

Research on the Fusion Path of Contemporary Digital Sculpture under the Translation of Traditional Figurative Sculpture Language

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Abstract: At present, the penetration of digital technology into the field of artistic creation continues to deepen, which directly promotes the creative carrier of sculpture art to usher in a new iteration. After thousands of years of precipitation, traditional figurative sculpture has already established a mature language system covering form, texture, spatial narrative, and humanistic expression, and mature realistic techniques and classical aesthetic concepts contain profound cultural value. Digital sculpture using 3D modeling, 3D printing, and immersive virtual presentation has broken through the traditional solid sculpture from the form of expression to the path of communication. The two kinds of creative logics share the same aesthetic background, and the unique artistic language of traditional figurative sculpture can be digitally translated, which can supplement the rich cultural support for the technology-oriented digital creation. This paper combs the translation paths of two kinds of sculpture languages, and compares the creative characteristics of digital media, and discusses the integration direction from the dimensions of body shaping and migration, texture and texture restoration, space atmosphere creation, creator's ability cultivation and multi-scene display, so as to open up the landing path of traditional aesthetics adapting to contemporary creation and boost the long-term innovation of local sculpture creation.

Keywords: Figurative sculpture; Sculpture language; Digital sculpture; Language translation; Art fusion

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1. Introduction

The creative form of sculpture has always been updated with the production technology of different times. As a classic art category with a long inheritance, figurative sculpture has been polished repeatedly by several generations of craftsmen, forming a systematic manual creation paradigm. The traditional figurative sculpture extracts the creative prototype from the real image, relies on solid materials such as stone, clay, and bronze, and is shaped by traditional techniques such as carving, molding, and casting, and conveys the creator's

emotions and local cultural characteristics with the form logic, handmade traces, and spatial arrangement. In recent years, digital technology has rapidly penetrated into the art circle, and various digital creative tools have gradually landed, and digital sculpture has also rapidly spread.

Digital sculpture breaks free from the natural constraints of solid materials, and its modeling adjustment is highly flexible, which greatly reduces the landing threshold of unconventional and complex configurations, and can also break the space limitation of offline display by relying on online communication. At present, the attention paid by the creative field to the inheritance of cultural roots continues to increase. Embedding the long-accumulated experience of figurative sculpture creation into the digital creation process and exploring the path of language translation based on the underlying logic of realistic creation with the same origin can not only continue the traditional context, but also broaden the creative boundary of contemporary sculpture and promote the diversified development of the industry.

2. Analysis and definition of language characteristics of two kinds of sculptures

2.1. Artistic language composition of traditional figurative sculpture

Traditional figurative sculpture takes real figures, animals and plants, and natural landscapes as reference prototypes, relies on solid materials such as clay, stone, wood and bronze, and is shaped by manual techniques such as plastic, engraving, casting and casting. Its artistic expression system can be divided into four core plates: shape, texture, space, and humanity.

The form is the bottom support of the whole creation. The whole process follows the logical calibration framework of human anatomy, controls the interpenetration and dynamic trend of different blocks, first sets up a large outline and then refines local details such as facial features and muscle lines, and strengthens the realism of objects by the virtual and real levels of the form. This creative logic has continued from the ancient grottoes to the present, and it is also the common principle of modern realistic figure sculpture. The uniqueness of texture comes entirely from the whole process of manual creation: the patchy traces left by the carving knife, the moist surface texture generated after polishing, the natural vein of stone, and the unique color precipitated after cooling bronze, all of which are exclusive marks made by hand. Each texture hides the light and heavy rhythm of the creator's hand, with strong personal expression attributes. Spatial expression depends on the physical field: the volume scale of the work itself, its visual echo with the surrounding environment, and the dynamic impression of the audience when they move, together constitute a complete tour experience. Humanistic expression is attached to the details of modeling: the creator combines local folk customs with the characteristics of the times, projects emotions through character demeanor and body movements, embeds regional memory and humanistic temperature into the works, and endows the sculpture with cross-cycle spiritual value. The four elements have been linked for a long time to build a mature and stable figurative sculpture creation system^[1].

