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EXPLORING CULTURAL AND CREATIVE PRODUCT DESIGN THROUGH DETERMINING THE SIGNIFICANCE CHARACTERISTICS OF HONGSHAN POTTERY PATTERN

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ABSTRACT

Hongshan Culture is one of China's precious cultural heritages and is among the most renowned archaeological cultures of the Neolithic era in Northeast China. Among the unearthed artifacts from the Hongshan Culture, pottery stands out as a typical item, offering insights into the aesthetic views, primitive religious beliefs, and cultural characteristics of the Hongshan Culture period. This holds significant academic value. In comparison to theoretical achievements in studying Hongshan Culture patterns, research on creative product design inspired by Hongshan Culture is relatively scarce. The primary aim of this study is to identify the significance characteristics of Hongshan Culture pottery patterns, thereby sparking reflections on incorporating these unique and typical patterns into creative product design. Through expert interviews, this research comprehensively explores seven aspects of Hongshan Culture pottery patterns: cultural significance, totem worship, religious beliefs, philosophy significance, auspicious significance, significant characteristics patterns, and their application in cultural and creative product design. The study ultimately defines the significance characteristics of Hongshan Culture pottery patterns and provides design suggestions for integrating these classic patterns into creative product designs.

1. Introduction

In the late Neolithic period of China, the Hongshan culture stands as a significant cultural form, with its distinctive pottery patterns being a focal point of scholarly attention. These visual patterns, rich in color and steeped in cultural significance, are crucial for a profound understanding in the context of "the significance characteristics of Hongshan Culture pottery pattern." This section of the study aims to delve deeply into the significance characteristics of Hongshan culture pottery patterns. Through the utilization of expert interviews, a comprehensive investigation unfolds across different dimensions, exploring its cultural significance, totem worship, religious beliefs, philosophical significance, auspicious significance, significance characteristics patterns, and application in cultural and creative product design. Employing qualitative analysis software, Nvivo 12 Plus, a systematic analysis of expert interview records has been conducted to uncover the profound cultural implications embedded within the pottery patterns of Hongshan culture.

2. Methodology

In 1967, Glazer and Strauss introduced Grounded Theory (Group Theory) (Glazer, Barney & Anselm Strauss, 1967). Unlike traditional approaches to constructing theoretical models, Grounded Theory adopts a bottom-up approach where researchers commence with raw data. They engage in a systematic coding analysis to integrate concepts, categories, and logical relationships between categories reflecting events or phenomena, culminating in the development of the final theoretical model. Grounded Theory, as a research methodology, operates based on two fundamental principles: "emergence" and "constant comparative analysis." At the initiation of the study, researchers typically possess vague research questions or research areas lacking theoretical underpinnings. Conceptual categories naturally emerge during data analysis, forming the basis for constructing the theoretical model. Simultaneously, the research must maintain a close association between theory and data. The coding process is conducted synchronously and iteratively. Through "constant comparative analysis," connections between conceptual categories are identified, until developing the theory.

3. Results

In this study, qualitative analysis software Nvivo 12 Plus was predominantly employed to perform tasks such as project setup, text coding, node organization, text classification, and data visualization on the organized interview records. Nvivo 12 Plus stands out as a robust qualitative analysis software capable of in-depth processing and analysis of various types of raw materials, including text, survey questionnaires, images, audio-visual materials, field notes, and web pages. This facilitates researchers in evaluating data and designing methods for assessing and establishing coding models (JiangXin, 2020). In the actual analysis process, this study drew on Nvivo 12 Plus, applying the selective coding approach from Grounded Theory to meticulously code approximately three-fourths of the interview materials verbatim.

3.1 Opening Coding

In this study, the original interview transcripts of three participants were meticulously coded on a sentence-by-sentence basis, involving three sequential steps: labeling, conceptualization, and categorization. Given that labeling and conceptualization were almost simultaneous and the expressions were closely related, the opening coding table (Table 1) only displays categorization. Conceptualization was primarily based on the participants' original language and researcher-generated concepts, aiming to accurately reveal the true meanings expressed by the participants. Further categorization of concepts was conducted on this basis.

During open coding, the researcher coded each sentence of the interview transcripts, resulting in a total of 78 initial codes. Considering the research theme of "significance characteristics of the visual patterns on Hongshan culture" and the complexity of the initial conceptualizations with some degree of overlap, the researcher employed functions such as node filtering, restructuring, and merging in Nvivo 12 Plus software to iteratively summarize and refine these initial codes. This involved removing codes that deviated from the research theme nodes and merging duplicate nodes. Based on this process, an initial set of 50 categories frequently mentioned by the participants was formed, such as "Production and Daily Life," "Reproductive Worship," "Evidence of Civilizational Emergence," "Manifestation of the Emergence of Ritual System," "Expression of Material Culture," "Totems are Endowed with Divinity," "Symbolization," "Fixation," and others, marked as free nodes. Table 1 illustrates representative excerpts from the original interview transcripts and initial conceptualizations corresponding to these categories.

*Table 1
Opening Coding*

Text Source	Example of Interview Record	Categorization
Expert 1	The cultural significance emanates from the practicalities of production and daily life, giving rise to a sense of form, color, and configuration within these practical experiences. Pottery patterns, as a reflection, embody the earliest aesthetic conceptions of humanity, seamlessly amalgamating utility and aesthetics in a perfect synthesis.	Production and daily life
Expert 1	In order to imbue themselves with the robust reproductive abilities of certain animals and plants, the Hongshan ancestors depicted them as patterns on pottery surfaces, reflecting the early human inclination toward reproductive worship.	Reproductive worship
Expert 2	The pottery patterns of the Hongshan culture serve as tangible evidence of the representative origins of civilization. The state of civilization within the Hongshan culture has attained a certain level of sophistication.	Evidence of civilizational emergence
Expert 2	Pottery is extensively employed in sacrificial rituals, and the pottery patterns therein represent the subjective thoughts of the ancestors, ultimately giving rise to ritual systems.	Manifestation of the emergence of ritual system
Expert 3	The Hongshan culture encompasses material culture, spiritual culture, and institutional culture. The patterns on pottery, in the form of pottery designs, serve as a manifestation of material culture on the surface of the pottery.	Embodiment of material culture
Expert 1	Totem worship has transcended the worship of the animals themselves; it is now a reverence for the significance attributed to them by the ancestors, moving beyond the tangible worship of totems.	Totems are endowed with divinity
Expert 3	Analyzing the pottery patterns of the Hongshan culture from the perspective of totem worship reveals a process involving symbolization, centralization, fixation, and sanctification. The pottery patterns serve as a reflection and manifestation of the genesis, development, and evolution of totem worship.	Symbolization
Expert 3	Analyzing the pottery patterns of the Hongshan culture from the perspective of totem worship reveals a process involving symbolization, centralization, fixation, and sanctification. The pottery	Fixation

