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CYCLES AND SEQUENCES OF THE EIGHT TRIGRAMS

ABSTRACT

This article investigates the original Chinese sources for two circular trigram arrangements that have played a crucial role in numerology associated with the *Book of Changes* (the *Yijing* 《易經》) since the Song dynasty (960–1279). While attempting to clarify the nature and the origins of these and related diagrams, recent secondary literature on topic is reviewed, especially the influential articles by Schuyler Cammann.

I. THE CHINESE SOURCES

Zhu Xi's 朱熹 (1130–1200) *Zhouyi Benyi* 《周易本義》, The Original Meaning of the Zhou Changes, includes two arrangements of the eight trigrams associated with the *Yijing* 《易經》, The Book of Changes, which have become known as the *Houtiantu* 《後天圖》, The Later Celestial Diagram, and the *Xiantiantu* 《先天圖》, The Former Celestial Diagram, respectively [see Fig. 1].¹

Over the centuries there has been much disagreement among Chinese as well as Western scholars as to how to reproduce these arrangements.² To further complicate matters, the two arrangements of the eight trigrams have been related to—or sometimes even identified with—the so-called magic squares known as the *Hetu* 《河圖》, The [Yellow] River Diagram, and the *Luoshu* 《洛書》, The Luo [River] Document. Like the trigram arrangements, no graphic representations associated with the names *Hetu* and *Luoshu* are known prior to those of the Song dynasty (960–1279). These magic squares are conventionally arranged as groups of black and white dots (connected by lines in

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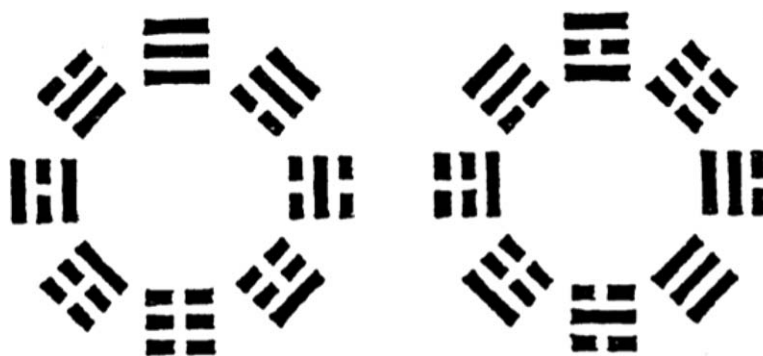


Figure 1.

the traditional manner of stellar diagrams) symbolizing the numbers one through ten and one through nine, respectively [Fig. 2].³ The *Hetu* and *Luoshu*, in turn, are intricately linked with the *wuxing* 五行, five phases (or elements), and the associated cycles of production and destruction.

In an attempt to disentangle the above-mentioned diagrams, squares, and cycles from some of the confusion that has been generated around them, I shall proceed to evaluate existing Song dynasty sources and then to investigate early references and textual evidence for the diagrams. Thereafter follows an examination of Schuyler Cammann's works on the origins of these trigram arrangements.⁴

The two arrangements of the eight trigrams known as the *Houtiantu* and the *Xiantiantu* have from the Song dynasty on traditionally been associated with two cultural heroes: the former is attributed to King Wen 文王 and the latter to Fuxi 伏羲. These attributions may have originated with Chen Tuan 陳搏 (d. 989), who is known for his Daoist affiliation, or Shao Yong 邵雍 (1011–1077), a prominent scholar of the

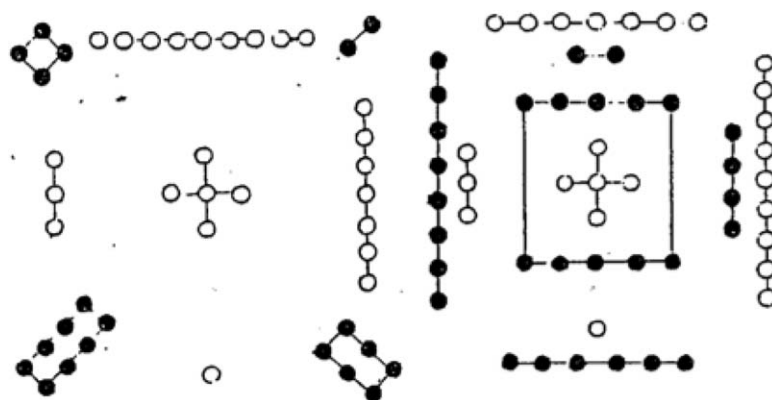


Figure 2.

xiangshu 象數, images and numbers, tradition.⁵ According to Zhu Zhen's 朱震 (1072–1138) *Hanshang Yizhuan* 《漢上易傳》, Hanshang's Commentary on the Changes, which was completed in 1134, the transmission of the *Houtiantu* and other diagrams may be traced back to Chen Tuan.⁶ A work known as the *Yi Long Tu* 《易龍圖》, The Dragon Diagram of the Changes, or the *Long Tu Yi* 《龍圖易》, The Changes of the Dragon Diagram, attributed to Chen Tuan (or his disciples) is said to have contained the diagrams.⁷ According to Zhu Zhen, Chen Tuan transmitted a *Xiantiantu* through Chong Fang 种放 (d. 1014), Mu Xiu 穆脩 (979–1032), Li Zhicai 李之才 (d. 1045) to Shao Yong, who devised a graphic representation of the progression from the great ultimate (*taiji* 太極) through the four images (*sixiang* 四象), to the eight trigrams.

Following another line of transmission the *Luoshu* and the *Hetu* were handed down from Chong Fang through Li Gai 李溉 (10th–11th century), Xu Jian 許堅 (fl. 976–984), Fan Echang 范諤昌 (10th–11th century) to Liu Mu 劉牧 (1011–1064), who like Chen Tuan was of Daoist persuasion.⁸ By the time Zhu Xi received the *Luoshu* and the *Hetu* some confusion as to the names of the diagrams was realized. Zhu Xi quotes Cai Yuanding 蔡元定 (1135–1198) saying that the diagrams were transmitted from Kong Anguo 孔安國 (ca. 156 BCE–ca. 74 BCE), Liu Xiang 劉向 (79–8 BCE), and Ban Gu 班固 (32–92) who all named them correctly, but Liu Mu considered the diagram with the numbers one through nine to be the *Hetu* and the one with the numbers one through ten as the *Luoshu*. Consequently, Zhu Xi changed the names around.⁹ Although the earliest known illustrations occur in the works of Zhu Xi, the great proponents of diagrams and numerology of the early Song are Liu Mu and Shao Yong along with Zhou Dunyi 周敦頤 (1017–1073), who received his famous the *Taiji Tu* 《太極圖》, Diagram of the Great Ultimate, from Mu Xiu.

