop-style teaching of long-term exposure, and apprentices need more than ten years of training in material perception before they can master the ability of “phasing jade”, and this kind of infiltration training mode has gradually lost its position in the fast-paced modern education system. Institutional education favors modeling theory and mechanical operation, and students lack the ability to anticipate the direction of internal locks and cracks in jade, and find it even more difficult to understand the wisdom of the traditional technique of “working with materials”, resulting in works that are in vain, but have lost the soul of craftsmanship. The aging trend of the artisan group exacerbates the risk of technological disruption, young practitioners in the impact of mechanical carving often choose to standardize the production path, the traditional carving of the “subtractive knife method” and other subtle control techniques are facing a crisis of loss. A deeper dilemma lies in the dissolution of craftsmanship ethics. Older craftsmen regarded jade as a condensation of the essence of heaven and earth, creating jade with the reverence of “asking for jade and knocking three times”, while modern quantitative production thinking downgraded jade to an ordinary raw material, and this mismatch in value perception has made it difficult to incorporate the spirit of traditional craftsmanship into the context of contemporary creations [5].

4.2. The death of modern cultural style understanding deviation

The death of modern cultural style deviation stems from the misinterpretation of the essence of innovation, which is manifested in the appropriation of cultural symbols and the break of aesthetic logic. Some creators equate modernity with westernization, and ignore the rhythmic law of “line follows air” in oriental aesthetics when grafting abstract geometric elements, resulting in the works being reduced to visual fragments of formal collage. The cognition of minimalism stays at the level of surface deletion, mistaking the rough elimination of traditional patterns as innovation, which in fact dissolves the cultural bearing function of jade carving, “the picture must be intentional”. In the practice of cross-media integration, digital modeling technology is often used as a shortcut to replace manual work, and although the topological structure generated by parameterization has a visual impact, it is difficult to reproduce the accidental texture generated by the situation in manual carving, and this kind of technological supremacy thinking cuts off the traditional creation paradigm of the trinity of the “hand, eye and heart”. A deeper dilemma lies in the lack of cultural translation ability, the introduction of modern style is often based on the premise of deconstructing the traditional symbolic system, but the lack of contemporary interpretation of the philosophical core of the jade culture “Bidu Zaidao”, so that the innovative works are reduced to the material experiments that have lost the weight of the spirit. When deconstruction and reorganization are alienated into the crude dismantling of traditional symbols, and when cross-border innovation is simplified into the physical superposition of materials and technology, jade carving is plunged into the crisis of “separation of the Dao from the tools”, and this cognitive bias not only hinders the modern transformation of the craft genes, but also dissolves the fundamental value of the art of jade carving as a carrier of culture [6].

4.3. Product acceptance and recognition difficulties

The problem of product acceptance and recognition reflects the value gap between cultural cognitive inertia and innovative practices, and is rooted in the misalignment between the traditional jade symbol system and modern consumer logic. The long-established value assessment standards in the collection market are fixed on material grades and technological complexity, and attempts by innovative works to break through formal conventions are easily misjudged as technological defects, leading to a cognitive blind spot in the market valuation system. Consumers' cultural imagination of jade carving still remains at the level of auspicious symbol carriers, and when modern style works strip away figurative ornaments and turn them into conceptual expressions, consumers are often caught in a predicament of interpretation, and this aesthetic gap weakens the emotional resonance effectiveness of the works [7,8]. The composite use of materials brought about by technological innovation has challenged the foundation of consumer trust in the “pure nature” of jade carving, and the intervention

of non-traditional materials, while expanding the dimensions of expression, may trigger consumers to question the purity of culture. A deeper contradiction lies in the fragmentation of the communication context. The traditional interpretation system of jade culture, which relies on rituals and ethics, can hardly carry the conceptual expression of modern art, while the emerging curatorial communication has yet to establish an effective value decoding mechanism. This two-way cognitive barrier makes it difficult for fusion works to be recognized by traditional collectors, and not easy to be integrated into the evaluation system of contemporary art, ultimately falling into acceptance dilemmas amidst the blurring of cultural discounting and market positioning .

