

# The Aesthetic Formation of Worldviews: A Civilizational Comparison between Ancient Greek Kosmos and Ancient Chinese Tianxia

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**Abstract:** *The relationship between order and beauty is a fundamental proposition shared by Chinese and Western civilizations. The ancient Greeks used “Kosmos” to name the universe—a term that simultaneously signifies order, arrangement, ornament, and beauty. Ancient China, by contrast, took “Tianxia” (All under Heaven) as its political framework while grounding it in the cosmological scheme of “round heaven and square earth” (tianyuan difang). Both civilizations based order on cosmology and endowed it with an aesthetic character, yet their paths diverged profoundly: ancient Greece, mediated by mathematics, developed a rational aesthetics centered on the perfection of the circle; ancient China, mediated by symbols, developed a ritual-musical aesthetics anchored in a symbolic system of square and round. This paper examines how the two civilizations constructed their respective cosmological aesthetics of order and explores their extensions into political and artistic practice. It argues that while the aesthetic nature of order is cross-civilizational, the Greek path led to a mathematical-rational tradition, while the Chinese path led to a symbolic-ritual tradition, which have deeply shaped their political and artistic forms.*

**Keywords:** Kosmos, Tianxia, Aesthetics of order, Round heaven and square earth.

## 1. Introduction

“Cosmos” and “Tianxia” are the core concepts of world order in ancient Greek and ancient Chinese civilizations respectively. In contemporary knowledge systems, the former belongs to astronomy, the latter to political science. Yet when we return to the original contexts of their philosophies, we find that the construction of order was from the very beginning aesthetic. As the art historian E. H. Gombrich emphasized, “the organism develops a sense of order in the struggle for survival, not only because its environment is generally orderly, but because perceptual activity requires a framework as a reference for distinguishing deviations from rules” [1].

The Greek word “Kosmos” originally meant order, arrangement, ornament, and beauty [2]. The Pythagoreans took number as the fundamental principle and held that the harmony of the universe is beauty. Plato asserted that the circle is the most perfect shape, so the orbits of celestial bodies must be circular. In Chinese, “Tianxia” appears to be a politico-geographical concept, but Lüshi Chunqiu (吕氏春秋) root it in the “Way of Heaven.” The ancients firmly believed in “round heaven and square earth”; the Zhouli Suanjing (周髀算经) says, “Heaven is like a covered canopy, Earth is like an overturned pan.” Jade bi disks were used to worship heaven and jade cong tubes to worship earth, giving abstract order a tangible material form.

Both civilizations grounded order in cosmology and endowed it with an aesthetic character, but their paths differed. The following sections will examine the aesthetic construction of cosmological order in ancient Greece and ancient China respectively, then compare their fundamental divergence and their extensions into political and artistic practice.

## 2. The Construction of Circular Order in Ancient Greece

### 2.1 From “Number as the Essence of All Things” to Cosmic Harmony

The Pythagoreans believed that number and its ratios govern the world order. They discovered the relationship between string length ratios and musical intervals, and thereby proposed the doctrine of the “music of the spheres,” viewing the cosmos as a harmonious whole arranged according to mathematical proportions. As Plato observed, this theory made Pythagoras the founder of mathematical music theory [3]. The circle and sphere, being completely symmetrical, were considered the most perfect geometric figures. The universe is not only mathematically ordered, but this order itself is beauty.

### 2.2 Plato’s Priority of the Circle and “Saving the Appearances”

In the Timaeus, Plato describes the demiurge ordering chaos into a well-proportioned Kosmos according to eternal forms [4]. Because the sphere is the most self-consistent, uniform, and perfect, the universe is shaped as a rotating sphere. Faced with observational facts that planetary motions are not perfect circles, Plato insisted on the circular hypothesis and launched the project of “saving the appearances”—anomalies are merely superficial and cannot overturn the aesthetic principle that the cosmos follows harmony. This shows that aesthetic judgment enjoyed epistemological priority in Greek cosmology: it is not phenomena that determine order, but the beautiful law of order that determines how phenomena should be explained.

