**Formation of the 64 Images in the Book of Changes**

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**Introduction**

The following is a brief outline of a theory on how the 64 images of the *Yi Jing* (Book of Changes, 易經) could have been arranged and calculated by King Wen (文王, Wen Wang, 1122 B.C.), the attributed creator and author of the *Book of Changes* (simply called the Yi from here on). Confucians promoted the traditional belief that King Wen’s arrangement of the 64 images was just a random selection of images placed according to a natural progression of events occurring in worldly situations. This article represents a different point of view, postulating a theory of how King Wen—with his formulation of the After Heaven arrangement of the Eight Trigrams in conjunction with the Before Heaven arrangement—calculated a set pattern of movements to create the actual progression and process for ordering the 64 images as shown in the Yi. Suggesting that the 64 images were logically determined—not randomly selected as commonly assumed—may sound like a bold statement, as this has never been proven since the Yi’s original appearance in the 12th century B.C. This article, however, will show that there are definite patterns and logic to the ordering of the 64 images.

![King Wen's Before Heaven Arrangement](image1)

![King Wen's After Heaven Arrangement](image2)
Presented here are several aspects of the theory and a brief explanation dealing with the first 14 images of the Yi—not all 64. The full theory will be presented in a future work, *The Logic of the 64 Images in the Book of Changes*. Before publishing this book, however, I seek to have a mathematician review the entire work to determine exactly what type of mathematics and logic King Wen used. This review is a critical step in the publishing process, not only to validate or add to the theory I have been developing over the past 30 years, but also to find any errors I may have made. However, in the process of calculating the images, based on clues left in various works by famous commentators on the Yi throughout its long history, the pattern holds true for the entire sequence. The theory is both simple and complex, just as the *Book of Changes* is in its present form.

My hope is that after publishing the entire work it will lead to further discoveries by others far more learned than I. The possibilities of applying this theory to other fields of science and philosophy could prove very useful. King Wen, in my opinion, was as enlightened as any other great spiritual figure and as genius as any great inventor or scientist in history. The *Book of Changes* is the very foundation of Chinese culture. Almost every aspect of Chinese civilization has been correlated with the principles of the *Book of Changes*, from antiquity to present day, from Fu Xi (2,800 B.C.) to Chairman Mao, the *Book of Changes* has been in constant use. My persistent question in the past 30 years of studying the *Book of Changes* has been, “Why is it that every other aspect about the Yi is based on logic and math, but the order of the 64 images was propagated as just a random selection?” I am hopeful that the theory I present here answers that question.

The following sections provide the evidence and background information on which I based the theory. Although this fundamental information is necessary, I don’t want it to detract from the article’s true purpose. So, if reading through the background information becomes challenging, I advise skipping ahead to the section on p. 18 showing the logical patterns of the hexagram and trigram movements and then backtracking through the other sections. This should make the evidence more understandable and easier to absorb as you will know where it is leading. Lastly, for further information on the *Book of Changes* please see my book, *The Book of Sun and Moon—A Traditional Perspective on the Book of Changes*, Valley Spirit Arts, 2013.

**The Formation of the 64 Images**

The formation of the 64 images in the Yi has normally been viewed and assumed as a random selection of images formed by King Wen, showing the natural progression of situations and events. No document exists, however, in which King Wen himself states how the 64-image sequence was configured. This idea of the 64 images being randomly placed was solely propagated by later Confucian commentators. The ninth text of the Ten Wings, *The Orderly Sequence of the Images* (*字卦傳, Zi Gua Zhuan*), does suggest why one image moves to the next—not mathematically, but rather by reason of a progression of circumstances. The explanation is not based on any type of logic, and in some cases seems anything but orderly. Some of the Chinese books I have relied on have hinted that the 64-image sequence is not random, but is mathematically based on King Wen’s creation and sequence of the After Heaven arrangement of the Eight Images (*八卦, Ba Gua*).
Actually, as will be seen later, Confucian commentators in the Ten Wings, likewise hint at the possibility of the Yi not being a random selection of images.

Admittedly, the question concerning this matter has perplexed me for decades. The placement of the 64 images in the Yi, at its very root had to be a mathematical equation, for how is it that the binary arithmetic of Yin and Yang, Four Images, and Eight Diagrams can be constructed on a logical math premise and then not the 64 images? The perplexity for me was that no matter what aspect of the Yi I studied, there was always a logical math behind it—i.e., Ho and Lo Maps, the Eight Diagrams, the Nine Palaces, Ten Heavenly Trunks, Twelve Earthly Branches, and so forth. Below are diagrams and charts for these correlated systems of calculation in the Yi. I apologize for the lack of information on them, but full explanations are not pertinent to the goal of this article. What is important, however, is to see King Wen’s reason for creating of the After Heaven arrangement, which in my view was used to determine an orderly sequence of the 64 images in the Yi.

The Five Basic Images and Correlated Systems of the Yi
1) Ho River Chart and Lo River Script (河圖洛書, Ho Tu Lo Shu)

From these charts of black (Yin) and white (Yang) circles, King Wen transposed them into the Eight Diagram images of broken (Yin) and unbroken (Yang) three-lined images.

2)
From keeping the same assigned numbers of the Lo River Script and Ho River Chart, the Eight Diagrams were correlated with the Nine Palaces chart.

