

A reinterpretation of the octagonal star–patterned painted pottery dou from the Dawenkou Culture: sun worship or totemic symbol?

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Abstract. The octagonal star pattern painted pottery dou vessel of the Dawenkou Culture has long been an important representative of prehistoric painted pottery art because of its unique shape and decorative patterns. Scholars have put forward many explanations for the meaning of the octagonal star pattern. Among them, the "sun worship theory" is the most common. But most related studies infer it only by the similar shape of the image. This paper takes the octagonal star pattern painted pottery dou vessel of the Dawenkou Culture collected in Shandong Museum as the research object. On the basis of sorting out the existing research views, it re-discusses the symbolic meaning of the octagonal star pattern by combining archaeological discoveries, the function of the artifacts and related remains of the same period. This study thinks that directly equating the decorative pattern with the sun pattern may lead to over-interpretation; it is more likely to be a symbolic image formed by the method of "forming symbolic images through the observation of objects", which comprehensively reflects the prehistoric ancestors' understanding of natural environment, agricultural production and group identity. The octagonal star pattern may have a conceptual connection with natural beliefs such as sun worship, but it is not their direct image correspondence, and should be understood in a more complex cultural context. This paper aims to reflect on the applicability of different interpretation approaches in the study of prehistoric decorative patterns through this specific case, and provide a more cautious research perspective for the interpretation of the meaning of related images.

Keywords: Dawenkou Culture, octagonal star motif, painted pottery dou, image system, prehistoric symbolism

1. Introduction

The Dawenkou Culture, dating back approximately 6,500 to 4,500 years and lasting about 2,000 years, is an important culture of the Late Neolithic Age in China. Its remains are mainly distributed in the lower reaches of the Yellow River. Painted pottery, with its rich shapes and complex decorations, has become an important starting point for scholars to explore prehistoric social beliefs, aesthetics and symbol construction.

The octagonal star pattern painted pottery dou vessel [1] (Figure 1) unearthed from the Dawenkou Site in Tai'an, Shandong Province in 1978 and now collected in the Shandong Museum, is famous for its symmetrical

shape, polychrome decoration technique and five groups of octagonal star patterns on the vessel body.



Figure 1. Octagonal star–patterned painted pottery dou. source: Shandong Museum

Scholars have put forward various interpretations of the octagonal star pattern, including sun worship, totem emblem, and nine-square grid pattern [2]. However, existing studies mostly emphasize shape similarity and symbol correspondence, and do not fully combine the function of artifacts, the context of use and the role of social practice in constructing the meaning of decorations.

Facing the questions about the formation reason and implied meaning of the octagonal star pattern, this paper does not attempt to provide a definitive explanation. Instead, through this specific case, it explores the meaning construction process of prehistoric images in image selection, belief expression and social practice. This study aims to reveal how prehistoric ancestors expressed social identity, spiritual beliefs and observations of the natural environment through geometric and symmetrical images.

2. The octagonal star motif and the octagonal star–patterned painted pottery dou

The octagonal star pattern, also known as "octagonal star pattern", "eight-pointed sun pattern" [3], "sun eight-pointed star image" [4], etc., is a geometric decoration with central symmetry and closed broken lines. It was mainly popular on pottery, spinning wheels and jades of various Neolithic cultures [2]. This kind of decoration can be roughly divided into two types: one has a square or circular center with eight triangles extending from the periphery; the other has a square or circular center with straight or arc-shaped eight corners extending outward, or an octagon directly carved without a center. The one on the painted pottery dou vessel discussed in this paper belongs to the former type.

The Octagonal Star Painted Pottery Dou [1] was unearthed in 1978 at the Dawankou Site in Tai'an, Shandong. Its mouth diameter is 26 centimeters, its foot diameter is 14.5 centimeters, and its height is 28.4 centimeters. It is made of red pottery, with a wide and slightly inward rim curves, a deep plate, a round bottom, and a tall, flared foot. Its overall shape is well-proportioned and steady. Brown and red opposite triangles and lines are painted on the rim. The belly is coated with pottery and painted with five groups of square octagonal star patterns. Five groups of octagonal star patterns are evenly painted around the pottery dou's belly, with a symmetrical composition. Each group is separated by two vertical lines. The foot is divided into three equal parts by two white curved lines. The decorative pattern layout matches the shape of the vessel, highlighting its ritual and symbolic meaning.