### 2.3 Aristotle’s Spherical Cosmos

Aristotle systematized the spherical cosmology: the Earth is at the center, and planets are embedded in concentric celestial spheres undergoing uniform circular motion. The cosmos is conceived as a finite and perfect sphere, whose aesthetic character arises from the precision of mathematical proportions and the perfection of geometric shape. At this point, Greek cosmic aesthetics completed a trajectory from mathematical hypothesis to geometric model to a fully systematized cosmology—a construction that also provided the ultimate paradigm for political life in the polis and for human ethics.

### 3. The Symbolism of Tianxia: Order of Round Heaven and Square Earth in China

#### 3.1 Perceptual Experience and Symbolic Signs

The term “order” (zhixu) first appears in the Rites of Zhou (周礼): “to administer its government decrees and carry out its ranks and sequences” (掌其政令,行其秩叙) [5], where “ranks and sequences” refer to arrangement according to hierarchical order. Joseph Needham once remarked that the key word in Chinese thought is “order” [6]. The concept of “universe” in Chinese philosophy differs from its Greek counterpart: “The past and present are called zhou (宙)[time], the four directions and above and below are called yu (宇)[space]; the Dao dwells within them, yet no one knows its place” [7].

“Round heaven and square earth” originated in perceptual experience: looking up, the sky appears as a canopy covering a square-shaped earth; looking down, the earth feels like a flat chessboard. The Zhoubi Suanjing (周髀算经) vividly captures this impression: “Heaven is like a covered canopy, Earth is like an overturned pan.” Lüshi Chunqiu (吕氏春秋) condenses it: “The way of heaven is round, the way of earth is square.” More importantly, a process of symbolization took place: the Liangzhu jade cong (良渚玉琮), square outside and round inside, materializes the cosmic idea in tangible form. The Rites of Zhou states: “Use a dark green bi disk to worship heaven, a yellow cong tube to worship earth.” Thus, the cosmic order is transformed into a system of visual symbols that can be seen and communicated.

#### 3.2 The Dialectic of “Round Subsuming Square”

In ancient Chinese cosmic aesthetics, “round heaven” takes priority. The Book of Changes states: “Qian is heaven, is circle.” Yet “square” is not discarded; it is integrated into a system led by the round. The Zhoubi Suanjing (周髀算经) says: “Round comes from square, square comes from the carpenter’s square. Square belongs to earth, round belongs to heaven—round heaven and square earth,” revealing the logical subsumption of square by round. The Wu Liang Shrine reliefs depict Fuxi holding a carpenter’s square and Nüwa holding a compass, presenting the dialectic of round heaven and square earth: heaven, as a canopy, covers earth. This is a distinctive way of thinking “round subsumes square”: square and round coexist, but round dominates square.

#### 3.3 The Institutionalization of Cosmic Order: Ritual-Music System and Aesthetic Governance

The Western Zhou “institution of rites and music” transformed cosmic order into political practice. Rites are the aestheticization of individual behavior and ceremonial norms; music is a synthetic art combining poetry, song, and dance. Together, rites and music realize the joint operation of goodness and beauty. Dong Zhongshu proposed “beautiful governance,” which contemporary scholars call “aestheticism” (美治主义): traditional Chinese politics carried out aesthetic cultivation through the teaching of poetry, rites, and music. The Circular Mound for sacrificing to heaven is round, the Square Pond for sacrificing to earth is square; the architecture of the Temple of Heaven embodies round heaven and square earth. Jade bi and cong give cosmic order material substance. Through the institutionalization of “vessels embody rites, rites imitate heaven,” cosmic symbolism permeated the political-cultural fabric deeply rooted in Chinese civilization.

If Greek cosmic aesthetics proceeded from mathematical intuition, through geometric reasoning, to an abstract cosmic model, then ancient Chinese cosmic aesthetics proceeded from perceptual experience, through symbolic representation, to an operable system of rites and music. The fundamental difference in their constructive paths is precisely the core content to be systematically analyzed below.

