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## Majiayao Legacy: A Neolithic Record of Astronomy, Acupuncture, and Midwifery

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# Majiayao Legacy: A Neolithic Record of Astronomy, Acupuncture, and Midwifery

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Watercolor of Magician Map Jar by Alise Suess.

From Michael Turk, "Magician's Map" (*Sino-Platonic Papers* 218)



Magician-map jar



Naked-human jar<sup>1</sup>

## Abstract

In China, certain communities of Neolithic farmers, artists, and potters mass-produced intriguing pottery with images representing fish and birds, in addition to many geometric designs never before seen. Today this group of communities, who lived primarily in the upper Yellow River region, is called the Majiayao culture. This paper examines two Majiayao jars showing human figures in bas-relief that stand out as extraordinary.

While the two jars are parallel in that they depict humans, the magician’s portrait on the map jar appears serene while the image of the naked human looks intense, as if giving birth. And, in fact, they are notably different from each other except in one revealing characteristic, which I will examine below.

As I explained in “Magician’s Map” (Turk 2011), the four-paneled Majiayao water jar can be read as a map of the Yellow River in a *sifang* (“four direction”) pattern, an important ordering concept in Chinese culture. The Majiayao scribes also painted other complex patterns; this jar, however, represents the most complex composition of symbols found to date. In this paper I propose that the ancient symbols depicted on the jar represent concepts that persist in modern Chinese culture. Today these concepts compose a theory of correlative cosmology which includes “yinyang,” “three powers,” and “five elements.”

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<sup>1</sup> The image of the magician-map jar is from Rawson 1996, 36, and of naked-human jar from Rawson 1996, 38.

Because knowledge of Chinese correlative cosmology is essential to understanding the significance of the symbols on the magician-map jar, I begin with an introduction to the theories that guide traditional Chinese medicine, including the two well-known concepts of “yinyang” (*taiji* / 太極) and “five elements” (*wuxing* / 五行). What is less well known about these theories is that they are part of a greater interconnecting data structure that includes the “three powers” (*sancai* / 三才), “four directions” (*sifang* / 四方), “four seasons” (*sishi* / 四時), and many more numeric correlations, all part of a unifying set of laws and correspondences.

The magician-map jar, featured in many books on Neolithic China, is inscribed with symbols in panels around the body of the jar. Reading the patterns made by the jar’s symbols reveals three maps: (1) a map of the Yellow River correlated with the place at which the jar was found buried (see Turk 2011), (2) a map of the polar stars prominent during the time the jar was made, and — to my surprise — (3) a map of acupuncture points and meridians painted on the magician’s body. The acupuncture evidence indicates cross-cultural influence, because at the same time that the Majiayao culture appeared in northwest China, Otzi the Iceman had acupoints tattooed on his body in Europe.

## Timeline

### Chronology of Northwest Chinese Neolithic Cultures<sup>2</sup>

Yangshao culture 4800–3000 BC  
    Banpo phase 4800–4200 BC  
    Miaodigou phase 4000–3000 BC  
Majiayao culture 3100–2000 BC  
    Majiayao phase 3100–2700 BC  
    Banshan phase 2700–2400 BC  
    Machang phase 2400–2000 BC  
Qijia culture 2400–1900 BC  
Xia dynasty – Erlitou culture 1953–1576 BC

### Chronology of Early Historic Dynasties

Shang dynasty 1576–1059 BC  
    Oracle Bone Script 1200–1050 BC  
Zhou dynasty 1059–221 BC  
Qin dynasty 221–206 BC  
Han dynasty 206 BC – 220 AD

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<sup>2</sup> This chronology is based on the work of David Pankenier (1982, 1985, 1995). Pankenier used computer astronomy programs to map the stars visible during specific events mentioned in early texts, thus establishing a secure chronology for the Xia, Shang, and Zhou dynasties.

From Pankenier 1995, "Early Astronomical Observations and Their Correlation with Political Dynasties," 123–24: "In the predawn hours of late February, 1953 BC, and again at dusk in late May, 1059 BC, the two most dense gatherings of planets in the past 5,000 years took place. These exceptionally close encounters of the "five pacers" (*wubu* / 五步) would have captivated even casual observers throughout the world for several days, if only because of the extreme rarity of such spectacular conjunctions. Both clusters were certainly witnessed, and more importantly, remembered, by the ancient Chinese, who must have gazed in amazement as they strove to comprehend their significance. Still another curious planetary "dance" in 1576 BC, at the beginning of the Shang dynasty, was remembered for its association with the transformation of the political landscape of North China then already underway. An abundance of literary and chronological evidence drawn from numerous Zhou and Han sources suggests that these celestial events were taken from the start to signal the high god's recognition of the legitimacy of a new regime, first Xia in 1953 BC, followed by Shang in 1576 BC, and the Zhou in 1059 BC."

A conjunction of all five visible planets occurs about every five hundred years. (One such gathering of the five occurred in April 2000. I was able to observe the planets from a meadow high in the Sierra Nevada Mountains, a thrilling experience.)

## 1. Prehistoric Precursors of Chinese Cosmology

Chinese cosmology is best known for the theories of *yinyang* and *wuxing*, the latter translated as “five elements or phases.” The legacy of Majiayao culture deserves study because the earliest symbols on Majiayao pottery describe a cosmology that survived into Han dynasty texts and much later. The evidence at the center of this claim is a remarkable jar, on which the images painted by Neolithic Chinese farmers turn out to be symbols in a complex pattern that I recognized as belonging to the correlative cosmology of China.<sup>3</sup>

My previous paper, “Magician’s Map”<sup>4</sup> (Turk 2011, SPP 218), presented evidence that the complex pattern on the jar is a map of the Yellow River painted in panels representing the landscape in three of four directions around a fifth, middle land — patterns called “four directions” (*sifang*) and “five phases” (*wuxing*) in ancient Chinese correlative cosmology.<sup>5</sup>

Chinese cosmology is a dynamic, changeable model for classifying information into stylized numeric patterns. This numeric ontology has at its core a five-in-one ontological structure, discussed in this paper with supporting evidence from additional images and patterns on the jar — namely, *yinyang* and the three powers: heaven, earth, and human. With the background of this understanding, the current paper will explore Majiayao achievements in midwifery, acupuncture-anatomy, and astronomy. More supporting proof is found on other

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<sup>3</sup> Chinese cosmology is characterized as one of “systematic correspondences” or as a “symbolic correlation system.” For more examples, see: Ho 1985, 21, on “symbolic correlations,” Needham 1956, 279, on “correlative thinking,” Hsu 2001, 93, on “correlative cosmology,” and Unschuld 1985, 51, on “medicine of systematic correspondences.”

<sup>4</sup> Turk 2011.

<sup>5</sup> Wang 2000, 25. Wang explains the results of her study of Shang cosmology in chapter 2, “*Sifang* and the Center: The Cosmology of the Ruling Clan,” in which she states, “This prolonged search for the origin of *Wuxing* in Shang has established two points — that a certain structural continuity between Shang cosmology and the *Wuxing* system did exist, and that the spatial notion of *Sifang* is of primary importance as one of many possible origins of *Wuxing*, including the correlation of seasons and directions, the numerology of five, and color systems.”

And from the abstract of Pankenier 2009: “Archaeological discoveries from the Chinese Bronze Age have demonstrated a dominant concern with achieving cardinal orientation that persisted throughout the Xia, Shang, and Zhou dynasties (ca. 2000–300 BCE). It has long been understood that cardinality is an index of the paradigmatic roles of ‘the center’ and ‘the four quarters,’ both core organizing principles of early Chinese cosmological thinking.”

artifacts left by the innovative Majiayao farmers, who were known for their beautifully painted mass-produced pottery. They were also the first in China to terrace the mountains for farming and to mine the mountains for metal to make bronze.<sup>6</sup>

Chinese correlative cosmology employs many number patterns. Numbers, though they do not exist in nature, are fundamental to the understanding of nature. Chinese cosmology incorporates numeric ontologies as organizing principles. The theory of ontology, a study of elements and their relationships, emerged in the discussions of Greek philosophers. Today computer scientists discuss ontological domains with elements, relationships, and structures in a knowledge framework. The philosophy of ontology guides the design of computerized information structures, and then the digital framework stores data for retrieval and the analysis of a domain. I think of Chinese correlative cosmology as a database of natural knowledge similar to the computer knowledge base systems of today.<sup>7</sup>

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<sup>6</sup> Loewe and Shaughnessy 1999. Yangshao culture is covered here, but Majiayao culture is not mentioned.

<sup>7</sup> In my first career I programmed databases; later, in 1989, I programmed a relational database to use as a point-of-sale accounting system for the office I used as a professional acupuncturist. I use the program to this day.



## 2. Chinese Cosmology



Cosmic Correlations on a Bronze Mirror<sup>8</sup>

This bronze mirror illustrates several numeric ontologies from Chinese correlative cosmology. Around the center are four creatures representing astronomical constellations: the Green Dragon, the Red Bird, the White Tiger, and the Dark Warrior. The next layer shows the eight trigrams from the *Book of Change*. The surrounding circles are the 12 animals of Chinese astrology, the 24 solar terms, and then the 28 lunar mansions.

The prolific historian Paul Unschuld (1985) found that systems of correspondence pervaded Chinese philosophy. In his introduction to *Medicine in China: A History of Ideas*, he wrote, "I speak of systematic correspondence here because all categories recognized by these different schools of thought are seen as constituting one intricate system of correspondences in

which each and every phenomenon is systematically allotted its more or less well-defined place.”<sup>9</sup>

Professor Aihe Wang (2000) mentions correlation systems in *Cosmology and Political Culture in Early China*: “Chinese cosmology, as such a framework of conceptions and relations, is an immense system of correlation-building, based on interlaced pairs (correlated to yinyang), fours (correlated to the four directions), fives (correlated to the Five Phases or wuxing), eight (correlated to the Eight Trigrams), and so on.”<sup>10</sup>

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<sup>9</sup> Unschuld 1985, 6. The term “numeric ontology,” used in this paper, is discussed in the his *Medicine in China: A History of Ideas*. Quotations from that work related to topics discussed are given below.

Re: “various schools, one complex system”: “In contrast to the subparadigm of magic correspondence, the subparadigm of systematic correspondence is based on a recognition that only a limited number of underlying principles exist and that all tangible and abstract phenomena can be categorized as manifestations of one of the two (yinyang theory) or five (Five Phases of Change theory) underlying principles identified by various schools of thought. I speak of systematic correspondence here because all categories recognized by these different schools of thought are seen as constituting one intricate system of correspondences in which each and every phenomenon is systematically allotted its more or less well-defined place.”

Re: “inductive reasoning”: “The allotment of phenomena to specific principles, be it in magic or in systematic correspondence, is a result of inductive reasoning which stands in marked contrast to the methods established by modern science to arrive at sound hypotheses. The conclusion that a swallowed comb (consumed as ashes) performs the same function in the stomach as a comb that is drawn through the hair on one’s head, namely the elimination of lice, is a typical example of inductive reasoning in magic correspondence. Similar, but often less obvious, logic accounts for the lengthy claims of association in systematic correspondence (see sections 3.1.2, 3.1.2.1, 3.1.2.2).”

Unschuld 1985, 6–7, on “systematic correspondence and cause-and-effect in Chinese literature”: “It is apparent from an analysis of historical illness-concepts in China that both these paradigms played a major role in attempts to explain the occurrence of illness and also in the development of therapeutic interventions. Although the Chinese world view has been characterized by the yinyang and by the Five Phases of Change theories of systematic correspondence, it should not be overlooked that the paradigm of cause-and-effect relations between noncorresponding phenomena is equally well represented in Chinese literature. In fact, the two paradigms should be seen as complementing each other in various ways; they do not exclude each other.”

<sup>10</sup> Wang 2000, 2: “Chinese cosmology has been characterized as ‘correlative.’ Cosmologies, using anthropologist Stanley Tambiah’s definition, are ‘frameworks of concepts and relations which treat the universe or cosmos as an ordered system, describing it in terms of space, time, matter, and motion, and peopling it with gods, humans, animals, spirits, demons, and the like.’ Chinese cosmology, as such a framework of conceptions and relations, is an

K. C. Chang (2005) explains that the Yangshao were the mother culture of the Majiayao, and he asserts, “In the Yangshao period, shamanism reflected a cosmology identical to the cosmology recorded in ancient Chinese literature.”<sup>11</sup>

My previous paper, “Magician’s Map” (Turk 2011), argued that the five-thousand-year-old Majiayao phase pottery jar found in northwest China had painted on it a map and a magician (*fangshi* / 方士). Three of the jar’s four panels had landscape symbols: river (*chuan* / 川), plants (*hui* / 卉), and mountains (*shan* / 山) associated with the directions (*fang* / 方).

The symbols for landscape on the jar may be writing — making it the oldest example of a Chinese written document and the oldest labeled map in the world. Even if the symbols on the jar are not writing, they are an artificial memory aid, symbolic associations in a spatial pattern (*li* / 理) called “the four directions” (*sifang* / 四方). The “Magician’s Map” goes on to discuss *sifang* concepts in Han texts about foreign lands and people.

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immense system of correlation-building, based on interlaced pairs (correlated to yinyang), fours (correlated to the four directions), fives (correlated to the Five Phases or wuxing), eight (correlated to the Eight Trigrams), and so on. Such a correlative cosmology is an orderly system of correspondence among various domains of reality in the universe, correlating categories of the human world, such as the human body, behavior, morality, the sociopolitical order, and historical changes, with categories of the cosmos, including time, space, the heavenly bodies, seasonal movements, and natural phenomena. Schwartz has found that Chinese correlative cosmology resembles what Levi-Strauss describes as the ‘science of the concrete’: ‘a kind of anthropocosmology in which entities, processes, and classes of phenomena found in nature correspond to or ‘go together with’ various entities, processes, and classes of phenomena in the human world.’”

<sup>11</sup> Chang 2005, 129. “The appearance of shamans and shamanism may be dated back to Yangshao times, 4,000–5,000 years ago. The characteristics and functions can be summarized as follows. (1) The particular responsibility of the shaman was to communicate between heaven and earth. The extant evidence indicates that shamans were male, but sometimes they enacted both male and female roles (fig. 5.3). (2) In the Yangshao period, shamanism reflected a cosmology identical to the cosmology recorded in ancient Chinese literature.”

Symbolic Correlations on the Map Jar

Four Panels	Four Directions
river	north
plants	east
looking south	south
mountains	west

For example, in that paper, the significance of “looking south” is mentioned in association with the ritual behavior of sage kings in the *Shujing* (書經), an ancient history book. “Looking south” is also discussed in an ancient medical book, the *Yellow Emperor’s Inner Classic* (Huangdi Neijing / 皇帝內經), an extant book on Chinese medicine published during the Han dynasty.

All of Chinese science is based on the study of change. Change is the only constant. The symbol for change is the yinyang symbol ☯ called *taijitu* (太極圖),<sup>12</sup> which means literally Great Pole Diagram: just as the North Pole (beiji / 北極) unfurls the polar sky, the Great Pole unfurls the theory of change. Taijitu is a graphic illustration of the interactions of *yin* and *yang* within a whole, one of several graphic illustrations of yinyang found in Song dynasty (AD 960–1279) literature.

The Taijitu (太極圖) Great Pole Diagram is circular and symmetrical. The two halves are in the shape of teardrops on either side of an s-shaped dividing line. Each half represents opposite yet complementary colors, usually black and white or red and blue.<sup>13</sup>

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<sup>12</sup> The earliest known appearance of the *taijitu* is during the Song dynasty. I use it here to graphically represent the ancient ideas of yin and yang.

<sup>13</sup>



An easy way to draw the taijitu is with the aid of a compass. (1) Start with a vertical line and mark the middle. (2) Draw a little circle and a bigger half circle through the mid-point around the end points. (3) Draw another big circle around the midpoint on the line. (4) Finally, erase the vertical line, and you have the taijitu.

The graphic image of taijitu has numeric significance. Within the one circular outer border can be found numeric ontologies for two, three, and four. The taijitu has dots within the teardrops; this graphic represents the traditional medical saying, "There is a little yin (*shaoyin* / 少陰) within yang and a little yang (*shaoyang* / 少陽) within yin." The moon (*taiyin* / 太陰), planets (*shaoyin* / 少陰), and stars (*shaoyang* / 少陽) shed light in the night, during the day the bright sun (*taiyang* / 太陽) casts shadows.<sup>14</sup> Little yin and little yang interact with great yin and great yang. In Han literature the four yinyang elements of a taijitu form a complex yinyang pattern associated with the sifang, the four directions spatial pattern.<sup>15</sup>

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<sup>14</sup> Needham (1959, 3: 227), wrote, "An ancient Chinese text describes the sun as great yang (*taiyang*) and the moon as great yin (*taiyin*), whereas the stars are described as lesser yang and the planets as lesser yin. Earlier it was noted that yang is like fire and yin is like water. Yang fire radiates light; yin water reflects light. This ancient Chinese text correctly identifies the sun and the stars as sources of light and the moon and the planets as reflecting light."