Five groups of octagonal star patterns are painted around the pottery dou's belly. Each group consists of a square center and eight angular structures radiating outward, forming a balanced overall distribution. Each group of patterns is separated by black striped lines, making each individual image relatively independent while creating a continuous visual rhythm in the surrounding structure. This repeated and orderly arrangement is uncommon in the painted pottery decorations of the Dawankou Culture, showing a strong sense of composition. From the perspective of compositional features, the octagonal star patterns do not adopt realistic natural images but are expressed in a geometric way. The square center and the external radiating structures are not simply connected but present a clear framing relationship, making the overall image more like a symbolic expression rather than a direct depiction of natural objects. This feature weakens the basis for directly equating it with a specific natural image to a certain extent.

3. Comparison with related octagonal star motifs and differences among vessel types

In the Dawankou Culture and its related remains, radiating or star-shaped patterns are not rare. Similar patterns can also be seen on pottery spinning wheels, bowls, jars and other vessels [1]. However, compared with the diverse radiating patterns commonly seen on spinning wheels, the octagonal star patterns on the painted pottery dou are more stable in shape and more regular in composition, and mostly appear on vessels with certain ritual attributes. Similar painted pottery bowls were also unearthed at the Dadunzi Site in Pizhou, Jiangsu [5]. Its upper shape is almost the same as the painted pottery dou, but there are seven groups of octagonal star patterns. This difference suggests that the meaning of the octagonal star patterns is affected by the function and use context of the vessels, rather than a single natural symbol. Such comparisons show that the painted pottery craftsmanship of the late Dawankou Culture was mature and presented a stable pattern expression system.

In addition, as a daily production tool, spinning wheels usually have patterns with strong improvisation and decoration. While painted pottery dou mostly undertake display or ritual functions. The difference in their social use levels makes it difficult to simply compare the symbolic meanings of their patterns. Therefore, if we only explain the patterns on different vessels as the image of the sun based on the radiating characteristics of the images, it obviously ignores the important role of vessel types in the generation of meaning.

Through the analysis of the shape, pattern composition of the octagonal star painted pottery dou and its distribution characteristics in different vessels, it can be found that the pattern has highly geometric and symbolic characteristics in form, and is closely related to vessels with certain ritual attributes in use. These characteristics indicate that the meaning of the octagonal star patterns is not only determined by its "shape similarity", but is more likely to be generated by the joint action of vessels, use methods and concepts in a specific cultural context.

4. The octagonal star motif and the sun-worship hypothesis

In existing studies, the view that the octagonal star patterns are regarded as the image of the sun is common. Some scholars believe that the radiating structure and the central shape are consistent with the visual feature of the sun shining brightly, and the octagonal star patterns may be the visual expression of the sun by ancient ancestors [1]. Combined with the high dependence of Neolithic agricultural production on natural rhythms, the sun, as an important natural factor affecting seasonal changes and crop growth, became an object of worship, which also has a certain rationality. From archaeological materials, there are indeed a large number of sun-

related image expressions on Neolithic pottery, jade and spinning wheels, such as vortex patterns and radiation line patterns. These patterns often emphasize the characteristics of the sun's movement and light through a circular center and outward diverging lines [1]. In this context, including the octagonal star patterns into the sun worship system and forming an abstract and symbolic sun image is an intuitive interpretation path in academic circles.

Although the theory of sun worship is logically persuasive, further analysis combined with specific vessel and pattern forms still has some debatable points. From the perspective of image form, there are still obvious differences between the octagonal star patterns and the common sun patterns in the same period. In the Dawankou Culture and its related remains, sun patterns mostly appear with a circular center matched with vortex or radiation lines, emphasizing the visual effect of continuous movement and energy diffusion. In contrast, the structure of the octagonal star patterns is more geometric, the center is mostly square, and the external angular structures are in a stable, closed and symmetrical layout, lacking the dynamic direction common in sun patterns. This morphological difference makes it difficult to be regarded as a direct variant of the sun image. From the perspective of vessel distribution, the occurrence frequency of octagonal star patterns in different vessels is uneven. This pattern shows a relatively complete and regular form on vessels with ritual or sacrificial attributes such as painted pottery dou, while it mostly appears in the form of incised lines on daily vessels such as spinning wheels. Although there are similarities in patterns (such as a pottery spinning wheel unearthed at the Qingdun Site [6], Figure 2), the forms vary greatly. If the octagonal star patterns mainly undertake the symbolic function of sun worship, their expression forms in different vessels should have higher consistency. The single explanation of sun worship can not fully explain the characteristics of the octagonal star patterns in composition quantity, arrangement mode and repeated use. The octagonal star painted pottery dou of the Dawankou Culture, with five groups of patterns surrounding the vessel belly, shows obvious order and integrity, and is closer to a repeatedly emphasized identification system than a symbolic depiction of a single natural celestial body.