3) **Nine Palaces Diagram Corresponding with King Wen’s Before and After Heaven Arrangements**

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<table>
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<tbody>
<tr>
<td>4</td>
<td>9</td>
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</tr>
<tr>
<td>8</td>
<td>1</td>
<td>6</td>
</tr>
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4) **Ten Heavenly Trunks**

Here is a very brief summary of the Trunks and their meanings on nature:

- **Jia 甲** is **Yang Wood** and is likened to the forests and trees in nature.
- **Yi 乙** is **Yin Wood** and is likened to all the small plants and flowers.
- **Bing 丙** is **Yang Fire** and is likened to the Sun.
- **Ding 丁** is **Yin Fire** and is likened to fires and flames.
- **Wu 戊** is **Yang Earth** and is likened to the boulders and rocks.
- **Ji 己** is **Yin Earth** and is likened to soil and fields that are farmed.
- **Geng 庚** is **Yang Metal** and is likened to steel and swords.
- **Xin 辛** is **Yin Metal** and is likened to gold and silver.
- **Ren 壬** is **Yang Water** and is likened to rivers and oceans.
- **Gui 癸** is **Yin Water** and is likened to rain and dew.

5) **Twelve Earthly Branches**

<table>
<thead>
<tr>
<th>12 Animals</th>
<th>Rat</th>
<th>Ox</th>
<th>Tiger</th>
<th>Rabbit</th>
<th>Dragon</th>
<th>Snake</th>
<th>Horse</th>
<th>Goat</th>
<th>Monkey</th>
<th>Rooster</th>
<th>Dog</th>
<th>Pig</th>
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<tbody>
<tr>
<td></td>
<td>鼠</td>
<td>牛</td>
<td>虎</td>
<td>兔</td>
<td>龍</td>
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<td></td>
<td>Shu</td>
<td>Niu</td>
<td>Hu</td>
<td>Tu</td>
<td>Long</td>
<td>She</td>
<td>Ma</td>
<td>Yang</td>
<td>Hou</td>
<td>Ji</td>
<td>Quan</td>
<td>Shu</td>
</tr>
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Calculation

Over the years I have seen several different papers attempting to explain King Wen’s sequence of images, but they were more speculative than logical. In the end, the 64 images are based on the Eight Trigrams, in both the Before Heaven and After Heaven arrangements. These Eight Diagrams are originally based on the Ho River Chart and Lo River Script. These in turn are the expressions of the Nine Palaces (popularly called the “Magic Square,” a numerological system). Likewise, all this correlates to the Twelve Earthly Branches and Ten Heavenly Trunks (meaning, the calculation of
months and hours, and the Yin and Yang aspects of the Five Elements). All of these aspects are based on mathematics, and because of them, the Yi has for centuries been proclaimed as both a book of divination and calculation, and all the various correlations go to the fact that it was used for calculation. Hence, if the Yi is equally a calculator as it is an oracle, then it has to have a mathematical basis in all its parts, even the sequence of the 64 images—otherwise, calculation would simply not be possible.

There is a pattern to the sequence of the Yi, and when looking at the particulars of it, it isn’t so difficult to see how King Wen arranged the Yi. In some ways, it is so simple that it appears complex. For my purposes here, only the first 14 images of the Yi will be shown and briefly explained. The first two images of Creativity of Heaven (#1) and Receptivity of Earth (#2) need not be calculated as they are the obvious images for starting the Yi—as Creativity of Heaven, A, consists of all unbroken (Yang) lines and Receptivity of Earth, B, all broken (Yin) lines. So in consideration of all that is going to be discussed here, it is necessary to show some of the basic patterns and rules of the Yi to support the evidence of what led me to the theory of King Wen’s construction of it.

As will be shown, Chinese writings on the Yi state that the numbering and process of creating an image through the manipulation of the stalks is likewise the key to understanding how the 64 images were arranged. Briefly, there are 50 stalks. One is removed and the remaining stalks are divided into two piles. Each pile is then lessened by the removal of four stalks at a time until a remaining amount equals either a Yin, Yang, or Changing Line number. *

* A detailed explanation of how to use the stalks for divination is given in my book, The Book of Sun and Moon.

**The Wheel**

Before continuing further, the reoccurring term of what I call “The Wheel” needs to be addressed and clarified. The Wheel is a device I designed to help in the process of rotating the After Heaven images around the Before Heaven images. This made it much easier for me to use the numbering systems I found in various texts, as initially I had to draw out each movement of all eight images, which proved tedious. The graphic, then, appears like two wheels that can circle around each other.
The Evidence

The following evidence comprises the theory of King Wen’s method for creating the 64 images. Each of the eleven points are like pieces to a puzzle. I apologize for the brevity, but I think these sections suffice to advance the theory of how King Wen determined the order and placement of the 64 images in the Yi.

1) Divination and Calculation

The Yi used for divination is quite explicit in both the function and operation of this process. But, as a book on calculation, meaning to use it to come to a mathematical and logical solution to a problem, and how the Yi was structured mathematically, is not as explicit, unless the function and operations are looked at much more deeply. First, I give two statements from Chinese Yi sources showing that the Yi was designed and used for both divination and calculation.

In the *Collected Essentials of the Rivers Ho and Lo* (河洛精蘊, He Luo Jing Yun) it states,

“The ancient Yi is a book of divination and calculation. Its use is to know the past and to know the future so to attain sagely wisdom.”

古易是卜筮而推算之書, 知往知來用得聖慧.

In the third chapter of the *Treatise of Remarks on the Trigrams of the Ten Wings*, it states,

“Calculation of the past is a natural process, having foreknowledge is to foresee. Therefore, the Yi is used for both calculation and foreseeing.”