	patterns serve as a reflection and manifestation of the genesis, development, and evolution of totem worship.	
Expert 3	Analyzing the pottery patterns of the Hongshan culture from the perspective of totem worship reveals a process involving symbolization, centralization, fixation, and sanctification. The pottery patterns serve as a reflection and manifestation of the genesis, development, and evolution of totem worship.	Centralization
Expert 3	Analyzing the pottery patterns of the Hongshan culture from the perspective of totem worship reveals a process involving symbolization, centralization, fixation, and sanctification. The pottery patterns serve as a reflection and manifestation of the genesis, development, and evolution of totem worship.	Sanctification
Expert 1	Religious beliefs originated based on agricultural activities, thus creating a close correlation between agricultural production and religious beliefs. This correlation is ultimately manifested in the form of patterns on the surface of pottery.	Agricultural activities
Expert 2	The ideological foundation of "revering the heavens and ancestors" is rooted in the spiritual strength of the ancient people. In that primordial society where spiritual power held immense sway, religious beliefs served as a robust pillar and formidable reliance for the survival of the ancient people. The pottery patterns created by the Hongshan ancestors evidently bear profound religious devotion, embodying boundless hope.	"Reverence for heaven and ancestors"
Expert 3	The pattern system serves as an expression of the religious belief system, representing a process from individual to group, group to inheritance, inheritance to refinement, culminating in the formation of an essence. After undergoing highly abstract processes, this essence is summarized into a core.	Individual
Expert 3	The pattern system serves as an expression of the religious belief system, representing a process from individual to group, group to inheritance, inheritance to refinement, culminating in the formation of an essence. After undergoing highly abstract processes, this essence is summarized into a core.	Group
Expert 3	The pattern system serves as an expression of the religious belief system, representing a process from individual to group, group to inheritance, inheritance to refinement, culminating in the formation of an essence. After undergoing highly abstract processes, this essence is summarized into a core.	Inheritance
Expert 3	The pattern system serves as an expression of the religious belief system, representing a process from individual to group, group to inheritance, inheritance to refinement, culminating in the formation of an essence. After undergoing highly abstract processes, this essence is summarized into a core.	Highly abstract
Expert 3	It is possible to explore and unearth the formation, development, and changes of the religious belief system in the Hongshan culture through an examination of its pattern system.	The pattern system is an expression of the religious belief system
Expert 1	The ancient people, in their perception of the myriad elements in the natural world, discerned varying changes with different seasons. Through rational observation and synthesis of these phenomena,	Rational refinement of cognition

	they manifested philosophical significance in their understanding of the world.	
Expert 2	The philosophical dialectical thinking of traditional Yin-Yang culture is reflected in the pottery patterns of the Hongshan culture.	"Yin-Yang culture"
Expert 2	"Unity of Heaven and Humanity" represents an ancient cosmic worldview, and the Hongshan culture constitutes a significant origin of this philosophical concept.	"Unity of Heaven and Humanity"
Expert 3	Examining the pottery patterns of the Hongshan culture allows us to discern the concepts held by the ancient people and the objective world they encountered.	The objectification of subjective world
Expert 1	The frog pattern in the Xinglongwa culture symbolizes abundance, and in today's society, frogs are also associated with abundance.	Frog pattern
Expert 1	The bird pattern in the Zhaobaogou culture may perhaps be linked to the contemporary auspicious symbolism of the phoenix.	Bird pattern
Expert 1	The interconnected whirlpool pattern, if representing the meaning of water, can also be seen as a symbol of auspiciousness in modern society.	Interconnected whirlpool pattern
Expert 2	The jade dragon and jade phoenix in the Hongshan culture represent typical auspicious symbols in China. Examining the pottery patterns, for example, the use of red pigments, reveals elements that continue to symbolize auspicious meanings even in modern society.	The use of red pigment
Expert 3	The patterns reflect a harmonious environment, encompassing the harmony of individuals and society, emphasizing the unity of heaven, earth, and humanity.	Environmental Harmony
Expert 3	They are based on the progress of production and life, signifying advancements in both. The patterns themselves undergo changes, reflecting an elevation in the standard of living.	Progress in Production
Expert 3	The third aspect indicates an improvement in the inherent qualities of individuals. In the early stages, patterns were simple and clumsy, while in later stages, they became more fluent and magnificent, showcasing an enhancement in people's qualities and perspectives. Therefore, the harmonious environment, progress in production, improvement in living standards, population growth, and elevated qualities collectively demonstrate the auspicious nature of the pottery patterns in the Hongshan culture.	Improvement of Life
Expert 3	Therefore, the harmonious environment, progress in production, improvement in living standards, population growth, and elevated qualities collectively demonstrate the auspicious nature of the pottery patterns in the Hongshan culture.	Population growth
Expert 3	Therefore, the harmonious environment, progress in production, improvement in living standards, population growth, and elevated qualities collectively demonstrate the auspicious nature of the pottery patterns in the Hongshan culture.	Improvement of Quality
Expert 3	In my opinion, the most fitting patterns include three: Scalelike pattern, Bird pattern, and Hook-shaped pattern.	Bird pattern
Expert 1	One of the most typical patterns in the pottery designs of the Hongshan culture is the "Z"-shaped pattern. Triangular and diamond patterns also hold significant importance, as do the interconnecting whirlpool patterns (floral patterns) and scalelike patterns.	Interconnected whirlpool pattern

Expert 1	One of the most typical patterns in the pottery designs of the Hongshan culture is the "Z"-shaped pattern. Triangular and diamond patterns also hold significant importance, as do the interconnecting whirlpool patterns (floral patterns) and scalelike patterns.	"Z"shaped pattern
Expert 1	One of the most typical patterns in the pottery designs of the Hongshan culture is the "Z"-shaped pattern. Triangular and diamond patterns also hold significant importance, as do the interconnecting whirlpool patterns (floral patterns) and scalelike patterns.	Triangle pattern
Expert 1	One of the most typical patterns in the pottery designs of the Hongshan culture is the "Z"-shaped pattern. Triangular and diamond patterns also hold significant importance, as do the interconnecting whirlpool patterns (floral patterns) and scalelike patterns.	Diamond pattern
Expert 1	One of the most typical patterns in the pottery designs of the Hongshan culture is the "Z"-shaped pattern. Triangular and diamond patterns also hold significant importance, as do the interconnecting whirlpool patterns (floral patterns) and scalelike patterns.	Scalelike pattern
Expert 2	The continuous use of two-sided and four-sided is distinctive in the pottery patterns of the Hongshan culture. Wide-band patterns, "回" shaped patterns, and Hook-shaped patterns are all characteristic designs that reflect the unique features of the Hongshan culture.	Continuous two-sided pattern
Expert 2	The continuous use of two-sided and four-sided is distinctive in the pottery patterns of the Hongshan culture. Wide-band patterns, "回" shaped patterns, and Hook-shaped patterns are all characteristic designs that reflect the unique features of the Hongshan culture.	Continuous four-sided pattern
Expert 2	The continuous use of two-sided and four-sided is distinctive in the pottery patterns of the Hongshan culture. Wide-band patterns, "回" shaped patterns, and Hook-shaped patterns are all characteristic designs that reflect the unique features of the Hongshan culture.	Wide-band pattern
Expert 2	The continuous use of two-sided and four-sided is distinctive in the pottery patterns of the Hongshan culture. Wide-band patterns, "回" shaped patterns, and Hook-shaped patterns are all characteristic designs that reflect the unique features of the Hongshan culture.	"回"shaped pattern
Expert 2	The continuous use of two-sided and four-sided is distinctive in the pottery patterns of the Hongshan culture. Wide-band patterns, "回" shaped patterns, and Hook-shaped patterns are all characteristic designs that reflect the unique features of the Hongshan culture.	Hook-shaped pattern
Expert 1	Don't just copy patterns	Don't just copy patterns
Expert 1	It is necessary to have a good extraction and design of the pattern, which must be combined with modern aesthetics.	Integrating patterns with modern aesthetics
Expert 1	Breaking the taboo of many modern people that many prehistoric artifacts are from tombs, delving into the meaning of the patterns themselves, and combining them with modern thinking can create cute or more acceptable designs for modern people.	Break taboos
Expert 2	In the realm of design, it is crucial to integrate traditional patterns with modern aesthetics. The extraction and inheritance of "form," the absorption and extension of "meaning," and the acquisition and sublimation of "spirit" are pivotal aspects.	Extraction and inheritance of "Form"

