

The Integration of Pattern Symbols in the Bronze Art of Sanxingdui and the Symbiosis of Technology in the Digital Age

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Abstract

This paper will study the cultural relics unearthed from the cultural monument Sanxingdui, study and analyze the patterns of Sanxingdui cultural relics in a phenomenological way, collect the Sanxingdui culture as well as the Yuan Cosmos-related literature in a case study way, screen and analyze them, guide and improve the research of this paper, and ultimately design a project in which the traditional culture and the emerging technology of the digital age are integrated and symbiotic.

1. Introduction

Humanity has entered the age of information technology, and science and technology are everywhere. Artists' creative vision is constantly broadening, and they begin to pay more attention to the development of science and technology, and incorporate it into the content, themes, styles, media, carriers, and even research methods of artistic creation, further deepening the in-depth fusion of art and science and technology, and greatly expanding both the means and possibilities of artistic expression.

To know and understand science from the perspective of aesthetics, it has long been found that beauty exists in the form of science. In the last century, by computer algorithms, the iterative equations were effectively folded, scaled, flipped, etc., resulting in the aesthetically pleasing 3D fractal art, with thousands of variations of shapes full of decorative rhythms, which is

marvelous. Yang Zhenning (2015) said, "This is a great beauty." People not only discover the beauty of visual presentation to spiritual perception in science, but also further apply science to the creation of art, closely integrate modern technology, break through the boundaries of traditional art, create new art forms, and intermingle between the two to promote the development of art.

The purpose of this paper is to start from the past and the present, take the cultural relics unearthed in Sanxingdui as the object of study, take the hottest meta-universe technology as the means of presentation, and devote to the integration and development of traditional culture and the new era of science and technology technology crafts, just as the great French writer Flaubert said: "The further we go, the more art has to be scientific, and at the same time, science has to be artistic! As the French writer Flaubert said, "The further we go, the more art has to be scientific, and science has to be artistic at the same time" (Flaubert, on "Art and Science"). Scientific and technological innovation has injected new vitality into traditional culture, preserved the treasures of traditional culture through digital means, realized virtual historiography, and contributed to historical and cultural exchanges as well as learning. This paper will use the cultural monuments of Sanxingdui excavated artifacts as a base for the creation of the design, and then through the meta-universe as a means of displaying the glamour of history and culture, the use of existing 3D scanning capabilities and drone technology, not yet fully unearthed historical

scenes for a full range of scanning, and then simulation of the virtual reality technology to restore the real historical scene, to help historians more convenient archaeology and protection of cultural relics, more convenient to display the cultural monuments to the more convenient Conveniently display cultural monuments to the world.

This paper will study and explore the symbiosis between the integration of pattern symbols in the bronze art of Sanxingdui and the technology of the digital age, which will help revitalize the fields of art and history. This paper will use phenomenological theory to qualitatively analyze the research problem, as well as confirm the theoretical basis of the research direction of this paper, and at the same time use case studies in qualitative research to analyze, through the Internet, a large number of pieces of literature on the Yuan universe, as well as Sanxingdui patterns and history education's strengths and weaknesses, to improve the shortcomings of this paper's research problem.

2. Methodology

Phenomenological methodology is to intuitively recognize the characteristics and features presented by things themselves and to observe the deeper meanings and essences behind the phenomena through their surface appearances. The Sanxingdui culture is famous for its bronze art, and its motifs and patterns usually reflect the cultural, religious, and artistic aspects of

society at that time. According to Liu Shaohuang (2004), the motifs that avoid fragmented and disorderly rhythms and rhymes are loanwords, which are the transformation of auditory into visual elements. Phenomenology will guide me to explore the cultural meaning and symbolism behind the motifs from the detailed characteristic features such as shape, line, and color in the patterns of the excavated relics of Sanxingdui.

Gombrich said in *The Sense of Order* that all patterns were originally conceived as symbols, even though their significance has disappeared in the course of historical development." In the process of exploring the theory and practice of finding a balance between innovation and functionality of use, reaching the pinnacle of design in conjunction with the new generation of technological meta-universes while being used as an innovation in the field of history as well as education, Even though the meaning of their existence has disappeared, it is more important to explore their significance and show the world the splendor that belongs to them, so that the world will never forget.

The bronzes unearthed in Sanxingdui culture are famous for their exquisite smelting techniques and unique modeling and decoration, while their casting of various kinds of bronze patterns has reached a high artistic level. These models and decorations are, on the one hand, the decorations and modifications of the bronzes, and on the other hand, they express the

observation and depiction of the world by the people at that time. The design of patterns in bronzes was the most intuitive reflection of the religion, nature, and society of that time in their spiritual world. The appearance of patterns in bronzes reflected their reverence for nature. As Hegel said in his book *Aesthetics*, "The elements of beauty can be divided into two kinds: one is internal, i.e., the content, and the other is external, i.e., what the content lends meaning and character to." As a matter of fact, the patterns on the bronzes express people's attitude and level of cognition towards the objective world in an artistic way, reflecting the mysterious and solemn atmosphere generated by the worship of natural gods at that time.