4.4. Short board of insufficient cultural depth excavation

The shortcoming of insufficient cultural excavation is essentially the impoverishment of the decoding ability in the process of transforming the genes of traditional craftsmanship, which is manifested in the dual dilemmas of symbolic appropriation and philosophical deciphering. Creators are accustomed to intercepting traditional patterns for visual reorganization, but ignore the Confucian ethical foundation of jade culture, let alone transforming the spirit of temperance, which is "better to be broken by jade", into a value resonance in modern contexts. The reference to traditional techniques mostly stays at the tool level, rarely touching the craft philosophy of "treating jade as if cultivating one's own body", resulting in the loss of the life experience contained in the "Way of Faceting" in modern creations. The lag in academic research has exacerbated the cultural discontinuity at the practical level, and the dialectical relationship between "heavenly workmanship and human ingenuity" in the ancient rituals of jade making has not been systematically sorted out, making it difficult for modern creators to grasp the scale of "keeping the breakage" in the practice of fusion, and they tend to fall into the form of imitation and neglect the spirit of translation [9].

5. Strategies for the fusion of traditional crafts of jade carving and modern cultural style

5.1. Constructing the traditional craft inheritance talent cultivation system

To establish a traditional craft inheritance talent training system, we should break the boundary of workshop empiricism and professional theorizing to build a dual-track teaching model centered on the philosophy of craftsmanship. We maintain the spiritual core of the teacher-training system as "spiritual core doings" embedded in institutional education, refine collectively the material perception training of "perception of the material" into cognizable modules, leverage modern three-dimensional scanning technology as a scaffold support for apprentices, use it to help apprentices form spatial imagination of the direction of the cracks in the skein of jade and at the same time, kindly referencing the ritual of "asking for jade" to facilitate respect for the material. In reconstructing the course content once again, interdisciplinary knowledge grafting was strengthened and simultaneously symbology and orient aesthetic theories were mapped on to the traditional modeling training, in a means that while apprentices learning how to "pluck out and remove the locks" of traditional craft knowledge, they simultaneously understood the cultural generation logic of the "form and meaning". The establishment of a training mechanism for "digital craftsmen" places parametric modeling technology as a rational design tool as opposed to a replacement for craftsmanship and training students' judgment to be conscious of the temperature of handmade craft in the age of mechanical carving. The government and enterprises have also co-established a research fund for craft ethics and sponsored the "living teaching" of craft inheritors in education institutions to develop the dialectical development of "keeping the art while keeping it new," comparing CNC machine tools to handmade (emery) tools via practice [10].

5.2. Accurately grasping the core connotations of modern cultural style

In order to fully understand what modern cultural styles directly embody often centers around establishing a dialog mechanism between traditional craft and the spirit of the age - which is especially representative when looking at the making of non-traditional jade materials such as amethyst. (see figure 1) Contemporary minimalism, or modern minimalism, focuses on a "less is more" ideal, which resonates with "the virtual and the real" of east philosophy. The sculptor is able to utilize the natural conical crystal structure of amethyst to highlight the energy field of the material itself with the simplest knife technique. Contemporary environmental concerns necessitate the reconstruction of a "best use of materials" ethics of creation, the retention and transformation of the 'internal ice cracks' of amethyst not only fit the contemporary aesthetic of beauty of the broken but also the traditional wisdom of jade

management, "with the shape of the situation". The process of reconstructing visual language in the digital age has forced craft innovations that utilize the amethyst birefringent property to create dynamic effects of light and shadow, and push beyond traditional thinking of planar relief to build a three-dimensional spatial immersive experience of the reality and falsehood intertwined. We understand the symbolic decoding needs of young groups for cultural consumption and will deconstruct and reorganize the purple spectrum of amethyst along with the auspicious symbol of "Purple Breath Comes from the East" and encapsulate it in a visual totem with interstellar future sensibilities through geometric direction. In the process of creation, we should be wary of technological alienation [11]. The precise reproduction of CNC machine tools offers a mechanical aesthetic that must be balanced in tension with accidental texture of handmade touch; this contradiction is a microcosmic reflection of modern culture's diverse symbiosis.