<sup>15</sup> Lu 1978, 46–47. See references for the Chinese text and English translation. Unschuld 2011, 127, provides a good English translation.

The *Neijing suwen* (AD 200), commonly translated as *The Classic of Internal Medicine*, explains the six yin meridians in a chapter on yinyang theory. Here is my literal translation of the first question in Chapter Six, "Yinyang Complementary (split join) Theory (陰陽離合論)." Huangdi asked, "I have heard heaven is yang and earth is yin, furthermore the sun that defines a day is yang and the moon that marks a month is yin; big and small moons in 360 days make one year, people respond to it also. Now the three yin and the three yang do not respond like yinyang, how can that be?"

Qibo said, "If yinyang categories were counted, the number would exceed ten, a hundred, a thousand, and ten thousand, even a million is not enough; the count is also one. Between the weather sent down by heaven and the support of the earth, everything everywhere gives birth; before emerging from the earth, life is yin, called yin within yin; after emerging from the earth, life is called yang within yin. When the growing yang gives a lift, the yin form becomes the owner. Therefore, the warming springtime begets birth, the hot summer causes growth, the cooling autumn results in a harvest, and the cold winter is the reason for storage; regular loss rules heaven, earth and the four surrounding territories. However, yinyang changes in humans can be known, counted, and controlled."



Taijitu



Fuxi and Nuwa in Han art<sup>16</sup>

To understand the taijitu’s overarching symbolism, observe the curved elements. The image of heaven is a circle. The often-repeated Han expression, “Heaven (*tian* / 天) is round (*yuan* / 圓) and earth (*di* / 地) is square (*fang* / 方)” is restated in Han art images of Fuxi (2800 BCE) and Nuwa (unknown date, BCE) who often pose with a compass and a square (*guiju* / 規矩), instruments used to draw circles (*yuan* / 圓) and squares (*fang* / 方). The dot and line figure encircling the royal couple represents linked stars. From the beginning of Chinese astronomy, dot-and-line figures were used to represent star groups. Fuxi, the first sovereign, saw images (*xiang* / 象) in heaven.

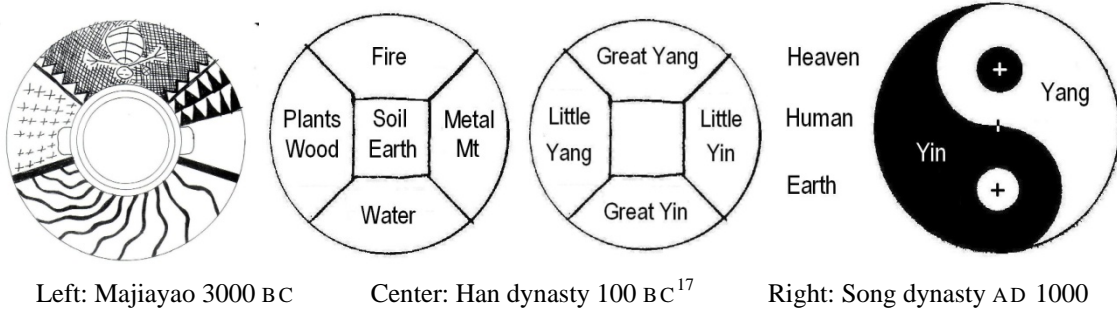
There are three circle elements in the taijitu: two dots and the outline. The taijitu’s circles are drawn around three centers. In graphic symbolism, interplay takes place within the taijitu’s

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<sup>16</sup> Image of Fuxi, Nuwa, and a surrounding dot-line image. Scarpari 2000, 90.

great circle; interactivity happens at the borders between graphic elements. There are three borders in the taijitu: the two dots have borders and the s-curve is a border.

### 3. Practical Chinese Cosmology



In the ontology found in Han literature the image of yin is water (*shui* / 水); the image of yang is fire (*huo* / 火). Water rules and the moon (*taiyin* / 太陰) gives light on long winter nights when dew, rain, and snow cover the soil (*tu* / 土) while plants (wood, *mu* / 木) rest. In spring the growing heat from the fiery sun (*taiyang* / 太陽) brings plants out of the cold damp soil. Fire (*huo* / 火) rules in summer when the bright summer sun nurtures and matures plants. In autumn, a time of diminished sunlight and growing cold, the plants ripen and the fruit falls to earth.

Knowledge of changing weather patterns has always been important to farmers. It is apparent that weather called heaven qi (*tianqi* / 天氣) is associated with the four seasons<sup>18</sup> (*sishi* / 四時), and that activity on earth responds to sunrise, noon, sunset, and night. A day of activity begins with sunrise in the east and ends with sunset in the west, which means all of these ontological elements also correspond to the directions (*fang* / 方).<sup>19</sup>

<sup>17</sup> These two images represent spaces separated by borders. The four spaces around an empty space have four borders between the active spaces. When the fifth space in the middle is added there are eight active borders. The central area has four borders and the surrounding areas have three borders each. This allows for interactivity involving three, four, and five spaces.

<sup>18</sup> Larre 1994, 25–34.

<sup>19</sup> Unschuld 2003, 86.

### Han-Era Symbolic Correlations

Little Yang / 少陽	Great Yang / 太陽	Little Yin / 少陰	Great Yin / 太陰
Stars / 少陽 or 星	Sun / 太陽 or 日	Planets / 少陰 or 行星	Moon / 太陰 or 月
Spring	Summer	Autumn	Winter
Sunrise	Day	Sunset	Night
East	South	West	North

The ontological nature of Chinese science is most developed in Chinese medicine,<sup>20</sup> commonly known for its use of acupuncture, moxibustion, and herbs. Chinese medicine also contains the concept of *qi*.<sup>21</sup> To the uninitiated, *qi* (氣) is the Life Force. However, the theory of *qi* professes that *qi* is the force of change, and it is also that which is changed.<sup>22</sup>

Manfred Porkert's (1974) scholarly analysis of traditional Chinese medicine titled *The Theoretical Foundation of Chinese Medicine* covers types of *qi* in the section titled, "The Forms of Energy (Energetics)." He explains why knowledge of the viscera (*zang* / 藏) "...is of little use unless we also have a clear idea of the forms and designations of the energies flowing in them." The section then describes 32 types of *qi*, for example, acupuncture meridian *qi* (*jingqi* / 經氣),

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<sup>20</sup> Hans Agren, "Chinese Traditional Medicine: Temporal Order and Synchronous Events," in Fraser, Lawrence, and Haber, eds. 1986, Part 3, "China." On p. 211, Agren writes: "One traditional cluster of concepts is that around the *Huangdi neijing* largely characterized by correlative thinking (that has also been called "symbolic syncretism"), numerology, and resonance ideas. The *Neijing* represents a vast body of writings on natural philosophy, exerting an enormous influence on Chinese scientific history."

On p. 213: "Correlative thinking is not at all unique to Chinese societies: it is extant in all premodern civilizations. What appear to be different are the symbols for connecting different frameworks of observations and speculations."

<sup>21</sup> Zhang and Rose 2001.

<sup>22</sup> From the Foreword, Rochat 2006a: "*Qi* manifests itself in all phenomena and is inseparable from that manifestation, so its universality ought to make it easily accessible and understood as a concept. However, even if we are practitioners of oriental medicine or of the various art forms and movement therapies which employ *qi* as an instrument or method, we often persist with very vague notions of what we are trying to influence and direct, and we rely on the catch-all term 'energy' to explain what *qi* is."



defensive energy (*weiqi* / 衛氣), heaven qi (*tianqi* / 天氣), earth qi (*diqu* / 地氣), and human qi (*renqi* / 人氣).<sup>23</sup>

All types of qi including the above are classified in patterns symbolized by numbers. The early Chinese developed the theories of Chinese medicine based on a numeric ontology rooted in an enormous network of associations and terms. This correlated symbolic system of terms forms a multi-dimensional pattern. These spatial relationships describe predictable changes that guide actions.<sup>24</sup>

The study of Chinese medicine trains the mind to evaluate disease and restore health using ontological associative logic. Patterns of two describe opposites, patterns of three describe levels, patterns of four describe time and space, and patterns of five describe interactive phases of change.<sup>25</sup>

Most Chinese philosophies used the following terms and concepts in their discussions of reality: yinyang (陰陽), energy (*qi* / 氣), pattern (*li* / 理), direction (*fang* / 方), and number (*shu* / 數).<sup>26</sup>

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<sup>23</sup> Porkert 1974, 168–73: Item 5 (*jingqi* / 經氣), item 7 (*tianqi* / 天氣), item 10 (*wèiqi* / 衛氣), item 18 (*renqi* / 人氣), and item 30 (*diqu* / 地氣).

<sup>24</sup> See Ho 1985. It also covers mathematics, astronomy, and He Tu, River Diagram.

<sup>25</sup> Beijing College of Traditional Chinese Medicine, 1980, 21, says: “In short, the theories of yin-yang and the five elements are two outlooks on nature in ancient China, both encompassing rudimentary concepts of materialism and dialectics and to some extent reflecting the objective law of things. They are of practical significance in explaining physiological activities and explaining pathological changes in guiding medical practice. In clinical application the two are usually related with and supplement each other and cannot be entirely separated. As for shortcomings in the two theories, by adhering to the scientific attitude of dialectical and historical materialism, we can continue making progress in our medical practice and promote the further development of traditional Chinese medicine in the light of constantly summing up our experience.” This was my textbook in 1981.

<sup>26</sup> Ho 1985 says in Chapter One, “Li 理, Qi 氣 and Shu 數,” p. 3: “In the study of the history of Chinese science and civilization, and indeed, in order to understand in depth many aspects of Chinese civilization itself, it is essential to examine the basic concepts of Nature as understood by the early Chinese. Let us take as a starting point the concept of the two fundamental entities, *li* (理) and *qi* (氣). The term *li* has been variously rendered by sinologists as ‘form’,

The *Laozi* taught all things come from 3-in-1 in sutra 42, “Out of Tao comes Unity; out of Unity comes two; from two comes three; from three all things come.”<sup>27</sup>

Most early cultures developed a concept of numbers for counting, but in Chinese philosophy, numbers are an important organizing principle. The character for number (*shu* / 數) finds usage in Chinese not present in English. This is common with many characters and words, making them difficult to translate.<sup>28</sup>

In Chinese science, numbers are the basis of patterns — ontological structures used to classify characteristics of a domain in nature. The patterns (*li* / 理) of the numbers (*shu* / 數) two, three, four, and five represent different dimensions within the One.

Li (理) is a common character that means “manage,” “principle,” “theory,” and “texture.” In Chinese philosophical writings, *li* has been translated as “pattern,” “organization,” “form,” “law,” “reason,” “principle,” and even “divine law.”<sup>29</sup> In classical Chinese medicine, *li* (理)<sup>30</sup>

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‘law’, ‘reason’, ‘principle’, and even ‘divine law’. ... Joseph Needham prefers to leave the term untranslated, but would use ‘pattern’, ‘organization’, or ‘principle of organization’ if necessary.”

Ho 1985, 6: “Before elaborating on the operation of *qi* under the pattern of *li*, we must note the existence of a third entity which was supposed to govern or explain the whole operation of nature, namely numbers (*shu* / 數). Once again, one cannot find a equivalent in English for the term ‘*shu*’. One of its many meanings is ‘number’, which held an important position in the early history of science in both Europe and China. Today number still plays a significant role in our daily life.”

<sup>27</sup> MacHovec 1962, 38.

<sup>28</sup> Lu 1978, 1:1, Chinese and English. Unschuld 2011, 1:29, English only. The *Neijing* was written as a question-and-answer dialogue. The first question in the *Neijing* is about the lives of ancient people, and my literal reading of the first sentence of the first answer is “Qibo says: Ancient people knew the Way to live, they modeled themselves on yinyang, they found harmony in *shushu* (appropriate number) numeric methods, they ate and drank in moderation, their daily lives had order, not wild and illicit striving” (emphasis mine). *Shushu* (術數) can also mean (1) ways of administrating, and (2) number magic, fortune telling. (岐伯對曰:上古之人, 其知道者, 法於陰陽, 和於術數, 食飲有節, 起居有常, 不妄作勞。)

<sup>29</sup> Needham 1956 discusses the concept of *li* in section “(7) The Words Li (pattern), and Tse (rules applicable to parts of wholes),” 2:565.

represents the nouns for “theory,” “principle,” and “pattern” as in “flesh pattern” (*couli* / 腠理) as well as the verb “to rectify” as in “rectify qi” (*liqi* / 理氣).<sup>31</sup>

The character qi (氣) is a common character that means “air, vapor, or breath.” When bound to another character, qi identifies the word as “able to change.” In Chinese science the operations of qi are classified in numbered patterns (*li* / 理).

The taijitu represents a yinyang ontology of cyclical dominance within a domain. Yin (陰) and yang (陽), however, operate with different patterns in heaven (*tian* / 天) and on earth (*di* / 地). The three powers<sup>32</sup> (*sancai* / 三才) — heaven, earth, and human (*ren* / 人) — are an ontology of three levels: above, middle, and below, within the One; they influence but do not change into one another. Heaven and earth are mentioned in the biography of Fuxi traditionally attributed to Confucius, “Fuxi looked up to observe images (*xiang* / 象) in heaven (*tian* / 天) and looked down to observe laws (*fa* / 法) on earth (*di* / 地).”<sup>33</sup> Chinese medicine also had three levels in the enigmatic theory of Three Heaters (*sanjiao* / 三焦) — upper, middle, and lower.

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Needham 1956, 2:562. Needham noted that Chang Tsai (張載) wrote in his book *Cheng Meng* (正蒙), “ ‘All rotating things’, he said, with reference to the heavens, ‘have a spontaneous force (chi) and thus their motion is not imposed upon them from outside (tung fei tzu wai yeh).’ One can now realize how mistaken would be the view that tse meant anything like the laws of Nature in the Newtonian sense, and how dangerous it should be to assume that such an interpretation could properly explain the thought of the Neo-Confucians about Li.”

Needham 1998, 7:1, 238–41. “Language and Logic” discusses *li* in a section under “Abstraction and the Concept of Property,” where it says, “In non-technical Classical Chinese contexts, *li* tends to refer to the pattern of things, the (often hidden) dispositions of a thing, its potential for showing certain qualities at given times.”

<sup>30</sup> Tessesnow and Unschuld 2008, 242.

<sup>31</sup> Wiseman and Feng 1998, 493; see dictionary entry for *li*: “To correct (counterflow, stagnant qi, or static blood);” see also Wiseman 1995, 542, under entry for *li*: “Rectify, rectification.”

<sup>32</sup> *Cai* is usually translated as “power,” as in the term *sancai*. The dictionary actually says *cai* is an adverb meaning “talent,” followed by *rencai* (人才), “capable person,” and *tiancai* (天才) “n. talent, gift.”

<sup>33</sup> *Grand Commentary to the I Ching*, (Yijing Tachuan).

The *Laozi* explains the method of creating ontologies in sutra 28, “Divide the Unity; the parts become as tools.”<sup>34</sup>

Divisions, like borders, establish distinctions, and detailed observations and definitions categorize things into ontologies. During the Han dynasty a basic numeric ontology of five-in-one included two opposites: yinyang (陰陽); three levels: sancai (三才);<sup>35</sup> four directions: sifang (四方); and the five phases: wuxing (五行).<sup>36</sup> In the Han dynasty medical book *Neijing Suwen*,

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<sup>34</sup> MacHovec 1962, 36.

<sup>35</sup> Xiaochun 1997, 3: “The universe was a harmonious unity of Tian 天 (Heaven), Di 地 (Earth), and Ren 人 (Man). This unity was the basis for the mutual response between Heaven and Man. Chinese astrology was strictly omen-astrology which only dealt with affairs of state.”

<sup>36</sup> This paper uses the following terms for the five phases: water (*shui* / 水), plants (*mu* / 木), fire (*huo* / 火), soil (*tu* / 土), and metal (*jin* / 金). The pictograph for the number five is an x-cross, the most powerful number. “Magician’s Map” (Turk 2011) discusses the cross as an early symbol for power.