The *Zhouyi Zhezong* 《周易折中》, Impartial Deliberations on the Zhou Changes, by Li Guangdi 李光地 (1642–1718) published in 1715 contains what is probably the earliest known illustrations of the numbers of the *Hetu* and *Luoshu* correlated with the trigram arrangements of the *Houtiantu* and the *Xiantiantu* [Fig. 3].¹⁰

For these illustrations Li Guangdi depended on Zhu Xi and Cai Yuanding, who described the relationship between the *Xiantiantu* and the *Luoshu* as follows:

The Luo [River] Document is vacuous at the center so it is also the Great Ultimate. [The sums of] both the odd and the even [numbers] are twenty so it is also the two *yi* (that is, heaven and earth or *yin* and *yang*). One, two, three, and four embody nine, eight, seven, and six. Lengthwise and crosswise [they all add up] to fifteen, and together they are seven and eight as well as nine and six so it is also the four

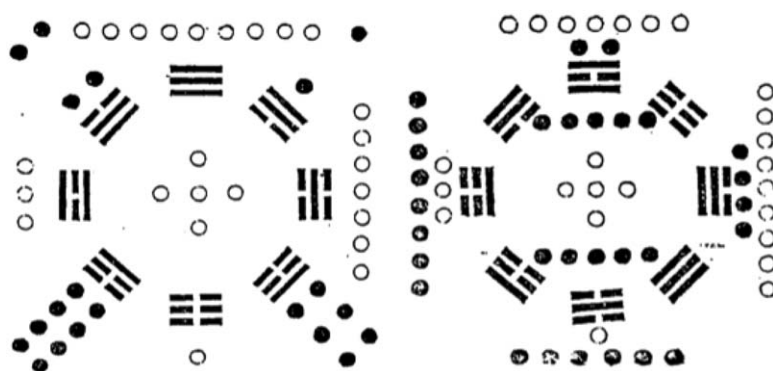


Figure 3.

images. The four directions are considered to be *Qian*, *Kun*, *Li*, and *Kan*. The intermediate points between the four corners are considered to be *Dui*, *Zhen*, *Xun*, and *Gen*. Thus it is also the eight trigrams.¹¹

These explanations which are based on the numerical progression one -two -three -four mentioned in both the *Xici* (繫辭), The Attached Phrases, and the *Qianzuodu* (乾鑿度), Chiseling through to the Regular System of *Qian*, are based on correlations between the numbers one through nine and the eight trigrams. The earliest known occurrences of correlations between trigrams and numbers are those by Cui Jing 崔憬 of the Tang 唐 dynasty (618–907), which have been appended to the commentary of Li Dingzuo's 李鼎祚 (8th century) *Zhouyi Jijie* 《周易集解》, The Collected Explanations of the Zhou Changes.¹² Cai Yuanding says of the numbers of the eight trigrams that one through four are *yang* and six through nine are *yin* but this does not tally with Zheng Xuan's 鄭玄 (127–200) definition that odd numbers are *yang* and even numbers *yin*.¹³ Cai does not explain how a number was correlated to a specific trigram.

In all probability these correlations came about as a result of attempts to integrate the diagrams with the cycles and correlates of the five phases. Like the eight trigrams, the five phases are correlated spatially to the compass points, but whereas the number eight accentuates the four directions and the four intermediate points, the number five commands a stress on the four corners and the center. The phases and trigrams are also correlated to the temporal concepts traditionally associated with the four corners such as the four seasons and the time of the day.¹⁴ When correlated to the five phases, the directions and the seasons often acquire a fifth element; thus the phase soil is correlated to the center, and various ingenious solutions are suggested to match the four seasons with the five phases.¹⁵

Unlike the spatial arrangements of the five phases and the eight trigrams, the integration of temporal concepts of the seasons requires

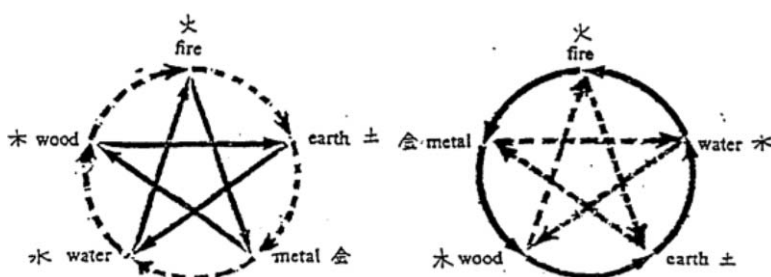


Figure 4.

considerations on how the phases and trigrams succeed each other in step with the seasons. The five phases are thought to follow each other according to one of two basic principles: The *xiangsheng* 相勝 or *xiangke* 相克, the mutual conquest sequence, or the *xiangsheng* 相生, mutual production sequence, of which the latter follows the course of the seasons [Fig. 4].¹⁶

For obvious reasons the correlation between the five phases and the eight trigrams is a difficult one, but leaving out the phase soil makes it possible. Correlations between the five phases and the eight trigrams never played an important role in Chinese cosmology, though.

In Needham's opinion, the five phases occur among the correlations listed in the *Shuogua* 說卦, Explaining the Trigrams, which has *Qian* representing metal, *Xun* representing wood, *Kan* representing water, and *Li* representing fire.¹⁷ In the eightfold correlation system peculiar to the *Yijing* cosmology, the eight trigrams are associated with similar concepts, which, especially in the *Daxiangzhuan* 大象傳, The Commentary on the Great Images, have become alternative names for the trigrams: *Qian* is heaven, *Kun* is earth, *Gen* is mountain, *Dui* is marsh, *Zhen* is thunder, *Xun* is wind, *Kan* is water, and *Li* is fire.¹⁸ Each of the last eight sections of the *Shuogua* focuses on one trigram and its correlations, and the water and fire of *Kan* and *Li* appear to belong to this set of eight natural phenomena and not to the five phases.¹⁹

The earliest known textual evidence for a correlation of the phases and the trigrams occurs in the eleventh-century *Yishu Gouyintu* 易數鉤隱圖, Outlining the Secret Diagrams of the Numbers of the Changes, by Liu Mu:

As to the five phases becoming numbers, water's number is six, metal's number is nine, fire's number is seven, and wood's number is eight.²⁰ Water resides in *Kan* and produces *Qian*. Metal resides in *Dui* and produces *Kun*. Fire resides in *Li* and produces *Xun*. Wood resides in *Zhen* and produces *Gen*. [*Kan*, *Dui*, *Li*, and *Zhen*] already reside in the four corners and produce *Qian*, *Kun*, *Gen*, and *Xun*. Collectively, they make up the eight trigrams.²¹

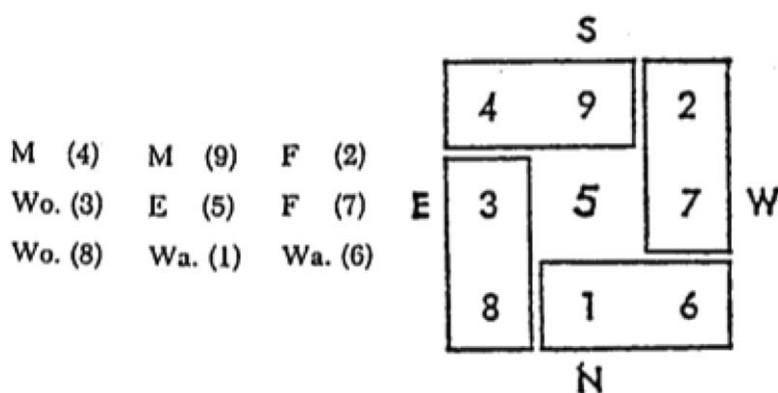


Figure 5.

This is a description of the *Houtiantu* incorporating the high numbers of the *Hetu*. The correlations of the numbers and the phases are well established in a number of texts of the Han dynasty, and the correlation of the phases and the compass points are among the most basic and never subject to variations.²² Liu Mu's account puts *Li* on top of the diagram in south, *Kan* at the bottom in north, *Dui* to the right in west, and *Zhen* to the left in east. Located in these four trigrams are the five (i.e., four) phases, which produce *Qian*, *Kun*, *Gen*, and *Xun*. If this production is visualized as a counterclockwise movement, it places *Xun* in the southeast, *Gen* in the northeast, *Qian* in the northwest, and *Kun* in the southwest. The trigrams taking up residence in the four corners are thus correlated to the numbers as follows: *Li* is correlated to seven, *Kan* to six, *Dui* to nine, and *Zhen* to eight. However, these correlations are unique to the combination of the *Houtiantu* and the *Hetu*. The combination of the *Xiantiantu* and the *Luoshu*, for example, gives different correlations between the trigrams and the numbers [Fig. 3], and so do the combinations of the *Houtiantu* and the *Luoshu* as well as those of the *Xiantiantu* and the *Hetu*. Furthermore, the correlations between the phases and the compass points do not match the *Luoshu* [Fig. 5].