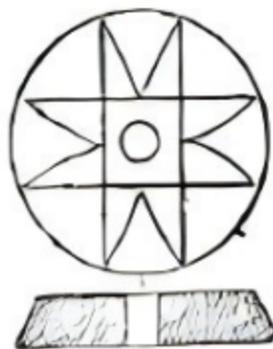


Figure 2. Ceramic spindle whorl from tomb M17 at Qingdun. source: *Acta Archaeologica Sinica*, no. 2 (1983)

5. The octagonal star motif and the totem hypothesis

Compared with the explanation path of single natural worship, regarding the octagonal star patterns as a kind of group symbol or totem mark may better cover the complexity of their form and use context.

From the perspective of social background, relatively stable settled settlements and initial social differentiation had emerged in the Dawankou Culture period. Different clans or groups gradually formed

symbolic symbols with identification functions in production [7], sacrifice and funeral activities. In this process, ancient ancestors "forming symbolic images through the observation of objects", and transformed natural objects into graphic symbols with identification meaning in an abstract and reconstructed way. The octagonal star patterns are highly symmetrical, with stable composition, and appear repeatedly as a single element on specific vessels, which conforms to the basic characteristics of totems or group emblems in form. However, the creation of the patterns may not point to a specific natural object, but integrate conceptual elements closely related to production and life such as mountains, fields and directions through a combined geometric structure, thus forming a comprehensive symbolic image. This explanation path not only retains the connection between the octagonal star patterns and natural worship, but also avoids the interpretive dilemma caused by simplifying them into sun images.

6. Symbolization and image formation of the octagonal star motif

This paper holds that the creation of the octagonal star patterns may follow the cognitive logic of "forming symbolic images through the observation of objects": ancient ancestors observed the natural environment around them, abstracted elements such as mountains, fields and celestial bodies, and then expressed them on vessels in the form of geometrization and symmetrization. This method not only meets aesthetic needs, but also serves social identification and ritual functions. On the painted pottery dou, a sacrificial vessel, the octagonal star patterns enable symbolic information to be transmitted, identified and continued among specific groups through repeated image combinations.

Through the analysis of the shape, pattern composition and vessel distribution of the octagonal star painted pottery dou in the Dawankou Culture, it can be found that the octagonal star patterns are not only a decorative form, but also may be a symbolic image system. Its characteristics of geometrization, repetition and symmetry, combined with the use context of painted pottery dou in rituals and sacrifices, show its symbolic function and cultural identification meaning. The octagonal star patterns may not only reflect natural objects, such as the sun, mountains or fields, but also bear the social functions of group identification or clan symbolism.

Compared with the explanation of sun worship, this comprehensive perspective emphasizes the multi-dimensionality of the meaning of the patterns: it not only includes the possibility of natural worship, but also does not limit the image to a specific object, but understands it in the interactive environment of prehistoric social production, rituals and symbolic systems. In this way, the octagonal star patterns are not only a visual symbol, but also a cultural expression reflecting ancient ancestors' cognition and social structure.

7. Conclusion

The octagonal star painted pottery dou of the Dawankou Culture is the crystallization of the wisdom and cultural expression of prehistoric ancestors. Its geometrized and symmetrical octagonal star patterns not only show the craftsmanship level, but also reflect the ancestors' comprehensive understanding of nature, society and group identity. Through the comprehensive analysis of shape, patterns, vessel distribution and use context, it can be seen that the symbolic meaning of this pattern goes beyond the explanation of single natural worship or sun image, but is a symbolic expression formed in a specific cultural context.

The re-interpretation of the octagonal star painted pottery dou of the Dawankou Culture enlightens us: when explaining prehistoric patterns, a single interpretation based only on image similarity easily leads to over-simplification. A multi-dimensional analysis combined with vessel types, use context and social background can more accurately grasp the symbolic meaning of patterns. This method is not only applicable to

the Dawankou Culture, but also can be extended to the study of other Neolithic patterns, providing a more cautious and systematic research framework for image interpretation.

This paper hopes to provide a more cautious methodological perspective through this case, and promote the understanding and re-interpretation of prehistoric patterns and symbolic systems.

Note

Totem: Clans of ancient ancestors often adopted an animal (or plant) as the symbol of their clan, and believed that their ancestors evolved from this totem. Therefore, they protected it, so that it could live and develop, and their descendants could multiply. Under the condition of low productivity, it is to personify natural objects and endow them with imaginary supernatural powers, in order to protect themselves.

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