### 4. Divergence: Mathematical Aesthetics vs. Ritual-Musical Aesthetics

#### 4.1 The Divergence of the Two Paths

Based on the separate examinations of Greek and Chinese cosmic aesthetics above, we can clearly see two distinct evolutionary trajectories.

The first path—Greek mathematical and geometric rational aesthetics. In this tradition, the ultimate reality of the cosmos is reduced to number and its proportions; the standard of beauty is mathematical self-consistency and geometric perfection. The sphere is beautiful not because of the viewer’s subjective feeling, but because it conforms to the perfect definition of the circle—every point equidistant from the center, self-symmetrical, without redundancy. This aesthetics inherently leads to the pursuit of external objective standards, providing the metaphysical and aesthetic foundation for later exact sciences.

The second path—ancient Chinese symbolic and ethical ritual-musical aesthetics. In this tradition, cosmic order is expressed through systems of symbolic signs, and these signs are tightly bound to the function of ethical cultivation. Square and round are not merely geometric shapes but symbolic presentations of the relationship between the “Way of Heaven” and the “Way of Man.” Beauty and goodness are inseparable here: a jade cong is beautiful not only because of its form but also because of its symbolic function of “worshipping earth.” Therefore, the value of beauty is ultimately realized in the cultivation of virtue and the stability of political order, focusing on the meaningful correlations among elements of the symbolic system rather than on quantitative mathematical description of the cosmos.

#### 4.2 Differences in Perception, Imagination, and Institution

The above divergence manifests itself as concrete differences on three levels.

At the level of perception: the Greeks extracted mathematical clues from celestial observations and used geometric reasoning as the core means of understanding the cosmos; China relied on intuitive “image-taking” (取象 quxiang), using metaphors such as “heaven as a canopy” to construct an imaginative picture of the heaven-earth structure.

At the level of imagination: Greek imagination was strongly constrained by mathematical axioms. Plato’s insistence that “the circle is best” was rooted in the pursuit of a self-consistent, complete, non-redundant geometric ideal. Chinese imagination, by contrast, concretized and symbolized the heaven-earth order through ritual vessels and architecture such as jade cong (玉琮), jade bi (玉璧), the Mingtang hall (明堂), and the Circular Mound (圜丘); the products of imagination were tangible artifact systems rather than abstract formulaic systems.

At the level of institution: though Greek rational aesthetics profoundly influenced philosophy and science, its direct shaping power over the political institutions of the polis was limited—politics followed more the logic of debate, law, and civic tradition than the projection of cosmic aesthetics. In contrast, Chinese ritual-musical aesthetics developed a full-fledged institutional practice of “aesthetic governance”: from the Duke of Zhou’s establishment of rites and music to the Han dynasty’s elevation of Confucianism as the sole orthodox doctrine, the aesthetic character of cosmic order was materialized and institutionalized through the rite-music system, becoming an integral part of state governance.

## 5. Conclusion

The ancient Greeks endowed the cosmos with mathematical beauty: harmony is beautiful because it can be expressed by simple mathematical formulas and perfect geometric figures. This belief provided the deep aesthetic foundation for the Western rationalist tradition and the modern science that emerged from it. The ancient Chinese endowed “Tianxia” with symbolic beauty: the beauty of heaven and earth can be expressed through a precise system of symbols and ritual propriety, thereby permeating the self-cultivation of individual life and the grand narrative of family and state.

However, the end of comparison should not stop at identifying differences but rather raise a question of greater intellectual tension: which civilizational tradition is better able to transform “cosmic beauty” into continuously expandable intellectual and institutional resources? The Greek mathematical-geometric aesthetics led to a persistent inquiry into external objective laws, eventually generating the paradigm of exact science. The Chinese symbolic-ethical aesthetics led to the continuous shaping of inner virtue and social harmony, nurturing a ritual-musical civilization that lasted millennia. Each has its strengths and its limits.

To re-open the aesthetic nature of Tianxia for contemporary intellectual inquiry is both necessary for cross-cultural dialogue and an indispensable dimension for understanding the full range of possibilities available to human civilizations

when confronting world order.

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