Comprehensive discussions of the correlations and sequences of the eight trigrams go back to the Ten Wings (the *Shiyi* 十翼) of the *Yijing*, namely the *Shuogua*, which probably date to the latter half of the third century BCE.²³ In the *Zhouyi Zhengyi* 周易正義 edition the *Shuogua* is divided into seventeen sections, which originally seem to have belonged to two different texts.²⁴ The first three sections contain a history of the creation of the Changes (*Yi* 易) and the diagrams, and these sections closely resemble the *Xici*.²⁵ Sections four and five discuss the sequence of the eight trigrams and its cosmological ramifications. The last twelve sections are lists of the correlations of the

eight trigrams; section six correlates the trigrams to conceptual qualities (e.g., adherence, joy), section seven lists the animal correlates, section eight correlates the trigrams to various parts of the body whereas section nine matches the trigrams with the members of the nuclear family, that is, father, mother, sons, and daughters. The remaining eight sections focus on one trigram per section listing between nine and twenty correlates to each trigram.

The relevant paragraphs of *Shuogua* 4, from which the *Houtiantu* is devised, say:²⁶

The divine sovereign brings out [the ten thousand things] in *Zhen*, regulates them in *Xun*, makes them mutually visible in *Li*, causes them to be served in *Kun*, makes them happy in *Dui*,²⁷ makes them fight in *Qian*, exhausts them in *Kan*, and completes them in *Gen*.²⁸ The ten thousand things are brought out in *Zhen*. *Zhen* is the east. They are regulated in *Xun*. *Xun* is the southeast. As to being 'regulated,' it means the ten thousand things are adjusted and made even. As to *Li*, it is brightness. The ten thousand things are made mutually visible. It is the trigram of the south. The sages faced south when they listened to the world (that is, held court), they turned towards the brightness and ruled. It is probably obtained from this. As to *Kun*, it is the earth. The ten thousand things are all nourished by it, therefore it says, "causes them to be served in *Kun*." *Dui* is midautumn. This is [the time] when the ten thousand things are content. Therefore it says, "makes them happy in *Dui*." As to "fighting in *Qian*," *Qian* is the trigram of the northwest. It means *yin* and *yang* are combating each other. *Kan* is water. It is the trigram of due north. It is the trigram of fatigue. This is where the ten thousand things return. Therefore it says, "exhausts them in *Kan*." *Gen* is the trigram of the northeast. This is where the ten thousand things reach the end and the beginning. Therefore it says, "Completes them in *Gen*."²⁹

In the subcommentary in Kong Yingda's 孔穎達 (574–648) *Zhouyi Zhengyi*, The Correct Meanings of the Zhou Changes, the explanations of the sequence resort to both the correlations found in the *Shuogua* and to the positions of the handle or spoon (*biao* 杓) of the Dipper, that is, the three stars extending from the box.³⁰ For example, the commentary on the passage, "The ten thousand things are brought out in *Zhen*; *Zhen* is the east," says, "When the handle of the Dipper points to the east it is springtime, in springtime the ten thousand creatures come forth and give birth."³¹ Li Dingzuo quoted Cui Jing who correlated the eight trigrams' positions in the four corners and the four intermediate points to the beginnings of the four seasons as well as to the summer and winter solstices and the spring and autumnal equinoxes.³² Gao Heng 高亨 (1900–1986) found the passage clear and free from forced logic, and he offered several examples of natural explanations of the development of the cycle, but in the final analysis he found it necessary to have recourse to the

metaphysics of *yin* and *yang* just like the text itself when explaining “the fighting [refers] to *Qian*.”³³

According to Zhu Xi the *Xiantiantu* arrangement originates in *Shuogua* 3 where it says:³⁴

The positions of heaven and earth are fixed. In mountains and marshes there are circulating vital material energy (*qi* 氣). Thunder and wind blend together. Water and fire do not³⁵ dislike each other. The eight trigrams alternate with each other. He who enumerates the going (that is, keeps track of the past) is in accord. He who understands the coming is forecasting. Therefore The Changes is both forecasting [the future] and enumerating [the past].³⁶

The trigrams are listed by their alternative names, the aforementioned natural phenomena which they symbolize. These correlations are fixed and all commentaries agree that this section enumerates the trigrams in pairs of opposites in terms of *yin* and *yang* lines in the following series: *Qian-Kun*, *Gen-Dui*, *Zhen-Xun*, *Kan-Li* ☰ ☷ ☶ ☱ ☳ ☴ ☵ ☲ ☱ ☲ ☳ ☴ ☵ ☶ ☷ ☰. Zhu Xi's commentary on this passage says:

Master Shao [Yong] says, “These are the positions of Fu Xi's Eight Trigrams. *Qian* is the south, *Kun* is the north, *Li* is the east, and *Kan* is the west. *Dui* resides in the southeast, *Zhen* resides in the northeast, *Xun* resides in the southwest, and *Gen* resides in the northwest. Thus the eight trigrams interchange with each other and form the sixty-four hexagrams. This is the so-called learning of the Former Heaven [*xiantian zhi xue* 先天之學].” It begins in *Zhen* and passes through *Li* and *Dui* to arrive at *Qian*. These are the trigrams enumerating the existing. From *Xun* it passes through *Kan* and *Gen* to arrive at *Kun*. These trigrams infer what is not yet existing. When the changes produced the trigrams, it was in the order *Qian*, *Dui*, *Li*, *Zhen*, *Xun*, *Kan*, *Gen*, and *Kun*. So there is both forecasting [the future] and enumerating [the past].³⁷

Significantly, as far as we know, no commentators prior to the Song dynasty interpreted this passage as a description of a trigram cycle.³⁸ In *Shuogua* 6 the trigrams are enumerated by their more common names in the same pairs but following a different sequence: *Qian-Kun*, *Zhen-Xun*, *Kan-Li*, *Gen-Dui* ☰ ☷ ☶ ☱ ☳ ☴ ☵ ☲ ☱ ☲ ☳ ☴ ☵ ☶ ☷ ☰. This series is repeated in sections seven through nine, and sections ten through seventeen (each of which deal with a single trigram) follow the same sequence.³⁹ In spite of the recurring use of this series in the *Shuogua*, neither the early commentators nor Zhu Xi seem to have conceptualized it as a circular arrangement of the trigrams.⁴⁰

The entire section of *Shuogua* 3 is quoted in (or stems from) the Mawangdui silk manuscript, *Yi zhi Yi* 《易之義》, The Significance of the Changes, in a slightly but notably different wording:

The positions of heaven and earth are fixed. [In mountains and marshes there are circulating *qi*].⁴¹ Fire and water dislike each other.

Thunder and wind blend together. The eight trigrams alternate with each other. He who enumerates the going (that is, keeps track of the past) is in accord. He who understands the coming is forecasting. Therefore the Changes is reaching [to the future] and enumerating [the past].⁴²

This passage indicates a series of opposing pairs as follows: *Qian-Kun*, [*Gen-Dui*], *Li-Kan*, *Zhen-Xun* ☰ ☷ ☵ ☴ ☲ ☱ ☳ ☶. Thus, there are so far three different series of opposing pairs associated with the *Shuogua*. In addition to that, there is the order of the lower trigrams in the Mawangdui manuscript *Liushisu gua* 六十四卦, The Sixty-Four Hexagrams, which is identical with the *Yi zhi yi* series except for *Kan* and *Li* being reversed.

The only characteristic feature of Zhu Xi's *Xiantiantu* arrangement is that the trigrams are paired according to the *pang tong* 旁通, laterally linked, principle, which means the *yang* lines in the first trigram of a pair turns into a *yin* line in the second trigram and vice versa.⁴³ The two trigrams are then placed opposite each other on the circle. There is therefore no compelling logic or other obvious reasons why one of the four series mentioned above should be preferred to the others.