The five elements (*wuxing* / 五行) are usually given as water (*shui* / 水), wood (*mu* / 木), fire (*huo* / 火), earth (*tu* / 土), and metal (*jin* / 金). “Water” and “fire” are fine English words to translate the elements *shui* (水) and *huo* (火), and also good images for yin and yang. However, appropriate English words for other Chinese terms are often difficult to find. For example, translating *xing* (行) as “element” was a poor choice, but all the Jesuits had with which to compare *xing* was the four elements identified by the Greeks. The Greek four elements are air, water, fire, and earth, which to this day correspond to terms in astrology. See Needham 1959, 3:437–51, for more on the Jesuits.

A better translation of *xing* is “phases.” The character *xing* (行) means “go,” incorporating the image of two footsteps walking. If the circular five phases diagram represents a cycle, the individual phases represent five steps or phases in the cycle.

“Metal” is a good English word for *jin* (金); the phase represents the color white and the direction west. In antiquity metal was found in streams where it washed out of the mountains, suggesting that the mountain symbol preceded the metal symbol in representing the direction west; the magician-map jar has mountains in the west panel.

The term “wood” is misleading because the *mu* (木) phase represents the green color of living plants; perhaps “trees” would have been better. “Plants” will be used here.

The term “earth” is confusing as a translation for the *tu* (土) phase, because “earth” (*di* / 地) is one of the three powers (*sancai*): heaven, earth, and human. Furthermore, the character for (*tu* / 土) means soil, the earth in which plants grow. Our planet is named Earth after the thin layer of soil that covers the surface. Therefore, the translation “soil” will be used here.

Soil is the central phase of the five. It is a by-product of the other phases, and its color is yellow, the middle color

the yinyang ontology included six levels, ten heavenly stems, and twelve earthly branches, to name only a few.

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on the visible light spectrum. The yearly cycle of growth and decay of plants produces humus to enrich the soil. All phases influence the quality of soil.

## 5-in-1 Numeric Ontology

**2 Yin Yang**

Earth	Heaven	
Water	Fire	
Metal	Plants	
Soil	Humans	
Sinking	Rising	
Rest	Activity	
Cold	Hot	
Dark	Bright	
Shadow	Light	
Female	Male	

Heaven  
Humans  
Earth

Taijitu

Bright Light has Shadows  
Dark Night has Lights

Yin within Yin is Water  
Yang within Yin is Plants  
Yang within Yang is Fire  
Yin within Yang is Metal

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**3 Sancai Sanjiao**

Heaven	Upper	Fire & Plants
Humans	Middle	Soil
Earth	Lower	Water & Metal

Trigram

Above  
Middle  
Below

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**4 Sixiang**

Bird	
Dragon	Tiger
Dark	Warrior

**Sishi**

Summer	
Spring	Autumn
Winter	

**Sifang**

South	
East	West
North	

Stacked rings diagram

Noon  
Dawn  
Dusk  
Midnight

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**5 Wuxing Five Elements**

Fire
Plants Soil Metal
Water

Ancient Pattern

Summer Solstice  
Spring Equinox  
Autumn Equinox  
Winter Solstice

Han Era Pattern


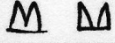




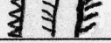


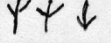







(c) Michael Turk 2013

Ancient Pattern

Han Era Pattern

H=heaven, E=earth, W=water, F=fire, P=plants (wood), M=metal, S=soil

#### 4. Symbolic Correlations on the Magician's Map Jar

	Pottery Marks	Shang Script	Modern Form	Four-panel Jar
Hill			丘	
Mountain			山	
Mound			阜	
Plants			卉	
Field			田	
River			川 or 𣶒	

Graphic written symbols for landscape



Top-down view with north at the top

The jar redrawn for a top-down view, with north placed at the top, looks as if the magician is inside looking out through the front panel.

Images on the map jar provide evidence of a symbolic correlation system, and that means that thousands of years before the Han dynasty, the Majiayao people used numeric ontologies for two and three. The theory of yinyang is the root ontology, i.e., two complementary opposites. The characters for yin (陰) and yang (陽) have a common element on the left that represents a mound (阝). The pictographs show the shaded mound as yin and the sunny mound as yang. We know the Majiayao people terraced the mountains for growing plants, some in the shade and some in the sun.<sup>37</sup>

<sup>37</sup> Unschuld 2003, 85.

## 5. Terraced Mounds Ancient and Modern



Pictographs and map jar triangles (insets) compared to modern terraced farms

Triangles along the upper inner borders of the south-facing panel look like terraced mounds. There are little triangles on the left and big triangles on the right — an early attempt at representing yinyang with the images of shady yin and sunny yang.

## 6. X — Symbol of Power<sup>38</sup>



a) “X” on axe



b) Netting with “x” and “t” crosses



c) “X” in mouth



d) “X” in head

The Majiayao and other Neolithic Chinese scribes indicated significant people and things with an x-cross as a symbol of power. In Han number symbolism, the most powerful number is five. Five stands alone (1234 5 6789) in the middle — a place of power. Two crosses, one above the other, is the pictograph for *yao* (爻), meaning “interactive, reciprocal; intersect, intertwine;

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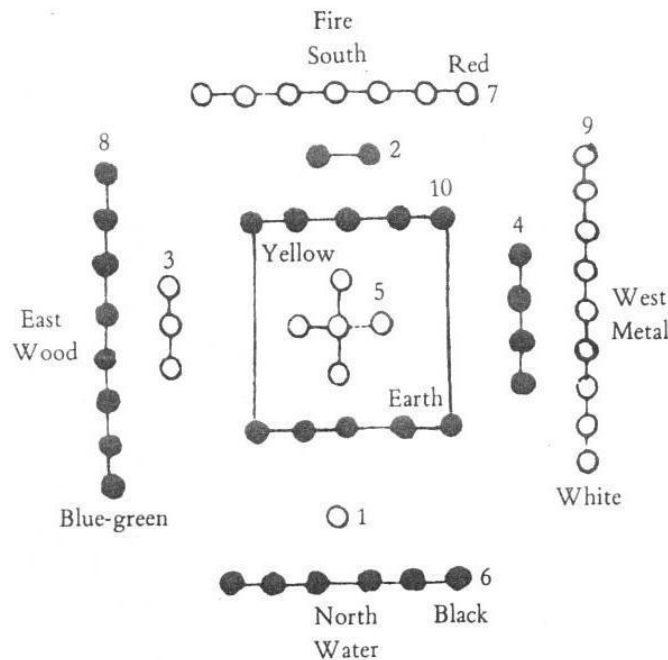
<sup>38</sup> (a) Yang 1999, 66; (b) Wu 1938, 39, no. 43; (c) Rawson 1996, 34; (d) Linduff & Sun 1996, 34.



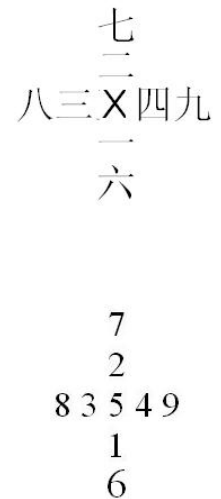
mix, blend; crosswise." The character means the lines in a trigram.<sup>39</sup> Yao is also a pictograph found in many other characters such as study, learn, and teach. In the dictionary, yao is a radical, a character used to classify other words.

A cross pattern is found in three ancient artifacts, the ancient five-element diagram, the Yellow River Diagram, and the layout of the map jar. The ancient five-element diagram is part of the five-in-one ontology.<sup>40</sup> The Yellow River Diagram is revered by Daoists as their most ancient document. The top view of the Majiayao map jar shows four panels around the jar's mouth, a cross pattern that represents four lands around a middle land, a *zhong-fang* territorial pattern.<sup>41</sup>

## 7. Yellow River Diagram (*Hetu*)



*Hetu* and Five Element associations<sup>42</sup>



Chinese and Arabic Numeral pattern

<sup>39</sup> Yao 爻; the three lines of a trigram are either a solid, yang 阳爻 line or a broken, yin 阴爻 line.

<sup>40</sup> See above in this paper: "Five-in-one Numeric Ontology."

<sup>41</sup> Allen 1991, 76–86. Zhong-fang in the mind of Shang royalty.

<sup>42</sup> Ho 1985, 19. The ball and line image with descriptive words was copied from this source.

The Yellow River Diagram (*Hetu* / 河圖) is a mystical arrangement of dot-and-line images attributed to Fuxi. It is not a written document, but it has been written about for 2,500 years. All agree — if on nothing else — that the dot-and-line images represent numbers. The *Hetu* numbers one through ten are arranged in such a peculiar manner that the meaning of the diagram is argued to this day.<sup>43</sup>

Notice that the diagram of dot-and-line figures is arranged in the shape of a t-cross. The ten number images resemble knots in a cord or beads on a chain. The number images are straight lines except for the central figures of a cross with five dots and a square with ten dots. Each knot or dot image represents a number from one to ten.

The five-dot-cross is in the middle of the ten-dot-square with the other number images around the square in four directions. In all five sections odd numbers are white while even numbers are black. Dot-and-line diagrams are also found in star charts to represent star groups and on acupuncture charts to represent acupoints and meridians. Western astronomy adopted the dot-and-line convention in the nineteenth century.

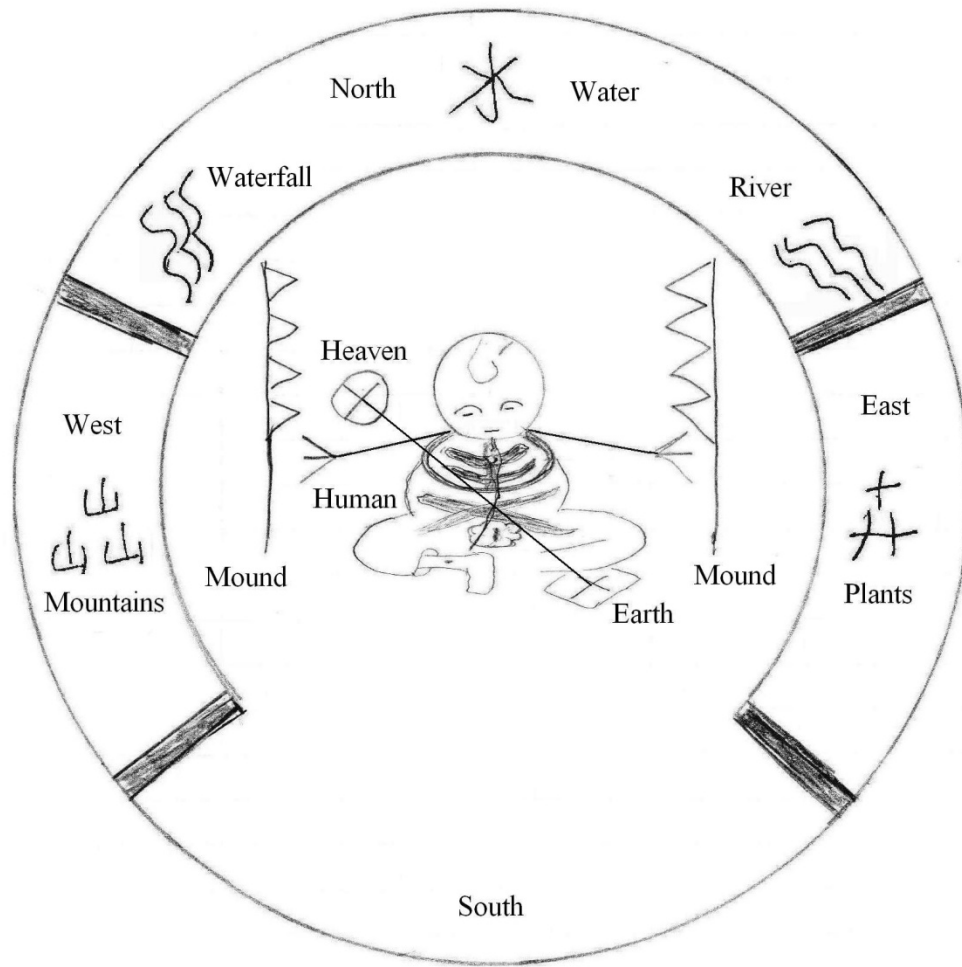
Remarkably, a t-cross of five dots is found in the middle of the *Hetu* t-cross pattern. The *Hetu* pays homage to the number five. The numbers are in five groups — top, bottom, left, right, and center. The two numbers in the five sections have a difference of five. Two layers of dot numbers surround the five-dot-cross enclosed in a ten-dot-square. The first layer of numbers 2, 4, 1, and 3 adds up to 10, and the second layer 7, 9, 6, and 8 adds up to 30. All totals are divisible by five.

The mathematic application of the *Hetu* number pattern is not apparent, but it is used in *Hetu* divination. In fortune telling, fengshui, and astrology, five always means good fortune. A mysterious manipulation of the *Hetu* numbers survives in the popular Nine Star Fengshui.

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<sup>43</sup> Ho 1985, 19; Wang 2000, 99; Needham 1959, 3: 56–58.

## 8. More Correlations on the Map Jar



Human sitting in the middle, the Fifth Space, looking south

If what I observed looking from above is correct, placing the human inside the jar put humans in “the middle,” the rightful place in the ontology of five. To see this, I moved the image of the magician from the south panel to inside the jar, sitting on tilled earth in the middle land, arms outstretched reaching toward terraced mountains to the right and left, with the polar cross behind, gazing out of the south panel to watch the sun cross the sky during the day, and tracking the four creatures (*sixiang* / 四象) from left to right during the night. A line has been added between each of the three crosses connecting the human to heaven and earth.

Today the authenticity of the *Hetu*, the Yellow River Diagram, is questioned because it was kept secret for thousands of years.<sup>44</sup> Confucius attributed the *Hetu* to Fuxi (2953–2838 BCE), who invented pictographic writing and lived in the Wei River Valley five thousand years ago — during the same period the Majiayao culture (3100–2700 BCE) produced its intriguing pottery. The diagram has paired dot-and-line images in an ancient five-element pattern. The ten-dot-square and five-dot-cross represent the middle. The *Yellow River Diagram* and the map jar both pay homage to five domains; one domain, the middle, is marked with a cross.

A careful examination of the front panel of the jar reveals more symbols of power in the portrait. There are three x-crosses in the front panel — the obvious one in heaven, a partial x-cross near the bottom of the panel marking the earth, and finally, a closer examination of the body finds a large x-cross on the lower part of the oval body. The 'X' of power marks the three powers (*sancai* / 三才): heaven, earth, and human. The concept of three powers found in Han literature was present here at the dawn of Chinese civilization.

The use of circles and squares on the magician jar is remarkable. Above the human in the dark polar sky is drawn a crossed circle, while below the human the cross is enclosed in a square element on the soil by the left leg, the image of the field 田. There are five squares in the character for the field 田. The magician jar shows evidence that the Majiayao used the circle and the square to represent heaven and earth.<sup>45</sup>

The symbols on the Majiayao map jar were arranged in patterns for the numbers two, three, four, and five. The two groups of triangles along the frames to the right and left of the human represent terraced mounds, an image of yin and yang. Three crosses represent heaven, earth, and human. The cross on the human's lower abdomen, positioned on a line in between the crossed circle in the sky and the crossed square on the soil, marks an acupuncture point where three leg meridians cross the body's midline meridian. The four types of landscape — three

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<sup>44</sup> Dewoskin 1983, 25, 43–4. Ho 1985, 7, 18, 27.

<sup>45</sup> See "Fuxi and Nuwa in Han art," above in this paper, which depicts the royal couple holding a compass and a square.

natural and one manmade — represent four of the five directions. This five-in-one foundation ontology is at the root of Chinese medical philosophy.

What more could be learned from the magician-map jar? I discovered new evidence while examining the background paint covering the outline of the human body first laid down, thus hiding and obscuring symbols and symbolic relationships such as the circular Daoist five-organ symbol painted on the chest above a cross on the abdomen.

### 9. Magician on the Map Jar<sup>46</sup>



From Rawson 1996



From Yang 1999

The first image that emerged from layers of paint that obscured the legs was a vulva. The magician is a woman, just as Rawson (1996), an art historian, curator, and authority on Chinese jade and pottery, speculated in *Mysteries of Ancient China: New Discoveries from the Early Dynasties*. She stated that the small eyes and mouth suggest a female, and generally scholars

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<sup>46</sup> Images of magician from Rawson 1996, 36; Yang 1999, 77. Photoshop was used to brighten Rawson's photo.

agree the human looks feminine. Rawson also observed, "...that the legs are indicated by curved lines that disappear into the registers of abstract patterns around the lower half of the belly."<sup>47</sup>

The catalogue that accompanied the exhibit where I saw this jar did not mention sexual identity. The catalogue entry (Yang 1999), "9. Painted pottery *guan* jar," in *The Golden Age of Chinese Archaeology: Celebrated Discoveries from the People's Republic of China*, described the front view of the jar in detail. It mentioned the triangles in the left panel and the crosses in the right panel. It also noted the two crossed-circles on either side of the human's head. It remarked on the face molded in relief, praising it for its sensitivity, refinement, and sweetness while recognizing the obscure area below the abdomen.<sup>48</sup>

#### 10. Naked-Human Jar<sup>49</sup>



From Rawson 1996

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<sup>47</sup> Rawson 1996, 36. *Mysteries of Ancient China: New Discoveries from the Early Dynasties*

<sup>48</sup> Yang 1999, 77, item 9. Painted pottery *guan* jar.

