

The Complete Book of Changes: 周易 Translation

with

A Commentary on the Evolution of Consciousness

**by
Douglass A. White, Ph.D.**

Appendices, Part 1



A Delta Point Book

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Appendices, Part 1

易經 · 繫辭上傳

The two sections of “Appendices” to the **Book of Changes** consist of a series of short essays that explore and explain some of the abstract principles that underlie the **Book of Changes**. The articles also introduce technical terms and concepts that are useful in understanding the texts on the hexagrams and the practice of divination. The author of the Appendices also speculates about the historical origins of the **Book of Changes** and its relation to the evolution of civilization.

第一章

1.01.01. When heaven is exalted and earth is lowly, the creative and the receptive are established.

天尊地卑，乾坤定矣。

The Unified Field (Tai-ji) expresses itself first as three main properties or planes of existence: the physical, the mental, and the transcendental. The Vedas refer to these as *chandas*, *devata*, and *rishi*. The corresponding terminology used in the text of the Appendices is earth, heaven, and man. Heaven is the mental realm of imagination and thought. It is a dynamic process that generates meanings, content, context, forms, and symbols. We experience it as consciousness. Earth is the physical expression of heaven as solid objects, physical phenomena, transformations, and various operations. Earth gives rise to the world that we perceive through the senses as objects of knowledge. It includes the physical body with all its sense organs. Man is the embodiment of undefined transcendental being. He is the Knower, the Self as pure awareness that comprehends the process of knowing (the creative mental phenomena of heaven), and the known (physical phenomena of earth). Ideas and feelings are subtle objects, and thus belong to a subtle aspect of the plane of earth to the extent that we can imagine them as objects of knowledge and manipulate them as such in consciousness. The mental plane of heaven is exalted because it is subtler than the physical plane of earth. Knowing is subtler than the object of knowing. It is the realm of consciousness. The Knower exists as a transcendental plane beyond all knowing and objects of knowing. The Knower therefore is undefined and is not an object or a state of consciousness. The Maharishi Mahesh Yogi often said, “Fulfillment is structured in achievement. Achievement is structured in action. Action is structured in knowledge. Knowledge is structured in consciousness.” Consciousness is structured in the pure awareness of the Knower. The Knower is the Source of Creative Intelligence. He is what the **Book of Changes** calls the “Change Maker” (one of the meanings of *Yi4* = 易). The physical plane is lowly because it

serves as the medium for conveying the imaging process of consciousness. It merely reflects back to you whatever you create as beliefs in your consciousness. People want to find fulfillment in life. The level of fulfillment you experience in life is based directly on your achievements. These achievements depend on your creative actions. Your creative actions depend on your knowledge, and your knowledge depends on your state of consciousness. All states of consciousness are expressions of Pure Awareness. Therefore, Pure Awareness is the non-changing Source, the Transcendental Self (*Yi* = 易). That is why the Change Maker as the Creator and Knower of all Changes is simple and non-changing in its essential nature. All changes arise from its inherent creative dynamism. Heaven is the state of consciousness generated by the creative imagination of a Knower. Earth provides a medium to reflect the images created by heaven. These images reflect back to the Knower and can be reflected from Man to Man in a shared reality via communication, because the undefined nature of Pure Awareness allows for any number of Knowers to create various viewpoints in that Awareness from which to imagine creations into the heavenly plane and then project them into the earthly plane.

1.01.02. When the low and the high are properly arranged, the noble and the petty find their places.

卑高以陳，貴賤位矣。

The distinction between heaven and earth is an expression of displacement. This is an illusion created by the ability to think abstractly and thereby create a context. In mathematics one way to generate a “context” is by choosing a base and a modulus. This context generates a way of representing a number system for exploring mathematics. The word base in mathematics refers to the number of single digit symbols used in a particular number system. For example, in base 10 we use 10 digits to count with: 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9. Completing a cycle through the digits, we start a new cycle: 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, then 20, 21, 22, and so on. There is no limit to the number of places a number in a given base may involve. The base 2 (binary) system uses the symbols 0, 1. Therefore in binary we write 2 as 10. The number 10 in decimal becomes 1010 in binary. The modulus of congruence $a \equiv b \pmod{m}$ is the number m . This provides a limit to a sequence of numbers after which the system rolls over and starts a new cycle. For example, on a 12-hour clock the modulus is 12. Thus, 9 o'clock plus 5 hours becomes 2 o'clock. After 12 o'clock, the system rolls over and starts again with 1 o'clock. In a binary base system with a modulus of 8, we get the sequence 000, 001, 010, 011, 100, 101, 110, 111, after which the system rolls back over to 000 and begins a new cycle. This is how the 8 trigrams in the **Book of Changes** work if we think of them as a

numerical sequence. We can set up the parameters of a system such as size, resolution, and dimensionality any way we like. According to their places within a given number, digits have high or low significance. When we count, the digits with high significance do less and accomplish more. They govern a whole range of values. We can say they are “noble”. Digits with low significance do more and accomplish less. We can therefore say they are “petty”. The noble and petty digits are the same, but their position in the number is different. Examine the list of 8 binary numbers given above. As you count in sequence, the high digits seem to change very slowly and the low digits seem to change very fast. The reality however, is that there are four 0’s and four 1’s in the high digit position and four 0’s and four 1’s in the low digit position. The high and low positions are equal from that statistical viewpoint. The same is true of people in a society. The creating of domains with different significance, influence, powers, and so on based on relative position is a very general principle. From another viewpoint all people are equal and biased viewpoints that suggest special qualities are illusions of perspective.

1.01.03. When motion and rest have regularity, the hard and the soft are distinguished.

動靜有常，剛柔斷矣。

There has to be motion and change in order to distinguish contrasts. To feel the boundary of bathwater that is near room temperature, the bather has to make some waves. The abstract mental value of this principle is in the notions of constants and variables. We place the constants and variables into various relationships. The ability to distinguish such things as constants, variables, and relationships is part of the critical faculty within the Knower that is responsible for bringing about clarity of knowledge or perception. It requires attention to details and the discovery of regular patterns within the details. The hardness or softness of an entity can only be distinguished by a test interaction with the entity that involves relative motion and rest.

1.01.04. When spaces are used to collect types, and things are divided into groups, well-being and misfortune come into being.

方以類聚，物以群分，吉凶生矣。

The word “fang” 方 means a direction. Distinction of directions is the essence of the creation of space. Methods are ways of working with the general concept of spaces in different dimensions. Space is a creative way of storing objects of knowledge and perception. Space is an information storage technological concept. We can divide a hypothetical space into areas. We can place creations of different

types in different areas of space to keep track of them. We can deliberately divide creations into sets by arranging similar creations into groups. What does this have to do with well-being and misfortune? There is a difference between deliberate and non-deliberate creations. Non-deliberate creations are habitual creations that repeat prior situations without deliberate new creation. If something is added, it may be resistance to or some modification of the prior creation. Each person does what seems to be best. When a deliberate (i.e. intentional) creation aligns with prior creations or has no prior creations that interfere with it, well-being is the result. We get what we want. When a deliberate creation conflicts (consciously or unconsciously) with prior creations, misfortune results and this generally takes the form of suffering. We do not get what we want or perhaps even get what we do not want.

1.01.05. When we create images in heaven, and we create forms on earth, the changes appear.

在天成象，在地成形，變化見矣。

Images are abstract structures in consciousness. Geometry is the precise study of abstract images. Forms are physical objects that reflect the abstract images that we resist or disown or deliberately intensify with fixed attention until they become real objects that seem to have a life of their own. Physics is the study of how objective forms interact in space over time. Psychology is the study of how we process images and reactions to images and forms in consciousness. All possible changes always exist on the level of the Vacuum State of Pure Awareness. However, we usually can not perceive them unless they have physical forms on the earthly plane. We may experience them in the heavenly plane of consciousness if the mind is clear and perception is subtle enough. The word for heaven also refers to the sky in Chinese, so there is a less general interpretation of “images” as the constellations of stars and the patterns of the planets in the sky. These are subjective creations that Man imagines from his viewpoint on earth. In remote antiquity before the invention of writing, teachers used the heavenly bodies as a textbook, creating imaginary mental constructions from constellations of stars, and then telling myths about these imaginary images. The heavenly images and earthly forms continuously change, and the **Book of Changes** is about the principles by which they change.