As a pair the *Hetu* and the *Luoshu* occur in *Xici* 1: 11, which may be as late as the early second century BCE.⁴⁴ There are some earlier references to the *Hetu* but the *Luoshu* seems to be a later invention.⁴⁵ A *Hetu* is mentioned in conjunction with regalia of jade and ceremonial weapons in the chapter "*Guming* 顧命," The Testamentary Mandate, of the *Shujing* 書經, The Book of Documents, but it is uncertain what the term refers to in this context.⁴⁶ In his commentary to Ban Gu's *Dian Yin* 典引, Extending the Canon, which is included in the *Wenxuan* 文選, Selections of Literature, Cai Yong 蔡邕 (133–192) cites a passage from the *Shujing* mentioning both the *Hetu* and the *Luoshu* but this is not to be found in any surviving editions.⁴⁷

In a famous passage in the *Lunyu* 論語, Analects, in the chapter "*Zi Han* 子罕," The Master Rarely, Confucius is supposed to have exclaimed in despair, "The Feng-bird does not arrive, the [Yellow] River does not bring forth a diagram, I am finished!"⁴⁸ Sima Qian (ca. 145–ca. 86 BCE) in the chapter "*Kongzi Shijia* 孔子世家," The House of Confucius, of the *Shiji* 史記, Records of the Historian, cites Confucius' outcry: "The [Yellow] River does not bring forth a diagram, the Luo [River] does not bring forth a document, I am finished!"⁴⁹ This is a good example of how a reference to a *Hetu* in a pre-Han text is reinterpreted to tally with the prevailing dual concepts of the Han dynasty and therefore paired up with the *Luoshu*. Another pre-Han occurrence of *Hetu* may be found in the chapter "*Feigong* 非攻," Against Aggressive Warfare, of the *Mozi* 墨子, Master Mo.⁵⁰ The earliest reference to the *Luoshu* probably occurs in the

chapter “*Tianyun* (天運),” The Turning of Heaven, of the *Zhuangzi* 《莊子》, Master Zhuang, which most likely dates to the beginning of the Han dynasty.⁵¹

Texts containing pre-Han material but edited during the Han dynasty often cast the *Hetu* as part of a larger scheme of parallel phenomena. For example, in the chapter “*Liyun* (禮運),” Conveyance of Rituals, of the *Liji* 《禮記》, The Records of Rituals, it is stated, “Therefore heaven sends down fertilizing dew, the earth brings forth sweet springs, the hills bring forth [materials for] utensils and vehicles, and the [Yellow] River brings forth a horse [with] a diagram.”⁵² The chapter “*Xiao Kuang* (小匡),” Small Regulations, of the *Guanzi* 《管子》 says, “When the ancients received the Mandate, the dragon and the tortoise appeared. The [Yellow] River brought forth a diagram, the Luo [River] brought forth a document, and earth brought forth a yellow chariot.”⁵³ In the *Da Dai Liji* 《大戴禮記》, The Records of Rituals of the Elder Dai, which is the latest of the ritual texts containing pre-Han material to have found its present form,⁵⁴ the “*he chu tu*” 河出圖 is paralleled by “*luo chu fu*” 雒出服. According to Wang Pinzhen’s 王聘珍 (eighteenth century) commentary *fu* 服 should be *fu* 符,⁵⁵ literally “tally,” which is but one of many alternative names used for these magic texts or diagrams.⁵⁶

During the Han dynasty the dual concepts of the *Hetu* and the *Luoshu* are fully developed as was seen in the quotations from the *Xici* and the *Shiji* above. The *Huainanzi* 《淮南子》, The Huainan Masters, states that the Luo River brings forth a red document and the Yellow River brings forth a green diagram.⁵⁷ In the *Chen Wei* 《讖緯》, Apocrypha, a tradition arises that these diagrams emerge from the rivers assisted by a tortoise and a dragon (or a dragon-horse), respectively.⁵⁸ However, as the lore unfolds, the exact nature of the *Hetu* and the *Luoshu* is still in dispute. According to Li Dingzuo’s *Zhouyi Jijie*, some of the commentators of the Han dynasty referred to the *Hetu* and the *Luoshu* as texts while others identified them with the eight trigrams.⁵⁹ The passage from *Xici* 1: 11 is quoted in the chapter “*Wuxing* (五行),” The Five Phases, of the *Hanshu* 《漢書》, The Documents of the Han, which records Liu Xin’s 劉歆 (46 BCE–23 CE) opinion that Fu Xi received the *Hetu* from which he copied and drafted the eight trigrams while the cultural hero Yu 禹 was given the *Luoshu* from which he devised the *Hongfan* 《洪範》, The Great Plan, detailed in a chapter by that name in the *Shujing*.⁶⁰ The *Hanshu* also quotes the outline of the nine points of the *Hongfan* saying that this is the original text of the *Luoshu* which heaven bestowed on Yu and which the rest of the “*Hongfan*” chapter is an elaboration of. In conclusion, the *Hetu* and the *Luoshu* are compared to the warp and the woof, the eight trigrams and the nine sections being like the

4	9	2
3	5	7
8	1	6

Figure 6.

outside and the inside of the same thing.⁶¹ In spite of different opinions on the nature of the relationships between the trigram arrangements and the magic squares, the idea of a connection between them has persisted to this day.

The *Hetu* numbers from one through ten are usually identified with a passage in *Xici* 1: 10 which assigns the odd numbers one through nine to heaven and the even numbers two through ten to earth.⁶² Rickett points to an essay physically assuming the shape of a calendar chart resembling Zhu Xi's arrangement of the *Hetu* numbers in the chapter "You Guan (幼官)" of the *Guanzi* 《管子》, Master Guan.⁶³ Rickett concludes that this "provides us with our earliest reliable evidence that Chu Hsi's River Chart did actually go back to Former Han times. . . ."⁶⁴ The earliest evidence of a square arrangement of the numbers one through nine is found in the *Da Dai Liji* which explains the layout of the divisions of the *Ming Tang* 明堂, The Bright Hall, in terms of the numbers two-nine-four-seven-five-three-six-one-eight.⁶⁵ When these numbers are arranged horizontally from right to left in a three-by-three grid, they constitute a magic square in which any three numbers added horizontally, vertically, or diagonally result in fifteen (Fig. 6).⁶⁶ This arrangement supposedly represents the *Luoshu*.

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ENDNOTES

Acknowledgment of Legal Copyrights and Intellectual Credentials:

1. See Zhu Xi 朱熹, *Zhouyi Benyi* 《周易本義》 (The Original Meaning of the Zhou Changes) in Yan Lingfeng 嚴靈峰, *Wuqiubei Zhai Yijing Jicheng* 《無求備易經集成》 (The Grand Compendium of the Book of Changes of the Wuqiubei Studio), (Taipei: Chengwen Chubanshe, 1975), vol. 28, 15, and 31. Yan Lingfeng's grand compendium will hereafter be abbreviated *YJJC*. See also Richard Wilhelm, *I Ching or Book of Changes*, trans. Gary F. Baynes (1951; reprint, Seattle: University of Washington