The famous semiotician Cassirer (1953) believes that "symbolized thinking is the most representative feature in human life. "Symbols carry the message they contain and can be touched or visually stimulated. From a methodological point of view, although previous interpretations of the connotations of bronze motifs are mostly exploratory and enlightening, they are unable to reasonably explain the logical relationship between the real formal structure, stylistic variations, and belief connotations of bronze motifs (Lin Sinaifu, 2019). In the excavated cultural relics, only some decorations can be found on the bronzes, and there is no specific textual interpretation, so among the many interpretations of the connotation of Sanxingdui patterns, these are only speculations and conjectures, and it is not possible to confirm whether they are

correct or not.

Perhaps it is the lack of style analysis tradition, the domestic academic research on the Sanxingdui bronze pattern from the archaeological art typology, the bronze pattern according to geometric patterns, animal and plant patterns, composite patterns, ideograms, etc., classification and staging, which has brought about an academic blind spot this kind of pattern in the form of structural relationship between the existence of what kind of pattern? What is the visual isomorphism between them? What are the reasons? According to Ran Honglin (2023), no writing has yet been found at Sanxingdui, but many bronze vessels have been found at the site with engraved symbols. With regard to the reflection on the incised symbols in these bronzes, there are too few such symbols marked, and there is no way to link them together and interpret them into a few words or a paragraph, but this paper argues that they are symbols with mnemonic attributes, a special form of record keeping.

3. Method

This paper will analyze and conduct research under the guidance of phenomenology, using case studies in the qualitative research method. This paper will collect the relevant literature about the Sanxingdui bronze patterns and metaverse, including archaeological research, historical documents, and the application of virtual reality technology. This paper will then study and

analyze the collected literature to understand the current situation, main content, and research methods of the research related to the Sanxingdui Bronze Patterns and Meta-Universe. Based on the information analyzed from the literature, this paper will establish an appropriate theoretical framework for the analysis of the combined design of Sanxingdui cultural relic patterns and meta-universes within such a theoretical framework. Finally, this paper will summarize the direction of the research design of the combination of Sanxingdui cultural relic patterns and meta-universe in light of the results of the literature analysis and look forward to the future development trend of the research.

Tang Xilan suggests (2020) that bronze decoration involves not only art but also contains the aesthetic psychology of the times. Sanxingdui civilization is a bright pearl of ancient Chinese civilization, which flourished in the non-central area during the Shang and Zhou periods and is famous for its bronzes. As an important symbol of ancient society, bronzes are not only practical tools but also works of art, carrying the aesthetics and thoughts of the ancestors. Bronze standing figures, bronze ornaments, gold staffs, and other objects excavated at the Sanxingdui site have different decorations on their surfaces, which have distinctive formal characteristics and unique shapes and patterns. The beautiful patterns are like a key that opens the door to the history of ornamentation and reproduces the splendor of totemic culture and decorative

art.

According to Zheng Hairong (2010), "Patterns are a kind of visual image in themselves, but when they enter into the activity of experience and human thinking, they will have an endless world of meaning." The bizarre shapes of the Sanxingdui bronzes and the symbols engraved in the patterns on the idols and objects let the world see the extraordinary creativity of the ancestors, who "respected the gods and wizards." The decorations attached to the bronze statues and artifacts of Sanxingdui interpret the divine beauty of animal patterns, the abstract beauty of geometrical symbols, and the diversified modeling of communicating with the "gods of heaven and earth," and these aesthetically valuable forms of artistic patterns unite the spirit of the ancient Shu culture and the religious and mythological concepts.

The general consensus on the concept of "meta-universe" comes from the 1992 science fiction novel *Snow Crash*. As depicted in the book by Stephenson N. (2003), a metaverse is an immersive shared space that can span different platforms and allow the physical world to intersect with the digital world. All these studies will bring new blood to history and culture and provide a fresh piece of technology to study history. The unique aesthetics created by the Sanxingdui culture, as described in the 1981 book *True Names* by American mathematician and computer expert Professor Vernor Vinge, can

be reintroduced in today's fashionable interactive and animated forms to express the aesthetic heritage of the ancient city of Ba Shu in a modern design language. The aesthetics of ancient Ba Shu can be expressed in modern design language. Virtual reality technology allows people to gain a deeper understanding of history and culture, through which they can visit lost ancient cities, explore ancient buildings and artifacts, and even interact with historical figures. This immersive experience can stimulate people's interest in history, as well as increase the efficiency of historians' research and protect the integrity of artifacts and sites, filling in more gaps in history. However, since the twenty-first century, the trend of researching the metaverse has been created, and it is true that no company has developed the metaverse system in its entirety so far, so the development of the metaverse in conjunction with the metaverse still needs more instances to be researched and developed.

4. Summary

Cultural heritage and scientific and technological innovation are complementary and mutually reinforcing. Cultural heritage also provides a steady stream of inspiration and materials for scientific and technological innovation and provides new ideas for scientific and technological development. Only in the process of mutual integration of cultural heritage and scientific and technological innovation can we truly realize the inheritance and innovative development of traditional culture.

The dialogue between culture and technology makes us pay more attention to the symbiotic relationship between the bronze art of Sanxingdui and the myth. While thinking about the visual representation of cultural continuity, the modern interpretation of traditional patterns will cross cultural faults and call for the return of the world's soul. By refining the inner qualities of Sanxingdui bronze art modeling and ornamentation and combining them with modern technology, we will seek richer connotations for the aesthetic characteristics of tattoo symbols.

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