<sup>49</sup> Rawson 1996, 38. Photo of naked-human jar.

The curator of the exhibit, Xiaoneng Yang compared the magician's portrait with an image of a naked human in bas-relief in *Reflections of Early China Decor, Pictographs, and Pictorial Inscriptions* (2000). The book examined images found on Neolithic Chinese pottery during the transition from decorations to writing.<sup>50</sup> He described "pictorial inscriptions" as decorations that combine pictographs to form a picture and can be read as an inscription. In the third chapter, "Sources in the Prehistoric Era," he portrayed the magician as having a molded face and a painted animal skeletal body. He described the naked human as "An ithyphallic human figure in relief between two simplified frog limbs." He concluded, "...figures might be composite images of human beings and animals, or even the deification of the Majiayao frog."

Rawson (1999) described the naked human in detail in a section titled, "Vessel with relief decoration of a naked figure." She observed that the naked figure is molded in relief with sexual organs emphasized, although she left the gender unstated. The naked figure, unique among Neolithic ceramics, attracts many varied interpretations. Rawson examined the rest of the jar, noting the large roundels filled with hatching on both sides and the stick figure on the backside. She reported that Western scholars identify the stick figures as anthropomorphic, where Chinese scholars describe the stick figures as frog-like.<sup>51</sup>

Dexter and Mair, in *Sacred Display: Divine and Magical Female Figures of Eurasia*, asserted that the zoomorphic stick figures are abstract females displaying genitals. The book examined the postures of females displaying genitals throughout Eurasia. The authors also noted the sculpted body on the naked-human jar had molded nipples, swollen abdomen, and distended navel, indicating a pregnant woman.<sup>52</sup>

Both the stick-figure and netting<sup>53</sup> are common images in Majiayao decoration, in addition to the crossed-circle, cowry shell,<sup>54</sup> spiral, dot and curvy-line,<sup>55</sup> and checkerboard. I

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<sup>50</sup> Yang 2000, 63.

<sup>51</sup> Rawson 1996, 38.

<sup>52</sup> Dexter and Mair 2010, 12–17.

<sup>53</sup> Yang 1999.

<sup>54</sup> The bottom of the cowry shell looks like a vulva, and the side view resembles a distended pregnant belly. Thus the

propose the stick-like anthropomorphic figures are an attempt to illustrate the posture of sitting or squatting humans, thus showing interest in anatomy and body language. Finger-like objects decorate the ends like hands and feet; similar decorations are found on elbows and knees. I interpret the roundels filled with crossing parallel lines as nets used to catch frogs or fish.

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cowry shell symbolizes fertility.

Andersson 1934, 294–312. See Chapter XIX, "Aphrodite's Symbol," for a thorough discussion of cowry symbolism around the world. Andersson excavated cowry shells from Majiayao culture graves and noted cowry symbols on jars. Chang 1986, 138, enumerates Majiayao designs including cowries and crosshatch. An oval with a line down the middle resembles the image of a cowry shell.



Cowry symbols, Wu 1938, 35, 49. Cowry shells

Rawson 1996, 35; Yang 1999, 61–2. Jar, not shown here, has a sculpted face and ovals painted on the body. Cowry shells also look like a protruding belly in the last stages of pregnancy.

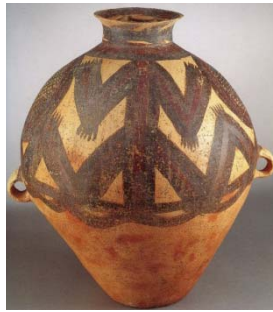
<sup>55</sup> Yang 1999, 74.



## 11. Majiyao Stick Figures<sup>56 57</sup>



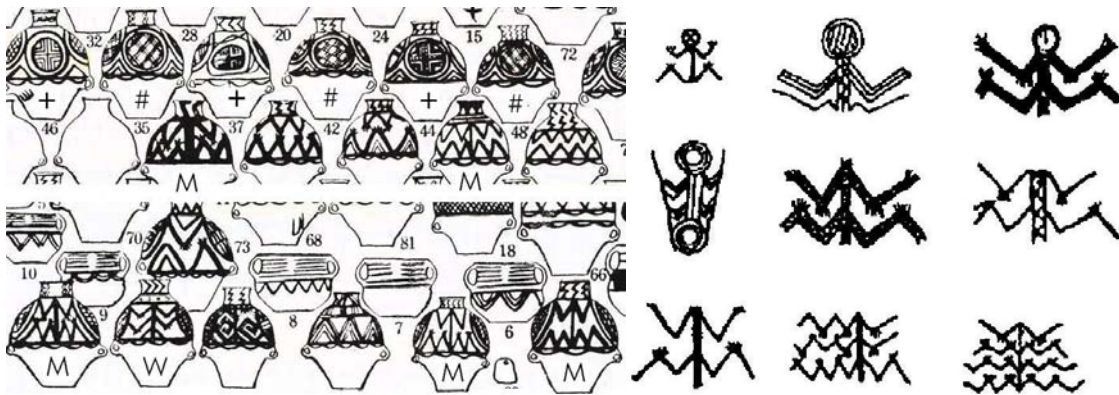
W Back



W Back<sup>58</sup>



M Front



Stick figures represent sitting: W for back view and M for front view

In the photographs above, it seems to me the red and black stick figures represent flesh and blood. In the illustration above, a mark has been added to the bottom half of the jar which identifies the pattern on the top half. In the illustration, “+” marks a t-cross, “#” marks a checkerboard, “M” marks a sitting front view, and “W” marks a sitting back view.

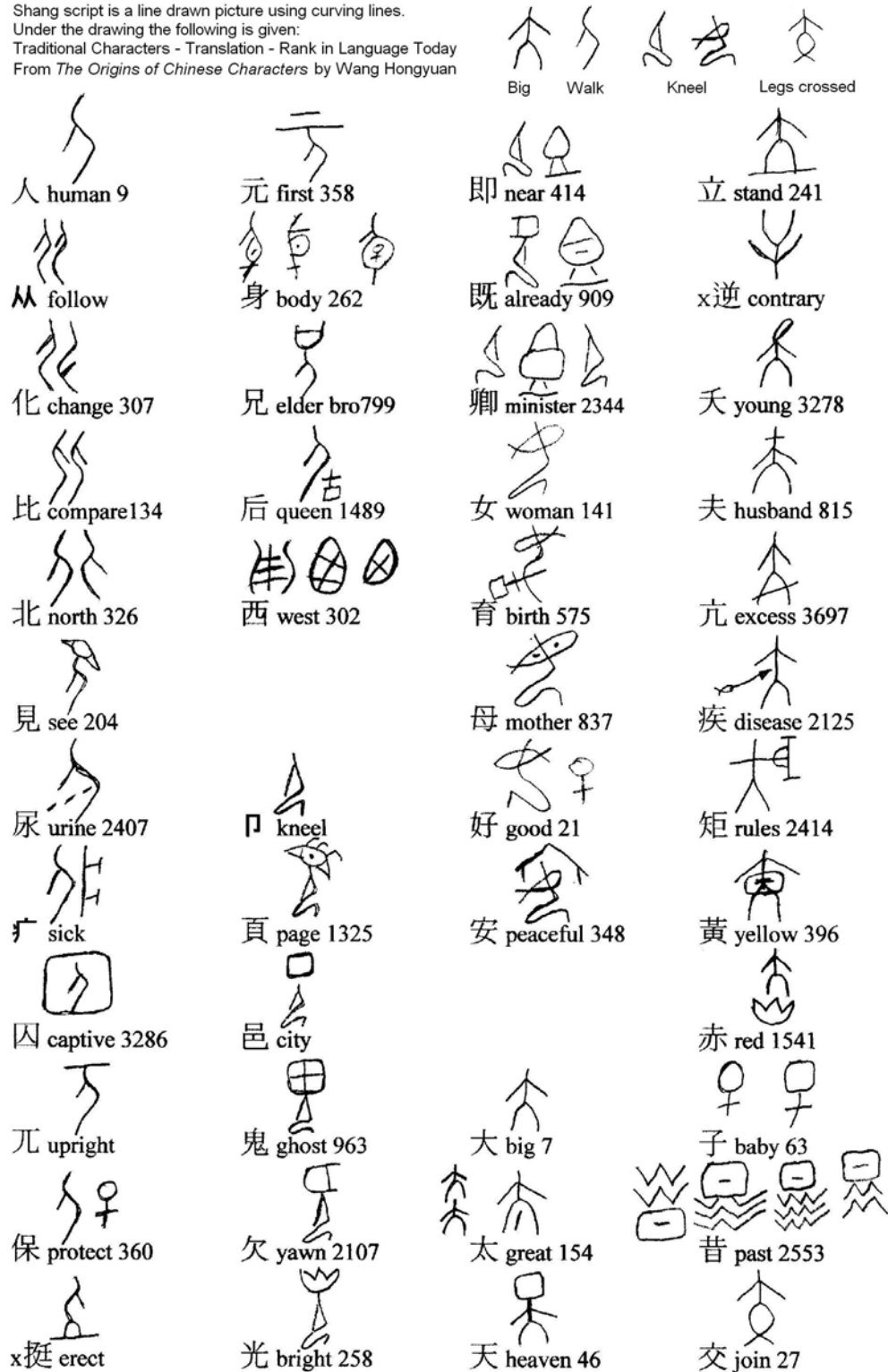
It appears that in Majiyao culture men worked standing and women worked sitting.

<sup>56</sup> Yang 2000, 61. Bottom left from *Reflections of Early China Decor, Pictographs, and Pictorial Inscriptions*. Description of image: “Fig. 77: Pottery vessel assemblage of tomb 564. Majiyao culture. Unearthed at Liuwan, Ledu, Qinghai.”

<sup>57</sup> Linduff and Sun 2004. Bottom right from *Gender and Chinese Archaeology*. These are nine of twenty stick figures from ‘figure 2.5’ “Frog motifs on pottery from Ledu Liuwan, Qinghaisheng Wenwu Guanlichu Kaogudui et al. (1984: 152, table 1,8)”.

<sup>58</sup> Images are from White 1993, 29, 31.

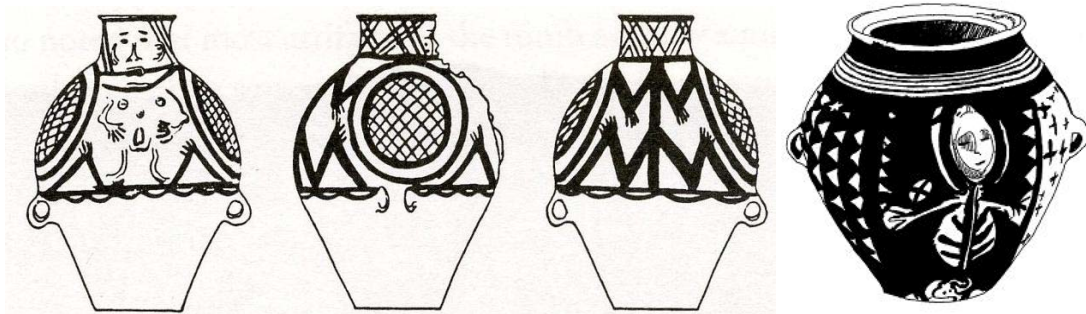
Shang script is a line drawn picture using curving lines.  
 Under the drawing the following is given:  
 Traditional Characters - Translation - Rank in Language Today  
 From *The Origins of Chinese Characters* by Wang Hongyuan



Shang pictographs of human stick figures in various postures<sup>59</sup>

<sup>59</sup> Wang Hongyuan 1993.

## 12. Two Majiayao Jars Compared<sup>60</sup>



Naked human jar (three views at left)

Magician jar (at right)

A sitting back view represented by a “W” stick-figure on the back of the naked-human jar appears to wrap skeletal arms and legs around the jar. The stick-figure embraces the naked-human in a display position with arms around the jar’s neck and legs around the jar’s belly, not a common embrace for two humans — with one important exception: a doula supporting a woman in labor.

The magician jar and the naked-human jar are complementary opposites.<sup>61</sup> They are similar looking jars with different decoration. Notice that the jars’ shapes are different and the human characteristics vary dramatically. The jar types differ — the mouth of the magician jar has a large opening with handles down the side just above the midway mark, and the naked-human jar has a small mouth, with handles below midway. However, they are similar because the images are placed in quadrants around the belly — front, back, and sides. For example, three sides around the map jar’s belly represent landscape, while three sides around the naked-human jar portray common images — netting in a circular frame and a typical stick-figure. However, this sitting stick-figure embraces a naked-human.

The shape and expression of the human features on the two jars are remarkably different. The eyes made of slits on the magician are notable for their mysterious stare, while the closed eyes of the naked-human are large. The mouth of the magician is a thin line, a Mona Lisa smile, while the mouth on the naked-human is wide open — lips pushed out with force. The face of the

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<sup>60</sup> Image of naked-human jar appears in Yang 2000, 63. Image of magician jar appears in Turk 2011.

<sup>61</sup> See images in the abstract of the present paper.

magician is simply serene, while the face on the naked-human is intently focused; even the ears point forward.

Both bodies are oval, with roundness pronounced by the jars' bellies. However, the arms of the magician are painted spread out in the gesture for "big," while the arms of the tense naked-human are made of molded clay from the head to the fingers wrapping around and grabbing the belly. The legs of the magician are obscured and mixed with the black background; however, the vulva appears to be where one would expect to find the genitals, hidden but not covered up by the surrounding black overlapping paint strokes. While the naked-human has molded genitals, she appears to be reaching for her vulva — a gesture observed during labor.

K. C. Chang (1986), in his source book *Archaeology of Ancient China*, suggests the naked-human is bisexual and the stick-figures anthropomorphic. Chang, Yang, and Rawson admit that the sculpted genitals on the naked-human are ambiguous, but Dexter and Mair recognize the signs of a pregnant woman.<sup>62</sup>

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<sup>62</sup> Chang 1986, 153. Yang 2000, 63. Rawson 1996, 38. Dexter and Mair 2010, 16. *Sacred Display: Divine and Magical Female Figures of Eurasia*.

### 13. The Crowning Moment of Birth



Crowning<sup>63</sup>



Naked-human jar

I propose the stick-figure represents a doula assisting the naked-human giving birth, and the artist caught the moment before a fetus becomes a breathing human — the crowning moment after a long labor when the head becomes visible at the vulva and birth is imminent.

Every characteristic examined above while comparing the magician jar with the -human jar is its polar opposite. The magician serenely embraces the natural world while the naked-human supported by a doula labors to give birth — one of the most intense experiences a woman can have, yet this may be the only work of art on display in a museum to immortalize the crowning moment.<sup>64</sup>

I believe the image on the jar is the crowning because I have assisted during childbirth and have been privileged to see the head emerge. The vision of the vulva stretching as the head passes through the vaginal canal is an unforgettable experience, a rarely seen image during a hidden ritual, the origin of life.

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<sup>63</sup> Unknown web source for picture of childbirth. Rawson 1996, 38, for image of naked-human jar.

<sup>64</sup> This picture of the naked-human morif was taken at the National Museum of China in Beijing and is accessed on Flickr.





Detail of "sacred display" on naked-human jar

#### 14. Cosmology of the Map Jar<sup>65</sup>



Detail of "sacred display" on map jar

Returning to the image of the magician in the lower part of the portrait, the brushstrokes give the impression the magician sits cross-legged (*jiao* / 交). Close inspection reveals the initial outline of the body and legs partially covered over with thick brushstrokes that fill in the background. By ignoring the background brushstrokes, I drew and redrew the figure following the still visible outline of the body and legs. The recovered images revealed a circle, a square, two more x-crosses, the Chinese pictograph for field 田, and two opposing pictographs of mounds 阝 all evidence of a symbolic correlation system. These same images and concepts appear in Han writing, art, medicine, and astronomy.

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<sup>65</sup> The illustration of the genitals on both the magician jar and the naked-human jar resemble a cowry shell, an oval with a line through the long axis, a common theme on Majiayao pottery. The halved-oval appears alone, in groups, or surrounded by curvilinear parallel lines.