- Press, 1987), 265ff., James Legge, *The I Ching: The Book of Changes* (1899; reprint, New York: Dover Publications, 1963), plates II & III, and Canon McClatchie, *A Translation of the Confucian 易經 or the "Classic of Change"* (1876; reprint, Taipei: Ch'eng-wen Publishing, 1973), plates viii and ix.
2. This may be illustrated by the fact that even a recent comprehensive reference work on the *Yijing* representing the combined efforts of sixty-three scholars did not get the diagrams right. The article on *houtian bagua* 後天八卦, the later celestial eight trigrams, states that this is also known as the eight trigrams of King Wen while the caption to the illustration of that arrangement says it shows King Wen's former celestial eight trigrams, see Zhang Qicheng 張棋成, *Yixue Dacidian* 《易學大辭典》 (The Great Encyclopedia of Studies of the Changes) (Beijing: Huaxia Chubanshe, 1992), 461. The illustration is a correct representation of the generally accepted layout of the *Houtiantu*, whereas the illustration of the *Xiantiantu* on page 459 has been rotated ninety degrees clockwise so the trigram *Li* 離 corresponding to east is on top where *Qian* 乾 corresponding to south should rightly be. The cover of the 1968 reprint of Granet's *La Pense?e*, may serve as another example, see Marcel Granet, *La Pense?e Chinoise* (1934; reprint, Paris: Editions Albin Michel, 1968). See also Schuyler Cammann, "The Eight Trigrams."
 3. There are references to layouts of these diagrams in mathematical texts prior to the Song, see Joseph Needham, *Science and Civilisation in China* (Cambridge: Cambridge University Press, 1959), vol. 3, 58f.
 4. Schuyler Cammann (1912–1991) was an American anthropologist who for over thirty years has written most extensively on the subject of magic squares and trigram arrangements. Cammann's most important essays are "The Evolution of Magic Squares in China," *Journal of the American Oriental Society* 80, no. 1 (1960): 116–24, "The Magic Square of Three in Old Chinese Philosophy and Religion," *History of Religions* 1, no. 1 (1961): 37–80, "Old Chinese Magic Squares," *Sinologica* 7 (1963): 14–53, "Some Early Chinese Symbols of Duality," *History of Religions* 24, no. 3 (1985): 215–54, and "The Origin of the Trigram Circles in Ancient China," *Bulletin of the Museum of Far Eastern Antiquities* 62 (1990): 187–212. His contributions, despite increasingly suffering from uncorroborated creativity, have been valuable in clearing up some of the confusion regarding the reproductions of the two trigram arrangements. With his two articles of 1985 and 1990, Cammann almost completely discarded textual and material support for his ideas and mainly referred to his own earlier articles. One example will suffice to give an idea of Cammann's reasoning (my italics): "If this *proposed* early circle of trigrams *had indeed been* closely connected with the Shang Diamond Plan, when the latter was reversed—by rotating it—the circle *would have been* rotated too," "Some Early," 238. As to the so-called "Shang Diamond Plan," Cammann explained (my italics again): "It has been *suggested* that both diagrams have been derived from a larger cosmic diagram of thirteen digits, which was *probably* known to the people of the Shang dynasty . . .," "Some Early," 223. See also Cammann's notes 28 and 42 for Bart Jordan, "the scholarly musician" who suggested this, and who "believes that the Shang people used circles of trigrams to express planetary motions and to represent a music scale derived from Western Asia," "Some Early," 236, note 59. In his dissertation on the *Luoshu* Berglund, having examined Cammann's articles, has this to say:
Even though we may find Cammann's theories interesting, particularly his conclusions, they are nothing but products of his own imagination. Therefore, his whole evolutionary theory should be examined with the utmost caution. It is necessary to make a clear distinction between personal interpretations and historical facts, which are confirmed by literary and other sources. Without any scientific proof, Cammann draws the conclusion that the Ba Gua were invented before the Luo Shu. However, I believe that the Luo Shu presupposes the Ba Gua and not vice versa.
Lars Berglund, *The Secret of Luo Shu: Numerology in Chinese Art and Architecture* (Lund: Lund University Press), 1990, 170. Notwithstanding the obvious slip of the pen in his last sentence, I certainly agree with Berglund on this issue but.
 5. See Needham, vol. 4, pt. 1, 296, note b, and vol. 5, pt. 5, 52. Fu Xi and King Wen were also intimately associated with the traditional genesis of the hexagrams and the

- lated texts, and Fu Xi's alleged discovery of the trigrams were sometimes described the Apocrypha in relation to diagrams revealed by or on the backs of mythical beasts usually coming out of rivers, see for example, fragments of the *Shangshu Zhonghou* 《尚書中候》 (The Central Five-Day Period According to the Hallowed Documents) and *Shangshu Zhonghou Woheji* 《尚書中候握河紀》 (The Records of Controlling the River of the Central Five-Day Period According to the Hallowed Documents) in Yasui Ko'zan 安居香山 and Nakamura Sho'hachi 中村璋八, *Isho Shu'sei* 《緯書集成》 (Tokyo: Kabushiki-gaisha Shuppansha, 1971–1985), vol. 2, 73 and 91.
6. The *Hanshang Yizhuan* is quoted as the *Hanshang Yijie* 《漢上易解》 (Hanshang's Explanations of the Changes) in the *Songshi* 《宋史》 (History of the Song Dynasty), comp. Tuotuo 脫脫 et al. (1345; reprint, Beijing: Zhonghua Shuju, 1977), vol. 37, 12908. Zhu Zhen, whose *zi* is Zifa 子發, was known as Mr. Hanshang 漢上先生 among his followers. For Chen Tuan's biography, see the *Songshi*, vol. 38, 13420ff. Smith and Wyatt think that "[t]he diagrams' ultimate provenance may well have been Ch'en T'uan . . .," see Kidder Smith, et al., *Sung Dynasty Uses of the I Ching* (Princeton: Princeton University Press, 1990), 110, n. 43. See also Xu Qinting 徐芹庭, *Yixue Yuanliu* 《易學源流》 (The Origins and Developments of Studies of the Changes), (Taipei: Guoli Bianyiguan, 1987), vol. 1, 662f.
 7. See Liao Mingchun 廖明春, Kang Xuewei 康學偉, and Liang Weixian 梁韋弦, *Zhouyi Yanjiushi* 《周易研究史》 (The History of Studies of the Changes of Zhou), 212ff, and W. Allyn Rickett, *Guanzi: Political, Economic, and Philosophical Essays from Early China; Volume One* (Princeton: Princeton University Press, 1985), 155.
 8. See *Songshi*, vol. 37, 12908, Li Weitai 李偉泰, "Lun Songru Hetu Luoshu zhi Xue 論宋儒河圖洛書之學" (On the Song Confucians Studies of the Yellow River Diagram and the Luo River Document), *Kong Meng Xuebao* 《孔孟學報》 (*The Journal of Confucius and Mencius*) 26 (1973): 133–51.
135, Fung Yu-lan, *History of Chinese Philosophy*, trans. Derk Bodde (Princeton: Princeton University Press, 1952–1953), vol. 2, 440, and Angus C. Graham, *Two Chinese Philosophers: Ch'eng Ming-tao and Ch'eng Yi-ch'uan* (London: Lund Humphries, 1958), 157.
 9. See Zhu Xi, *Yixue Qimeng* 《醫學啓蒙》 (Instructing the Youth in the Studies of the Changes) in Zhu Xi, *Zhuzi Yishu* 《朱子遺書》 (The Posthumous Papers of Master Zhu), (Taipei: Yiwen Yinshuguan, 1969), vol. 12, 3B. See also Rickett, 155, and Schuyler Cammann, "The Magic Square," 59, n. 67, and "The Origin," 205, n. 48.
 10. See Li Guangdi 李光地, *Zhouyi Zhezong* 《周易折中》 (Impartial Deliberations on the Zhou Changes) in *YYJC*, vol. 82, 1954ff., and Richard Smith, *Fathoming the Cosmos and Ordering the World: The Yijing (I Ching, or Classic of Changes) and Its Evolution in China* (Charlottesville: University of Virginia Press, 2008), 177ff.
 11. Zhu Xi, *Yixue Qimeng* in Zhu Xi, *Zhuzi Yishu*, vol. 12, 7A. Although this famous work is commonly attributed to Zhu Xi, the first draft was made by his friend and colleague Cai Yuanding, see Bent Nielsen, *A Companion to Yi jing Numerology and Cosmology: Chinese Studies of Images and Numbers from Han 漢 (202 BCE–220 CE) to Song 宋 (960–1279 CE)* (London: RoutledgeCurzon, 2003), 25.
 12. See *YYJC*, vol. 10, 681f.
 13. In the commentary on the *Qianzuodu* attributed to him, Yasui and Nakamura, vol. 1, pt. 1, 40.
 14. It seems that the association between the compass points and the seasons predates the correlation system of the five phases, and Eberhard called these members of original pre-five phases correlation systems *Urgleichungen*. East is associated with spring, south with summer, west with fall, and north with winter, see Wolfram Eberhard, "Beiträge zur kosmologischen Spekulation Chinas der Han-Zeit," *Baessler-Archiv* 16, nos. 1–2 (1933): 1–100, 53.
 15. Some schemes correlate soil to a fifth season, a midsummer, others divide the year into five periods of seventy-two days, and sometimes soil is simply left out of the equation, see, for example, Eberhard, 48, Gao You 高誘, *Huainanzi* 《淮南子》 (The Huainan Masters) in Yang Liangong 楊亮功, *Zhongguo Zixue Mingzhu Jicheng* 《中國子學名著集成》 (A Grand Compendium of Chinese Masters' Famous