1.01.06. Therefore, the hard and soft rub each other, and the eight trigrams agitate together.

是故，剛柔相摩，八卦相盪。

Observable systems are transformations of relationships between physical forms that

have hard and soft physical qualities. We can represent the physical forms abstractly in a mathematical or pictorial model with an interaction of trigrams. The set of trigrams is the set of binary numbers to three places. However, the mention of eight trigrams is merely an example using the simplest possible system. People generally count with decimal numbers and leave binary numbers to the computers, because binary numbers are hard for people to read and manipulate when they get large. Computers have no such problem. Binary numbers are useful, however, when we only work with small numbers, because they present a complete, balanced set of archetypes. The **Book of Changes** presents three-digit binaries (a set of eight) and then combines these in pairs to get binary numbers with six digits (a set of 64). This latter set can also be viewed as a set of octal numbers in two digits (also a set of 64). The Chinese used a set of eight special characters to represent the octal digits, but they generally preferred to write the set of 64 as binary “hexagrams” with the yin and yang binary notation they invented. The word for these numbers in Chinese is “*gua*” 卦. The character means a bamboo or stone tablet marked in some way and used for divination. A common divination method still in use is to mix bamboo tablets or strips in a container and have the diviner draw one at random to determine a *gua* number.

1.01.07. Thunder and lightning excite, wind and rain moisten; sun and moon circulate bringing alternations of cold and hot weather.

鼓之以雷霆，潤之以風雨，日月運行，一寒一暑。

These are examples of how the abstract images can be projected onto forms of nature to study how natural phenomena unfold. Thunder and lightning are examples from natural phenomena of trigrams ZHEN and LI interacting. Wind and rain during a storm demonstrate the interaction of trigrams XUN and KAN. We can change our interpretation of the trigrams and take LI as the sun and KAN as the moon. The dominance of LI brings hot summer weather, because the days are long with lots of sunlight. The dominance of KAN brings cold winter weather, because the nights are long and the moon’s light provides no warmth. This sentence shows us how we must adapt the eight fundamental archetypes to different physical systems in order to study how they operate.

1.01.08. The path of creativity produces males, and the path of receptivity produces females.

乾道成男，坤道成女。

“Creativity” and “receptivity” are terms used for the first two hexagrams. The former is made from two QIAN trigrams, and the latter is made from two KUN

trigrams. This statement does NOT mean that women are uncreative or that men lack receptivity. First, it describes the roles of the sexes during copulation. The male emits his creative seed, and the female receives that seed in her womb and allows it to fertilize her egg. A man can fertilize many women, but a woman can only bear one pregnancy at a time. Therefore, males have an urge to spread their seed around, and women have an urge to receive the best seed they can get and cultivate that. Those who choose the path of assertiveness to spread their seeds, tend to become strong males. Those who choose the path of bearing children become women. By her nature a woman is more passive, because she must raise her children in a stable nest. By his nature a man is more active, because he has no limitation on his movements due to pregnancy and raising children. By studying this general principle, we can understand the relations between men and women and understand how a society becomes structured. Of course, many special cases may arise, but that is another issue. First we are looking at the most general principles.

1.01.09. A creative [person] knows great beginnings. A receptive [person] makes them become [real] things.

乾知大始，坤作成物。

This continues the comparison of creative and receptive people. The creative person generates a new idea. A receptive person accepts the idea and applies it to a real situation or turns it into a physical object. The man knows a woman sexually and makes her begin her pregnancy by fertilizing her womb. The woman incubates that fertile beginning into a living child that will grow up to be a new member of society. The latter example shows the sexual aspect of the principle. However, the first example shows that the principle can be quite general and need not have any sexual bias. It refers more to a personality type.

1.01.10. Creativity is for easy knowing. Receptivity is for simple power. When something is easy, then it is easy to know. When something is simple, then it is easy to follow. When something is easy to know, then you have intimacy. When something is simple to follow, then you have achievement. When you have intimacy, you can persist. When you have achievement, you can enlarge. The ability to persist [describes] the virtue of a worthy person. The ability to enlarge [describes] the enterprise of a worthy person.

乾以易知，坤以簡能。

易則易知，簡則易從。

易知則有親，易從則有功。

有親則可久，有功則可大。

可久則賢人之德，可大則賢人之業。

“Knowing” can be in the sense of having sex with a woman. A creative man has an easy sex life. “Knowing” can also mean understanding things. A creative person easily grasps the fundamentals of any situation. This enables him to come up with creative new viewpoints. Receptivity is the key to power. Men often resent the power women have over them. In traditional Indian culture the male creative energy is known as Shiva, and the female receptive power is known as Shakti. This understanding goes back to ancient Egypt. Real power is very simple and consists in having a handle on the central point of resistance in a system. A woman can control a man by managing what he resists. The most powerful martial arts use the principle of receptivity to manage the resistance of an enemy. The enemy finds no place to attack, because he only meets receptivity and no resistance. His own resistance ends up destroying him. He attacks himself. If the instructions for a procedure or rules of a game are simple, then it is easy to follow the procedure or play the game. Achievement is success at performing the procedure or playing the game. Achievement in some aspect of life allows you to expand your sphere of influence. This could be in personal relationships, business, or any career. When you know someone sexually, you achieve an intimate relationship with them. However, simply having sex does not mean you “know” the person well. Really knowing a person means that there are no secrets. This facilitates deep mutual understanding. On this basis you can build a long-term relationship. Since raising a family takes many years, there must be true intimacy for the relationship to persist over that time and remain healthy and prosperous. Virtue is a kind of influence that comes from alignment of intention and action. The primary key to success in any endeavor is not profound learning or great skills, although these can certainly help. The key is the ability to persist. The key to persistence is a sense of intimacy with what you are doing. This means that attention is fully focused there with love and appreciation. Expansion of a career depends on the power a person has when they follow a simple formula that they have mastered and simply repeat it over and over. For example, an industrialist develops a good product and a simple, cost-effective way of producing and delivering it to customers so that they are satisfied. Then he simply repeats this successful formula over and over. This is how huge international corporations develop and generate vast wealth and prosperity for themselves, their employees, and customers.

1.01.11. With ease and simplicity you may master all the principles in the world. When you master all the principles in the world, you will achieve [your] position at their center.

易簡，而天下之理得矣；天下之理得，而成位乎其中矣。

Another way of reading the first phrase of this section is: “The Change Maker is simple but it obtains all the principles in the universe.” The archetypes of the Holistic Change Maker (*Zhou Yi*4) alone and in their various combinations comprehend all the basic principles in the world. Once you master these principles, you find that you are the Holistic Change Maker, the Source of all Changes, and your position is in the “center” of them all. The center here means at the Source from which they all arise. The Chinese represented this by creating circular diagrams of the changes with the Great Ultimate Change Maker understood to be in the center of the diagram. The simplest state of awareness is also the most comprehensive state of awareness. Only pure undefined awareness can comprehend the field of all possibilities. This is beyond the hexagram of Receptive Awareness (2), although that can be a label for it. All principles can be known only on the basis of contrast. The perfection of the Knower in the center is that he is transcendental. He is beyond all contrasts, and he also includes all contrasts.

第二章

1.02.01. The sages design the basic archetypes (gua4 卦) and contemplate the images. Then they attach definitions to them and clarify [conditions] of well-being and misfortune.

聖人設卦觀象，繫辭焉而明吉凶，

Sages are people rich in wisdom who are able to cognize directly the possibilities that exist within a given universe. The sages design a set of archetypes to describe in general terms the possible conditions that may exist as realities and use the set as a communication tool. The archetypes that they use for the **Zhou Yi** are simply mathematical symbols: a set of binary numbers written in a special notation. The designers could use any base, notation system or set of axioms, but simplicity is preferred. Precise, standardized notation is essential for allowing people to critique, develop, and share any body of knowledge. Once the sages design a set of archetypes in a useful notation system, they observe closely the abstract images that these numbers form from the notation as structures in consciousness. Based on these observations, they use language to describe each image with a definition. From the interplay of these images and definitions, they can derive a clear understanding of the varying conditions of existence. From a subjective viewpoint, situations that support life, growth, and evolution toward higher states of consciousness represent well-being. Situations that bring suffering, failure to achieve goals, losses, or even lowering of consciousness, constitute “misfortune”. The definitions provided by sages are not intended to limit in any way, but suggest ways to reduce misfortune and increase

well-being in the way that people generally understand these ideas. Ultimately they hold the promise of enlightenment and fulfillment.