數往者順, 知來者逆, 是故易逆數也.

As shown in the Wheel graphic, the After Heaven images are placed around the Before Heaven images. Each of these three-lined images are based on broken (Yin) and unbroken (Yang) lines or symbols, and there are eight possible variations. Stacking these eight images upon each other then produces 64 different images of six lines each. It is logical, then, that the sequence of the 64 images would begin with six unbroken (Yang) lines (image #1) and six broken (Yin) lines (image #2), as these represent the ultimate Yang and Yin images.

<table>
<thead>
<tr>
<th>#1</th>
<th>#2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity of Heaven</td>
<td>Receptivity of Earth</td>
</tr>
<tr>
<td>Heaven over Heaven</td>
<td>Earth over Earth</td>
</tr>
</tbody>
</table>

2) Sun and Moon Images

It is also clear in the Yi that the images are positioned in pairs (Sun and Moon images), with the majority of images appearing as reversed reflections of each other. For example, images #3 and #4 are reversed or inverted reflections of each other because turning either one upside down reveals the other. There are 56 images in the Yi that comply with this inverted principle, eight that do not. This means that there are 28 Sun images that automatically create 28 Moon images (28 + 28 = 56), so no calculation is necessary in creating Moon images.
The fifth chapter of the *Lower Great Appendix in the Ten Wings* implies this relationship of Sun and Moon images when it says,

“The sun departs and then the moon arrives. The moon departs and then the sun arrives. The sun and moon each take the other’s place, and so their illumination is created.”

日往則月來, 月往則日來, 日月相推而明生焉.

*Ri Wang Wang Ze Yue Lai, Yue Wang Ze Ri Lai, Ri Yue Xiang Tui Er Ming Sheng Yan.*

Eight images do not comply with this inverted reflection and are direct opposite images of each other—meaning, a Yin line in one image becomes Yang in its paired image, and vice versa. These images are #1 and #2, #27 and #28, and #29 and #30 in the first (or Upper) book of the Yi, and images #61 and #62 in the second (Lower) book.

**Opposite Images in the First Book**

<table>
<thead>
<tr>
<th>#1</th>
<th>and</th>
<th>#2</th>
</tr>
</thead>
</table>
| _CREativity of Heaven_  
Heaven over Heaven | _Receptivity of Earth_  
Earth over Earth |

Images #1 and #2 represent the cosmic relations of Heaven and Earth, and only contain the cardinal trigrams of Heaven and Earth, or the North (#2) and South (#1) positions of the Before Heaven arrangement.

<table>
<thead>
<tr>
<th>#27</th>
<th>and</th>
<th>#28</th>
</tr>
</thead>
</table>
| _Nourishment_  
Mountain over Thunder | _Great Passing_  
Valley over Wind |

Images #27 and #28 represent, in the Sun and Moon correlations, an eclipse (the moon passing in front of the sun). These two images are made up of the four trigrams positioned in the diagonal positions of the Before Heaven arrangement—Northwest and Northeast (#27), Southeast and Southwest (#28).

<table>
<thead>
<tr>
<th>#29</th>
<th>and</th>
<th>#30</th>
</tr>
</thead>
</table>
| _The Abyss_  
Water over Water | _Distant Brightness_  
Fire over Fire |

Images #29 and #30 represent the fire and water aspects of the sun and moon. These images occupy the cardinal positions of the Before Heaven arrangement of East (#30) and West (#29).
Opposite Images in the Second Book

#61 and #62

Inner Truth
Wind over Valley

Small Passing
Thunder over Mountain

Images #61 and #62 represent an eclipse (the earth blocking the light of the sun onto the moon). These two images contain the four trigrams of the diagonal positions of the Before Heaven arrangement, but in reverse of images #27 and #28 shown above—Southwest and Southeast (#61) and Northeast and Northwest (#62).

3) The Stalks

The manner and numbering system for manipulating the stalks to determine an image in the divination use of the Yi appear to be the foundational method for calculating how the order of the 64 images were determined, which can be seen in the manner the Wheel is turned. Picking up one stalk (as in casting an image) corresponds to one click on the Wheel. Separating four stalks represents clicking the wheel either three or five positions, or four or six clicks. This may sound confusing right now, but this process will be explained much clearer. The point here is to show that a relationship exists between how the stalks are manipulated in casting an image, the turning of the Wheel, and how the images are ordered in the Yi.

In the ninth chapter of the Upper Great Appendix of the Ten Wings the following statement concerns the use of the stalks:

“The numbers of the Great Expanse is 50, but only 49 of these are used. The stalks are then divided into two piles to represent the sets of the two emblems (Heaven and Earth, Sun and Moon). One stalk is then taken [from the right pile] and placed [in the left hand] and this symbolizes the Three Powers (Heaven, Humanity, and Earth).”

在篇之策萬有一千五百二十當萬物之數也

In the 11th chapter of the Upper Great Appendix (繫辞上傳, Xi Ci Shang Zhuan) it is said:

“In the two divisions (Upper and Lower books of the Yi) the calculated number for all possible variations is 11,250. This number corresponds to the Ten-Thousand Things.”

Er Pian Zhi Ce, Wan You Yi Qian Wu Bai Er Shi. Dang Wan Wu Zhi Shu Ye.

In the Collected Essentials of the Rivers Ho and Lo (河洛精蘊, He Luo Jing Yun) it states,

“Creating the images through manipulating the yarrow stalks has calculation, and identical numbers are used for the orderly succession of the images.”