2.2. The creative advantages and artistic development potential of contemporary digital sculpture

Contemporary digital sculpture refers to a new type of sculpture in which the creator relies on three-dimensional modeling software, virtual interactive equipment, and intelligent design programs to complete the whole process of modeling in virtual space. The final results can be transformed into physical exhibits through 3D printing, and can also be directly displayed to the public in the form of virtual images and online

interactive models. This creative mode has incomparable advantages over traditional handmade sculptures: there is no loss of solid materials in the whole creative process, the modeling files can be traced back and adjusted repeatedly at any time, and the complex configuration of multi-layer hollowing-out and multi-component intertwining, which can hardly be achieved by traditional hand, can be easily realized by digital tools. In the later stage of creation, one can also add light and shadow rendering and dynamic special effects to enhance visual expression, and completely break the restrictions of regional display by relying on Internet communication channels, covering a wider audience.

With the continuous iteration of various creative tools, digital texture brushes and virtual carving plugins are constantly optimized and adapted, and the operating feel has been highly adapted to the power logic of solid carving, which has laid a solid tool foundation for undertaking traditional handmade techniques. At present, many creators have been actively exploring the local aesthetic elements of traditional sculpture and trying to inject classical aesthetic charm into digital works. Digital sculpture itself has a strong creative inclusiveness, and the realistic creative logic fully adapts to the digital process. The common attributes of the two in terms of shape arrangement, artistic conception creation, and emotional transmission also pave the way for the digital translation of traditional sculpture language ^[2].

3. The internal basis of translating traditional figurative sculpture language into digital sculpture

3.1. The aesthetic core of modeling has consistency

Traditional figurative sculpture and contemporary digital sculpture both take realism as their core creative direction, and both take realistic images as modeling reference anchor points, which have extremely high requirements for the true physical structure of objects. When traditional craftsmen knead clay manuscripts and chisel stone, they always finalize the overall large outline first, dynamically calibrate the works in place, and then polish the local details layer by layer. The practical logic of digital modeling completely follows this creative order from the whole to the part: the creator first builds a dynamic framework with basic geometry, and then gradually carves fine-grained content such as muscle texture and facial features. On the aesthetic level, they also attach importance to the contrast between reality, deliberately weaken the redundant secondary structure, strengthen the core expression part, and pull out the visual tension through the ups and downs of the body. The common creative logic and aesthetic orientation enable the anatomical experience and body control skills accumulated in traditional sculpture to be directly reused in digital modeling. This highly compatible aesthetic core is the core premise for the smooth translation of the two creative languages ^[3].

3.2. The purpose of creation is connected with the function of cultural bearing

Since ancient times, figurative sculpture has always assumed the core functions of recording the section of the times, projecting the individual emotions of the creators, and inheriting the local culture. Ancient folk statues restore the daily production picture of farming, religious sculptures convey the spiritual beliefs of the public, and modern theme sculptures retain the social collective memory of a specific stage. In addition to the basic decorative attributes, contemporary digital sculpture also carries the creative mission of inheriting the regional context and showing the characteristics of the present era. Digital works can spread in circles by relying on network links, and transmit the unique local cultural characteristics to a wider range. Their creative goals are highly similar, and both of them use figurative modeling as the carrier to output ideas and cultural

content. The same frequency of appeals allows the humanistic core precipitated by traditional sculpture to be smoothly implanted into digital creation, and the complete transmission can be completed only by switching the expression media without adjusting the original ideological core.