1.02.02 The hard and soft push against each other to produce changes.

剛柔相推而生變化。

The interactions of creations when they encounter more or less resistance generate an array of possible changes. Software can not transform data unless it runs on some kind of hardware system. Thus the hardware and the software must interact to generate changes on a computer or any physical system. This principle holds generally in the physical world.

1.02.03 Therefore, well-being and misfortune are images of gain and loss. Regret and caution are images of doubts and worries.

是故，吉凶者，失得之象也。悔吝者，憂虞之象也。

The text of the **Zhou Yi** uses certain technical terms to describe the management of situations. **Well-being** 吉 means that there is some positive gain. The situation is usually not only stable, there is also some progress. **Misfortune** 凶 means that there is some loss. There may be suffering or unpleasant experiences. The cause of misfortune is that current intentions are not aligned with prior creations that work against the result that a person desires to achieve. The reason misfortune occurs is that a person has changed viewpoint with regard to a prior situation and now wants something different than the situation he has already created. The only way to get out of such a problem is first to handle the situation that causes the misfortune. The desired condition will not occur until you take responsibility for all existing creations that are not aligned with the desired result and handle them so that they no longer interfere. There are techniques to accomplish this in a relatively swift and painless manner as long as a person is thoroughly honest about what he wants to achieve. **Regret** 悔 means that a person has done something in the past that causes a problem. The situation may not be serious enough to bring about misfortune, but it definitely subtracts from the overall result you would like to be experiencing, so you wish you had not done it. However, you can not undo an action once it has been done. You either must let go of the regret, accept things as they are, and move on or you have to repair the damage that brought on the regret. Repairing the damage may require some apologies and appropriate reparations. If you can not let the regretful situation go as is or repair the damage, you will go on being stuck and feeling regret. Correcting the situation tends to build a sense of integrity and confidence. **Caution** 吝 means heightened focus of attention on details critical to achieving the desired outcome of a situation in the future. A person is in a situation where a problem is

developing, but attention to critical details will avoid the problem from becoming a threat to achieving fulfillment of the desired result. **Regret** is attention focused toward the past, and **Caution** is attention focused toward the future. **Doubts** 憂 indicate the presence of beliefs that are not aligned and thus draw a person in a direction different from his declared goal. **Worries** 虞 mean that a person lacks confidence in his goal or in his ability to achieve his goal. **Fear** is an extreme state of **Worry**. **Doubts** and **Worries** are similar, and a person with many doubts and worries generally will need to proceed with caution and may develop many regrets due to mistakes. Mistakes are expected as part of the learning process, but a person need not fall into regrets if he learns from mistakes and corrects them.

1.02.04 Transformations are images of progressing and retrogressing. Hard and soft are images of day and night.

變化者，進退之象也。剛柔者，晝夜之象也。

This section continues to introduce technical terms and develops the principle of correspondence. **Transformations** 變化 occur in the dimension of time. We measure time by motion. Progressing and retrogressing are subjective motions that are meaningful only in terms of a goal. From an objective view point there is only motion without progress or retrogress. **Hard** 剛 and **Soft** 柔 usually refer to qualities of physical objects in space and describe the amount of resistance a person has to them or that the objects have toward each other. **Hard** corresponds to the **yang** 陽 energy of creative will when it expresses itself in the physical plane of earth. **Soft** corresponds to the **yin** 陰 energy of receptive awareness when it expresses itself in the physical plane of earth. If hard asserts against hard there is conflict and resistance. If hard asserts against soft, the soft gives way to accept and receive the hard. If soft asserts itself against soft, the two tend to coexist (like oil and water) or to mix and possibly form a compound (like whiskey and water). If soft asserts itself against hard, it tends to flow around the hard and embrace it. Soft can also refer to substances made of many small particles, such as sand or flour. Sand, cement powder, and water are all soft from many points of view. However, anyone who has belly-flopped into a pool of water or fallen on a sheet of ice can attest that water can seem very hard from certain angles of experience. We can combine soft substances into a mixture that is also soft. For example, water and clay mixed can form soft mud. Then we can extract the water by drying with slow heat, and the remaining mixture hardens into a brick, which is a very hard form of dried mud. Thus, the two qualities, hard and soft, may interact so as to generate the illusion of transformations in time. “Day and night” is simply an expression for the passage of time. Thus, we find in the transformations of hard and soft an integration of space and time.

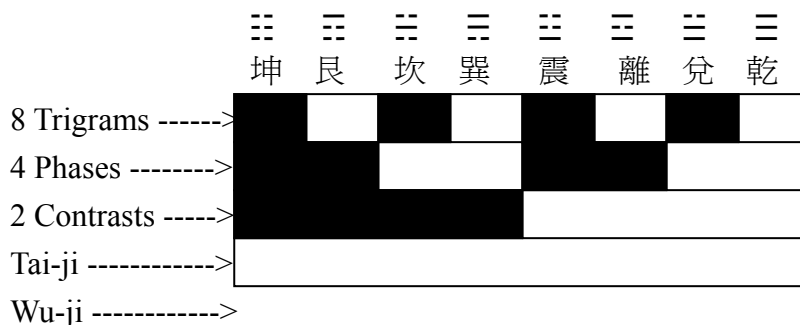
Without some transformations of hard and soft, the alternations of day and night that we use to calculate a passage of time would be meaningless alternations of light and dark. We know that it takes a certain number of hours for newly poured cement to set into its hard form as concrete, and this depends on the average rate of extraction of the soft water from the cement mixture. The transformations of hard and soft bring us our modern sciences of physics and chemistry along with their many practical applications.

1.02.05 The movements of the six digits are the pathways of the three planes.

六爻之動，三極之道也。

The six digits are the “lines” that make up a hexagram. The technical term in Chinese is “yao2” 爻. Each hexagram consists one of sixty-four possible six digit binary numbers. The digits move in several ways. The simplest movement is for a binary digit in a particular position to shift value from 0 to 1 or from 1 to 0. (I use modern Arabic numerical notation here.) Another movement is for a particular digit to shift from one position to another among the six places of the digits. For example, the 1 in the number 00001 can shift from the first position to the second position: 000010. Each shifting of a digit by one place in a number represents an order of magnitude shift. Another type of movement is for the whole sequence of digits in a number to invert its sequence. For example, 000010 may change to 010000. Yet another type of movement is for each digit in the number to reverse to its complementary value. For example, the complementary value of 000010 is 111101. Also a block of digits within a number may shift position as a group: 001100 --> 011000. The three planes 三極 are the earthly 地, heavenly 天, and human 人 planes. The human plane represents the Tai-ji (or Grand Plane, or Great Ultimate 太極) when it touches the Heavenly Plane at the Creative Source. The true human plane is Wu-ji 無極 – No Limit Being that lies Beyond the Ultimate Boundary of a Creation. Humans integrate the heavenly and earthly planes into a Unified Field. There are two ways to identify the planes in a hexagram. Hexagram numbers usually are written from the bottom up (with a few exceptions). However, we have a circular chart of the hexagrams that the Sung dynasty scholar Shao4 Yong 邵雍 discovered (or recorded from earlier sources) that clearly shows a Chinese convention that the higher positions in a hexagram represent the lower valued digits in the number, while the lower positions in a hexagram represent the higher valued digits in the number. For example, the number we write as 111000 in binary has 1’s in the higher (inner or lower trigram) positions, and 0’s in the lower (outer or upper trigram) positions. This means that your external world appears to change faster than you do. As a result our perception of the world resembles watching a movie. Frames flicker

by rapidly. We sit and watch, but do not change very much. Here is a chart based on the way Shao Yong derives Bao Xi's (Fu Xi) Binary Digital Sequence of Trigrams



Wu-ji 無極 is an undefined condition. We represent it by the area outside of the rectangular chart. It can also include the area inside the rectangle, but is unaffected by the boundaries and contrasts in that space. **Tai-ji** 太極 is the beginning of definition, and Shao represents it by the bottom row of the chart that underlies and unifies the entire set of trigrams. This row lacks contrast and is the same as Wu-ji except that it forms the foundation for definition. Defined and undefined form a pair of **Contrasts**. For the purposes of this chart we arbitrarily call undefined energy **yang** (light bar), and defined energy **yin** (dark bar). The assignment of colors is arbitrary, but generally yang corresponds to light, and yin corresponds to dark. On the other hand Chinese generally distinguish yang energy with a solid line ___ and yin energy with a broken line ___. The second row from the bottom in the above chart represents the two contrasts of yang and yin. Undefined energy is creative potential. Defined energy has received a definition and is therefore receptive. In addition to these two contrasting conditions, we can have the two contrasts each interact in two ways to generate a total of four **Phases**. Undefined energy can become defined, and defined energy can become undefined. Thus, there are four primary phases to reality: the undefined phase (the creative potential phase), defining of the undefined (the creation phase), the defined phase (the manifestation phase, receipt of definition), and the removal of the definition (the dis-creation phase). Each of these four phases can also undergo one or the other of the two contrasting possibilities. This generates eight possible conditions, each of which has three layers of contrast. We find the eight trigrams formed by the top three rows of the rectangular chart. Above the rectangular chart I place the name of each trigram in Chinese characters and its corresponding Chinese mathematical notation. The mathematical sequence runs from left to right. As you read along from trigram to trigram, the top lines change most rapidly, and the bottom lines change the slowest. However, if you count up all the trigrams, you will find that each line has an equal number of each contrast. This interesting illusion is one of the basic principles of statistical mechanics. The first four

trigrams as a block form a macrostate of the system, and the second four trigrams form another macrostate. Each trigram taken individually forms a microstate of the system.