Expert 2	In the realm of design, it is crucial to integrate traditional patterns with modern aesthetics. The extraction and inheritance of "form," the absorption and extension of "meaning," and the acquisition and sublimation of "spirit" are pivotal aspects.	Assimilation and extension of "Meaning"
Expert 2	In the realm of design, it is crucial to integrate traditional patterns with modern aesthetics. The extraction and inheritance of "form," the absorption and extension of "meaning," and the acquisition and sublimation of "spirit" are pivotal aspects.	Attainment and Sublimation of "Spirit"
Expert 2	It is imperative not to confine oneself to a singular perspective but rather strive for a holistic representation. The combination of ancient symbols and elements with contemporary aesthetics is encouraged.	Overall reflection
Expert 3	Endeavors have been made to produce designs that transcend national boundaries and various cultures. These designs are characterized by creativity, novelty, and a close connection to various cultures within the Hongshan complex.	Design beyond national and cultural boundaries
Expert 3	They successfully integrate traditional patterns with modern aesthetics, utilizing ancient elements in a contemporary transformation.	Using ancient elements for modern transformation

3.2 Axial Coding

Axial coding involves discovering and establishing various connections between independent categories, exploring potential logical relationships among categories, and thereby constructing the main and sub-categories of this research. Building upon opening coding, researchers repeatedly scrutinized the connotations of 50 initial codes, merging and classifying categories that were semantically related. Ultimately, 40 main categories were formed, as shown in Table 2. Categories such as "Production and daily life," "Reproductive Worship," "Evidence of Civilizational Emergence," "Manifestation of the Emergence of Ritual System," and "Expression of Material Culture" were classified under the main category "Cultural Significance." Similarly, categories like "Symbolization," "Fixation," "Centralization," and "Sanctification" were grouped under the main category "Symbolization → Centralization → Fixation → Sanctification." Additionally, categories such as "Individual," "Group," "Inheritance," and "High Abstraction" were classified under the main category "Individual → Group → Inheritance → Highly Abstract." Subcategories like "Totems are Endowed with Divinity," "Agricultural Activities," "Reverence for Heaven and Ancestors," "Rational Refinement of Cognition," "Yin-Yang Culture," "Unity of Heaven and Humanity," "Objectification of the Subjective World," "Frog Pattern," "Bird Pattern," "Interconnected Whirlpool Pattern," "Use of Red Pigment," "Environmental Harmony," "Progress in Production," "Improvement of Life," "Population Growth," "Improvement of Quality," "Bird Pattern," "Interconnected whirlpool pattern," "Z-shaped pattern," "Triangle Patterns," "Diamond Pattern," "Scalelike Patterns," "Continuous Two-sided Pattern," "Continuous Four-sided Pattern," "Wide-Band Pattern," "回-shaped patterns," "Hook-shaped pattern," "Don't Just Copy Patterns," "Integrating Patterns with Modern Aesthetics," "Breaking Taboos," "Extraction and Inheritance of 'Form,'" "Assimilation and Extension of 'Meaning,'" and "Attainment and Sublimation of 'Spirit,'" "Overall Reflection," "Design Beyond National and Cultural Boundaries," "Using Ancient Elements for Modern Transformation" were directly elevated to main categories.

Table 2
Axial Coding

Main Category	Sub-Category
Cultural significance	Production and daily life
	Reproductive worship
	Evidence of civilizational emergence
	Manifestation of the emergence of ritual system
	Embodiment of material culture
Totems are endowed with divinity	Totems are endowed with divinity
Symbolization → Centralization → Fixation → Sanctification	Symbolization
	Fixation
	Centralization
	Sanctification
Agricultural activities	Agricultural activities
"Reverence for heaven and ancestors"	"Reverence for heaven and ancestors"
Individual → Group → Inheritance → Highly Abstract	Individual
	Group
	Inheritance
	Highly abstract
The pattern system is an expression of the religious belief system	The pattern system is an expression of the religious belief system
Rational refinement of cognition	Rational refinement of cognition
"Yin-Yang culture"	"Yin-Yang culture"
"Unity of Heaven and Humanity"	"Unity of Heaven and Humanity"
The objectification of subjective world	The objectification of subjective world
Frog pattern	Frog pattern
Bird pattern	Bird pattern
Interconnected whirlpool pattern	Interconnected whirlpool pattern
The use of red pigment	The use of red pigment
Environmental Harmony	Environmental Harmony
Progress in Production	Progress in Production
Improvement of Life	Improvement of Life
Population growth	Population growth
Improvement of Quality	Improvement of Quality
Bird pattern	Bird pattern
Interconnected whirlpool pattern	Interconnected whirlpool pattern
"Z"shaped pattern	"Z"shaped pattern
Triangle pattern	Triangle pattern
Diamond pattern	Diamond pattern
Scalelike pattern	Scalelike pattern
Continuous two-sided pattern	Continuous two-sided pattern
Continuous four-sided pattern	Continuous four-sided pattern
Wide-band pattern	Wide-band pattern
"回"shaped pattern	"回"shaped pattern
Hook-shaped pattern	Hook-shaped pattern

Don't just copy patterns	Don't just copy patterns
Integrating patterns with modern aesthetics	Integrating patterns with modern aesthetics
Break taboos	Break taboos
Extraction and inheritance of "Form"	Extraction and inheritance of "Form"
Assimilation and extension of "Meaning"	Assimilation and extension of "Meaning"
Attainment and Sublimation of "Spirit"	Attainment and Sublimation of "Spirit"
Overall reflection	Overall reflection
Design beyond national and cultural boundaries	Design beyond national and cultural boundaries
Using ancient elements for modern transformation	Using ancient elements for modern transformation

3.3 Selective Coding

Compared to the axial coding, the concept extraction of selective coding emphasizes more abstract aspects, forming the core category of this study. In the selective coding phase, this research summarizes and integrates the 40 main categories formed by the axial coding, extracting more systematic core categories. Through the selective coding phase, seven core categories are finally formed. The main category "Cultural Significance" is directly used as a core category, with its sub-categories elevated to main categories. The sub-categories like "Totems are endowed with divinity," "Symbolization → Centralization → Fixation → Sanctification," are classified under the core category "Significance of Totem Worship." "Agricultural activities," "Reverence for heaven and ancestors," "Individual → Group → Inheritance → Highly Abstract," "The pattern system is an expression of the religious belief system," are categorized under the core category "Significance of Religious Beliefs." "Rational refinement of cognition," "Yin-Yang culture," "Unity of Heaven and Humanity," "The objectification of subjective world," are classified under the core category "Philosophical Significance." "Frog pattern," "Bird pattern," "Interconnected whirlpool pattern," "The use of red pigment," "Environmental Harmony," "Progress in production," "Improvement of life," "Population growth," "Improvement of Quality," are categorized under the core category "Auspicious Significance." Patterns like "Bird pattern," "Interconnected whirlpool pattern," "Z-shaped pattern," "Triangle pattern," "Diamond pattern," "Scalelike pattern," "Continuous two-sided pattern," "Continuous four-sided pattern," "Wide-band pattern," "回-shaped pattern," "Hook-shaped pattern," are classified under the core category "Significant Characteristics Patterns." "Don't just copy patterns," "Integrating patterns with modern aesthetics," "Break taboos," "Extraction and inheritance of 'Form'," "Assimilation and extension of 'Meaning'," "Attainment and sublimation of 'Spirit'," "Overall reflection," "Design beyond national and cultural boundaries," "Using ancient elements for modern transformation," are categorized under the core category "Cultural and Creative Design."