Shi Cao Zuo Sheng Gua You Shu. Yong Xiang Shu Wei Xu Ci Zhi Gua.
From this statement it would appear that the method of removing one stalk first and then separating the stalks in groups of four, from both the Yin and Yang stalk piles, is to be symbolically imitated when calculating the orderly production of the images.

In the ninth chapter of *The Upper Great Appendix* of the Ten Wings, it says,

“Heaven is one, Earth two, Heaven three, Earth four, Heaven five, Earth six, Heaven seven, Earth eight, Heaven nine, and Earth ten.”

天一地二天三地四天五地六地七地八地九地十.

Even though this statement clearly shows that all odd numbers are assigned to Heaven and all even numbers to Earth, it also shows that the numerical difference between Heaven and Earth is always one. So when the stalks are divided into Heaven and Earth piles, one stalk is removed. This procedure is not only symbolic of the one-number difference between Heaven and Earth, but is also a symbolic representation of the Three Powers. All the Heaven numbers equal 25 and all the Earth numbers equal 30, both are multiples of five (the central number of the Nine Palaces). But most importantly this shows the numbers one, three, five, seven, and nine are all Yang numbers, and two, four, six, eight, and 10 are all Yin numbers.

In the 10th chapter of the same Wing, it says,

“The changes are caused by the numbers three and five. These numbers bring order to the calculations, and a thorough understanding of those changes.”

參伍以變,錯綜其數,通其變.

In this above statement it is seen that the movement of the numbers three and five are needed to make the changes, but in consideration of the Earth (Yin) numbers, the Heaven (Yang) numbers three and five would naturally produce the Earth (Yin) numbers of two and four, both one number away from Heaven. In these two statements, the numbers are a reference for manipulating the stalks, but since the creation of images and their sequences are based on the numbers and process of casting the stalks, these numbers could as well be applicable to the process of the logical math for the ordering of the 64 images.

4) The After Heaven Images

The reasoning behind King Wen’s After Heaven (AH) arrangement and its correlation to the Before Heaven (BH) arrangement must be examined. One way of looking at why King Wen presented the Eight Diagrams in the circular Before Heaven and After Heaven arrangements can be determined by the function of the After Heaven images with their associated Before Heaven images. For example, Heaven (BH ☷) is visible due to the brightness of Fire (AH ☷). Valleys (BH ◵) are
nourished by Wind (AH 風). Fire (BH 火) is the expression of Thunder (AH 雷). Thunder (BH 雷) produces Mountains (AH 山). Wind (BH 風) moves and forms the Earth (AH 地). Water (BH 水) flows and collects into Valleys (AH 坑). Mountains (BH 山) are Heaven (AH 天) on our planet. Earth (BH 地) is revealed by Water (AH 水).

5) Ruling Lines
The more probable and mathematical reason for King Wen's creation and placement of the After Heaven images, however, may have to do with Ruling Lines. In image #1, for example, the Ruling Line is the fifth Yang line, and in image #2 the Ruling Line is the second Yin line. In image #1 if the Ruling Line (fifth line) is changed to Yin there is then the image of Fire over Heaven (Great Possession), which happens to be exactly the image created at the top of the Wheel diagram. In image #2 if the Ruling Line, second Yin line, is changed to Yang there is then the image of Earth over Water (The Army), which is seen at the bottom of the Wheel. This seems like more than just coincidence.

As noted, the application of changing the Ruling Lines in images #1 and #2 create the images of #14 and #7, highlighted in the two arrangements of the Before Heaven and After Heaven diagrams. Likewise, when creating the first six images on the Wheel, there is a complete return to the images of #7 and #8 on the Wheel. Also, when creating the next six images, there is a return to images #13 and #14 (explained later). This also cannot be just coincidence.

6) Calculation of the Calendar
In the *Zhou Yi Cantongqi* (周易參同契) by Wei Boyang (魏伯陽) appears the construct and explanation of what is called the “Twelve Sovereign Images (Bi Gua, 畢卦).” These images, as Wei Boyang relates, are the movements of the Sun and Moon throughout the year, and he likewise illustrates there are six trigrams relating to the days within a month showing the ascent and descent of the Sun and Moon.

* Wei Boyang, around 200 A.D., wrote the *Zhou Yi Cantongqi*, and many others. He was an internal alchemist (內丹, Neidan) and considered the first patriarch of the Southern Sect of Perfect Realization (全真南派, Quan Zhen Nan Pai). Wei wrote the *Zhou Yi Cantongqi* using the Yi as a model for describing the processes of creating the internal elixir for immortality. His insights into
the Yi are some of the most profound in Chinese literature. Curiously, Wei was also the first Chinese person to write out the formula and process for making gunpowder. See The Seal of Unity of the Three by Fabrizio Pregadio for a complete translation of the Zhou Yi Cantongqi.