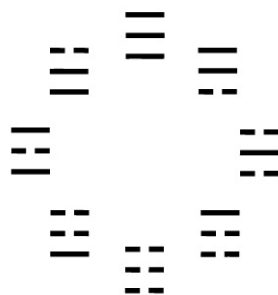
Here is Shao's 64 hexagram sequence cut into sets of eight and laid out as a rectangular array and written with Arabic binary numbers: Study the sequence and the symmetrical patterns that the numbers form when arrayed like this.

000000, 000001, 000010, 000011, 000100, 000101, 000110, 000111,
001000, 001001, 001010, 001011, 001100, 001101, 001110, 001111,
010000, 010001, 010010, 010011, 010100, 010101, 010110, 010111,
011000, 011001, 011010, 011011, 011100, 011101, 011110, 011111,
100000, 100001, 100010, 100011, 100100, 100101, 100110, 100111,
101000, 101001, 101010, 101011, 101100, 101101, 101110, 101111,
110000, 110001, 110010, 110011, 110100, 110101, 110110, 110111,
111000, 111001, 111010, 111011, 111100, 111101, 111110, 111111.

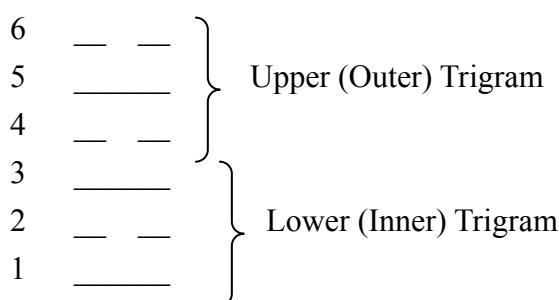
Read the chart row by row from left to right and from the top row down. Notice the sequence of the trigrams in the numbers. Also notice how the lowest digits oscillate rapidly, and the higher digits oscillate slowly as we count along.

When we put the whole system together, we have 64 Hexagrams, 8 Trigrams, 4 Phases, and 2 Contrasts all emerging from the Tai-ji. The Tai-ji therefore contains 78 basic archetypes. In the Western tradition these archetypes became the 78 Tarot cards. As I point out in the Introduction to this book, the ancient Egyptians apparently already understood the importance of this system and the numbers 2, 4, 8, 64, and 78 that result from it.

Now let us compare the binary trigram sequence to the Fu2 Xi 伏羲 (Bao Xi) circular diagram. Start from the bottom of the circle with KUN and read the first four trigrams anticlockwise up the right side: KUN, GEN, KAN, and XUN. Then cross over and read clockwise up the left side starting from ZHEN, through LI and DUI, until you reach QIAN at the top. In his large circular chart Shao Yong merely expanded the Fu Xi arrangement out to include the sixty-four hexagrams. How you orient the images is an arbitrary convention, but the images relate to physical systems in very specific ways.



Chinese traditionally number the positions within a hexagram from one to six starting with one at the bottom and ending with six at the top. Each position has a line that corresponds to a digit 0 or 1 in a binary number.



If we interpret in terms of a physical system, the first two positions (1 and 2) at the bottom of a hexagram number represent the **earthly plane**, because from our physical perspective earthly things are attracted toward the center of the earth, and that is at our feet. The last two digits at the top of a hexagram (5 and 6) represent the **heavenly plane**. The sky and outer space extends above our heads. The middle two digits (3 and 4) represent the **human plane**, because we stand between heaven and earth from this perspective. This is one perspective of viewing the hexagram as a whole. From this overall hexagram analysis, lines 3 and 4 gain access to transcendental status via the gap between the inner and outer trigrams. This is the principle of the gap. Heaven and earth are mixed in a human, so you must go within and find the gap to experience the transcendental aspect.

If we view the hexagram as consisting of two trigrams interacting, then the planes are distributed differently. Positions 1 and 4 are inner and outer **earthly** planes. Positions 2 and 5 are inner and outer **human** planes. Positions 3 and 6 are inner and outer **heavenly** planes. Line one is an earthy earth line. Line two is an earthy human line. Line three is an earthy heaven line. Line four is a heavenly earth line. Line five is a heavenly human line. Line six is a heavenly heaven line. This viewpoint helps to get a feel for the individual lines. It is also important when we analyze in terms of the interaction of trigram images.

In general the inner trigram represents your inner subjective and personal life, and the outer trigram represents your interaction with the objective external and social world. The inner trigram also stands for the early stages of a developing process, and the outer trigram stands for the later, more mature stages of a developing process. Lines 5 and 2 hold the central positions in the outer and inner trigrams respectively and therefore gain direct access to transcendental status from that viewpoint. They also have a subtle intuitive connection such as we may find between a parent (5) and a child (2) or master (5) and disciple (2).

A third way of locating the three planes is the perspective that heaven is not an external aspect of the physical world but is immanent as the world of consciousness from which we perceive the world. From this perspective the inner two lines represent the heavenly plane of consciousness, and the outer two lines represent the earthly plane of the physical world. Man then again occupies the middle two transitional lines, with the pure transcendental value being at the gap between the inner and outer trigrams. The gap also appears between any two other lines and also is directly contacted through the central lines of the trigrams. From a larger perspective, each line can be viewed from any of the three planes: Self (human), mind (heaven), and body (earth).

1.02.06 Therefore, that which the Wizard dwells in and is at peace with is the sequence of the changes, and that which he takes pleasure in and plays with is the descriptions of the lines.

是故，君子所居而安者，易之序也。所樂而玩者，爻之辭也。

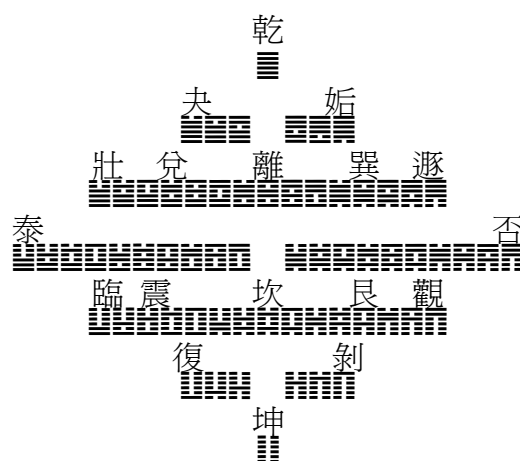
Any process involves changes, and the changes are orderly and follow sequences. Understanding of the order within a series of changes brings out the non-changing aspect of the changes. For example, orderliness manifests as the ordinal property of numbers (1, 2, 3, 4, 5,). That represents one possible sequence that we introduced in the comments on the previous section. The hexagrams can be placed in a circular, rectangular, or other type of array and still follow that same sequence. Numerous other sequences exist. For example, the Ma-wang-dui copy of the **Book of Changes** is organized along “family” principles. The eight trigrams are divided into four males and four females. The sequence is father, 3rd son, 2nd son, 1st son, mother, 3rd daughter, 2nd daughter, 1st daughter. These eight trigrams form eight “Houses”. In each House the family member in charge of that house forms the outer trigram. The inner trigram of the first member of the House is the ruling member’s trigram doubled. The first House sets the pattern for the lower trigram: father,

mother, 3rd son, 3rd daughter, 2nd son, 2nd daughter, 1st son, 1st daughter. For each House after the father's, the lower trigrams follow the above sequence, skipping the trigram of the House ruler that has moved up to first place. This is a very orderly sequence, but it is not perfectly orderly. There is no clear reason why the upper and lower sequences are different, the former with sexes separated, and the latter with sexes alternating. This type of arrangement has many possible variations that are rule based, but more complex than a simple ordinal sequence.