Table 3
Selective Coding

Core Category	Main Category
Cultural Significance	Cultural Significance
Significance of Totem Worship	Totems are endowed with divinity
	Symbolization → Centralization → Fixation → Sanctification
Significance of Religious Beliefs	Agricultural activities
	"Reverence for heaven and ancestors"
	Individual → Group → Inheritance → Highly Abstract
Philosophical Significance	The pattern system is an expression of the religious belief system
	Rational refinement of cognition
	"Yin-Yang culture"
	"Unity of Heaven and Humanity"
Auspicious Significance	The objectification of subjective world
	Frog pattern
	Bird pattern
	Interconnected whirlpool pattern
	The use of red pigment
	Environmental Harmony
	Progress in production
	Improvement of life
Population growth	
Significant Characteristics Patterns	Improvement of Quality
	Bird pattern
	Interconnected whirlpool pattern
	Z-shaped pattern
	Triangle pattern
	Diamond pattern
	Scalelike pattern
	Continuous two-sided pattern
	Continuous four-sided pattern
	Wide-band pattern
"回"shaped pattern	
Cultural and Creative Design	Hook-shaped pattern
	Don't just copy patterns
	Integrating patterns with modern aesthetics
	Break taboos
	Extraction and inheritance of "Form"
	Assimilation and extension of "Meaning"
	Attainment and sublimation of "Spirit"
	Overall reflection
Design beyond national and cultural boundaries	
Using ancient elements for modern transformation	

3.4 Coding Table and Theoretical Saturation Test

Through three-level coding of approximately three-fourths of the interview transcripts in this study, an encoding table was eventually established for the research theme "significance characteristics of the visual patterns on Hongshan culture," as detailed in Table 4. According to the requirements of Grounded Theory, to assess the credibility and sufficiency of the refinement of material concepts, main categories, and core categories, researchers need to conduct a theoretical saturation test. The theoretical saturation test entails the inability to discover new theoretical insights or examination categories from newly collected data. After determining the core categories, this study performed a theoretical saturation test using the remaining 1/4 of the data to validate the results generated by Grounded Theory. Through three stages of coding, the test results indicated a substantial repetition of concepts in the in-depth interview data. The encoding table for the research theme "significance characteristics of the visual patterns on Hongshan culture" remained applicable to new interview records. It can be considered that the encoding table proposed in this study for the research theme is theoretically saturated. Additionally, utilizing the visualization analysis features of NVivo 12 Plus software, tree diagrams were created for each of the seven themes and the overall node, as illustrated in Figure 1 to 8.

Table 4
The encoding table for the research theme "Significant Characteristics of Visual Patterns in Hongshan Culture"

Core Coding	Main Coding	Sub-Coding
Cultural Significance	Cultural Significance	Production and daily life
		Reproductive worship
		Evidence of civilizational emergence
		Manifestation of the emergence of ritual system
		Embodiment of material culture
Significance of Totem Worship	Totems are endowed with divinity	Totems are endowed with divinity
	Symbolization → Centralization → Fixation → Sanctification	Symbolization
		Fixation
		Centralization
		Sanctification
Significance of Religious Beliefs	Agricultural activities	Agricultural activities
	"Reverence for heaven and ancestors"	"Reverence for heaven and ancestors"
	Individual → Group → Inheritance → Highly Abstract	Individual
		Group
		Inheritance
	Highly abstract	
	The pattern system is an expression of the religious belief system	The pattern system is an expression of the religious belief system
Philosophical Significance	Rational refinement of cognition	Rational refinement of cognition
	"Yin-Yang culture"	"Yin-Yang culture"
	"Unity of Heaven and Humanity"	"Unity of Heaven and Humanity"
	The objectification of	The objectification of subjective world

	subjective world	
Auspicious Significance	Frog pattern	Frog pattern
	Bird pattern	Bird pattern
	Interconnected whirlpool pattern	Interconnected whirlpool pattern
	The use of red pigment	The use of red pigment
	Environmental Harmony	Environmental Harmony
	Progress in Production	Progress in Production
	Improvement of Life	Improvement of Life
	Population growth	Population growth
Significant Characteristics Patterns	Improvement of Quality	Improvement of Quality
	Bird pattern	Bird pattern
	Interconnected whirlpool pattern	Interconnected whirlpool pattern
	"Z"shaped pattern	"Z"shaped pattern
	Triangle pattern	Triangle pattern
	Diamond pattern	Diamond pattern
	Scalelike pattern	Scalelike pattern
	Continuous two-sided pattern	Continuous two-sided pattern
	Continuous four-sided pattern	Continuous four-sided pattern
	Wide-band pattern	Wide-band pattern
"回"shaped pattern	"回"shaped pattern	
Cultural and Creative Design	Hook-shaped pattern	Hook-shaped pattern
	Don't just copy patterns	Don't just copy patterns
	Integrating patterns with modern aesthetics	Integrating patterns with modern aesthetics
	Break taboos	Break taboos
	Extraction and inheritance of "Form"	Extraction and inheritance of "Form"
	Assimilation and extension of "Meaning"	Assimilation and extension of "Meaning"
	Attainment and Sublimation of "Spirit"	Attainment and Sublimation of "Spirit"
	Overall reflection	Overall reflection
Design beyond national and cultural boundaries	Design beyond national and cultural boundaries	
Using ancient elements for modern transformation	Using ancient elements for modern transformation	