The Yearly Sovereign Images

<table>
<thead>
<tr>
<th>#24</th>
<th>#19</th>
<th>#11</th>
<th>#34</th>
<th>#43</th>
<th>#1</th>
<th>#44</th>
<th>#33</th>
<th>#12</th>
<th>#20</th>
<th>#23</th>
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<tbody>
<tr>
<td>Fu</td>
<td>Lin</td>
<td>Tai</td>
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<td>Dun</td>
<td>Pi</td>
<td>Guan</td>
<td>Bo</td>
<td>Kun</td>
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</table>

Earthly Branch: 子 丑 寅 卯 辰 巳 午 未 申 酉 戌 亥
Zi Chou Yin Mao Chen Si Wu Wei Shen You Xu Hai

12 Animals: Rat Ox Tiger Rabbit Dragon Snake Horse Goat Monkey Rooster Dog Pig

Month: 11 12 1 2 3 4 5 6 7 8 9 10
Hour: 23-1 1-3 3-5 5-7 7-9 9-11 11-13 13-15 15-17 17-19 19-21 21-23

After Heaven 64-Image Sequence
From this it can be observed that the main body of the 64 images can be developed into five groups of 12—60 images that correlate with the 60-year cycles of the Chinese calendar, which is based on the math of the Ten Heavenly Trunks and Twelve Earthly Branches.

### The Six Lunar Images

<table>
<thead>
<tr>
<th>Sun Images</th>
<th>Moon Images</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zhen Dui Qian Xun Gen Kun</td>
<td>Li Kan</td>
</tr>
</tbody>
</table>

This particular sequence of images illustrates the ascent of Yang (or Sun) lines and the descent of Yin (or Moon) lines throughout the 30 days of a lunar month. Note that the images of Li (Fire, 火) and Kan (Water, 水) are not included. Fire represents the Sun, and Water represents the Moon, and these are the images ascending (Fire, Yang) and descending (Water, Yin) through the other six images.

The above manner of calculating the calendar by Wei Boyang proved very helpful in my attempting to calculate the logical progression of the 64 images in the Yi, because when manipulating the Wheel it likewise showed clearly that images could be produced in two blocks of six images (equaling twelve total), and these series of twelve images occur five times to account for the ordering of the main body of 60 images in the Yi.

### 7) The Arrangements

In the *Collected Essentials of the Rivers Ho and Lo* (河洛精蘊, He Luo Jing Yun) it states,

> “Before Heaven images are fixed; the After Heaven images become movable.”

Xian Tian Gua Shi Ding, Hou Tian Gua Wei Dong.

From this statement it can be deduced that the After Heaven, being a temporal condition, is in constant motion. The Before Heaven, being primordial, is fixed in position when calculating a group of 12 images. So by placing the After Heaven arrangement around the Before Heaven arrangement there is then the opportunity of moving the After Heaven images around the Before Heaven images in a precise manner to create the various 64 images, as well as determine the order in which the 64 images appear.
8) The Numbers

In *The Philosophy of Foretelling Destinies by the Eight Character Horoscopes* (八字推命哲學, Ba Zi Tui Ming Zhe Xue) it is said,

“One, three, and five are Heaven; two, four, and six are Earth. Within Heaven, Earth moves, and within the Earth, Heaven moves. Therefore, [concerning] the images of the Before Heaven and After Heaven diagrams, the After Heaven encircles the Before Heaven to create the six-line images. Just like the moon moving around the Earth. So when the sun comes, the moon departs; when the moon arrives, the sun leaves.”

天有一三五,地有二四六.中天動地,中地動天.
故先天圖而後天圖之卦,生卦為後天轉圖先天.
如一月旋地.日來月出,月來日出.

Qu Xian Tian Tu Er Hou Tian Tu Zhi Gua, Sheng Gua Wei Hou Tian Zhuan Quan Xian Tian. Ru Yi Yue Xuan Di. Ri Lai Yue Chu, Yue Lai Ri Chu.

From this statement it became obvious that the number of movements (or as I call them “clicks” of the Wheel) were to be one, three, and five for creating the first six images in Yang (clockwise) movement, and two, four, and six for creating the remaining six images in Yin (counterclockwise) movement.

9) The After Heaven Trigram Movements in the Eight Houses

King Wen grouped the 64 images into Eight Houses. Each house starts with one of the eight doubled images and follows a certain pattern of changing lines to create eight images for each house. In looking at the houses, a curious and consistent aspect of trigram movement can be found. Notice in the fourth image of the House of Water (After Completion, #63) a change occurs: Water stops repeating as the top trigram and Fire starts repeating below. Fire stays in the lower position until the eighth image, where Water then returns. Also notice that the eighth image is *The Army*, #7 (and its reflected image would be *Union*, #8), which are precisely the lower images on the set position of the Wheel.

≌ House of Water, Kan 坎 After Heaven Eight Houses

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<thead>
<tr>
<th>#29</th>
<th>#60</th>
<th>#3</th>
<th>#63</th>
<th>#49</th>
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</table>

Trigram Movement

This pattern of trigram movement is seen in each of the Eight House arrangements. In the House of Heaven, for example, Heaven is above for the first four images, then Earth appears below, staying in the lower position until the eighth image, where Heaven returns. Interestingly, the eighth image becomes *Great Possession*, #14 (and its reflected image of *People United*, #13), which are precisely the images on the top of the Wheel.
It was this occurrence of how the primary trigram would change (in the fourth image) to its opposite trigram and then return again at the end (the eighth image) that allowed me to see a similar pattern of trigram movement within King Wen's ordering of the 64 images. For example, the primary trigram would drop down from an After Heaven position to a Before Heaven position on the Wheel when configuring the fifth and sixth images of the first series of six images, and then do so in reverse with the primary trigram of the second series of six images moving up from the Before Heaven position to an After Heaven position at the fifth and sixth images. This will be demonstrated clearly at the end of this article.

10) The Upper and Lower Books of the Yi

The Yi is divided into two books. The first book contains 30 images and the second book, 34 images. This is also, clearly, not a random division by King Wen. The first book is based on the Nine Palaces Diagram numbers, wherein five is the central number and all surrounding numbers (be it horizontal, vertical, or diagonal) equal 15, and each of these have a Yin and Yang association. Thus, 30 images (2 x 15 = 30) are created and used.