4. The integration path of traditional figurative sculpture language into contemporary digital sculpture

4.1. Digital transplantation of traditional figurative sculpture shaping

It is the core starting point of the integration of traditional figurative sculpture to completely put the practical logic of shape modeling into digital modeling. When starting the creation of digital sculpture, the creator first follows the creative thinking of traditional sculpture, that is, setting the dynamics first and splitting large blocks, and gets rid of the bad habit of piling up details as soon as he starts. In the early stage, the trunk shape is built with basic geometry, the center of gravity and the overall posture are calibrated in place, and the relationship between the height of bones and muscles is straightened out in strict accordance with the anatomical laws of human bodies that have been used for many years in traditional sculpture, and the interspersed structure at the joints of shoulders, necks and limbs is blocked.

In the stage of detail polishing, artists directly refer to the experience of dealing with the reality of traditional handmade sculptures: artists focus on allocating resources to the core expression points such as the face and hands, and deliberately weaken the ups and downs of secondary areas such as the back. Many digital sculptures based on traditional folk figures refer to the scale of ancient clay sculptures in the whole process, deliberately retaining the slightly exaggerated posture characteristics of traditional sculptures and restoring the unique modeling rhythm of classical sculptures. Creators can also learn from the experience of traditional sculpture volume control to adjust the curvature of the model surface to avoid thin lines floating, so that the digital model can directly obtain the heavy sense of volume of the solid sculpture and completely inherit the body language characteristics of traditional figurative sculpture ^[4].

4.2. Digital reproduction of texture and texture of traditional sculpture

Texture is the core carrier of traditional sculpture to convey the material characteristics and preserve the handmade temperature. In the digital creation process, it is completely possible to reproduce the hand texture with customized tools to restore the unique touch and visual texture of solid sculpture. When drawing the material layer, do not directly set the regular finished product map that comes with the software. Compare with the original grain characteristics left by stone carving, mud scraping, and bronze casting, draw the irregular grain traces manually with a custom carving brush. When making stone carving digital works, it simulates the scattered and broken marks left by the carving knife, with deep strokes and gullies in some positions, and the rest of the lines are lightly swept over, accurately restoring the natural texture level brought about by the change of cutting force during manual carving.

When making digital sculptures in clay sculpture style, the square brush is used to simulate the strip-shaped cutting marks left by scraping the mud surface with a scraper, and the fine concave-convex folds are partially supplemented to restore the fine cracks caused by the natural air-drying shrinkage of the mud. To make bronze works, artists should adjust the color gradient layer, pull out the mottled color with scattered shades, and restore the rust texture precipitated by years of oxidation. When making traditional digital sculptures of Buddha statues, the facial area is polished finely and smoothly, and the clothing lines are

engraved with staggered tool marks, completely following the texture contrast logic of ancient statues. By hand-painting texture instead of mass-generated texture to avoid homogenization, artists can implant the unique vivid texture of the hand into the digital model and complete the translation of texture language ^[5].

4.3. Reconstruction and integration of spatial artistic conception and humanistic language

Spatial arrangement and artistic conception contrast are the core of improving the artistic quality of digital sculpture. Traditional concrete sculptures have always attached great importance to the adaptability between the works and the surrounding fields. When designing digital sculptures, the creators can directly refer to the spatial layout logic of traditional sculptures and dynamically adjust the sculpture volume in combination with the subsequent exhibition scenes. If the works are to be displayed offline in 3D, the height ratio of the works should be adjusted according to the layout idea of traditional garden sculptures, so as to accurately adapt to the scale of exhibition halls or outdoor public spaces; If it is a virtual sculpture displayed directly online, it will be matched with a minimalist background, and the aesthetic idea of leaving the traditional sculpture blank will be used to set off the overall atmosphere.

The implantation of humanistic connotation depends entirely on the details of modeling: when creating digital sculptures of historical figures and folk customs, the expression of eyebrows and eyes is adjusted with reference to the expression of ancient statues, and the character is highlighted by body movements. Digital sculpture based on traditional folk figures follows the simple expression logic of traditional handwork and embeds the humanistic temperature in folk stories into the modeling details. Many digital sculptures directly refer to the traditional cultural allusions to design their shapes, completely inherit the attributes of traditional sculptures bearing the local culture, and export the local humanistic content by virtue of the innate advantages of digital communication, so as to realize the effective continuation of humanistic language in the present ^[6].