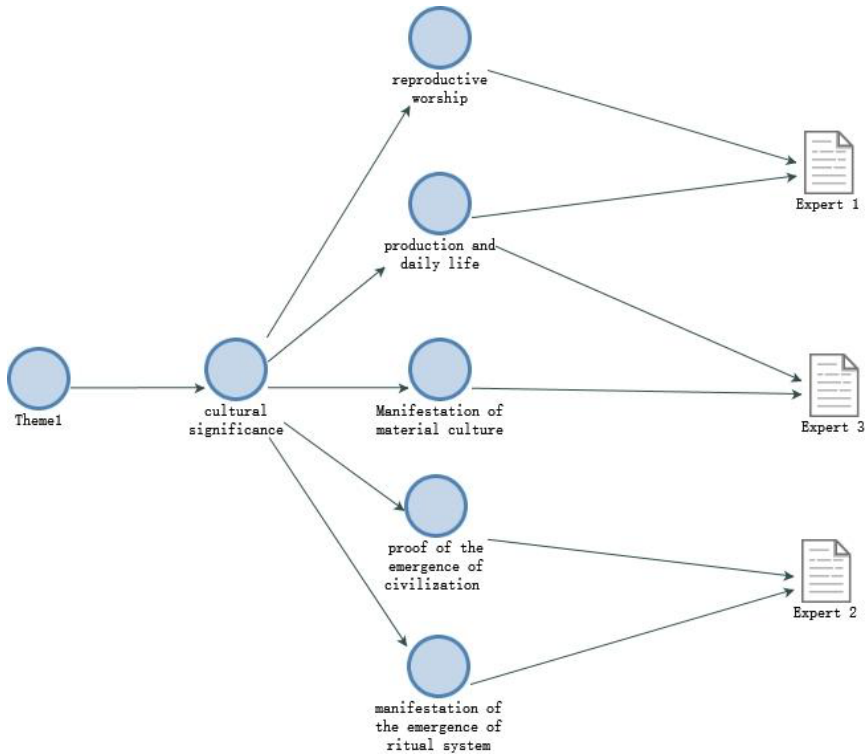


Figure 1. Visualization of Theme 1 Nodes

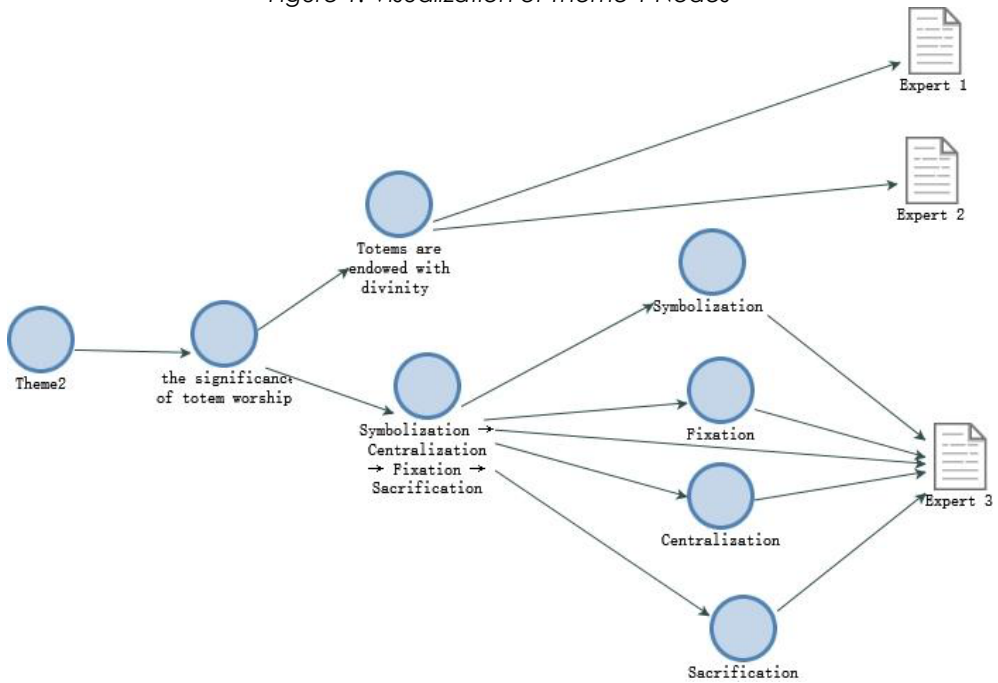


Figure 2. Visualization of Theme 2 Nodes

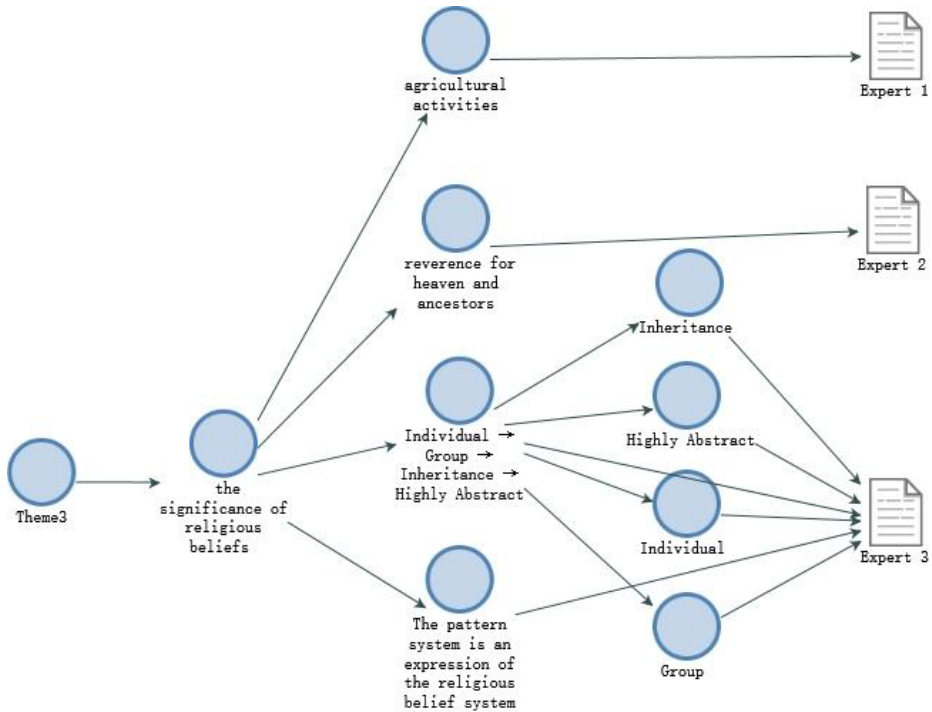


Figure 3. Visualization of Theme 3 Nodes

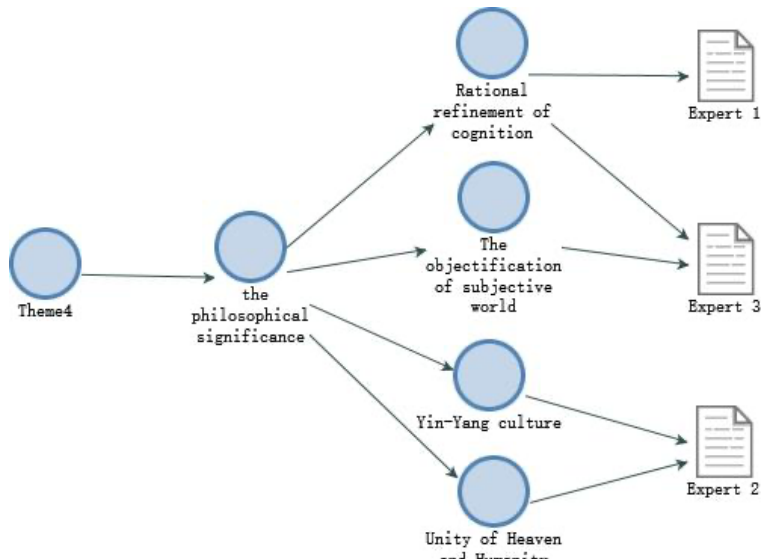


Figure 4. Visualization of Theme 4 Nodes

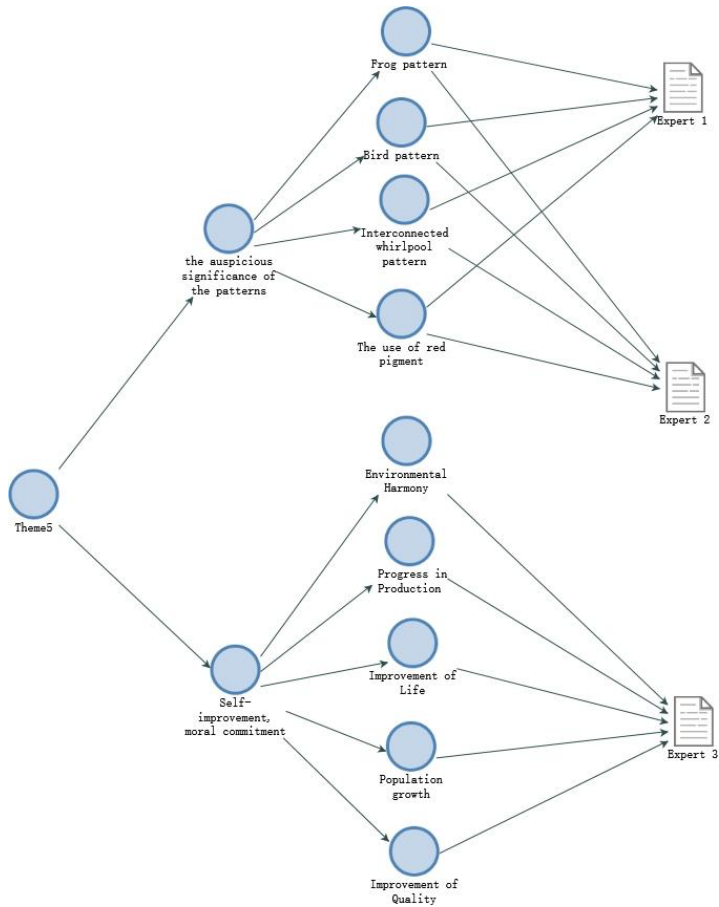


Figure 5. Visualization of Theme 5 Nodes



Figure 6. Visualization of Theme 6 Nodes

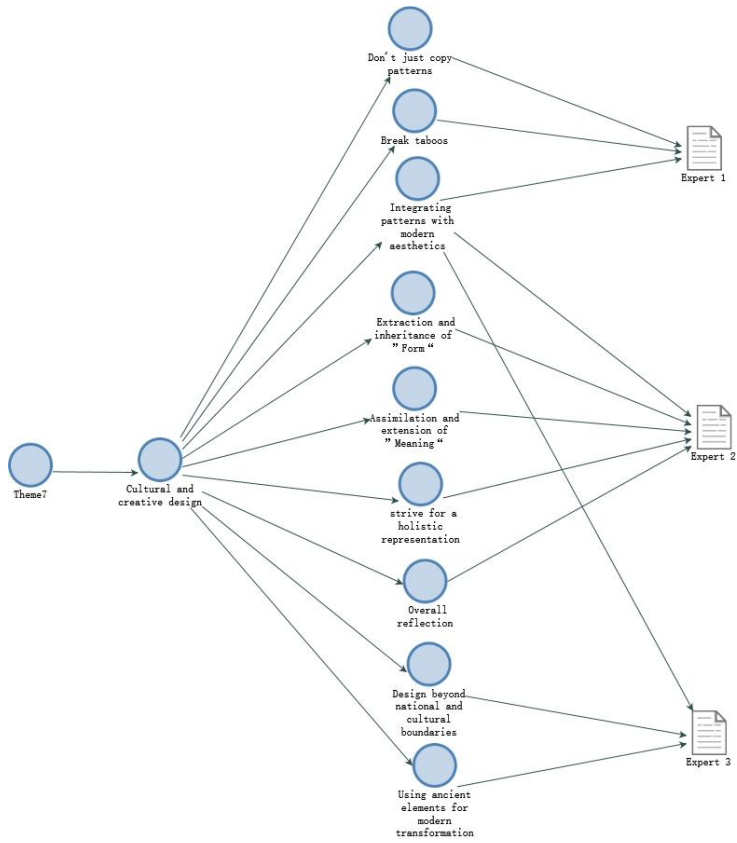


Figure 7. Visualization of Theme 7 Nodes

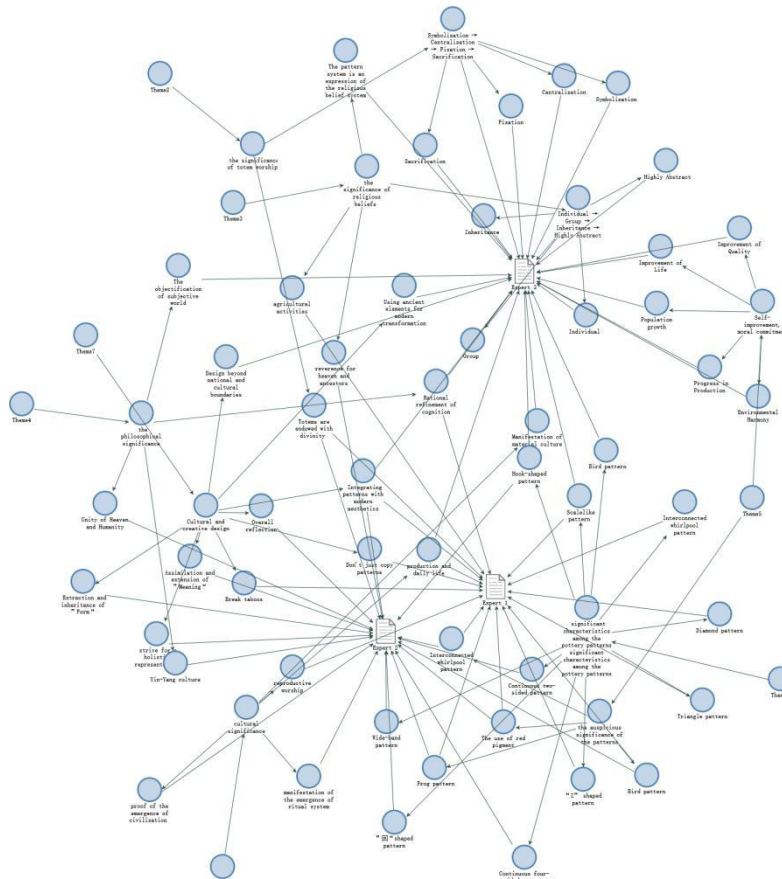


Figure 8. Visualization of Theme 8 Nodes

4. Discussion

4.1 The cultural significance of the patterns on the pottery of the Hongshan Culture

a) Originating from production and daily life

Regardless of whether it is pottery, jade artifacts, or other objects such as stone tools, one can sense that the inspiration or source of design for these artifacts originated from production and daily life. The early inhabitants gradually summarized higher-level cognitive aspects, making pottery patterns a direct reflection of their understanding of the surrounding world. Regarding the shapes of patterns, such as geometric patterns in the pottery of the Hongshan Culture, the early inhabitants first developed an understanding of squares and circles before incorporating straight lines and curves into their designs. Through observations of nature, they intuitively felt that the earth is flat, the contours of mountains are curved, and objects in nature are perceived as having straight or curved forms. This recognition of squares and circles reflects their cognitive understanding of the world.

Concerning the colors of patterns, the Hongshan Culture painted pottery often features red and black, and murals from the Niheliang Goddess Temple reveal similarities with colored pottery. In addition to red and black, white elements are also used. Based on the historical conditions and available materials of the time, the commonly used colors were red, black, and white. These