- Works) (Taibei: Zhongguo Zixue Mingzhu Jicheng Binayin Jijinhui, 1978), vol. 85, 104, and Fung, vol. 2, 13. Yang Lianggong's compendium is hereafter abbreviated *ZZMJ*.
16. See, for example, Needham, vol. 2, 253ff. Eberhard has a table of attested occurrences of five phase-sequences and concludes they all share certain regularities such as being based on solar (clockwise) or lunar (counterclockwise) movements. Thus, the mutual production sequence corresponds to the sun's movement during the course of a day while the mutual conquest sequence corresponds to the moon's movement during the course of a month, see Eberhard, 45ff. Both terms occur in chapter names (58 and 59, respectively) in Dong Zhongshu's 董仲舒 (ca. 179–ca. 104 BCE) *Chunqiu Fanlu* 《春秋繁露》 (Luxuriant Dew on the Springs and Autumns), see Sun Kuang 孫鑛 (1543–1613), *Chunqiu Fanlu* 《春秋繁露》 in *ZZMJ*, vol. 27, 321 and 325. The two chapters in question occur in a cluster of seven chapters on the five phases which may have been added to the work at a later stage, see Michael Loewe, *Dong Zhongshu: A "Confucian" Heritage and the Chunqiu Fanlu* (Leiden: Brill, 2011), 267. According to Loewe the mutual conquest sequence is the older of the two; the mutual production sequence originated during the Western Han dynasty (202 BCE – 9 CE), Michael Loewe, "Water, Earth and Fire: The Symbols of the Han Dynasty," *Nachrichten der Gesellschaft für Natur- und Volkerkunde Ostasiens/Hamburg* 125 (1979): 63–68, 65. In Loewe's opinion, these sequences of the five phases only gained political importance in the second half of the first century BCE, see Michael Loewe, *Dong Zhongshu*, 265. Both principles attempt to give a natural explanation of how the phases succeed each other. The rationale behind the mutual production order may be understood as wood produces fire because wood is consumed by fire, fire produces soil because fire opens access to the soil by clearing forests (the slash-and-burn method), soil produces metal because metallic ores are mined in the soil, and metal produces water because metal has the "property of liquefying," see Needham, vol. 2, 255. The mutual conquest sequence is explained by water putting out fire, fire melting metal, metal cutting wood, wood penetrating the soil, and the soil damming up water.
 17. See, for example, Li Dingzuo 李鼎祚, *Zhouyi Jijie* 《周易集解》 (The Collected Explanations of the Zhou Changes) in *YJJC*, vol. 10, 843, 851, 855, and 860. See also the tabulation in Needham, vol. 2, 313, where Needham lists the "associated element" taken from the last eight sections of the *Shuogua*, which he refers to as "ch. 11 of App. 8," *ibid.*, 312.
 18. See, for example, Zhu Xi, *Zhouyi Benyi* 《周易本義》 (The Basic Meaning of the Zhou Changes) in *YJJC*, vol. 28, 303–69. See also Iulian Shchutskii, *Researches on the I Ching*, trans. William L. MacDonald, Tsuyoshi Hasegawa, and Hellmut Wilhelm (1960; reprint, London: Routledge and Kegan Paul, 1980), 6f.
 19. In the case of *Xun* the *Shuogua* says: "*Xun* is wood, it is wind," Li Dingzuo in *YJJC*, vol. 10, 851. Metal is not mentioned at all, and the correlate to *Kun* is said to be earth, which is a translation of *di* 地 and not *tu* 土, soil, of the five phases. Needham's tabulation lacks textual basis, and there are several weak points in his Column 7: The correlate to *Zhen* is said to be wood but the closest the text comes to that is "green bamboo shoot" (*ibid.*, 848). The correlate to *Gen* is also said to be wood but the text only mentions "fruit of trees and other plants" (*ibid.*, 863), and "as to its (*Gen*'s) relationship to trees, it is those with many joints" (*ibid.*, 865). Finally, Needham indicates that both water and metal are correlated to *Dui* but there is absolutely nothing in the text that may warrant such a claim. It is significant that none of the Han dynasty commentators cited by Li Dingzuo sees a connection between the five phases and these or any other sections of the *Shuogua*.
 20. Here, as in many other cases, the fifth phase, soil, is left out making the correlations more convenient.
 21. See Liu Mu, *Yishi Gouyintu* 《易數鉤隱圖》 (Outlining the Secret Diagrams of the Numbers of the Changes) in *YJJC*, vol. 143, 20). Note that these correlations differ from those Needham claimed to have found in the *Shuogua*.
 22. The *Guanzi*, the *Huainanzi*, and the *Chunqiu fanlu* to mention a few, see, for example, Eberhard, 51.