4.4. Improve the training mode of creative talents, and lay a solid foundation for their integration

Sculpture majors in colleges and universities can adjust the logic of curriculum arrangement within the existing teaching framework, and break through the long-standing gap between traditional solid sculpture and digital creation. In the basic teaching stage, the operation of clay sculpture is still anchored as the core training module, and students are arranged to polish the cognition of human body structure and the ability to control figurative bodies for a long time, so as to lay a solid foundation in realism and thoroughly understand the underlying modeling logic precipitated by traditional sculpture for hundreds of years. After the students master the whole process of hand-made sculpture skills, they will follow up and set up an advanced course of 3D modeling and practical operation, guide them to directly transfer the experience of body feeling accumulated in the process of kneading to digital creation, and train students to transform the completed clay sculpture original into standardized digital assets through 3D scanning and manual layer-by-layer refinement, and independently complete the natural adaptation transition from traditional creation logic to digital creation path.

Daily training can directionally arrange the topics of traditional culture creation, encourage students to carry out digital creation based on grotto statues and folk non-legacy clay sculptures, and explore the translation rules of the two kinds of artistic languages in practical polishing. Industry practitioners can

also rely on offline art exchange workshops with different themes to share first-line practical experience, continuously expand the integration dimension of the two kinds of creation, and produce more sculptures with authentic traditional charm and vivid modern expression attributes ^[7].

4.5. Expand diversified exhibition paths, and strengthen the artistic communication efficiency of the fusion results

Relying on the original communication advantages of digital media, the exhibition forms of sculpture works translated from traditional languages will be further enriched. Digital sculpture injected with traditional expression logic can not only output production documents and prepare them into physical exhibits by 3D printing, but also put them into professional exhibition halls to complete offline public display, which fully adapts to the physical exhibition logic of traditional sculptures; It can also be packaged as an online platform for interactive three-dimensional models, and the audience can adjust the perspective of the model independently and carefully observe the details of the surface texture and internal structure. Some outdoor works in public spaces combine 3D printing entities with dynamic light and shadow technology, project flowing sound and light effects at night, match contemporary digital special effects with traditional realistic modeling, and build a differentiated immersive exhibition experience.

In the scene of cultural tourism development, the digital sculpture created by IP anchored local history and culture landed in the scenic spot space after materialization preparation, realizing the organic integration of humanistic sculpture and local landscape. At the same time, through the short video platform, the whole creative process can be synchronized and publicized, and the logic of traditional figurative sculpture language can be digitally translated to the public, which can expand the spread radius of works and complete the popular spread of traditional sculpture art ^[8].

5. Conclusion

The popularization of digital technology has opened up a new path for the inheritance and innovation of traditional figurative sculpture. The rigorous modeling logic, unique handmade texture, and profound humanistic core of traditional sculpture have made up for the long-standing shortcomings of artistic texture in digital creation. The landing paths, such as body translation, texture re-engraving, artistic conception fusion, talent training system construction, and exhibition efficiency upgrade, have completely opened up the feasible channels for the two kinds of creative languages to be embedded and integrated. Traditional sculpture aesthetics, which has been deposited for thousands of years, relies on digital carriers to break through the constraints of solid materials and gain a broader expression boundary. Digital creation also uses traditional art to supplement the cultural thickness, and the two-way empowerment adapts to the current trend of diversified artistic development. Creators can dig deep into the characteristics of traditional original art and polish the translation accuracy, so that ancient sculptures can release new vitality in the contemporary era and produce high-quality works with both classical aesthetic texture and a clear logo of the times.

Disclosure statement

The author declares no conflict of interest.

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