colors also stem from the early inhabitants' understanding of life; for example, the sun is red, and the night is black. The use of colors in pottery is also derived from daily life practices. Regarding the forms of patterns, in the Hongshan Culture, whether in pottery patterns, jade artifacts, or architectural layouts and designs, a sense of balanced symmetry is prominently displayed. Early inhabitants sketched many symmetrical, balanced, and consistently sized patterns on the three-dimensional surface of pottery, showcasing the beauty of balance and symmetry. This representation originates from life experiences.

Therefore, the cultural significance stems from practical life practices, forming a sense of form, color, and pattern in daily life. Pottery patterns reflect the initial aesthetic values of humanity, perfectly combining utility and aesthetics.

b) Expressing reproductive worship

Reproductive worship, as conveyed through the unique cultural connotations of pottery patterns in the Neolithic era, possesses a mysterious style. Engels explicitly stated in the preface to 'The Origin of the Family, Private Property and the State': 'Production has two sides. On the one hand, it is the production of the means of subsistence, i.e., food, clothing, shelter, and the necessary tools for this purpose; on the other hand, it is the production of human beings, the propagation of the species.' Due to harsh living conditions and scarce resources, primitive ancestors relied on their own reproductive production to continue their offspring, which became a significant factor restricting human historical development. Consequently, reproductive worship became the theme of primitive art.

The frog-pattern is one of the decorative patterns in Hongshan colored pottery. Hongshan ancestors used this pattern to express the frog's reproductive capability, symbolizing potent fertility. They depicted this pattern on the surface of pottery, reflecting the early people's psychological reverence for reproductive worship.