The standard classic follows a very complex sequence. I have studied it at some length and uncovered most of the rules, but there are still a few exceptions that I can not explain. The basic rule is that all the hexagrams are arranged in pairs that are either mutual inversions 錯卦 (e.g., 000001, 100000), complementary opposites 綜卦 (e.g., 111111, 000000) or both 錯綜卦 (e.g., 110100, 001011). Another rule is that the hexagrams begin with the pure numbers that correspond to binary 63 and 0 (111111, 000000), and then the yin and yang lines generally become increasingly intermixed until the last pair is perfectly intermixed (101010, 010101).

There is also a “diamond” or “global” sequence developed by Yu2 Yen3 俞琰 of the Sung Dynasty. This demonstrates in seed form principles of modern group theory and is related to some Unified Field theories of physics. The two pure hexagrams form north and south pole (1 case for north and 1 case for south), the “arctic” latitude has one changed line (6 cases north, 6 cases south), the “temperate” latitude has two changed lines (15 cases north, 15 cases south), and the “equatorial” latitude has one large group with 3 yin lines and 3 yang lines distributed in all possible ways (1 group with 20 cases). The chart below shows Yu Yen's Diamond Layout. The Twelve Cyclical Hexagrams form the outer edge and show the cycle of energy. Heaven, Earth, Sun and Moon form the central axis. The eight trigrams form the Before Heaven Structural Arrangement with LI and KAN pushed into the central axis. This is a perfectly coherent diagram of the organic structure of the human body and the circulation of energy within it. This layout is well worth deep study.

Yu Yen's Diamond Layout



The principle behind orderly sequences and arrangements is that once you organize a system such as a manufacturing procedure into its most efficient sequence, you can relax and the system virtually runs itself, because it follows a natural sequence of events that produce a given outcome in a predictable manner. The primary result of setting up a logical rule-based system for any procedure is that such a system is stable and efficient as a model for practical applications as well as an elegant theoretical structure. This is the scientific approach to doing things. An important secondary result is that it frees attention up for other creative activities. A person who is disorganized and inefficient, tends to waste a lot of energy and attention just trying to get along from day to day and often may face difficult problems. Efficient people free up creative resources and leisure time to devote to culture, art, or whatever project they want to pursue. The Wizard knows how to find great pleasure in observing the details of the world around him. He also greatly enjoys playing with language. The comments in the **Book of Changes** often contain rhythm and rhyme and striking imagery that resembles poetry. This text on the Appendices is some of the most elegant and profound Chinese philosophical prose ever written. The imagery and descriptions of the changes provide endless entertainment that is educational as well as fun.

1.02.07 Therefore, when the Wizard is at rest, he contemplates its images and plays with its descriptions. When he is on the move, he contemplates its changes and plays with its oracles.

是故，君子居則觀其象而玩其辭，動則觀其變而玩其占。

This passage develops further the previous section and echoes its language. “At rest” means that he is relaxed. In this state of calm relaxation he can visualize the images in his consciousness on the mental plane just to explore them artistically, spiritually, or on any other dimension. He plays with the texts, enjoying the vivid poetic language, and perhaps even creating his own comments on the changes.

Many of China's greatest scholars studied the **Book of Changes** and wrote their own interpretations. Study of these works provides insights into the history of Chinese philosophy. "On the move" can mean that the Wizard is in a state of physical activity or that he is in a state of heightened mental activity. The latter can mean that he performs calculations, designs constructions or strategies, develops mathematical proofs, and so on. The word "oracles" is much more general than what most people think of as divination. By closely observing how a system changes, a person can learn to predict how it will evolve over time. For example, if an engineer wants to build a bridge, he considers the terrain, dimensions, load requirements, climate, and available building materials. Then he calculates from these data what the optimal bridge design is that he can achieve. The outcome of these calculations is an accurate "oracle" of how long it will take to build the bridge, the cost, the traffic it can bear, the maintenance requirements, and the probable longevity of the bridge. A mathematician achieves his "oracle" when he earns the right to say, "Q.E.D." A housewife sets up a schedule for her housecleaning that minimizes the time and effort involved and leaves the house looking good almost always, and especially when guests come. Then she has plenty of free time to devote to her favorite projects.

1.02.08 Because heaven assists him, there is well-being and everything benefits.

是以自天祐之，吉无不利。

This phrase quotes the text for line six of **Great Possession (14)**. The Wizard effortlessly brings his mind and body into accord with all of Nature. Another word for Nature is the Higher Self. Nature responds by supporting his endeavors and bestowing life-supporting benefits on the whole society and environment. The mind is the plane of heaven, especially when it attunes to the expanded consciousness of the Higher Self. The Wizard tunes his individual consciousness to the mass consciousness of society and of the whole planet. He discovers the deep desires and tendencies of planetary mass consciousness, and then helps that to materialize. He thus builds heaven on earth. Heaven, earth, and man all benefit from this.

第三章

1.03.01 The Tuan Commentary speaks about the images. The text on the lines (numerical digits of the hexagram) speaks of the transformations.

彖者，言乎象者也。爻者，言乎變者也。

This section explains the purposes of two important portions of the text. The **Book of Changes** contains a complete set of 64 binary hexagram (six-place) numbers. Each hexagram has appended to it comments on the hexagram as a whole and then comments on each individual line or digit that makes up the hexagram. The Tuan

Commentary discusses King Wen's brief description of the hexagram as a whole. This involves analysis of the images and mention of particular lines that stand out or relate in certain ways. The text on the lines deals with what happens when a particular line of a hexagram happens to change. The comments on the lines often seem very cryptic. One reason for this is that the commentator uses imaginative imagery to describe the transformations. These descriptive passages are only intended as examples to help the reader grasp the dynamics of the changing line. One problem is that this text derives from a period before the standardization of Chinese orthography. In ancient times people often wrote any character that suggested the spoken value of the word they intended. The line texts are so brief and cryptic that the editors of the standard text may have misunderstood the original imagery. The Ma-Wang-Dui copy and the surviving bamboo slip texts plus quotations in other books indicate a lot of variations in the text due to this problem. Another aspect of the line comments that confuses readers and makes the text seem mysterious is that the lines are about transformations. The hexagram does not sit still. It is dynamic. Each line text describes first the condition of that line during the influence of the hexagram. Then it extrapolates to the new situation that arises when the line changes. People who read the **Book of Changes** often fail to study the details of the transformation. Theoretically any hexagram can transform into any other hexagram. On a practical basis, however, a hexagram often remains stable for a time or only changes in a single line. If more than one line changes, there is a sequence to the transitions, and you can follow the transformations as a sequence of hexagrams with interacting trigrams and individual changing lines. My commentary on the hexagrams considers the resultant hexagram for each changing line, because the text on the line often refers specifically to the outcome of the transformation.

If no lines change in a hexagram obtained during divination, you take King Wen's comments on the hexagram, plus the Tuan and Image comments as the interpretation. The situation is fairly stable in its current configuration.

If one line changes, you begin with Wen's comments, the Tuan and the Image comments, and then focus on the line comment for that changing line and see what new hexagram emerges. The original hexagram usually is the current situation. The changing line indicates the dynamic tendency of the situation as it develops and may suggest how to facilitate the development of the situation in a way that you prefer. The resultant hexagram indicates the outcome.

If two lines change, the transformation is more complex. First study the original

hexagram A. This indicates the current situation. Look at the highest changing line to see the dynamic tendency that is transforming the outer aspect of the situation. Then generate hexagram B that results after that line changes. Hexagram B represents a transition phase and may give ideas about how to handle the changing situation. Next look at the lower changing line as the text appears in the transition hexagram B. This gives insights into how you can work on yourself to ensure the best overall long term result. Next go to hexagram C that results when the lower line changes. The overall meaning of hexagram B comments on near term developments. The overall sense of hexagram C gives a long term insight into the outcome of the transformation.