In the first book, Heaven (☷), Earth (☷), Fire (☵), and Water (☶) are like the Four Pillars of the other 26 internal images, which if divided evenly become two sets of 13 Sun images and 13 Moon images. The number 13 is important because it denotes the Eight Trigrams along with the Five Elements (e.g., the 13-Posture arrangement of T'aijiquan is likewise based on this principle).

1 See T'ai Chi According to the I Ching by Stuart Alve Olson.

The second book contains 34 images, but since the doubled images of Fire and Water (#29 and #30) are reversed in order, they equally become the initial images of the second book. Note that image #29 (☵, Water over Water) is in a Sun or Yang position, and image #30 (☲, Fire over Fire) is in a Moon or Yin position.

King Wen obviously reversed the logical placement of these two images and so crossed them over to both end the first book and to begin the second book. This means there are actually 36 images connected to the second book, equaling a division of 18 Sun images and 18 Moon images, and so the order and numbering of the images are correlated with the original Eight Diagrams and Nine Palaces wherein the central number is six and the surrounding numbers add to 18.

It is these original configurations that incorporated the association of the Yi with numerology. The Magic Square (not a Chinese term) is properly called the Nine Palaces Diagram (九宮圖, Jiu Gong Tu). The original Ho River Chart used the number six as the central number, and all other numbers
add up to 18. This may have been an equation wherein the six represents the number of lines in a hexagram, and the 18 shows the number of changes needed in sorting the stalks to create a hexagram, and only three numbers can be used to arrive at 18, which may as well have been a representation of the three sortings to arrive at one line in a casting. The Nine Palaces Diagram contains eight possible variants that add up to either 18 in the original diagram or that add up to 15 in the later version.

The number 18 is also important in that it takes 18 changes to create a six-lined image when using the stalks. Meaning, for the creation of one line of the hexagram there are three separate sortings of the stalks. All six lines then take 18 sorting actions. It must also be noted that the first two images of the second book of the Yi, images #31 and #32, are a combination of all four diagonal images of the Before Heaven arrangement (Valley ☦, Mountain ☧, Thunder ☪, and Wind ☩), which are also the main doubled images of the second book—☷, ☷, ☨, ☩.

Original Arrangement of the Eight Diagrams

Note the exchange of the positions of Mountain (7) and Valley (5).

In Chapter Three, Remarks on the Trigrams, in the Ten Wings it says,

“Heaven and Earth have fixed positions, but the influences of Mountains and Valleys are interchangeable.”

天地定位，山澤通氣

<table>
<thead>
<tr>
<th>Nine Palaces Diagram Corresponding with the Original Eight Diagrams Arrangement</th>
<th>= 18</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>= 18</td>
<td>= 18</td>
</tr>
</tbody>
</table>
11) The Eight Positions of the Supreme Ultimate Diagram

When the Supreme Ultimate Diagram (Taiji Symbol) is rotated through the eight positions of the Wheel, it carries the Before Heaven images with it. However, when the Supreme Ultimate Symbol and the Before Heaven images are moved to a new position, the After Heaven images remain in their fixed position on the outside circle. This particular function is quite involved and not necessary for the intent of this article, but a full explanation of these configurations will appear in my book *The Logic of the 64 Images in the Book of Changes*. Suffice to say that the various configurations factor into the ordering of the 64 images. However, all eight configurations are shown below so I can point out some interesting results of the different rotations. Note that the outer circle of the Wheel contains the After Heaven (AH) images with the inner circle showing the Before Heaven (BH) arrangement, which is connected to the Taiji Symbol. The center images of the Wheel (meaning, the combined six-lined image from reading the AH trigram over the BH trigram) are highlighted in each configuration. The BH trigram of Heaven is also highlighted to show its direction and placement in the configurations.

In Configuration 1 (see p. 16), with the BH trigram of Heaven positioned in the South, the center of the Wheel shows AH Fire over BH Heaven ‼️ (#14, Great Possession) and AH Water over BH Earth ▪️ (8, Union) in the North. When BH Heaven is in the position of the East (Configuration #2), the center of the Wheel shows Fire over Water ⚡️ (#64, Before Completion) in the South and Water over Fire ⚡️ (#63, After Completion) in the North. When BH Heaven is positioned in the North (Configuration #3), the center images become Fire over Earth ‼️ (#35, Advancement) and Water over Heaven ▪️ (5, Hesitation). When BH Heaven is advanced to the West (Configuration #4) the center images become Fire over Fire ⚡️ (#30, Distant Brightness) and Water over Water ⚡️ (#29, The Abyss).

All four cardinal positions on the Wheel are combinations of only the images of Heaven, Earth, Fire, and Water—the four cardinal trigrams of the Before Heaven arrangement.

When looking at the diagonal directions and the BH trigram of Heaven is moved to the Southeast (Configuration #5), the center of the Wheel shows Fire over Wind ⚡️ (#50, The Cauldron) and Water over Thunder ⚡️ (#3, Difficult Beginnings). In Configuration #6 (BH Heaven in the Northeast), the center images are Fire over Mountain ⚪️ (#56, The Wanderer) and Water over Valley ⚪️ (#60, Regulating). In Configuration #7 (BH Heaven in Northwest), the center images are Fire over Thunder ⚡️ (#21, Mastication), and Water over Wind ⚡️ (#48, The Well). In Configuration #8 (BH Heaven in Southwest), the center images are Fire over Valley ⚪️ (#38, Opposition), and Water over Mountain ⚪️ (#39, Difficult Obstruction).