The characteristics of reproductive worship involve the belief in the mysterious reproductive power of nature and the veneration of sexual organs. Through rituals, magic, and fertility ceremonies, people sought to obtain vigorous reproductive spirits. In ancient times, primitive ancestors believed in a kind of magical faith that allowed for the mutual interaction and transmission of reproduction among humans, animals, or plants. By abstracting and imagining the images of certain animals or plants representing strong reproductive power on the surface of pottery, they could convey or control this reproductive power, ensuring the prosperity of the clan and the strength of the family.

c) Evidence of the Hongshan Culture Civilization

Hongshan Culture plays a crucial role and exerts significant influence in the overall origin of Chinese civilization; it is both a unified and diversified entity. Different cultures exhibit distinct characteristics in the use of pottery, and the decorative patterns on pottery hold great significance for the origin of Chinese civilization. From the perspective of civilization, it refers to the attainment of a certain level in various aspects of human material and spiritual development. The decorative patterns on Hongshan Culture pottery serve as tangible evidence of the representative origin of civilization, indicating that the state of civilization in Hongshan Culture has reached a certain level.

d) Manifestation of the Emergence of Ritual System

Throughout the course of historical development, pottery initially served practical purposes. As the early people gradually developed aesthetic awareness in their daily lives, patterns began to emerge on pottery. In later stages, pottery played a significant role in rituals,

and the patterns on pottery came to represent the subjective thoughts of the early people. Eventually, the ritual system emerged, becoming a crucial manifestation of civilization.

e) The embodiment of material culture

Hongshan Culture encompasses material culture, spiritual culture, and institutional culture. The patterns on pottery serve as a manifestation of material culture, presented in the form of patterns on the surface of pottery.

4.2 The significance of totem worship in the patterns on pottery of Hongshan Culture

a) Totems are endowed with divinity

The animal images, such as birds, deer, frogs, and dragons, in the patterns on Hongshan Culture pottery represent unique abilities and are showcased in the pottery patterns, endowed with divinity. Totem worship no longer revolves around the worship of the animals themselves but extends to the reverence for the meanings attributed to them by the ancestors, transcending the concrete worship of totems. Different societal modes of production and life can evoke distinct totemic worship practices.

b) Symbolization → Centralization → Fixation → Sanctification

A totem is a symbol. The collective consciousness of people, along with material culture, jointly forms a symbol, which constitutes a totem. Symbolization and centralization come together, giving rise to different totems based on various beliefs. Eventually, these totems converge into one or several totems, which then become fixed and established. The ancestors expressed totems through pottery, forming patterns that symbolized totemic worship. These patterns were sanctified through daily use and rituals, becoming objects of worship for the community. Therefore, analyzing the pottery patterns of the Hongshan Culture from the perspective of totem worship reveals a process involving symbolization, centralization, fixation, and sanctification. The pottery patterns reflect and embody the emergence, development, and evolution of totemic worship.

4.3 The significance of religious beliefs in the patterns on the pottery of the Hongshan Culture

a) Born out of agricultural activities

In the pottery patterns of the Hongshan Culture, the significance of religious beliefs not only needs to be combined with totem worship but also should be integrated with agricultural activities. In the Xinglongwa culture of the Hongshan Culture system, primitive agricultural activities had already emerged. By the time of the Hongshan Culture period within the Hongshan Culture system, agricultural activities had become quite mature. In agricultural societies, there was a great reverence for the 'Water God,' and elements related to agricultural activities such as the sky, clouds, and rain were highly valued. At this stage, the ancestors paid much more attention to nature and the environment than before. They would summarize some regular observations. Faced with many unexplainable phenomena, the ancestors would mythologize them, representing these elements with patterns on pottery surfaces. This allowed them to express their inner wishes through the depicted patterns. Consequently, based on agricultural activities, religious beliefs were born. Thus, agricultural production activities and religious beliefs are closely related, ultimately manifested in the form of patterns on pottery surfaces.

b) The patterns embody the concept of "reverence for heaven and ancestors"

In primitive society, the ideological foundation of "reverence for heaven and ancestors" was the spiritual strength of the early ancestors. In that spiritually omnipotent primitive society, religious beliefs have always been a powerful support and strong dependence for the early ancestors to survive. People placed all their hopes and wishes in religion. In this mindset and

psychology, the pottery patterns created by the Hongshan ancestors clearly bear immense religious devotion, embodying boundless hope. These works represent the continuation of their lives, the pillar of their spirits, and religious ideology dominates the creative thinking and thematic content of the people (Zhang Hongliang & Wu LAN, 2016).

c) Individual → Group → Inheritance → Highly Abstract

The entry point for understanding the significance of religious beliefs in the pottery patterns of the Hongshan Culture should be human consciousness, or, in other words, human faith. The process of its formation is the transformation of individual consciousness (individual religious beliefs) into collective religious beliefs, which is a significant leap. The collective religious beliefs, through inheritance, condense into a relatively precise and easily accepted system. From this perspective, the system of pottery patterns itself is a religious belief system, or, in other words, the pattern system reflects the religious belief system. The pattern system of the historical process of the Hongshan Culture undergoes evolution, with styles constantly changing. From the perspective of religious beliefs, it reflects the changes in the religious belief system. The pattern system is an expression of the religious belief system. It is a process from individual to group, group to inheritance, inheritance to refinement, forming essence, and highly abstracting into a core. Exploring and excavating the formation, development, and changes of the religious belief system of the Hongshan Culture can be done through the pattern system of the Hongshan Culture.

4.4 The philosophical significance of the patterns on the pottery of the Hongshan Culture

a) Rational refinement of cognition

The philosophical significance of the pottery patterns in the Hongshan Culture is the ancient people's understanding of the world and their knowledge of the heavens, earth, sun, moon, and all living things. The ancient people rationalized their cognition, forming conceptual meanings in a philosophical sense. Based on agricultural production and life, the ancient people's understanding of the world differs from the previous ancient cultures that were primarily nomadic. Therefore, they paid significant attention to the movements of the sun and moon, the changes in the four seasons, and how these changes affected their lives. Perceiving the various changes in nature during different seasons, the ancient people engaged in rational observation and summarization, reflecting philosophical meanings in their understanding of the world.

b) "Yin-Yang culture"

The philosophical dialectical thinking of traditional Yin-Yang culture is reflected in the pottery patterns of the Hongshan Culture. Day and night, cold and warmth, heaven and earth—all these were the most direct experiences of the ancient people. The red base with black embellishments, inverted patterns, and other elements in the patterns express the traditional Chinese philosophy of "Yin-Yang culture".

c) "Unity of Heaven and Humanity"

The concept of "Unity of Heaven and Humanity" represents an ancient cosmic worldview, and the Hongshan Culture serves as a significant origin of this philosophical idea. Pottery as a ritual instrument with social functions, became the most primitive and essential carrier for the Hongshan ancestors to revere nature and pursue a harmonious relationship between heaven and humanity. In the process of creating patterns, the ancient people expressed their aspirations for goodness by embodying them in the compositional elements of pottery patterns. The formed images are abstract and comprehensive, representing the unity of thought and expression, the product of collective wisdom and thinking. These are unique cultural and spiritual creations of the Hongshan ancestors, embodying the principle of "Unity of Heaven and Humanity".

d) The objectification of subjective world

The philosophical significance refers to in the relationship between the subjective and the objective, and the relationship between ideas and practices. In the context of the Hongshan Culture, pottery patterns embody the materialization of concepts. Philosophically, patterns are expressions and reflections of people's subjective consciousness, forming a set of patterns that reflect both their subjective consciousness and the objective world at that time. Therefore, through the pottery patterns of the Hongshan Culture, we can glimpse into the ideas of the ancient people and the objective world they faced. The philosophical significance of the Hongshan Culture's pottery patterns in the reflection of both the subjective and objective worlds, representing the objectification of subjective worlds and the materialization of concepts.