Female symbolism abounds in the cowry shell: cowry snails live in water, the bottom of the cowry shell resembles a vulva, and the top of the shell looks like the abdomen of a pregnant woman.

The recovered images from the portrait of the magician have an agricultural, astronomical, and medical theme, not unlike the three founding sage-kings (*sanhuang* / 三皇) of Chinese civilization: Fuxi, Shennong, and Huangdi, traditionally said to have taught philosophy, farming, and medicine.<sup>66</sup>

The x-cross above the magician’s shoulder in the front panel resonates with several ideas — the pictograph for “five” (the most powerful number) or a celestial cross of five stars. The star Thuban was the polestar when the Majiayao artist painted the map jar. By the Han era the polar sky was called the fifth celestial palace.<sup>67</sup> I propose that the dark background represents the polar sky marked with a constellation of stars in the shape of an x-cross that marked the North Pole (*beiji* / 北極). It is notable that the character for pole (*ji* / 極) is also found in the Chinese name for the yinyang symbol, *taijitu* (太極圖), literally “Great Pole Diagram,” as mentioned earlier and “Middle Pole,” the meridian acupoint to be described next.

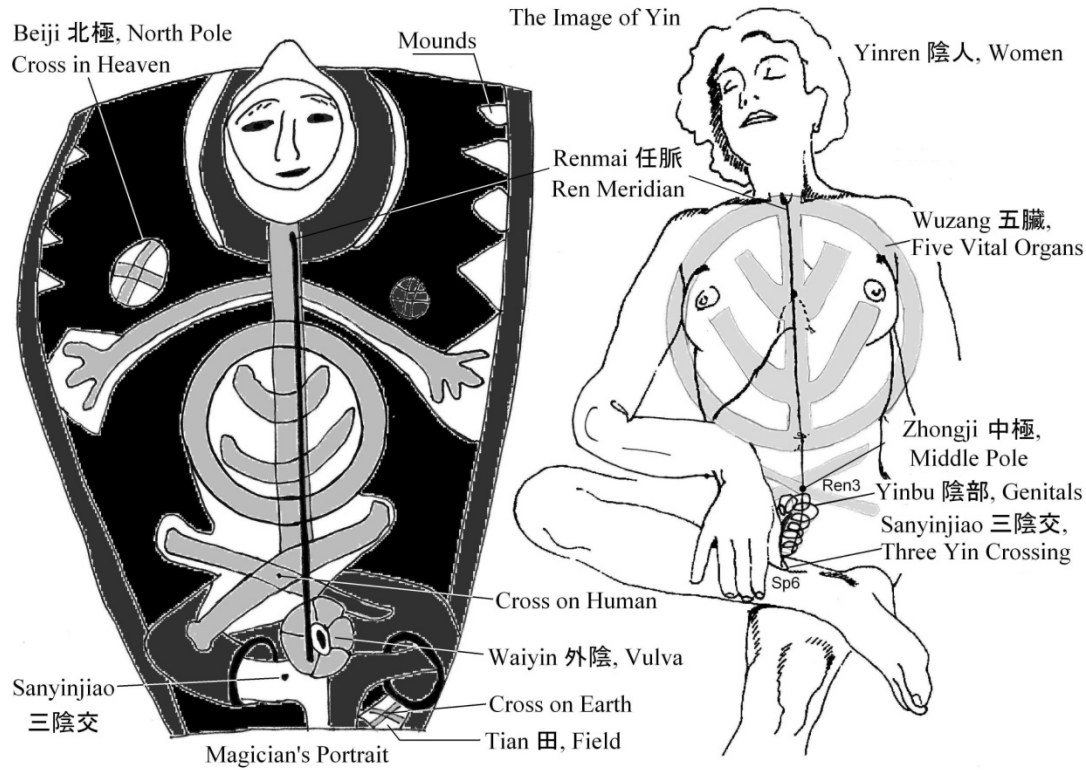
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<sup>66</sup> Loewe and Shaughnessy 1999, 55.

<sup>67</sup> Xiaochun 1997, 119.



## 15. Medicine Woman



Left: Recovered symbols in magician's portrait Right: Acupoints, meridians, and Daoist symbol for vital organs

Finding an x-cross in heaven, on earth, and on the human body was intriguing, but still more images could be recovered from the body of the magician — and these revealed a medicine woman. The x-cross on the magician's abdomen was aligned between the x-cross in heaven and the x-cross on earth, and I propose that the x-cross on the body marks the acupoint Ren3, Middle Pole (*zhongji* / 中極), traditionally located on the body's midline and classified as a crossing acupoint (*jiaohui* / 交會), literally "crossing and meeting," used in the treatment of abdominal disorders and pain. Crossing acupoints, it should be noted, are seen as having greater diagnostic and therapeutic value.

This paper uses the word "meridian" to translate the term *jingmai* (經脈). Meridian acupoints are located on the twelve *jing* (經) and two of the eight *mai* (脈). The term *mai* was

used in early texts before the term *jing* to describe the body as having six longitudinal layers of yinyang: taiyin, shaoyin, jueyin, taiyang, shaoyang, and yangming.<sup>68</sup>

In early acupuncture texts, crossing acupoints are found on more than one meridian. Meridians that cross add power and influence to the acupoint. At the crossing acupoint Ren3, the Middle Pole connects four meridians: the renmai (任脈) meridian and three yin meridians from the legs. The renmai meridian is called the “sea of all yin.”

Traditionally, the renmai meridian is described as a path between an acupoint on the lip and the acupoint Meeting Yin (*huiyin* / 會陰), Ren1, located in the perineum between the genitals (*yinbu* / 陰部) and the anus. On the abdomen the renmai meridian crosses three yin leg meridians.

The three yin meridians (*sanyinjing* / 三陰經), on the legs, cross again at the acupoint Three Yin Crossing (*sanyinjiao* / 三陰交), Spleen6. The three yin meridians are associated with the kidney, the liver, and the spleen — the master organ of digestion. The acupoint Spleen6 on the legs is one of the most commonly used acupoints for female disorders, yet it is forbidden to needle during pregnancy unless one is a master acupuncturist. Three Yin Crossing also treats problems associated with the abdomen such as digestion, elimination, and reproduction around the location of the acupoint Middle Pole mentioned above.<sup>69</sup> We have seen the character *jiao* 交 before, the image of sitting with legs crossed, the posture of the magician.

The evidence described above hints that the Majiyao could have been part of a mother culture that practiced acupuncture. Dexter and Mair (2010) suggest that the Majiyao were part of a Pan-Eurasia culture. The archeological evidence for cross-cultural sharing of acupuncture and metallurgy is dramatically supported by the discovery of a five-thousand-year-old mummy called Otzi the Iceman in the Alps. Otzi had acupoints tattooed on his lower back, where he

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<sup>68</sup> See Lu 1978, 1:46–48, for the Chinese text and English translation.

The six layers of yinyang classification are discussed in Chapter Six of the *Suwen*. In this chapter the importance of facing south is explained in association with the six yinyang meridians: four on the front, one on the side, and one on the back of the human body. When the sage faces south, sunlight falls on the sunlit yang meridian. Today the sunlit yang meridian is associated with the stomach and spleen meridians.

<sup>69</sup> See Wiseman and Feng 1998, 98, for the dictionary entry on ren mai, and p. 317 for the dictionary entry on intersection acupoints.

could not have made them himself. Furthermore, Otzi carried a copper axe he could not have made alone; we know that Majiayao metalworkers cast bronze knives.<sup>70</sup>

Both Otzi's community and the Majiayao obtained ore from local mountains; it required a community effort to produce the metal tools. Ore from the Otztaler Alps was used to make a copper axe; ore from the Shaanxi Mountains was used to make a bronze knife. All prehistoric metalworkers employed the same metallurgical processes for smelting and casting, requiring temperatures above 1000 degrees Centigrade to produce metal tools.

X-rays of his mummified remains show that Otzi had arthritis in several joints. Tattooed acupuncture points were located near his painful joints — they are at the same locations recommended in today's acupuncture texts. Perhaps even more remarkably, scatological analysis shows that Otzi had whipworms (*Trichuris trichiura*), which caused severe abdominal pain. Astonishingly, it appears that a tattooed dot on his body was located in a place four fingers above his medial malleolus, at the acupoint Spleen6.<sup>71</sup>

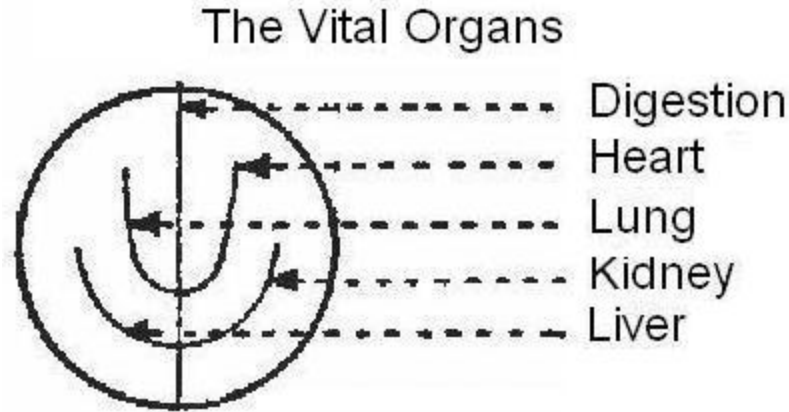
Spleen6, also called "Three Yin Crossing," corresponds to disease and pain in the abdomen. This exact correspondence is found in acupuncture's correlative cosmology. For example, internal and external correspond at a distance for diagnosis and treatment. Because Otzi was tattooed with acupoints appropriate to his arthritic joints and abdominal pain, we know his doctor used the same system of correspondences used today to treat these problems.

Images of women in display position, acupuncture, and metallurgy could indicate a common culture or merely common Neolithic knowledge.

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<sup>70</sup> See Chang 1986, 143, for bronze knife, 5300–4400 BP, cast in two molds. See Spindler 90, for copper axe, 3300 BP.

<sup>71</sup> L. Dorfer et al., 1999, 1023–25.



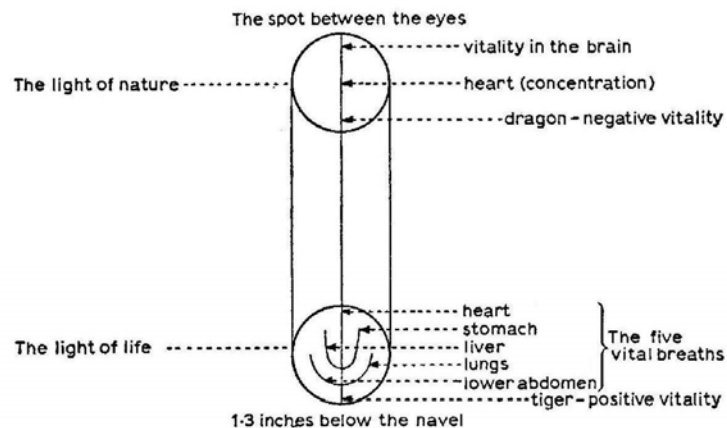
Daoist Five Viscera symbol<sup>72</sup>

I propose that the renmai meridian was inscribed on the magician jar as a thin vertical line along the central stem of the body's trunk. In addition, the circular symbol on the chest looks like the Daoist symbol for the five viscera, the image of four branches around a middle branch

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<sup>72</sup> Luk 1970, 135. The original illustration (fig. 9) included more. I extracted the five stems (*wuzang*) within a circle called the "light of life" from an illustration that included more symbols. The original complete image is on page 135 of *Taoist Yoga: Alchemy and Immortality*, written by Charles Luk (Lu K'uan Yu) and published in 1970. On the title page Luk attributes the text to, "A translation, with introduction and notes, of *The Secrets of Cultivating Essential Nature and Eternal Life (Hsin Ming Fa Chueh Ming Chih)* by Taoist Master Chao P'i Ch'en, born 1860."

I also changed the labels on the branches of the *wuzang* symbol to those used in traditional Chinese medicine — the branch labeled "stomach" refers to the digestive system called the spleen; the "lower abdomen" refers to the kidney.

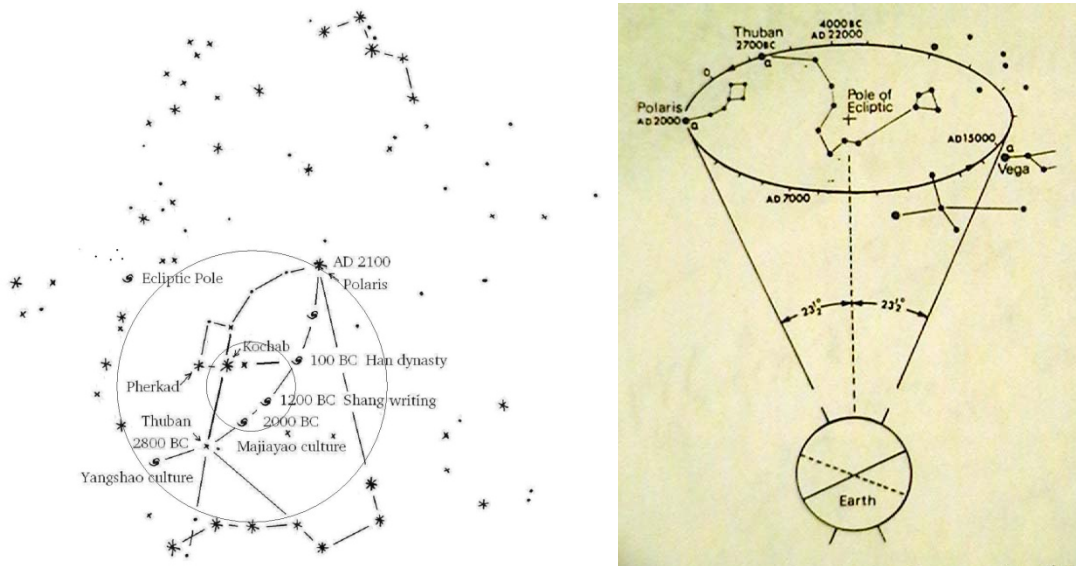


**Figure 9** *The field of concentration for gathering the macrocosmic alchemical agent.*

inside a circle. I found the five viscera symbol (*wuzang* / 五臟) after taking away the last thick brush strokes below the arms of the magician and adding the outline of a circle surrounding the branches painted on the upper part of the body.

Everything in the portrait of the magician on the map jar is characterized by yin. For example, women are yin (and men are yang).<sup>73</sup> The front of the body is yin. The most yin meridian is renmai. The most yin acupoint is sanyinjiao. Also, the Daoist symbol for the five viscera (*wuzang* / 五臟), represents the yin internal (yin) viscera (yin). Finally, the portrait is on an earthen (yin) water (yin) storage (yin) jar (yin).

What else can be learned from the magician's map? Consider the tools and skills needed in mapmaking. Two important tools needed to measure and draw maps are a square and a compass. The ability to locate north by mapping the sky is needed to orient the map to the territory. This might explain the x-cross in heaven; it could be a constellation of stars that locate the North Pole (*beiji* / 北極), just as the x-cross on the magician's body marks an important crossing acupoint called Middle Pole (*zhongji* / 中極).



Polar star maps illustrating precession<sup>74</sup>

<sup>73</sup> The genitals 陰部, *yinbu*, are in the shade (*yin*) — the vulva 外陰, *waiyin* — the penis 陰莖, *yinjing*.

<sup>74</sup> The image of precession is from an unknown source.