The four diagonal configurations of the Wheel show combinations of Wind, Thunder, Mountain, and Valley below Fire and Water, thus lending credence to the connection of images #29 (Double Water, ⚡️) and #30 (Double Fire, ⚡️) with the second book of the Yi—just as images #1 (Double Heaven, ‼️) and #2 (Double Earth, ▪️) begin the first book.
The Patterns and Logic of King Wen’s Hexagram Placements
(Images #1 thru #14)

The previous section represents a short draft of the evidence on which I based the following method for constructing the order of the 64 images. Below is just a quick sample of how, in my opinion, the images were created by King Wen. The reader should keep in mind that this, like the previous section, presents only a cursory sampling of information. Much is left unsaid, but it is enough to demonstrate logical patterns and math. In my forthcoming book, *The Logic of the 64 Images in the Book of Changes*, there is a much more detailed explanation of the evidence and conclusions on King Wen’s formation of the Yi.

**To Begin**

![Diagram](image1.png)

All Yang lines

All Yin lines

For the above two images no calculation or movement of the Wheel is necessary.

**Water Trigram Movements of the Wheel**

The movement begins in the North (foreshadowing, Sun) position of Water over Earth and so ends in the proper Moon position of Water over Earth.

**Symbolic of Sorting Stalks from the Sun (Left, Yang) Pile**

<table>
<thead>
<tr>
<th>#3</th>
<th>#4</th>
<th>#5</th>
<th>#6</th>
<th>#7</th>
<th>#8</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image2.png" alt="Image" /></td>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
<td><img src="image5.png" alt="Image" /></td>
<td><img src="image6.png" alt="Image" /></td>
<td><img src="image7.png" alt="Image" /></td>
</tr>
</tbody>
</table>

**Clicks on Wheel:**

- 1 click clockwise
- 3 clicks clockwise
- 5 clicks clockwise

**Represents:**

- Removing 1 Stalk
- Removing 4 Stalks
- Removing 4 Stalks

Starting Position (Focus on AH Water)

1 click clockwise reveals images #3 & #4
Notes
The question of why the movements start in the position of AH Water over BH Earth at the bottom of the Wheel can be answered by their Nine Palaces associations: Both Water and Earth are assigned the numbers 1, thus making it position #1. It then seems logical to start in the Earth position because the Receptivity of Earth (image #2) is sequentially connected to create and move to image #3. The After Heaven images here move clockwise (see After Heaven 64-image diagram). To comply with the process of casting stalks, one stalk is retrieved from the left pile, so moving one click directly left of Earth is logical. If we completely discard from our minds the given order of the Yi images, and simply move the After Heaven image of Water one click over, the Sun image of Difficult Beginnings (Water over Thunder, image #3) is automatically found, and likewise looking at the Wheel upside down (inverted) the Moon image of Youthful Folly (Mountain over Thunder, image #4) is automatically created.

Now, continuing to move the After Heaven image of Water three clicks (as subscribed and indicated by the Yang number three) in the same direction, we automatically end at the Sun image of Hesitation (Water over Heaven, image #5) and then inverting the Wheel, the Moon image of Contending (Heaven over Water, image #6) is automatically created.

Lastly, continuing to move the AH Water image in the same direction five clicks, the Wheel comes back to the position of Difficult Beginnings (image #3). However, in compliance with the movements prescribed and seen in the After Heaven 64-images construct,* the After Heaven image of Water must move down to the Before Heaven position of Water. So in looking at the Wheel it is seen that AH Earth is automatically positioned over BH Water, thus creating the Sun image of The Army #7, and inverting the Wheel, the Moon image of Union #8 (Water over Earth) is automatically created, and this image shows a complete return, where the Wheel began in the Sun position of Water over Earth and now ends in the proper Moon position of Water over Earth. The image of #8 Union is a Moon image because of its order in the sequence of 64 images, so it is in its proper
position when the After Heaven image of Water descends to the Before Heaven inner wheel. Seeing Water over Earth in a Sun position at the beginning of the sequence can be viewed as a foreshadowing of where the Wheel is heading.

* The details of these movements of the Before Heaven and After Heaven images is further explained in the forthcoming work wherein all 64 images are explained. Suffice to say that in creating the 5th image of any series of six images, the After Heaven image either descends to the Before Heaven position, or the Before Heaven image ascends to the After Heaven position, as will be seen in the creation of the next six images below.

In correlating the movements of the Wheel with the casting of the stalks, it can be seen that first the stalks were separated into Sun (Yang, Heaven) and Moon (Yin, Earth) piles, represented by images #1 and #2. Creating images #3 and #4 was representative of picking up one stalk from the Sun pile (one click turn of the Wheel). Turning the Wheel three clicks (to image #5) is representative of removing four stalks from the Sun pile, and turning the Wheel five clicks (creating images #7 and #8) is likewise representing taking four stalks from the Sun pile.

We now move on to separate two sets of four stalks from the Moon (or right pile) of stalks, and attention is moved to the top of the Wheel, to the Before Heaven position of Heaven. Keep in mind that the process was started in the Before-Heaven Earth position at the bottom of the Wheel. This moving up to the Before Heaven image of Heaven seems logical for several reasons:

1) In the process of creating all 64 images, the Before Heaven arrangement is changed to determine groups of twelve images, and here at the beginning of creating images #3 to #14, the Wheel is in the prescribed position of Fire over Heaven and Water over Earth (the four ruling images of the first book). These two images run vertical to each other.