4.5 The auspicious significance of the patterns on the pottery of the Hongshan Culture

a) Auspicious meaning of the pattern

Throughout history and across different cultures, the understanding of auspicious meanings varies. Therefore, it is essential to carefully analyze the significance of patterns in both past and present societies. For instance, the frog pattern in the Xinglongwa culture symbolized abundance, and in today's society, frogs are still associated with prosperity. The bird pattern in the Zhaobaogou culture might be linked to the auspicious meaning of phoenix in contemporary understanding (Wang Qige, 2007). Similarly, the Interconnected whirlpool pattern, representing water, remains a symbol of good fortune in modern society. The use of red pigment in pottery patterns also reflects auspicious symbolism in the aesthetic preferences of contemporary Chinese society.

b) Continuously striving for self-improvement and carrying great virtue

The patterns of various cultures in the Hongshan region are all positive, reflecting the continuously striving for self-improvement and carrying great virtue. To elaborate, their auspicious meanings include the following aspects: First, the patterns reflect a harmonious environment, encompassing harmony among individuals and within society, achieving unity between heaven, earth, and humanity. Second, based on progress in production and life, the patterns reflect advancements in the quality of life; they are dynamic and changeable, mirroring the improvement in people's lives. Third, they demonstrate an enhancement in people's inherent qualities. In the early stages, patterns were simple and clumsy, while in later stages, they became fluent and magnificent, reflecting the improvement in people's qualities and perspectives. Therefore, the harmony of the environment, progress in production, improvement in living standards, population growth, and enhanced personal qualities all signify the auspicious nature of the Hongshan Culture pottery patterns.

4.6 Significant Characteristics Patterns

In the pottery patterns of the Hongshan Culture, the most typical designs include "Z" shaped pattern, Triangle pattern, Diamond pattern, Interconnected whirlpool pattern (floral pattern), Scalelike pattern, Wide-band pattern, "回" shaped pattern, Hook-shaped pattern, and Bird pattern. Hongshan culture pottery patterns of Continuous two-sided pattern, f Continuous four-sided pattern very characteristic.

4.7 Suggestions for the Application of Patterns in Cultural and Creative Product Design

a) Don't just copy patterns.

b) It is necessary to have a good extraction and design of the pattern, which must be combined with modern aesthetics.

c) Breaking the taboo of many modern people that many prehistoric artifacts are from tombs, delving into the meaning of the patterns themselves, and combining them with modern thinking can create cute or more acceptable designs for modern people.

d) Extraction and inheritance of "Form"

"Form" generally refers to the external shape and structure represented by a figure, here indicating the transformation of natural forms into a new aesthetic form through human processing. In modern art and design, the utilization of the 'form' of Hongshan Culture pottery patterns involves more than mere reproduction; it involves the extraction, recreation, and elevation of these patterns. This re-creation involves, firstly, a deep understanding of Hongshan Culture pottery patterns, applying their methods of composition involving points, lines, and surfaces to modern design. Secondly, it employs modern aesthetic perspectives to deform, combine, and iteratively apply the 'form' of Hongshan Culture pottery patterns to cultural and creative product design, expressing contemporary design concepts.

The "form" of Hongshan Culture pottery patterns exhibits abstract geometric characteristics, perfectly aligning with the rules of beauty in modern art and design. These forms can be applied individually or through various modern compositional forms, such as recombination, variation, and simplification. By abstracting and simplifying the 'form' of pottery patterns, conducting artistic refinement, and integrating with modern functionality and technology, the 'form' of Hongshan Culture pottery patterns can be extended and developed.

e) Assimilation and extension of "Meaning"

In modern art and design, inheriting the excellent traditions of pottery patterns and absorbing their cultural significance is a form of innovation. On one hand, it involves integrating the "meaning" of Hongshan Culture pottery patterns into the concepts of modern art and design. On the other hand, it combines this design philosophy with international advanced ideas and contemporary awareness, exploring creative thinking methods. The 'form' of pottery patterns carries symbolic meaning, with an indirect relationship between the abstract nature of symbols and their expressive significance, thereby providing space and depth for the absorption and extension of 'meaning' into "form."

The "form" of Hongshan Culture pottery patterns embodies the aspirations and longings of the ancient Hongshan people for beautiful things. In modern art and design, integrating the auspicious "meaning" of pottery pattern forms into advanced modern design concepts is a form of conceptual recreation. It combines and innovates the forms of pottery patterns with modern design, representing the absorption and extension of the "meaning" of pottery patterns. Building upon this inheritance, the structure of the "form" of Hongshan Culture pottery patterns is abstracted, decomposed, or reorganized, transforming it into symbolic forms with symbolic "meaning." These symbols are then applied to the design of cultural and creative products, extending the ancient "meaning" into the present day. In other words, the use of Hongshan Culture pottery patterns requires not only inheritance but also innovation. Building upon the original patterns, contemporary cultural spirit and epochal characteristics should be integrated. Using modern language, infuse its "meaning" into the design, merging the artistic aesthetics of ancient patterns with the contemporary aesthetic preferences of modern people.

f) Attainment and Sublimation of "Spirit"

If we consider the manifestation of "form" and "meaning" in Hongshan Culture pottery patterns in modern design as a surface-level extension and sublimation, delving deeper into the "spirit" of Hongshan Culture pottery patterns, transcending the materialized representation of traditional aesthetics, and exploring and seeking in the spiritual domain is an ongoing process of

innovation and sublimation based on the inheritance of the "form" and "meaning" of pottery patterns. It serves as the perpetual driving force for the development of Hongshan Culture pottery patterns in modern design.

In design, it is essential to creatively apply and develop pottery patterns, seamlessly integrating them with modern elements such as forms, concepts, and techniques. This fusion should give rise to works that possess a contemporary vibe and regional style. Shifting the "spirit" of Hongshan Culture pottery patterns allows them to transform into new artistic representations, incorporating modern technology to expand and elevate the expression of pottery patterns(Song Zhichun, 2019).

g) Do not limit yourself to one aspect, but to reflect the whole. Combining ancient symbols and elements with modern aesthetics.

h) Through research efforts, the design transcends countries and different cultures, is creative and novel, closely related to Hongshan culture, and combines traditional patterns with modern aesthetics.

i) Using ancient elements for modern transformation.

5. Conclusion

In people's daily lives, Hongshan Culture pottery patterns carry profound cultural connotations. Through analyzing their significance characteristics, it is evident that, after undergoing prolonged changes and development, traditional abstract patterns have deeply rooted themselves in ancient customs and culture. In the collision between tradition and modernity, traditional patterns have rejuvenated, providing valuable insights for the development of modern cultural and creative design (Yan Shuqin,2023) . This serves as a significant reference for the application of modern cultural and creative design, not just as an inheritance but also as an innovation where Hongshan Culture pottery patterns respond to the aesthetic preferences of a new era in novel forms. It is a commitment to stay true to our original aspirations, infusing traditional arts and aesthetic spirit into everyday life, and remembering the initial intentions of our modern cultural and creative design—to both preserve tradition and create the future.

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Conflict of Interest

The work described has not been submitted elsewhere for publication, in whole or in part, or is not under review process in another journal, and all the authors listed have approved the manuscript enclosed.

References

- Glazer, Barney & Anselm Struss. (1967). *The Discovery Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine Publishing Company.
- Jiang Xin. (2020). Research on open sharing policy of scientific data in foreign funding agencies - Policy text analysis based on NVivo12 [J]. *Modern Intelligence*, 8, 144-155.
- Song Zhichun. (2019). Application and innovation of Niuhe LiangHongshan Cultural painted pottery pattern. *Journal of Liaoning Normal College (Social Science Edition)* (05), 18-19.
- Wang Qige. (2007). Worship of "divine bird" in Hongshan culture and Shaman's "bird God". *Journal of Dalian University for Nationalities* (06), 96-99.
- Yan Shuqin. (2023). Application of Traditional Abstract Ornamentation in Modern Cultural and Creative design: A case study of Liaoning Hongshan Cultural Painted Pottery. *Grand View of Art* (02), 73-75.
- Zhang Hongliang & Wu LAN. (2016). The relationship between the evolution of pottery decorative art style in Zhaobaogou Culture and primitive religion. *Journal of Chifeng University (Chinese Philosophy and Social Sciences)*



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