23. Nielsen, 214f.
24. Both Shchutskii and Shaughnessy distinguish between two different parts or texts, see Shchutskii, 159f., and Edward L. Shaughnessy, “*I Ching (Chou I)*,” in *Early Chinese Texts: A Bibliographical Guide*, ed. Michael Loewe (Berkeley: The Society for the Study of Early China, 1993), 220.
25. The first three sections comprise the first text or part one in Shchutskii’s and Shaughnessy’s divisions, see Shchutskii, 159f., and Shaughnessy, “*I Ching*,” 220. In the silk manuscripts unearthed at Mawangdui these three sections are included in a different text, which modern scholars refer to as the *Yi zhi Yi* 《易之義》 (The Significance of the Changes), see Deng Qiubai 鄧球柏, *Boshu Zhouyi Jiaoshi* 《帛書周易校釋》 (A Critical Edition of the Silk Manuscript of the Changes of Zhou) (Changsha: Hunan Renmin Chubanshe, 2002), 548ff.
26. The section begins with a passage that seems to be unrelated to the *Houtiantu*: “The thunder moves them (that is, the ten thousand things), the wind scatters them, the rain moistens them, and the sun dries them. *Gen* stops them, *Dui* makes them joyous, *Qian* rules them, and *Kun* stores them,” see Li Dingzuo in *YJJC*, vol. 10, 824. The trigrams are enumerated in a series that has more in common with those to be mentioned below in the discussion of the *Xiantiantu* arrangement than with the *Houtiantu* sequence. It is very tempting to rearrange sections three and four so as to include this passage in section three. Gao Heng 高亨 (1900–1986) thought that the last thirteen characters of section three belong to section two instead, see Gao Heng 高亨, *Zhouyi Dazhuan Jinzhu* 《周易大傳今注》 (Modern Annotations to the Great Commentary of the Changes of Zhou), (1970; rev. ed., Jinan: Qi Lu Shushe, 1980), 611. With these sentences out of the way the above passage would fit nicely in section three both compositionally and with regard to the order of the trigram series.
27. Following Gao Heng reading 悅 for 說 and 焉 for 言, see Gao Heng, 611ff.
28. Reading 焉 for 言, see previous note.
29. *Shuogua* 4, see Kong Yingda 孔穎達, *Zhouyi Zhengyi* 《周易正義》 (The Correct Meanings of the Zhou Changes) in *YJJC*, vol. 6, 835ff., Li Dingzuo in *YJJC*, vol. 10, 827ff., and Gao Heng, 611ff. See also Wilhelm, 268ff., Legge, 425f., and Bodde in *Fung Yu-lan*, vol. 2, 102. Compare the following statement from the Mawangdui text, *Yi zhi Yi*: “The right conduct of the year begins in the northeast and is completed in the southwest,” see Chen Songchang 陳松長 and Liao Mingchun 廖名春, “*Boshu Er San Zi Wen, Yi Zhi Yi, Yao Shiwen* 帛書二三子問易之義要釋文” (Annotations to The Silk Manuscripts The Disciples Ask, The Significance of the Changes, and The Essentials) in *Daojia Wenhua Yanjiu* 《道家文化研究》 (Studies in Daoist Culture), ed. Chen Guying 陳鼓應 (Shanghai: Shanghai Guji Chubanshe, 1993), vol. 3, 424–35, 432.
30. See, for example, Needham, vol. 3, 232f. The position of the Dipper within the *Houtiantu* circle is probably the most significant feature of the so-called diviner’s boards, see, for example, Donald J. Harper, “The Han Cosmic Board (*Shih* 式),” *Early China* 4 (1978–79): 1–10.
31. Kong Yingda in *YJJC*, vol. 6, 836.
32. Li Dingzuo in *YJJC*, vol. 10, 826ff.
33. Gao Heng, 613f.
34. Another explanation is that it originates in the *Xici* 1: 11: “So for the *Yi* there is the great ultimate. This produces the two *yi* (*yin* and *yang*). The two *yi* produce the four images. The four images produce the eight trigrams.” Li Dingzuo in *YJJC*, vol. 10, 711. See also Shen Diemin 沈頤民, “*Xian Hou Tian Shiyi* 先後天釋疑” (Explaining the Confusion Regarding Preceding and Succeeding Heaven) in *Zhouyi Yanjiu Lunwenji* 《周易研究論文集》 (A Collection of Essays on Studies of the Changes of the Zhou), ed. Huang Shouqi 黃壽祺 and Zhang Shanwen 張善文 (Beijing: Beijing Shifan Daxue Chubanshe, 1990), vol. 3, 181–98, 186f.
35. Gao Heng thinks that the character 不 is superfluous, Gao Heng, 610. In the corresponding passage in the silk manuscript *Yi zhi Yi*, the character 不 does not occur, see Deng Qiubai, 2002), 553f.
36. My translation follows Kong Yingda in *YJJC*, vol. 4, 438f., and vol. 6, 834f., and Gao Heng, 611. However, see also Li Dingzuo in *YJJC*, vol. 10, 824, who quotes Yu Fan’s

- 虞翻 (164–233) interpretation of the last three sentences: “It means *Kun* wanes from *wu* to *hai*, [from] above [to] below, therefore it is following. It means *Qian* is waxing from *zi* to *si*, [from] below [to] above, therefore it is opposing. The Changes is called *Qian*, therefore it is opposing the numbers.” While there is no indication that Yu Fan relates this to a sequence or arrangement including all eight trigrams, he clearly pictures it as the movements of *Qian* and *Kun* in a circular arrangement of the twelve earthly branches with *wu* (no. 7 corresponding to south) at the top and *zi* (no. 1 corresponding to north) at the bottom. See also Richard Lynn, *The Classic of Changes: A New Translation of the I Ching as Interpreted by Wang Bi* (New York: Columbia University Press, 1994), 125, n. 7.
37. See Zhu Xi in *YJJC*, vol. 28, 495f. See also Legge’s note, 424f., and Wilhelm’s comments, 265ff., which are clearly influenced by Zhu Xi’s commentary.
 38. See Li Dingzuo in *YJJC*, vol. 10, 822ff., Han Kangbo 韓康伯 (d. ca. 385) in Wang Bi 王弼, *Zhouyi Zhu* 《周易注》 in *YJJC*, vol. 3, 347, and Kong Yingda in *YJJC*, vol. 4, 438f., and vol. 6, 834f.
 39. See, for example, *Harvard-Yenching Institute Sinological Index Series: A Concordance to Yi Ching* (1935; reprint, Taipei: Chinese Materials and Research Aids Service Center, 1966), 50ff. for a general view of these sections.
 40. See Li Dingzuo in *YJJC*, vol. 10, 822ff., Han Kangbo in Wang Bi in *YJJC*, vol. 3, 347, Kong Yingda in *YJJC*, vol. 4, 438f., and vol. 6, 834f., and Zhu Xi in *YJJC*, vol. 28, 500ff.
 41. The sentence in brackets is based on the received edition of *Shuogua* 3.
 42. See Chen and Liao, 430. The translation is based on the emendations suggested by Chen and Liao. See also Yu Haoliang 于豪亮, “Boshu *Zhouyi* 帛書周易” (The Silk Manuscript Changes of the Zhou), *Wenwu* 《文物》 3 (1984): 14–24, 17, who has the same emendations.
 43. See Nielsen, 185ff.
 44. See, for example, Li Dingzuo in *YJJC*, vol. 10, 716, and Han Zhongmin, *Bo Yi Shuolüe* 《帛易說略》 (Beijing: Beijing Shifan Daxue Chubanshe, 1992), 205.
 45. See Chen Pan 陳槃, “Chen Wei Shiming 識緯釋名” (Explaining the Names of the Apocrypha), *Zhongyang Yanjiuyuan Lishi Yuyan Yanjiusuo Jikan* 《中央研究院歷史語言研究所集刊》 11 (1947): 297–316, 303. For discussions on early references to the *Hetu* and the *Luoshu* see Zhu Yizun 朱彝尊 (1629–1709), *Jing Yikao* 《經義考》 (Investigating the Meanings of the Classics) (1701; reprint, Taipei: Taiwan Zhonghua Shuju, 1970), vol. 7, *Juan* 264, 1A–1B, Xu Qinting, vol. 1, 662ff., Gao Heng, 554f., n. 21, Chen Pan, “Gu Chen Wei Shu Lu Jieti; 1” 《古識緯書錄解題 (一)》 (Explaining the Problems of the Ancient Apocrypha, Documents and Registers; 1), *Zhongyang Yanjiuyuan Lishi Yuyan Yanjiusuo Jikan* 《中央研究院歷史語言研究所集刊》 10 (1948): 371–80, 371ff., and Needham, vol. 3, 56ff.
 46. In Ruan Yuan 阮元, *Shisan Jing Zhushu* 《十三經注疏》 (Commentaries and Subcommentaries to the Thirteen Classics) (1816; reprint, Beijing: Zhonghua Shuju, 1982), vol. 1, 239, and Bernhard Karlgren, *The Book of Documents* (Gothenburg: Elanders Boktryckeri, 1950), 71.
 47. See Xiao Tong 蕭統, *Wenxuan* 《文選》 (An Anthology of Literature) (530; reprint, Beijing: Zhonghua Shuju, 1983), vol. 3, 684.
 48. Ruan Yuan, vol. 2, 2490.
 49. *Shiji* 《史記》 (Records of the Historian), comp. Sima Qian 司馬遷 et al. (1st century BCE; reprint, Beijing: Zhonghua Shuju, 1975), vol. 6, 1942.
 50. See Zhang Chunyi 張純一, *Mozi Jijie* 《墨子集解》 (Collected Explanations of Master Mo) (1931; reprint, Taipei: Wenshizhe Chubanshe, 1982), 199.
 51. See Jiao Hong 焦贛, *Zhuangzi Yi* 《莊子翼》 (The Wings of Master Zhuang) in *ZZMJ*, vol. 60, 413, and Burton Watson, *The Complete Works of Chuang Tzu* (New York: Columbia University Press, 1968), 154. The “Tian yun” Chapter is dated to the early second century BCE, see Angus C. Graham, *Chuang-tzu: The Seven Inner Chapters and Other Writings from the Book Chuang-tzu* (London: George Allen and Unwin, 1981), 28, and Harold Roth, “Chuang tzu,” in *Early Chinese Texts: A Bibliographical Guide*, ed. Michael Loewe (Berkeley: The Society for the Study of Early China, 1993), 56–66, 56.