For example, suppose your initial hexagram is Splitting Off (23). Lines 2 and 4 in the hexagram oracle change. Study the hexagram, and then look at the comments on line 4. This suggests a major loss in the material world. However, it points out that this is only a superficial loss. Then look at the intermediate hexagram that results when line 4 changes. The hexagram becomes Progress (35). This suggests that the loss is an opportunity for a new awakening and the dawn of a new phase in the situation that can lead to Progress. Next, look at the text on line two of Progress. This suggests some sadness may linger from the loss, but a higher connection (line 5) can provide guidance to further Progress. Finally, look at the resultant hexagram when line two of Progress changes. The situation becomes Incompletion (64) and suggests that there may be a protracted period during which the Progress evolves but lacks any final resolution.

If three lines change, the process is basically the same as the case for when two lines change. After studying the initial hexagram, begin with the highest changing line first to consider the short term influences. Next take the middle line for middle-term developments and suggestions. Finally consider the lowest changing line for the long term outcome and deeper aspects. You get a sequence of four hexagrams, of which the first two are of primary importance for dealing with the current and near-term situation, and the latter two provide reference for the longer term and the outcome.

The chances of four or more lines changing get progressively less probable, but such cases do occasionally happen. When four lines change, you study the two non-changing lines. First read the comment on the highest non-changing line. Next, look at the hexagram that appears when the two highest changing lines have changed. Then read the text on the lowest non-changing line (as it appears in your

intermediate hexagram). Then read the comments on the final hexagram that emerges after the lower two changing lines have changed.

For example, suppose you get Following (17) with lines 1, 3, 5, and 6 changing. After studying the general meaning of the hexagram to understand the current situation, look at the comments on line 4 of Following to see the dynamic tendency of the situation. Then look at Biting Through (21), the resultant hexagram when lines 5 and 6 change. This gives you a suggestion or a view of what the transition may be like or what you may do to facilitate the transition. Next read the comment on line 2 of Biting Through. The text on the lower line often brings up aspects you need to look at or work on in yourself to ensure the outcome stabilizes as you prefer. Finally, study the resultant hexagram when lines 1 and 3 change. This is The Inn (56).

When five lines change, focus on the text of the line that does not change and then go to the new hexagram that results when the five lines change.

When all six lines change, there is a special commentary for the hexagrams Creative Will (1) and Receptive Awareness (2) when that case arises. As for any other hexagram, then you study the initial hexagram first, and then ignore the line comments and simply read the Tuan and Image texts for the complementary hexagram as a whole that appears when all the lines change.

1.03.02. The terms “well-being” and “misfortune” speak of one’s gain and loss. The terms “regret” and “caution” speak of small imperfections. “No blame” means to be skilled at fixing errors.

吉凶者，言乎其失得也。悔吝者，言乎其小疵也。无咎者，善補過也。

These technical terms used in the **Book of Changes** refer to the exercise of the critical faculty. If there is no critical opinion, then any situation is fine. A loss is not necessarily something “bad” unless we label it with that negative judgment. However, people generally tend to seek what they consider well-being and avoid what they think is misfortune. **Misfortune** means that a system of thoughts and actions is internally inconsistent and contains contradictions that prevent it from functioning properly if certain intentions are present. The intention will not manifest, and perhaps even something unwanted may show up. Also, it may mean that a situation is unsatisfactory as a model for certain applications. Perhaps there are errors in design or planning. In such cases we can remove the problem by correcting the errors. Conditions of regret or caution usually involve minor problems that can be fixed fairly easily with some attention. **No blame** is a technical term used in the

classic to describe a situation that is neutral or easily handled. A condition of regret or misfortune can be shifted to this neutral stance by making an appropriate correction of a mistake. The external situation may not become ideal, but a person can remove the inner discomfort caused by the regret and reduce the suffering from misfortune. Once the “no blame” condition is reached progress is then possible toward a more preferable situation.

1.03.03. Therefore, the gradation from noble to petty resides in the notion of position. The standard for size resides in the notion of the number.

是故，列貴賤者，存乎位。齊小大者，存乎卦。

This statement clarifies the key aspects of parameter setting. The terms “noble” and “petty” in their most abstract sense refer to the relative position of digits in a number. A trigram has three positions, and a hexagram has six positions. How you assign high and low digits determines the value of an individual number. The size of a whole system depends on the number (卦 *gua4*) of items in the set that you choose to consider. A set consists of a collection of items and hence is another way of expressing the concept of number. There can be no items in the set, one item, or as many as you like. We can associate each member of a set with a number, and the set as a whole has a cardinal value determined by the total number of items in the set. In the **Book of Changes** we find a set of 8 trigrams and a set of 64 hexagrams. The members of these sets are usually described by a binary notation (yin and yang lines), an octal notation (trigram names), or a Base64 notation (hexagram names). Binary or octal are examples of bases commonly used today in computers for numerical notation. You get the same size set of 64 items, whether you work with binary hexagrams or octal bigrams. The Han dynasty philosopher Yang² Xiong² 揚雄 (53 BCE – 18) designed a set of 81 archetypal quadragrams using ternary (base 3) instead of binary and 4 as his number of places (exponent size). In other words he created a complete set of four-digit numbers expressed in ternary. This set consists of $3^4 = 81$ members. Size is relative, and so is the level of detail you wish to study. We can divide a single day into standard units such as 24 hours or 1440 minutes or 86,400 seconds. Or we can consider periods of 24 days, 1440 days, or 86,400 days. The first case gives various arbitrary ranges of resolution based on standards for the study of a single span of time. The second case gives various arbitrary multiples of a given standard unit of time. We can measure length with standards such as kilometers, meters, centimeters, millimeters, and so on. Or we can take any standard unit and multiply it any number of times. We discover that size depends entirely on our subjective viewpoint and has no objective “real world” value except as arbitrary standards that the members of a culture agree on for communication, commerce, and

so on. The sets of 8 trigrams and 64 hexagrams that we find in the **Book of Changes** are simple examples. You can make a system as large and complex as you like. Computers greatly facilitate this. The Chinese general technical term for a member of a finite numerical symbol set is “*gua4*” 卦. The items in the set are given arbitrary labels such as A *gua*, B *gua*, C *gua*, and so on. The label specifies a name for the item within the set. In English we indicate the set size by indicating the number of digits: monogram, digram, trigram, hexagram, and so on. We usually assume that such a term refers to the lowest base that generates the set. Thus, trigrams and hexagrams are assumed to be in binary, although theoretically they can be written in any base. There are $2^3 = 8$ trigrams in binary. The same set in octal would be $8^1 = 8$ monograms. In ternary we might have $3^2 = 9$ bigrams or $3^3 = 27$ trigrams. In quaternary (base 4) we can have $4^2 = 16$ bigrams or $4^3 = 64$ trigrams. Thus, we can have 64 octal bigrams, 64 quaternary trigrams, or 64 binary hexagrams. The **Book of Changes** does not use the quaternary notation, although that is another valid way of analyzing the 64 archetypes. “Gram” stands for the symbolic mark we use to indicate a digit. An “n-gram” can contain “n” number of digits of whatever base we please. Every archetype in a set has equal value as a **number**, as an **image**, and as an archetypal **principle**, regardless of where it comes in the sequence or what subjective judgments are appended to it. The purpose of the **Book of Changes** is for you to achieve mastery over these archetypes and their transformations rather than for them to master you.

1.03.04. The discrimination of well-being and misfortune resides in the descriptions. The concern for regrets and cautions resides in the boundaries, and the awakening of blamelessness resides in regret.

辯吉凶者，存乎辭。憂悔吝者，存乎介。震无咎者，存乎悔。

This sentence probes deeper into the practical use of the various subjective judgments in the text. The images and numbers of the hexagrams have no inherent quality of good or bad, well-being or misfortune. All these latter qualities are subjective judgments that we place on situations. The third way of interpreting the symbols of the **Book of Changes** (after **numbers** 數 and **images** 象) is **principles** 理. In the comments 辭 appended to the hexagrams and lines, the commentator expresses subjective opinions based on observation of human behavior to assist readers in using the dynamic archetypes as guides for improving their lives. These comments about principles express the opinions of the commentators. I also comment with my opinions. Everyone discriminates in his life according to preferences. We generally say that what people prefer is well-being, and what people do not prefer is misfortune. Ultimately each person has to judge for himself what well-being and

misfortune are, although many people tend to agree in certain areas. Regrets and cautions lurk in the gaps 介 between aspects of a situation. We live in the present. The present is the gap between past and future. Regrets indicate focus on the past while living in the present. Cautions indicate focus on the future while living in the present. In each case a person with concern for regrets or cautions is not able to live fully in the present moment. Something bothers the person, and this indicates a lack of integrity. Integrity unifies past, present, and future into a perfect wholeness. Thus, the value of sincere regret 悔 for past mistakes is that it opens the way for blamelessness 无咎 in the future if a person takes action to make the correction in the present. People who harbor secrets about past transgressions or carry plans for future transgressions are always subject to the need for extra caution to protect their secrets and plots from discovery. This disallows them from living fully in the present moment and enjoying life to its fullest.