Finding the directions using the stars was a required skill for early mapmakers and travelers, especially sailors. A mapmaker must know how to identify and measure the directions. Since antiquity, the sun and stars have accurately indicated direction; it is a consequence of our spinning earth. The Majiayao probably used mapmaking skills to record the northern path of the Yellow River from the mountains to the fertile plain.<sup>75</sup>

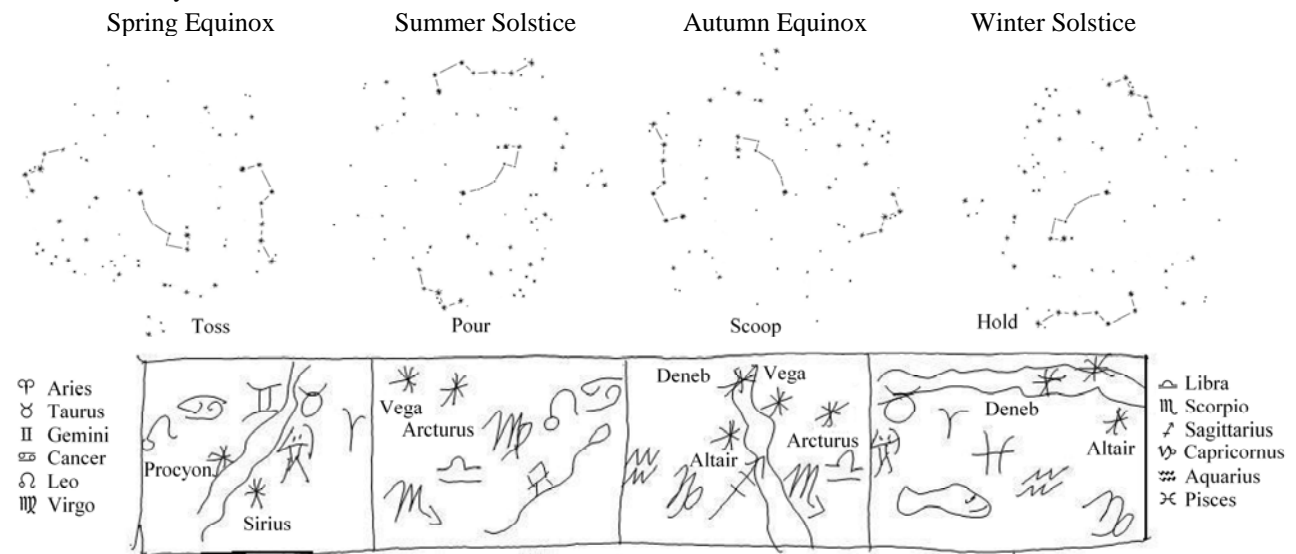
The easiest way to find north is with a bright North Star. Today, the Big Dipper has a pair of stars that point to and help find Polaris, this era's polestar. During other eras, different polestars, images, and alignments pointed the way north.<sup>76</sup>

<sup>75</sup> Today a magnetic compass or GPS device works even when clouds cover the sky. However, the magnetic compass needle is not accurate unless local magnetic variation is measured and compensated for.

The Yellow River also fascinated the Han Chinese. A Han envoy sought the origin of the Yellow River while exploring western lands looking for political allies and trading partners for China's manufacturing industry. A Han myth says the origin of the Yellow River is the Milky Way, a river of stars the Chinese call the Celestial Yellow River.

Today we know that the spinning earth's axis produces a north and south pole; however, that knowledge does not make it obvious how to find the celestial North Pole or the direction north. To ancient navigators finding north was a skill required to orient a map to a territory. Since the earth spins, when we are looking south at the night sky, stars appear to move from left to right, rising in the east and setting in the west, while in the northern sky the everlasting polar stars rotate around the invisible North Pole.

<sup>76</sup> Seasons today in the northern and southern skies:



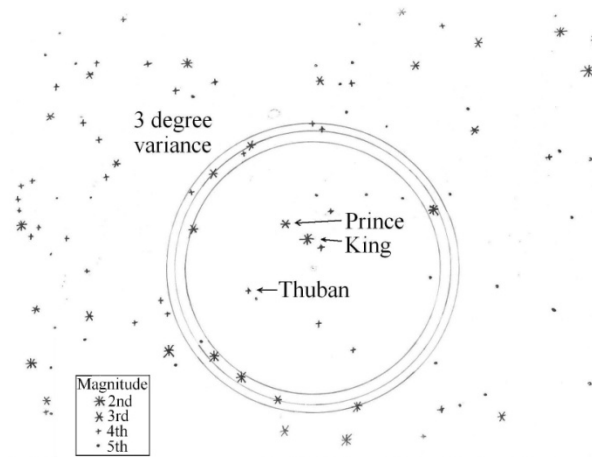
Today's polar sky (top) and southern sky (bottom)

It is interesting to note that the Confucian biographies of Fuxi, Shun, and Yu mention the importance of astronomy to the ruling class of early China.

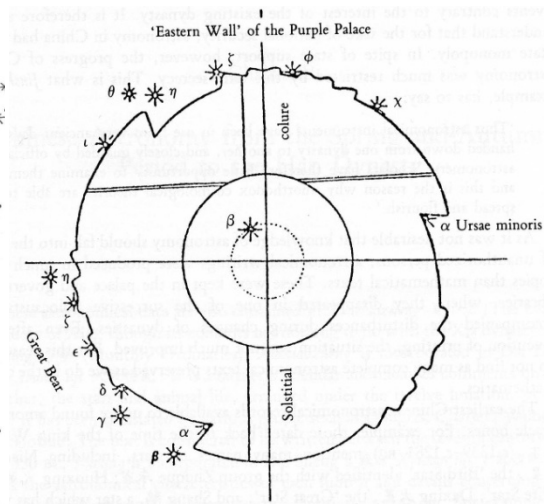
From the beginning of Western recorded history to the Roman era, two bright stars circled the invisible pivot. The pole stars were Kochab and Pherkad. Kochab was the brightest polestar since the previous reign of Vega, and it reigned as the brightest star until precession moved the North Pole closer to Polaris. Today Polaris is the brightest polar star and will be so through AD 3000.

In AD 1088, a Chinese polymath, Shen Kuo (1031–1095) used a sighting tube and recorded the change in polestars in *The Dream Pool Essays*, an encyclopedic reference on the state of knowledge during the Song dynasty. In the book on astronomy he described how he located the North Pole and the polestar. He measured the polestar's distance from the pivot, noting it was just over three degrees.

## 16. The Mysterious Serrated Disc



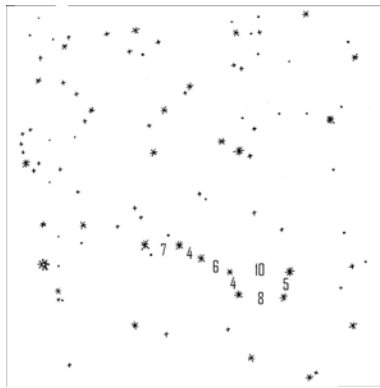
A circle of two groups and Polaris<sup>77</sup>



Serrated disc (*bi* / 璧)<sup>78</sup>

<sup>77</sup> The image in this note shows the Big Dipper as a measuring spoon. It can be used like a distance scale on maps.

The ancients could have measured the nightly rotation of the circle of stars with a serrated disc. Holding the notched jade disc at arm's length, the ancients could have viewed the King star through the hole and lined up the bright stars with the three groups of notches while the body of the disc hid the stars Prince and Thuban. Joseph Needham credited the scholar Henri Michel with solving the mystery of the sawtooth-edged disc inscribed with a cross that had its crossing point in the disc's hole.<sup>79</sup>



<sup>78</sup> Needham 1959, 3:337. "Fig. 150. Diagram to illustrate the use of the circumpolar constellation template (after Henri Michel)"; see also the discussion of the jade serrated disc (*bi*) and the jade tube (*cong*) in Ho 1985, 117–19.

<sup>79</sup> Needham 1959, 3:336. Read "pi" as "bi" (disk), "tshung" as "cong" (tube), and "hsiu" as "xiu" (in 28 mansions): "Meanwhile, another kind of *pi* had been under study by archaeologists. A good many examples are known in which the outer edge of the disc is very curiously carved (one might almost say graduated), being divided into three sections of equal length each beginning with a salient projection and a sharp indentation, and continuing with a series of teeth of variable shape until a plane circumference intervenes before the next set of graduations. Furthermore, in one side these strange discs bear two incised cross-lines almost at right angles which owing to their constancy and regularity cannot be dismissed as chance marks of the jade-cutter's saw. It was Wu Ta-Chheng (2) who was the first to urge that these discs were certainly astronomical instruments, and to identify them with the *hsuan-chi* of the *shu ching*; Laufer (8) accepted this but was unable to explain their use. This has now been done by Michel (I, 2), who, pointing out that the protruding tube of the *tshung* seems as if made to fit into the perforation of the *pi*, suggests that the *tshung* was originally nothing but a sighting-tube (and hence identical with the *yu-heng*), while the *pi* was a degenerate ritualized form of what we may call the 'circumpolar constellation template', for if the indentations on the circumference of the astronomical *pi* would fit the chief circumpolar constellations, the true pole would occupy the centre of the sighting-tube and an orientation among the *hsiu* and the outer constellations could readily be obtained. This the indentations do."



Early Chinese astronomers recorded a pair of bright polestars that ruled the northern Purple Palace (circumpolar stars) together. They named them King (Kochab) and Prince (Pherkad). Father and son were the brightest stars in the polar sky when the magician-map jar was painted. These two polestars reigned through the Han dynasty until the Emperor star (Polaris) was crowned supreme.

The two ancient polestars were surrounded by a circle of eight bright stars — four stars of the Big Dipper, three stars of Draco, and Polaris. All eight 2nd and 3rd magnitude stars plus a few 4th magnitude stars made a near perfect circle with only a three-degree variance, an artifact hidden in plain sight. Even today a jade disc (*bi* / 璧), serrated or not, can be used to view the King star surrounded by bright stars.<sup>80</sup> Some circles of stars found in Chinese star catalogs and on maps were named “turtle” or “tortoise”;<sup>81</sup> however, this star circle cannot be found on early star maps. The only memory of this important circle of stars is the crossed-circle on the magician-map jar, unless the *Hetu* (Yellow River Diagram) is a star map — it is, after all, composed of dot-and-line figures.

An ancient myth tells how Fuxi found the *Hetu* on the back of a turtle on the banks of the Yellow River. If the turtle in this myth represents heaven, it could be the polar star circle located next to the celestial Yellow River, the Milky Way.

Turtles, the namesake for star circles, are round like heaven. A turtle’s shell looks particularly symbolic with a domed shell above like heaven and a flat plastron below like earth. The symbolic turtle is also found with a snake wrapped around it in the mysterious image of the Dark Warrior, one of the four constellations (*sixiang* / 四象); it represents north and winter.

The earliest known evidence of writing in China was found in notations about divination sessions written on turtle plastron and bovine scapula during the Shang dynasty. It is interesting to note that turtle shell divination reached its peak around 1200 BC when precession had moved the North Pole to within a few degrees of the center of a polar circle of stars, which meant that

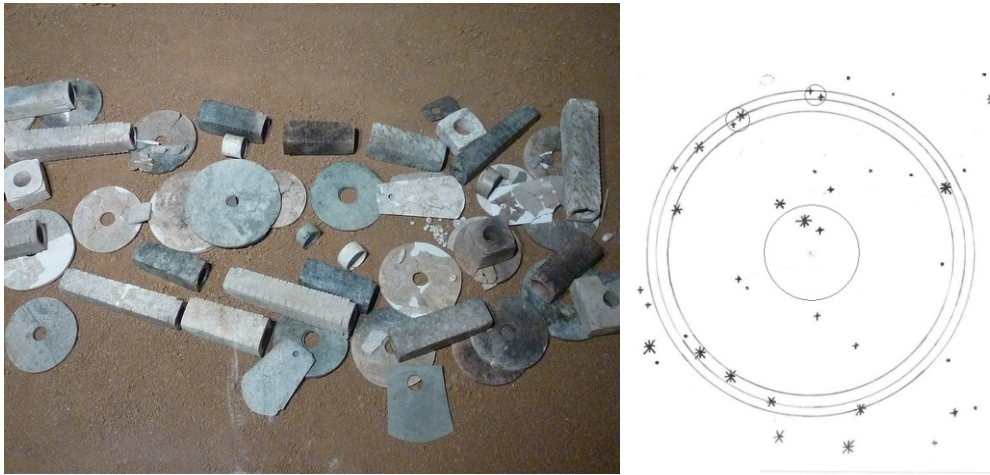
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<sup>80</sup> Hold the disc in front of the eye so that Kochab is seen through the hole in the center. Then move the disc nearer and farther until the bright stars appear around the edge.

<sup>81</sup> Xiaochun 1997: on the maps between pp. 28 and 29 many circles of stars can be found. Several circles of stars are named “shell I.68” (甲), “soft-turtle I.72” (蟹), and “tortoise II.5” (龜).

eight bright stars in three groups crossed the celestial meridian at the same latitude all night long. This could explain why the Shang sought answers from heaven by reading cracks made with fire on the plastrons. The Majiayao, like the Shang used writing and noted the starry circle in heaven, the celestial turtle.

## 17. Astronomical Instruments<sup>82</sup>



Left: Five-thousand-year-old Ritualistic Jade Right: Disk Superimposed on the Polar Circle of Stars

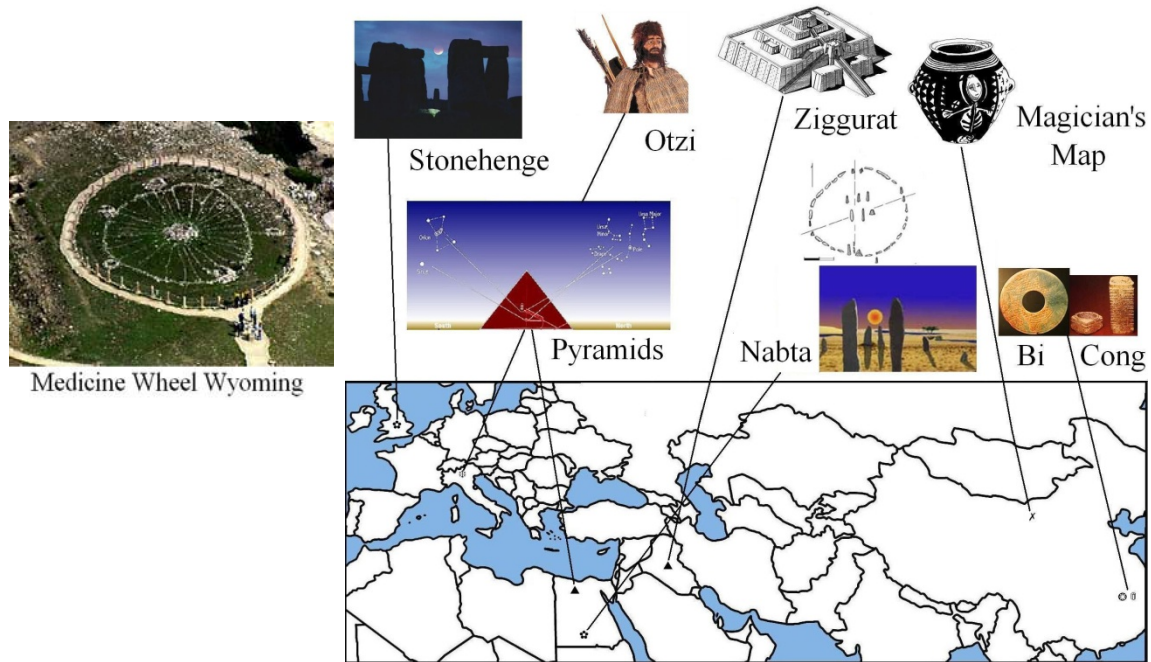
There are many types of discs. Some discs have relatively large or small holes in the middle. For that reason, scholars gave discs different names to distinguish them from the common discs with an average diameter of the hole equal to one-third the diameter of the disc. The jade tube (*cong* / 琮) and the disc (*bi* / 璧) have long been called ritual objects because they are found buried with royalty. Because the shapes are composed of circles and squares they were thought to represent heaven and earth.<sup>83</sup> The serrated *bi* found during archeological excavations are rare compared to the common disc (*bi* / 璧).<sup>84</sup>

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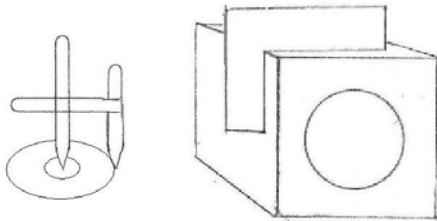
<sup>82</sup> See Alen 2006, 112, for image of many jade *bi* and *cong*.

<sup>83</sup> One can measure a *bi* and a *cong* with a compass and a square.

## 18. Five Thousand Years Ago a Rare Celestial Event Occurred



Evidence that civilizations around the world were watching Thuban pivot five thousand years ago.<sup>85</sup>



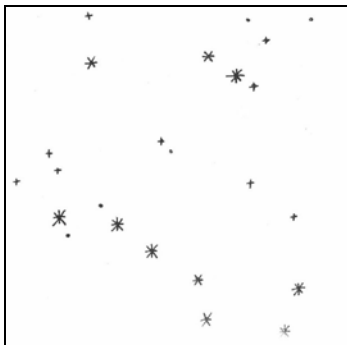
<sup>84</sup> Temple 1986, 38. Temple describes a jade serrated disc in a caption on p. 38 as “a jade circumpolar constellation template. An ancient Chinese astronomer would have held this up at approximately arm’s length, with the Pole Star in the center. The jagged outer edges of the circle would then have perfectly matched the pattern of stars surrounding the Pole Star; that is, a star would twinkle in each tiny notch in the jade. These templates varied with time because of the shifting positions of the Stars. Although the date of this one has not been determined, similar ones have been dated to 1000 BC and 600 BC. Unique to China, they were used to find orientations in the sky in the study of the constellations, and were among the earliest and most primitive equatorial astronomical instruments.”