- See also Cammann, "The Magic Square," 44, and Anna Seidel, "Imperial Treasures and Taoist Sacraments: Taoist Roots in the Apocrypha," in *Tantric and Taoist Studies in Honour of R. A. Stein*, ed. Michel Strickmann (Brussels: Institut Belge des Hautes Études Chinoises, 1983), vol. 2, 291–371, 298ff.
52. Ruan Yuan, *Shisan Jing*, vol. 2, 1427.
 53. See Ling Ruheng 凌汝亨, *Guanzi jiping* 《管子輯評》 (Collected Comments on Master Guan) in *ZZMJ*, vol. 69, 314.
 54. The final redaction of the text is thought to have taken place around 100 CE, see Needham, vol. 2, 605, and Jeffrey K. Riegel, "Ta Tai Li chi," in *Early Chinese Texts: A Bibliographical Guide*, ed. Michael Loewe (Berkeley: The Society for the Study of Early China, 1993), 456–9, 456.
 55. See Wang Pinzhen 王聘珍, *Da Dai Liji Jiegu* 《大戴禮記解詁》 (Explanatory Notes for Da Dai's Records of Rituals) (Beijing: Zhonghua Shuju, 1983), 185.
 56. See Chen Pan, "Chen Wei," 302ff., Seidel, 309f., and Michael Saso, "What Is the *Ho-t'u*?" *History of Religions* 17.3–4 (1978): 399–416, 408, for the different names used for the *Hetu*, *Luoshu* and associated charts and texts.
 57. See Gao You in *ZZMJ*, vol. 85, 83. See also Zhu Yizun, vol. 7, *Juan* 264, 1A.
 58. See, for example, the *Shileimou* 《是類謀》, Yasui and Nakamura, vol. 1, Part 2, 99, and the *Qianzuodu*, Yasui and Nakamura, vol. 1, 60. This tradition may have been influenced by the authors/editors of the *Guanzi* and the *Liji* as the above quotations thereof may suggest.
 59. The commentary mentions that the *Hetu* has nine chapters and the *Luoshu* six chapters, see Li Dingzuo in *YYJC*, vol. 10, 716. Note the numbers nine and six, which clearly refer to the numbers associated with the *yang* and *yin* lines of the hexagrams. Fragments of some sixty texts with titles including *Hetu* and/or *Luoshu* have indeed been transmitted from the Han dynasty on, see *Isho*, vol. 6. Traditionally, these fragments have been included in collections of Apocrypha. The most thorough studies of these fragments are those by Chen Pan published in *Zhongyang Yanjiuyuan Lishi Yuyan Yanjiusuo Jikan* 《中央研究院歷史語言研究所集刊》 in the period 1948–1975. Among the Han dynasty commentators the explanation of Kong Anguo 孔安國 (ca. 156–ca. 74 BCE) figures prominently and may have influenced Liu Xin 劉歆 (50 BCE–23 CE), see below. Kong Anguo said, "The *He tu* is the eight trigrams and the *Luo shu* is the nine divisions [of the Great Plan of the *Shujing*]," Li Dingzuo in *YYJC*, vol. 10, 716. See also Li Weitai, 133.
 60. See *Hanshu* 《漢書》 (The Documents of the Han), ed. Ban Gu 班固 et al. (92; reprint, Beijing: Zhonghua Shuju, 1983), vol. 5, 1315. See also John B. Henderson, *The Development and Decline of Chinese Cosmology* (New York: Columbia University Press, 1984), 84. For the "Hongfan" Chapter, see Ruan Yuan, vol. 1, 187ff., and Michael Nylan, *The Shifting Center: The Original "Great Plan" and Later Readings* (Nettetal: Steyler Verlag, 1992). The authenticity of the "Hongfan" Chapter has been under debate. Creel has called it "one of the most unmistakably false of those attributed to Western Chou," see Herrlee G. Creel, *The Origins of Statecraft in China: Volume One* (Chicago: University of Chicago Press, 1970), 456. Liu Jie 劉節 (cited by Creel) dated the chapter to the late third century BCE but pre-Qin. At the other extreme are, for example, Chan and Rubin who uphold the traditional Western Zhou date, see Chan Wing-tsit, *A Source Book in Chinese Philosophy* (1963; reprint, Princeton: Princeton University Press, 1973), 11, and Vitaly Rubin, "The Concepts of *Wu-hsing* and *Yin-yang*," *Journal of Chinese Philosophy* 9, no. 2 (1982): 131–57, 132 and 152, n. 7. See also Edward L. Shaughnessy, "Shang shu (Shu ching)," in *Early Chinese Texts: A Bibliographical Guide*, ed. Michael Loewe (Berkeley: The Society for the Study of Early China, 1993), 376–89, 379, who takes up the middle ground, and Nylan, 146, who concludes a thorough discussion of the dating of the "Hongfan" Chapter by suggesting a late Warring State date.
 61. *Hanshu*, vol. 5, 1316. See also Henderson, 84ff.
 62. See Zhu Xi in *YJC*, vol. 28, 11.
 63. See Rickett, *Guanzi*, 150ff., and "An Early Chinese Calendar Chart: *Kuan-tzu*, III, 8 (*Yu kuan* 幼官)," *T'oung Pao* 68 (1960): 195–251, 201ff. Rickett dates the final

redaction of this chapter to about 26 BCE, *ibid.*, 225. See also Rickett, *Guanzi*, 148f., for the many different interpretations of the title of the chapter, which literally translates as “office in charge of youth.”

64. Rickett, “Early Chinese,” 206.
65. See Wang Pinzhen, 150. The *Ming tang* was a ritual hall with nine main rooms where the emperor conducted ceremonies in accordance with the monthly commands (*yue ling* 月令), which follow *yin yang* and the five phases and their correlations to the seasons, colors, etc., see, for example, Granet, 150ff. Remnants of a ritual hall dating to 56 CE matching the descriptions of the written sources have been excavated south of the Eastern Han capital near Luoyang, see Wang Zhongshu, *Han Civilization*, trans. K. C. Chang et al. (New Haven: Yale University Press, 1982), 39. A similar spatial division into nine parts can be traced back to the chapter “Yu Gong 禹貢,” Tribute of Yu, of the *Shujing* (Ruan Yuan, vol. 1, 146f.), and to Zou Yan 鄒衍 (305–ca. 240 BCE), the alleged founder of the *yinyang wuxing* philosophy, see John S. Major, “The Five Phases, Magic Squares, and Schematic Cosmography,” in *Explorations in Early Chinese Cosmology*, ed. Henry Rosemont, Jr. (Chico: Scholars Press, 1984), 133–6, 133ff. See also Cammann, “Magic Square,” 43f., and “The Evolution,” 117ff.
66. In the *Zhouyi Zhezong*, which has diagrams using actual numerals in stead of dots, these numerals are arranged in a circle, see *YJJC*, vol. 82, 1954ff.

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