1.03.05. Therefore, there are large and small sets, and there are descriptions of danger or ease. However, each description describes where things are going.

是故，卦有大小，辭有險易。辭也者，也各指其所之。

Where are things going? They are going back to the abstract notions to which they refer. Regardless of a situation's relative size, obviousness, or lack of obviousness, ultimately it refers back to its source in the absolute Knower, the Maker of Changes. What makes something dangerous or easy? Complexity generates difficulty and increases risks. Simplicity generates easiness and decreases risks. Which way is your life going? The **Book of Changes** only produces images and descriptions. What you do with them is up to you.

第四章

1.04.01. The Change Maker is the measure of heaven and earth. Therefore he can enfold in his fabric all paths of heaven and earth.

易與天地準，故能彌綸天地之道。

The Change Maker is the Unified Field fully enlivened. As Cosmic Man, with no sexual preference intended here, he is the author of all change, and therefore is the plane of Pure Awareness. The Change Maker (the Creative Will acting in the full Awareness of No Limit Being) is the precursor of the Grand Ultimate (Great Plane or Tai-ji). The Plane of Man can actualize the Great Plane in human life. The Change Maker's fundamental characteristic is equivalence. This means that he treats all creations as equally undefined from his transcendental viewpoint and subsumes them all as aspects of himself. This gives rise to all measurement and comparison. Thus, "man is the measure of all things". The equivalence relation integrates the

planes of heaven and earth. This also gives rise to the principle, “as above, so below”. What you experience (the earthly plane) is a perfect equivalent of what you believe (the heavenly plane). A Man is exactly what he believes (defines) himself to be. If he does not define himself, then he is undefined Awareness. Man is like a mirror that reflects between the two aspects of reality, heaven and earth (mental and physical). The possible paths for heaven and earth form the cosmic pathway called the DAW (道). All possible pathways weave together to form a cosmic fabric of space, time, matter, and consciousness.

1.04.02. [Man as the Change Maker] looks up to observe the patterns of heaven, and he looks down to study the patterns of earth.

仰以觀于天文，俯以察于地理，

On a superficial level this passage is about studying astronomy and geography. On a deeper level the patterns of heaven are imagined patterns of thoughts and feelings that structure consciousness. And the patterns of earth are the patterns of physical phenomena and human affairs that reflect those imagined patterns of consciousness as real life experiences. Up is the direction of greater subtlety and abstraction. Down is the direction of greater intensity of expression and concreteness.

1.04.03 Therefore, he understands the reasons for obscurity or clarity and how processes have their beginnings at a source and their endings in a return [to that source.]

是故知幽明之故。原始反終，

This section describes very succinctly the cyclical creation process as it occurs on the three planes of existence. All creations begin at a transcendental source. This source is the essence of the Plane of Man. Harry Palmer (RS, p. 39) describes it as the Aware Will. The creation process begins with the Will selecting a thought, idea, or some knowledge in the Plane of Heaven storehouse of all possibilities and defining it as a desire. The creation develops when the Will applies attention and possibly action (resistance) to the thought. This is an intensification of the desire combined with a paradoxical resistance to being the desire that shifts the desire from the Plane of Heaven into the Plane of Earth. The creation matures into a reality on the Plane of Earth when the action leads to achievement. It also tends to lead to a sense of separation between the Will and the creation. The action and achievement therefore represent the Plane of Earth when there are no other creations that inhibit the achievement of the desire. However, the purpose of the creation is not merely achievement of desire. The true purpose is fulfillment of the Will's desire. This requires returning the achievement to the Plane of Heaven and thence back to Source

in No Limit Being. This is the phase of experiencing and feeling the creation in all its details. Why buy a house and never live in it? Some people do this for reasons such as social status or investment. But this means they have not fulfilled the desire to live in the house. Perhaps they only fulfill the desire for status or investment profit. The return phase dissolves the creation from the Plane of Earth and shifts it back into the Plane of Heaven. When the dissolution phase is complete, the creation returns all the way to its source as purely Aware Will and loses all its definition. It again becomes a potential creation rather than an actual creation. This is the transcendental Plane of Man that always exists ready for response and action filled with infinite potential creations. The six positions of a hexagram represent these stages in the creation cycle. Position one at the bottom of the hexagram marks the beginning of the creation. This is the stage of potential in a seed form. At this point there is a tremendous range of possibility for its development, but it is obscure, because it is all transcendental and unrealized as an experience. There is just a seed selected and placed in the ground. Thus, stage one really begins with the first impulse toward the theme of the hexagram creation. Stage one represents the **Seeker** or the **Explorer**. The only difference between these two is attitude. The Seeker feels stress, as if something is missing in his life and he wants to find it. The Explorer is relaxed and sees the unknown as a fun field in which to play and discover. Stage two represents the **Thinker** or the **Meditator**. The Thinker may be creatively designing and planning or simply worrying. If he does not know how to manage thinking, he gets lost in details. The Meditator relaxes and knows that thoughts have a source that is filled with creative energy. He follows the thought back to its source and empowers it with as much creative energy as it needs to grow into the reality he intends. He knows that the Will is invincible (because he decides it to be that way, which is a pretty handy way to get things done), so he does not worry about details. He knows he can handle them. Stage three represents the **Pretender** or **Action Hero** in the field of action. A Pretender engages in action, but the action is not aligned with his true intention. An Action Hero performs actions according to his intention. Because not every person is an Action Hero right away, the Stage of Action may have ups and downs, successes and failures. A person must practice at this stage until he can handle the ups and downs. Stage four is Reality and represents the **Failure** and the **Achiever**. At this stage you reach whatever level of success the creation can achieve in this cycle. If you have prepared properly in the first three stages, you are stable and successful in stage four. However, there is more to the story, so do not stop at stage four. Position five represents the Stage of Fulfillment. This is the **Leader** who enjoys a sense of **Mastery** over his creation. This is the process of fully Experiencing the creation in all its dimensions and is the most powerful level of

feeling. Complete experience dissolves the creation just the way your delicious ice cream cone disappears. If complete fulfillment is missed, there is a sense of regret. This may lead to a resolution to repeat the creation cycle. Stage six completes the return phase. This is the realm of the **Wizard** and moves beyond the manifest phase of the creation back to source. A Wizard can operate the creation cycle without leaving source awareness. On the other hand, position six also can represent a **Demon** who pretends to be Source, but is actually just putting on a grand show of power and prestige to satisfy a monumental ego. The difference between **clarity** 明 and **obscurity** 幽 depends upon where the focus of attention is. The Will governs attention. Whatever the Will focuses attention on becomes clear. Whatever the Will decides not to focus the attention on becomes obscure. (Try focusing attention on various objects and notice what happens.) If you understand this statement, you realize that you can solve any problem by simply learning how to manage your attention. How you perform in the six stages of development depends on how well you learn to manage your attention. Any problem you have indicates an area of life you have not put enough attention on.

1.04.04. Therefore, he knows the explanation for life and death, and how semen and breath become [living] things, and how the wandering soul becomes transformed. Therefore, he knows the conditions of ghosts and spirits.

故知死生之說。精氣爲物，游魂爲變，是故知鬼神之情狀。

This describes the realm of the Wizard. By his mastery of the creation cycle, he understands the cycle of life 生 and death 死. He therefore enjoys immortality and lives from the level of transcendental source, whether he is in or out of a body. He understands the three levels in terms of the principles of biology. **Semen** 精 is the material essence or seed form of the Earthly Plane. It contains the DNA code that governs the evolution of biological life. **Breath** 氣 is the energy of the Heavenly Plane and governs the thought energy of consciousness. The two combine to form a **physical body** 物 or 身. No breath means no thought and quickly leads to no consciousness. Continued lack of breath in the absence of Samadhi (Aware Will) means death has occurred and the **Soul Wanders** forth 游魂 from the body toward new transformations. Soul 魂 is a core belief system that maintains a sense of individuality and purpose on the level of a Cosmic Mission. Spirit 神 ranges from the finest level of an individual self to the transcendental Aware Will. It is the ability of the Aware Will to extend itself into various creations. Ghosts 鬼 are souls of disowned and disembodied (i.e. rejected) belief systems that persist in various levels of dissatisfaction or suffering due to resistance against certain experiences. They may be aspects of what some Chinese call the earthly soul components (*po4* 魄).