Figure 1. Amethyst Carving Artwork

5.3. Expanding the path of fusion works' market acceptance

To broaden the path of market acceptance for fusion works requires reconstruction of the field value system for ornamental jade sculpture, and present-day transformation of jadeite cabbage as classic furnishing object suggests a possible future transformation of spatial narratives for jadeite cabbage. As seen in Figure 2, the traditional "cabbage" shape evokes the traditional multi-faceted meaning of "a hundred fortunes," which can be sublimated into a visual metaphor representing the accumulation and exchange of wealth, with the aid of the natural color band of jadeite simulating the trajectory of currency circulation; interweaving abstract economic philosophy, while also maintaining a figurative form. The space display likewise relocates the display of jadeite cabbage from a static pedestal format, designing a 360° levitation device to reflect jadeite's translucent qualities, while the bottom surface features holographic projection of dimensional video that recreates the transformational process of jadeite cabbage from raw stone to finished product, along with a superposition of objects and memories through time-space. Latest development of intelligent environment sensing systems will automatically adjust coverage to the jadeite surface micro-water mist combination, throughout the exhibition about temperature and humidity changes, which revitalize the "jade" aesthetic physical experience [12]. The jadeite cabbage is re-located to a contemporary art installation, across the border from the cultural consumption scene, through the virtual image of the stainless steel mirror creates a conceptual dialogue between reality and reality, thereby opening up the notion of a distancing between the old ornament and new contexts of reality spaces that open a distance between the old ornament and the new contemporary context of reality spaces. Digital recording needs to extend beyond flat image recordings, utilizing photonic scanning technology for inner crystal growth vectoring to create interactive dynamic data sculptures extending the digital twin value of physical works. To establish a new dimension of

printed or non-printed appreciation and evaluation considering the previous interpretation of jadeite locks, and to think about understanding contemporary transformation of emotional interpretation of ice crack textures re-defined as a relic or a new human record of matter of movement of earth's minerals of a natural epic, and build consensus aesthetic of the traditional human aesthetic standard of flawlessness [13].



Figure 2. "Emerald Cabbage"

5.4. Deeply excavating and highlighting the cultural value of fusion works

To authentically excavate and amplify the cultural value embedded in multi-temporal artifacts, the interpretative framework must transcend temporal boundaries by translating material craftsmanship wisdom into tangible carriers of spiritual ethos. This process inherently aligns with the traditional jade carving principle of "material-guided design" which animates the ethical cartography of materiality through adaptive engagement with lithic essence. Without compromising the natural texture, it would be to deploy a cutting techniques of light and shadow to highlight the cosmic order of internal crystal lattice arrangement of the minerals, establishing visual dialog between the scientific microscopic material structure and scientific macroscopic laws of nature. A "craft gene pool" is built, and yin and yang carving techniques are deconstructed to represent point, line and surface energy transfer model, where stress analysis software is used to assess the scientific fit between the traditional knife techniques and the materials tolerance level, thus embedding an empirical dimension to the succession of crafts [14]. The spatial story accomplishes the transcending of static display, and the jade carvings suspended by the acrylic levitating device can emit dynamic images of mineral growth patterns with changes in light between day and night, effectively turning the observational activity into an immersive experience of observing geological history. The cultural value assessment needs to insert an ecological dimension, determining the carbon trajectory of the work from quarrying to mold, and turn that trajectory into an image map, so that the warm texture of the jade carries the contemporary ethos of sustainable development. Digital twin technology should move beyond replications. The dynamic topographical model created by photonic scanning of the jade carving surfaces can tangentially capture the biomechanical code of the strength and angle of the craftsman's knife behind each curved surface, thus creating a new knowledge map for skill dissemination [15].

6. Conclusion

The fusion of traditional jade carving techniques and modern cultural styles is essentially a civilized dialogue across time and space. This kind of integration is by no means a simple superposition of techniques or collage of elements, but requires the extraction of the spiritual kernel from the cultural roots, and then reconstructing the form of expression with modern design language. When the ancient technique of yin carving and yang carving meets the geometric lines of minimalism, and when auspicious patterns are transformed into visual symbols with contemporary metaphors, jade carving breaks through the narrow scope of “arts and crafts” and becomes a cultural medium connecting history and the future. In this process, the reconstruction of the talent training system, the cultivation of market acceptance, and the excavation of cultural depth are indispensable. In the future, jade carving may be able to get out of the passive situation of “non-heritage protection”, through the establishment of an open and inclusive innovation ecology, so that traditional craftsmanship is truly integrated into the aesthetics of modern life.

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