<sup>85</sup> As this illustration shows, humans around the world watched the stars five thousand years ago. People built the medicine wheels in North America. In Europe and the Middle East, standing stone monuments act as templates and temples. Otzi lived in 3300 BC. In China the map jar and royal jade indicate stargazing.

For the last ten thousand years the only star to come within one degree of the North Pole was Thuban. Today the Earth's North Pole points to Polaris, but ten thousand years from now the polar axis will point to many bright stars along the Milky Way. Then, in sixteen thousand years, because of precession, Vega, the brightest star in the polar sky, will again be the polestar, which recurs every twenty-six thousand years.

For one hundred years Thuban was within one degree of the polar pivot, approaching to within 0.1 degree of the North Pole — so close Thuban appeared to spiral in, stop, and then spiral out of the center of the polar sky, a rare celestial event.<sup>86</sup> For a generation Thuban appeared to stop rotating and rest in the middle of the polar sky while marking true north for stonemasons, mapmakers, and travelers.

### 19. Polestar Thuban and the Invisible North Pole<sup>87</sup>



Star map with Thuban in the middle



Swirl



The North Pole bowl<sup>88</sup>

Today it does not seem significant that a star called Polaris is near the invisible pivot in the northern sky; but five thousand years ago, when the earth's axis pointed at a dim star — Thuban — stargazers must have marveled that a star appeared to stop moving at the invisible

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<sup>86</sup> Pankenier 2004, 225. Thuban was within one degree of the polar pivot, spiraling in and out of the pivot.

<sup>87</sup> The dim star in the middle of the star map is Thuban. The figures on the right show Thuban and the North Pole drawn in a bowl.

<sup>88</sup> [www.guxiang.com](http://www.guxiang.com).

Pole while all the other stars kept rotating.<sup>89</sup> Wonderment, discussions, and debates must have occurred among star watchers. It was at this time Majiyao artists painted geometric designs on pottery; they could have been recording the sky or debating. Did that star spiral into the center of the sky? Did it join with the pivot? Did it stop moving? The Majiyao knew and drew the invisible North Pole with an imaginative innovation, a swirl.

How could an ancient stargazer determine if the star Thuban had stopped moving? Neolithic people, for example at the eight-thousand-year-old Nabta stone circle in south Egypt, aligned sighting stones to show true north. Later, in north Egypt, the builders of the Great Pyramid included a North Pole sighting channel.

In North America, Neolithic stone circles called medicine wheels were usually aligned to true north. Medicine wheels resemble a wheel with a hub and spokes. The hub stones, called a cairn, center the wheel; the spokes vary in number and position but usually align to the four directions. These stone circles, such as the Majorville Medicine Wheel in Montana, could be used to observe star alignments that alerted the native people to the onset of winter. The oldest medicine wheels are estimated to be five thousand years old.<sup>90</sup>

Astronomically aligned giant stone circles in Eurasia could be used to observe stars. However, stone circles need a good view of the horizon. A mounted sighting tube is an easy-to-use tool for observing a star rotating around the North Pole; it is portable and even works when the horizon is totally obscured, as in the mountains.<sup>91</sup>

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<sup>89</sup> Pankenier 2004, 225.

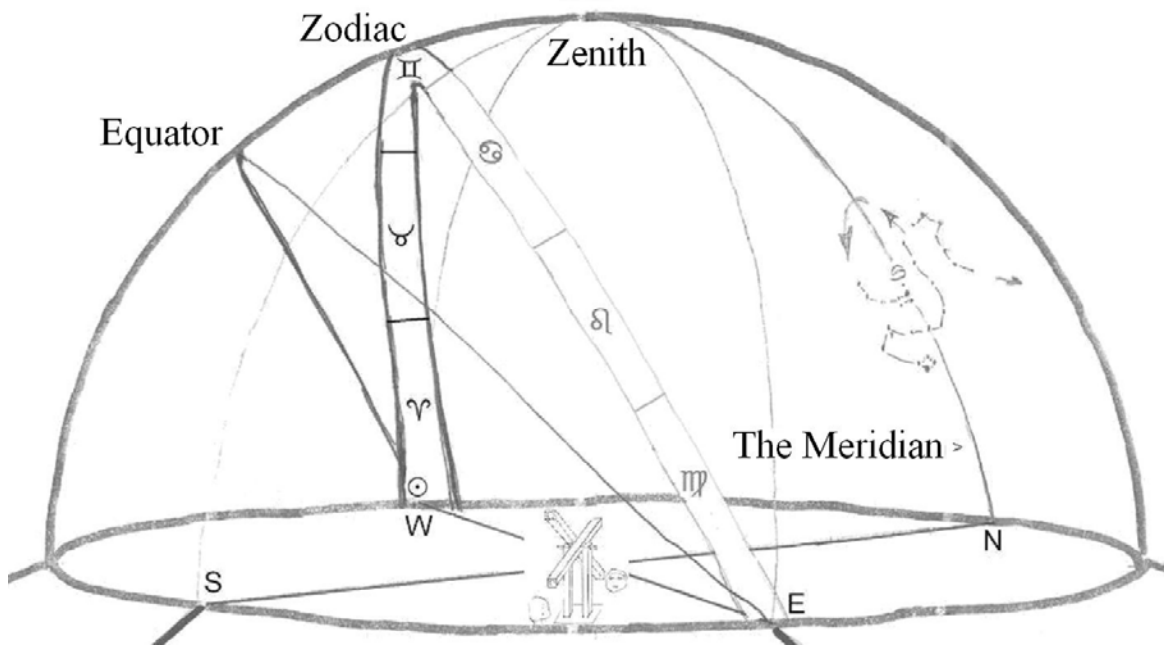
<sup>90</sup> Freeman 2009, 14. "The Majorville Medicine Wheel is the most intricate stone ring that remains on the North American Plains. It is also the most ancient, estimated at 5000 years BP. The 2000-year-old Moose Mountains Sacred Ring in southeastern Saskatchewan is egg-shaped and different in style from the ring near Majorville. The approximately 300-year-old Big Horn Sacred Ring has stylistic similarities to both the Majorville and Moose Mountains Rings. There were probably other Sacred Rings of intermediate ages that have been destroyed, or have not yet been discovered."

<sup>91</sup> The two Neolithic tools likely to be available were the gnomon and the sighting tube. The gnomon is an upright stick forming the part of a sundial that casts a shadow. Other methods that could be used include sight alignments using two poles or stones set near and far and aligned with the North Pole. Medicine wheels use piles of stones to mark sight alignments.

Needham (1959) discusses the use of sighting tubes in antiquity and mentions a well-known proverbial expression from Zhou and Han era texts: "Looking at heaven through a bamboo tube — narrow-minded" (以管窺天).<sup>92</sup>

Before deciding whether the Neolithic Chinese used sighting tubes to measure the sky, consider this: Needham proposed that Chinese astronomy used a polar coordinate system to record celestial events observed between longitudinal meridians.<sup>93</sup> This polar-equatorial meridian method is the same used in scientific astronomy today.

## 20. Practical Astronomy



Viewing Roman and Han Stars Through a Sighting Tube<sup>94 95</sup>

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<sup>92</sup> Needham 1959, 3:332, especially note b. Zhuangzi used the proverb to make fun of Mohists and Logicians.

<sup>93</sup> Needham 1959, 3:230, re: polar coordinates.

<sup>94</sup> Looking at celestial meridian, 100 BC, on the evening of the spring equinox.

<sup>95</sup> To locate the celestial meridian with a tube, watch the stars rotate in a circle in the polar sky. Aim a tube at the star nearest the invisible North Pole. Watch the star trace a circle between the North Pole and the tube's rim. Center the circling star in the tube. Pivot the tube vertically up and down to view stars along the meridian. Now one can record

In ancient Greece, astronomers recorded celestial events with maps of constellations. The constellations of the zodiac divided the ecliptic path, a celestial great circle where planetary events took place. No tool was required to observe stellar events occurring in and around constellations. However, without a sighting tool, observations along the celestial meridian are difficult. Sighting tubes easily establish accurate borders along the longitudinal meridians of a polar coordinate star map and make it easy to observe stars crossing the meridian in both the northern and southern hemispheres simultaneously.

To summarize the uses of handheld and mounted sighting tubes: day or night a sighting tube aids the eye to focus on distant objects; at night a mounted sighting tube can be used to note a star's movement; and a sighting tube that swivels vertically can locate the celestial meridian.

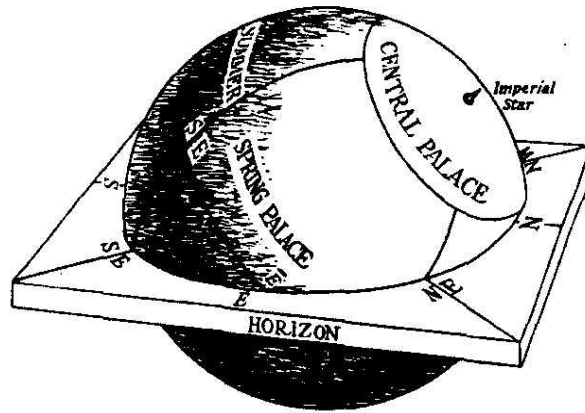
This is probably how the palace border stars of the four constellations (*sixiang* / 四象) were identified. Needham asserts that the 28 lunar mansions had to be constructed with a method accurate enough to locate the celestial meridian.<sup>96</sup>

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which southern stars cross the meridian at the same time that a northern star crosses.

<sup>96</sup> Needham 1959, 3: 231. Needham writes that the ancient Chinese used the North Pole and the circumpolar stars to find the celestial meridian and observe the stars as they transited. He suggests the ancient Chinese could have used the gnomon.

## 21. Four Constellations (*sixiang*) and 28 Lunar Mansions<sup>97</sup>



The position of Five Celestial Palaces around five thousand years ago<sup>98</sup>

Five thousand years ago, on the evening of the spring equinox, four visible constellations appeared in the sky: to the east the Green Dragon rose above the horizon; to the south the Red Bird flew; to the west the White Tiger crouched below the horizon; and to the north the crossed-circle rotated. As a result of precession, this particular alignment of rising and setting stars can only happen once in twenty-six thousand years. I propose the date of 2800 BC for the origin of the four constellations (*sixiang* / 四象), the main divisions of the 28 Lunar Mansions.

This once-in-twenty-six-thousand-years arrangement of southern stars is remembered in the *Yijing*'s first hexagram, "Heaven," which mentions the Green Dragon's seasonal movement through the sky.<sup>99</sup>

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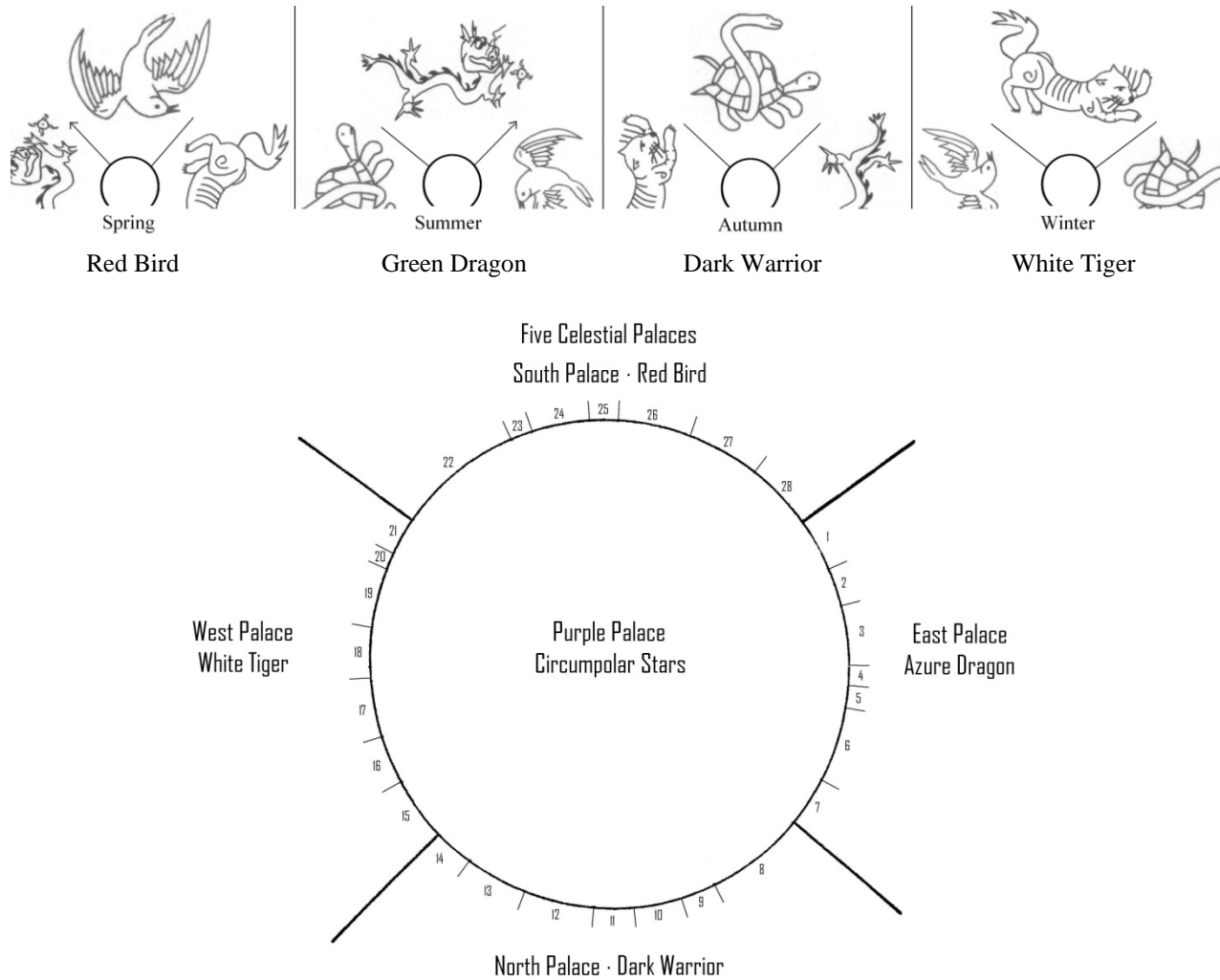
<sup>97</sup> Xiaochun 1997, 2: "Secondly, the Chinese sky is a historical phenomenon. The constellations were designed neither during a single short period, nor by a single astronomer or astrologer. They developed during a long period of history. Some constellations like Beidou 北斗, Shen 參 and the four cardinal asterisms, evidently belong to the oldest ones in the sky." The four cardinal asterisms are the four images (*sixiang* / 四象).

<sup>98</sup> Needham 1959, 3:240. Fig. 89. Diagram of the ancient Chinese divisions of the celestial sphere and their relations with the horizon (after de Saussure, 16b).

<sup>99</sup> Bertschinger 2011, 57–61.



## 22. Majiayao Seasonal Stars of the Southern Sky



The 28 Lunar Mansions evolved from the four constellations (*sixiang* / 四象).

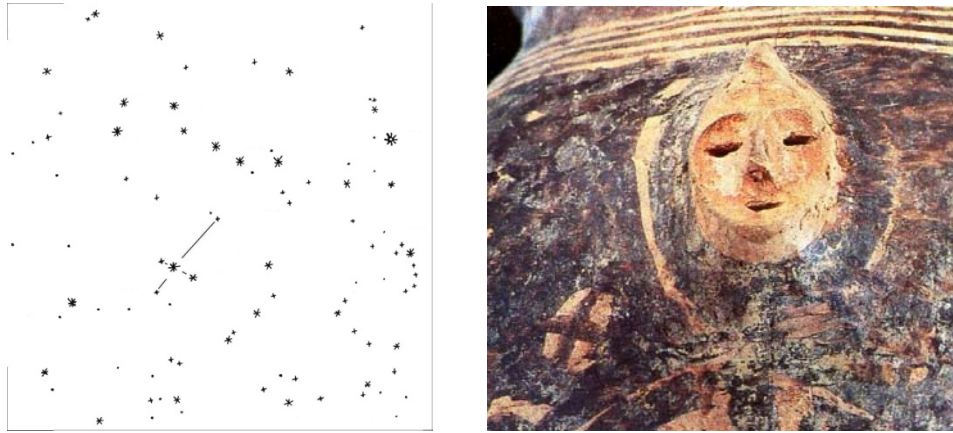
Did the Majiayao have the tools and technology to make a sighting tube? It is not known for certain.<sup>100</sup> However, we do know that in the Liangzhu culture (3200–2000 BCE) a few thousand miles to the southeast, contemporary Chinese stone workers mass-produced thousands of tubes out of jade.<sup>101</sup>

<sup>100</sup> Andersson 1934, 193, 272–73. He was the first to have purchased a jade disc and excavated several fragmentary discs from Banshan sites.