2) From the proper positions on the Wheel of images #7 and #8 it can be seen at the top of the Wheel (the Heaven position) that images #9 and #10 are already in place, thus no need to make one click turn of the Wheel, as it would be in manipulating stalks (no stalk is picked up when separating stalks from the right pile.

3) As pointed out earlier, the Wheel also shows the returning of position to image #3 (Water over Thunder), the first image in creating the first six images of the Yi. Likewise, this creates the first image of the next six images to be created, image #9 and #10, at the top of the Wheel.

It should be noted that this process requires three movements of the Wheel, thus correlating with the idea of the Three Powers. It also correlates with the idea of the three initial sorting actions of the stalks to create the first bottom line when casting an image. The creation of the six images coincides with the casting process of creating six lines, which makes for the 18 operations needed to make one hexagram (as noted in the Ten Wings).
Heaven Trigram Movements of the Wheel

Symbolic of Sorting Stalks from the Moon (Right, Yin) Pile

<table>
<thead>
<tr>
<th></th>
<th>#9</th>
<th>#10</th>
<th>#11</th>
<th>#12</th>
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<th>#14</th>
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Clicks on Wheel: 0 click 2 clicks clockwise 4 clicks clockwise = 6

Represents: Removing 4 Stalks Removing 4 Stalks

Without turning the wheel, images #9 & #10 are revealed.

2 clicks counterclockwise reveals images #11 & #12

4 clicks counterclockwise reveals images #13 & #14

Pattern of Trigram Movements for the 12 Images—#3 through #14

Below are graphs showing the patterns of trigram movements. These graphs clearly show concise patterns from which logical conclusions can be applied. The first graph shows the trigram movements of just the Sun images. The second graph shows both the Sun and Moon image movements.
Yang Clockwise Movements

Water descends to the Before Heaven position

Yin Counterclockwise Movements

Heaven ascends to the After Heaven position.

Pattern of Trigram Movements of Sun Images

Using dots to indicate the trigram movements and positions shown above, the following graphs show a definite pattern that correlates with the ascent and descent of primary trigrams seen in the After Heaven arrangement of the Eight Houses (see p. 13).

Pattern of Trigram Movements of Sun and Moon Images
Notes

When continuing to calculate the images on the Wheel after images #7 and #8, the creation of images #9 and #10 are already complete (see top of Wheel). But now yet another inversion process must be undertaken, and this is twofold:

1) Since moving to the right, Moon, pile of stalks the Wheel should emulate this by turning the Wheel counterclockwise, a Yin direction. Likewise, the Yin numbers of two and four are now used, as three and five are associated with Yang.

2) The other inversion taking place is that the Before Heaven image of Heaven remains fixed until reaching the fifth position wherein it will ascend to the After Heaven position.

Please note, creating this set of six images is opposite of the creation of the first six images wherein Water is tracked along with the turning After Heaven arrangement until reaching the fifth position and then descends to the Before Heaven arrangement.

So, in beginning the position of the Wheel where images #7 and #8 were created, and images #9 and #10 are automatically revealed, and following the pattern described above (but this time in an opposite, or Yin, manner with the focus on BH Heaven)—if the After Heaven images are moved two clicks in a counterclockwise direction, the Sun image of Peacefulness (Earth over Heaven, image #11) is created, and by inverting the Wheel, the Moon image of Adversity (Heaven over Earth, image #12) is automatically created.

Lastly, if continuing to move the After Heaven images four clicks counterclockwise, the Heaven trigram, which now makes its ascent to the After Heaven position, ends up directly over the Before Heaven image of Fire. Thus, creating the proper Sun position of Union of Men (Heaven over Fire, image #13), and the Moon image of Great Possession (Fire over Heaven, image #14), and this image shows a complete return (and conclusion of the sequence of six images). Remember, the Wheel begins in the Sun position of Fire over Heaven (which is a foreshadowing image, as King Wen determined Fire over Heaven to be a Moon image because of its placement within the 64-image sequence). So, concluding with Fire over Heaven here, in its proper Moon position, is also showing the Wheel, in a sense, returning to the foreshadowed position of image #14.

In moving the Wheel with the prescribed numbers for creating the above 12 images (#3 to #14), there were nine clicks for the first six images and six clicks for the next six images, the assigned numbers in the Yi for Yang and Yin, and for changing lines. Adding nine and six together equals 15, which coincides with the Nine Palaces central number of 15.
Concluding Remarks

Beyond the correlations touched upon here, further connections with the Nine Palaces, Ten Heavenly Trunks, and Twelve Earthly Branches can be made, but delving into this information is left for the future book. Despite the brevity of this article, I hope the reader can begin to see the scope, wisdom, and intricacies of King Wen’s presumed thinking.

Throughout the manipulation of the Wheel in creating the images, consistent road-like signs foreshadow where the images are heading. I cannot say with certainty that this process of turning the Wheel is identical to what King Wen might have used, yet it comes to the same end. Possibly more learned people will simplify this process, as I am fully aware that I have not mastered the full context of the After Heaven images. In the end, I can say, “I see the fruit, but not the roots.” I say this because having worked with the Yi so intently for so many years, and no matter what I may come to understand or discover about it, it just keeps getting deeper and more profound.

Stuart Alve Olson
Year of the Water Snake