<sup>101</sup> See Loewe and Shaughnessy 1999, 62, on jade culture in southeast China.

Though we have no evidence for the tools the Majiayao used to observe the stars, the swirl next to a dot in the bottom of a painted pottery bowl shows that they observed the invisible vortex and approaching polestar Thuban.

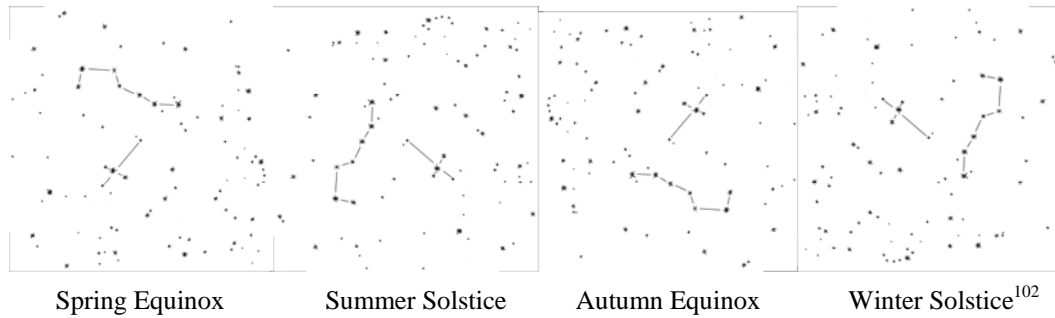
I looked for star images, patterns in the polar sky, that resembled the cross in the front panel of the jar, and found a cross of five stars near the North Pole with one arm longer than the other three, similar to the x-cross in the dark sky of the front panel.



Polar Cross in the Majiayao sky and on the magician jar

Notice, on the magician jar and the computer-generated star map, that the long arm of the cross points upward to the “one o’clock” position. I propose that the polar cross memorializes the evening of the spring equinox. Also notice that on the right side a cross has been blotted out, which could mean that the image on the right was incorrectly aligned and the image on the left was made to correct the error.

### 23. Majiayao Seasonal Stars of the Northern Sky



The spinning earth makes the polar sky appear to rotate counterclockwise. The polar sky acts like a compass, clock, and calendar. The clock works like a 24-hour clock in which one hour of counterclockwise rotation equals two Western hours. The polar sky rotates counterclockwise one quarter every season and counterclockwise from dusk to midnight every night, and that means midnight of the spring equinox looks like the evening of the summer solstice.<sup>103</sup>

The star-maps above show the cross pointing out the seasons at sunset during the year. Thuban (Alpha Draco) forms a stellar cross with the King, Prince, and two more stars close by. This polar cross of five rotated around Thuban (Arabic for “dragon”).

The prehistoric constellations next to the North Pole in past eras and remembered in Greek myth include Atlas, Hercules, and Ladon, the dragon (Draco). Chinese classics have long forgotten the Neolithic polar constellation that resembled a crossed-circle, but it may have been drawn on the magician’s Yellow River map jar and remembered on the *Yellow River Diagram* (*Hetu*). According to tradition, Fuxi discovered the *Hetu* written on the back of a turtle found

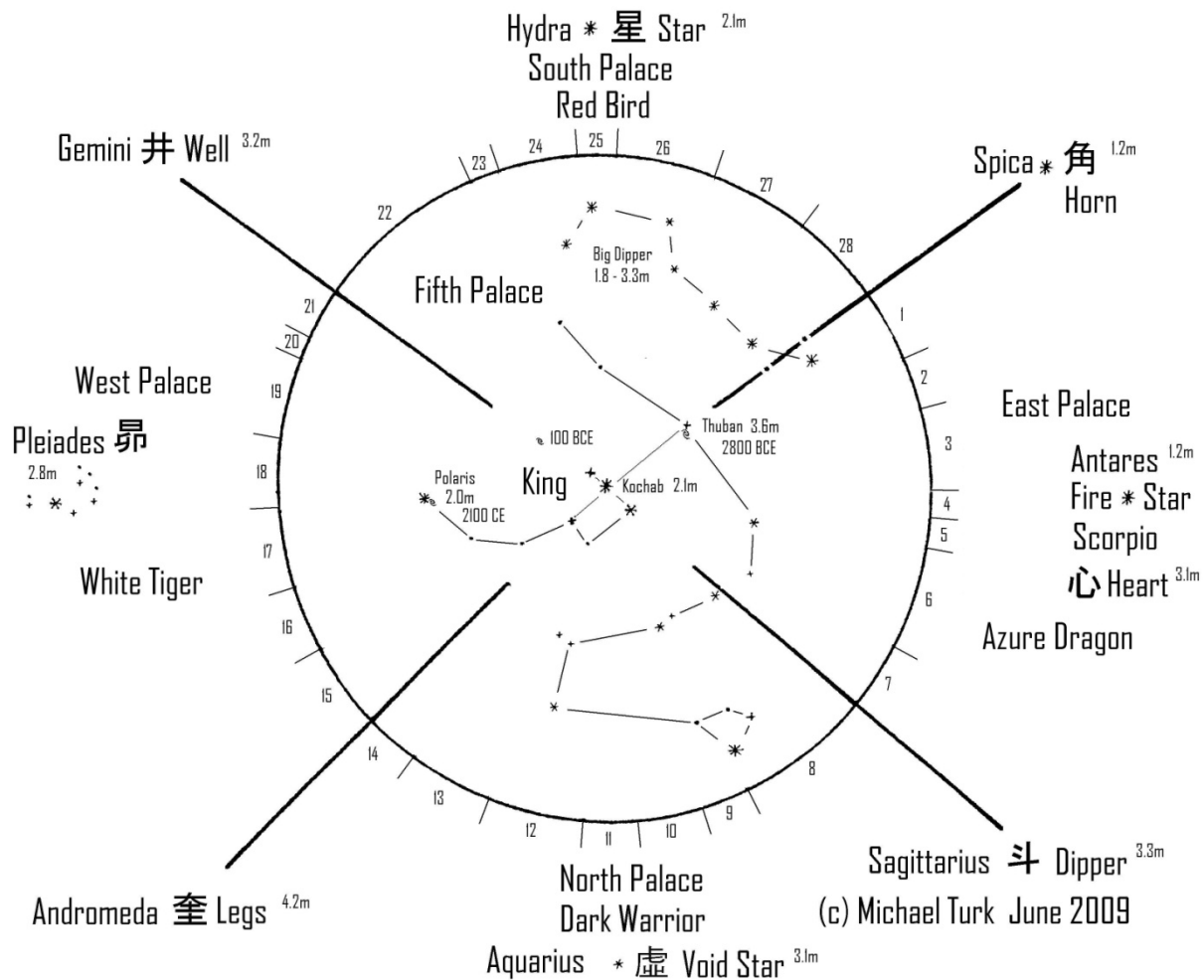
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<sup>102</sup> Unschild 2003, 353, note 28. Unschild describes how the emperor went into the Hall of Light (*mingtan*) to study the directions indicated by the handle of the Big Dipper during each of the twelve calendar months. The attribution Unschild gives is “See Soothill NY 1952: 93.”

<sup>103</sup> The spinning earth establishes the four directions because the apparent motion of stars moving across the night sky can be read like a sky compass. During the seasons the stars change like a sky calendar, during the night stars move by the hour like a sky clock. During daylight a gnomon’s shadow easily measures the time of day. At daybreak the long shadow of the morning sun points west as the sun rises in the east. The shadow moves clockwise and becomes shorter until noon, then the shadow lengthens as it continues moving east until sunset. The word clockwise indicates its origin because a gnomon’s shadow moves from west to east on a sundial.

near the Yellow River. The polar circle of stars, a turtle, is adjacent to the Milky Way, the celestial Yellow River. The polar circle of stars encloses the five-star cross prominent five thousand years ago when Thuban approached the North Pole.

Jade tubes and discs found in southwest China have long been identified with the imperial cult of star watchers. Tubes are the natural tool for measuring the sky. A mounted sighting tube can easily measure polar coordinates by observing stars that cross the celestial meridian at the same time; this is because the celestial meridian passes through the North Pole.<sup>104</sup>



Four constellations (*sixiang*) correlated to the northern sky.

<sup>104</sup> See the image "Viewing Roman and Han Stars Through a Sighting Tube," in Section 20, above.

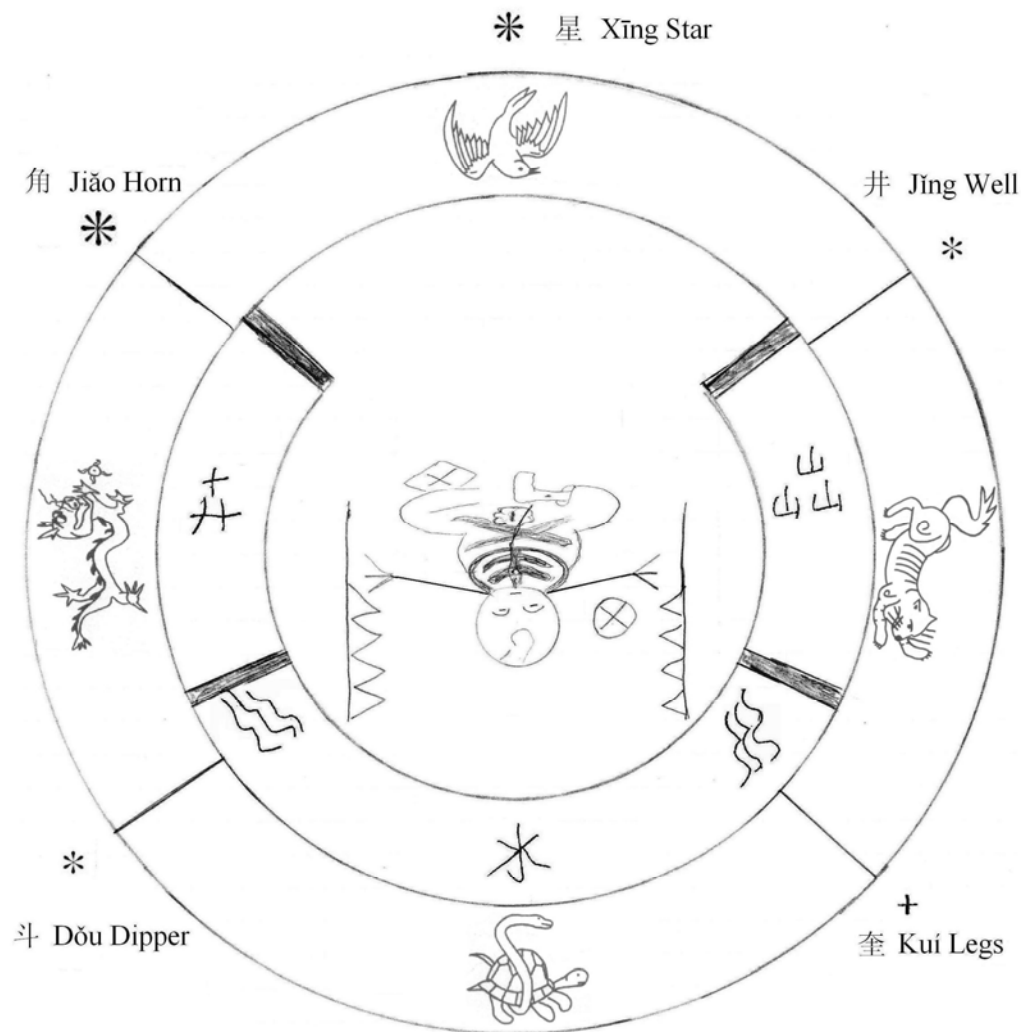
The stars named above (except Polaris) are mentioned in the history book *Shujing*.<sup>105</sup> From earliest times, Chinese astronomy used the polar cross of five stars as the center for a polar coordinate system, with the arms of the polar cross unevenly dividing the sky.

The arms of the polar cross divide the northern and southern sky into four uneven quadrants, and the borders are marked by stars named for the first mansions of the four images associated with the four directional palaces — Green Dragon, Red Bird, White Tiger, and Dark Warrior. The king star is in the middle of the four stars that mark the arms of the polar cross. A mounted sighting tube can measure the point at which a southern star crosses the meridian defined by the King star and the four cross stars. The uneven celestial quadrants resemble the uneven division of the magician jar’s four panels.

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<sup>105</sup> Xiaochun 1997, 15–21. Section “2.1 Stars from remote antiquity” reports on stars mentioned in historical texts that are drawn on my chart of the 28 lunar mansions. The authors summarize the scholarly estimates for the date of the origin of the 28 lunar mansions, which they estimate to be 2400 BC, though more stars appear in pre-Han texts.

## 24. Neolithic Constellations around the Magician



Gazing at a star named "Star" in the Red Bird on the evening of the Spring Equinox 3000 BCE

## 25. Conclusion

Examining the legacy of the Majiayao culture conveyed by these two jars revealed three surprises. The first is that the decorations on the magician-map jar represent the five-in-one correlation system found in Chinese philosophy. The second is that acupuncture points and meridians decorated the magician's body. The third is that the magician appears to be a woman from a clan of weavers, midwives, and scribes. Majiayao art honored women.

The Majiayao are known for imaginative geometric designs and pottery marks. Decoded symbols reveal extensive knowledge of medicine, astronomy, agriculture, fishing, and weaving. Skeletal figures found on Majiayao pottery could be studies of anatomy. Crosshatch images could represent weaving traditionally performed by women while sitting down.

I analyzed and interpreted the magician-map jar in Turk 2011; my further analysis, described in the present paper, reveals more evidence that the Majiayao understood Chinese correlative cosmology, including yinyang, the three powers, the four directions, and the five elements; this conclusion, based on the evidence in this paper, shows that the earliest understanding of these concepts can now be dated to about 3000 BC.

The Majiayao artist painted three maps (heaven, earth, and human) on the magician's jar — not merely as decoration but rather to portray a cosmology. Mapmaking and astronomy are twin sciences, as are midwifery and acupuncture. Chinese correlative cosmology might have been a widespread Neolithic idea. It is by great good fortune that the magician jar survived for us to ponder: if it does reveal codified knowledge, as my examination suggests, the Majiayao were the "midwives" of Chinese philosophy, and even of traditional Chinese medicine.

Other details on the jar seem to reinforce this idea. There are three "power crosses" found in the portrait of the magician, one above in the celestial circle, one below in a square on the earth, and one between, marking an acupuncture point on the magician. These three x-crosses represent three complex ontological coordinate structures.

Above, in the polar sky, the arms of a crossed-circle of stars divide the northern and southern skies. The cross is the image for the pictograph of five; the five star polar cross marks the fifth palace in Chinese astronomy.

Further, I think it is likely that at the time that the Majiayao were mapping the polar stars to coordinate their viewing of the southern stars, the Liangzhu culture was producing and perhaps exporting jade tubes in southeast China. A polar coordinate system comes naturally when using a sighting tube to map the heavens, and one speculation is that the Majiayao might have made or perhaps traded for such tubes.

Below, on the earth, the x-cross and an enclosure compose the character for a farmer's field. The jar's belly is divided into four panels by an x-cross with an orientation that corresponds to the polar cross. The four panels map the four directions around the burial site of the magician-map jar.

The x-cross between heaven and earth on the magician's body marks the yin acupoint called "Middle Pole," Ren3; four yin meridians cross paths at this point. On the leg, three of the meridians cross again at a point four fingers above the ankles at "Three Yin Crossing," Spleen6, the dot on the magician's leg. Yin acupoints and meridians decorate a woman displaying her vulva painted on a water jar — all of these are emblems of yin. Meridians and acupoints indicate knowledge of acupuncture.

The Majiayao might have been part of a mother culture. In addition to the revelations produced by examining the magician jar, we know that artifacts found at the western end of the Eurasian continent indicate that another culture practiced acupuncture and metallurgy. Notably, in the European Alps, Otzi the Iceman had a therapeutic tattoo exactly at Spleen6 for his abdominal pain, and he carried a copper axe. These two complex uses of technology thus appear in distant parts of the Eurasian continent.

The jar can be read as a book of symbolic logic. The crossed-circle next to the magician's head shows that the Majiayao mapped the polar sky, the four panels of the magician-map jar show that they mapped the earth, and the markings on the body of the magician show that they mapped acupoints and meridians. Five thousand years ago the Majiayao culture codified and drew a mental database employing a five dimensional correlative cosmology found today at the heart of Chinese philosophy.



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