There are seven *po* components that correspond to the seven physical chakra components identified by the Egyptians. The Egyptian names for these are the material body (khat 𓂏), electrical energy (ka 𓂏), chemical energy (sekhem 𓂏), heart energy (ab 𓂏), name energy (ren 𓂏), breath energy (ba 𓂏), and shadow or meditative energy (khaybet 𓂏). These energies generally disperse at death, although they may linger in various forms under certain conditions. The *hun* 魂 soul is immortal and corresponds to the Egyptian Light Body (Aakh 𓂏). The Chinese distinguished three levels of Light Body that correspond to three types of immortal. We do not know much about how ancient Egyptians classified Light Beings. The first level seems to simply be the Aakh, which was the eighth chakra. The second class was probably the Henememet (ascended masters), and may have also included the Akhemyu Sekyu, a group of Immortal Light Beings often compared to the circumpolar stars that never set below the horizon. Presumably the highest were the great elder gods, such as Ra`, Hathor, Thoth, and Ma`at. The **Wandering Soul** *Yu Hun* 游魂 represents the identity of a viewpoint located in the Heavenly [Astral] Plane during the gap between Earthly Plane embodiments. Wandering Soul is also a technical term in the science of the Changes for an arrangement of the hexagrams attributed to Jing Fang2 (京房) of the Han Dynasty. Jing arranged the hexagrams into Eight Houses, one for each of the eight trigrams. The Head of each House is the namesake trigram doubled. The first through fifth successive “generations” of a House represent lines 1 through 5 sequentially changing. The “sixth generation” is called the **Wandering Soul** 游魂. Line six can not change without turning the hexagram into its complement, which is already the Head of another House. Thus, Jing hit upon the idea of changing the fourth line back to its original value. The last member of the House is called the **Returning Soul** 歸魂. This hexagram is formed by changing the inner trigram back to the original form of the Head of the House. This results in a hexagram that looks just like the Head of the House except that line five has changed. The Head of the House, plus the five consecutive changing lines, form a set of six. Adding on the Wandering and Returning Souls makes a set of eight hexagrams for each House. Each hexagram is distinct, so the Eight Houses with all their generations, wanderings, and returnings, cover all 64 possible hexagrams. Below is the House of the Creative Will as an example of this Eight House Wandering Soul system and on the next page is a chart of the whole set.



THE EIGHT HOUSES

								Returning Soul
								Wandering Soul
								5th Generation
								4th Generation
								3rd Generation
								2nd Generation
								1st Generation
								Pure Hexagrams
乾 震 坎 艮 坤 巽 離 兌								

1.04.05. He resembles heaven and earth. Thus, he does not stand off from them. His knowledge encompasses all things, and his pathway rescues all in the world. Thus, he does not go beyond: he shifts, but does not flow away. He enjoys heaven and knows destiny. Thus, he does not worry. He rests on the land and has a robust benevolence. Thus, he is able to love.

與天地相似，故不違。知周乎萬物，而道濟天下，故不過。旁行而不流，樂天知命，故不憂。安土敦乎仁，故能愛。

This section continues a description of the Wizard. As the Plane of Man, he is a living model of the Plane of Heaven and the Plane of Earth. All the planes of creation are handy in his own person, so he does not have to look far away for them. Instead he meditates and cognizes whatever knowledge he needs. The **Book of Changes** is properly called the **Zhou Yi**. Many believe this name comes from the Zhou dynasty. The text tells us here that the word “zhou” 周 means to encompass all possibilities in the universe. The “Change Maker” is “Comprehensive”, “All-encompassing”. The practical aspect of the **Zhou Yi** is that it contains the solution to any problem. Therefore, a Wizard who masters it can rescue the people of the world from their problems, if they want to be rescued.

“Not going beyond” means that all his creations and experiences fall within the range of creation. By the definition of a creation this must be so. He therefore changes within creations by **shifting sideways** and does not flow away to nothingness. “Pang2 xing2” 旁行 is a technical term that means to bypass. Sometimes it is written “pang2 tong” 旁通, a **sideways circuit**. In modern highway engineering a bypass on an interstate highway is a section of the highway that goes in a circuit around a city so that travelers can bypass the city and not be held up by heavy city traffic. The idea is to shift sideways (in a 90 degree dimensional shift) rather than moving straight ahead into a difficult area. The sideways shifting keeps the mind active in the relative world, cycling around the Taiji. Special meditative techniques are usually necessary to shift attention from the changes to the Taiji and beyond into the transcendental world of No-Limit Being Wuji.

The sideways circuit includes an often unnoticed intermediate phase. In section 1.02.06 I briefly discussed the sequence of hexagrams in the standard text and mentioned that the hexagrams are organized into pairs. The pairing is primarily by **inversion** 錯, secondarily by **complementary opposition** 綜 when a hexagram is symmetrical, or by both at once 錯綜 in a few special cases. Nevertheless, every hexagram has a complementary opposite somewhere in the set of 64. The complementary opposite of a hexagram forms the intermediate “bypass” phase of a line shift when the hexagram changes. This is an extremely profound technology when applied by a Wizard to practical life. To try to explain it sounds like magic to most people, so they have to settle down and experience it with some expert coaching.

Another way that a hexagram can change is through a **correspondence** between positions of the inner and outer trigrams. The lines at positions 2 and 5 tend to correspond, the lines at positions 1 and 4 tend to correspond, and the lines at positions

3 and 6 tend to correspond. The strongest correspondence tendency is between positions 5 and 2. This is the relationship between master and disciple, teacher and student, leader and follower. These two roles mutually support each other. However, if the two lines are of the same type, then no change occurs between them when they interact.

Qing Dynasty scholar Jiao Xun² 焦循 (1763-1820) studied this situation, gave examples of this process, and generalized the way lines shift. For example, if the Creative (1) ䷀ does a correspondence shift from position 2 to position 5, nothing happens. But if it does a **bypass circuit** 旁通 via its complementary opposite pair Receptive (2) ䷁, then its yang line at position 2 can go to position 5 of Receptive (2), and Receptive's yin line at position 5 can go to Creative's line 2. The result is Companionship (13) ䷌. Thus, a hexagram uses its complementary opposite as a "bypass" to shift a corresponding line. When ䷀ does a correspondence shift from 2 through 5 with a bypass through ䷁ the result is ䷌. Also, there is a reactive correspondence shift from 5 through 2 in ䷁ with a bypass through ䷀ resulting in Adherence ䷌. There is a special relation between Adherence and Companionship. Companions tend to Adhere together.



Jiao gives another example from the text of line 5 of Companionship 同人 (13) ䷌. The text there says: "Great Masters can meet" (or "Great Armies can meet" 大師克相遇). Jiao notes that the mention of hexagram Armies/Masters 師 (7) ䷆ in the text for line 5 in Companionship is an indication of the bypass circuit relationship between that hexagram and Companionship. Companionship and The Army are complementary opposites: ䷌ ䷆. Basically the bypass hexagram for a given hexagram is its complementary hexagram. Thus, when a line in a given hexagram changes, it bypasses through its complementary hexagram on the way to its new condition. Thus, in the above example from Companionship ䷌, its line 5 bypasses by cycling via line 5 of the complementary hexagram The Army/Master ䷆ to generate Brightness (30) ䷔.



When great Masters meet in Companionship, they meet eye to eye (LI and LI) and great Brightness ensues. When great Armies meet there is a clash of weapons (LI and LI). Jiao points out that this explains why the commentator mentions a meeting of Masters or Armies in line 5 of Companionship. Line five is the line for the

Master. The theme of the hexagram is Companionship, and the theme of the complementary hexagram is also the Master. Participating in The Army generates one of the deepest bonds of Companionship because soldiers trust and protect each other with their lives on the line. This goes far beyond most ordinary Companionship. Even opposing Armies share a deep bond of Companionship, because they meet each other on the fundamental level of life and death. The principle of complementary creations is very profound and tells us that each creation is deeply bonded with its complementary opposite. Change is always motivated by a condition being attracted to unify with its complementary opposite, even if the attraction only draws one or two bits (binary digits) to change in the overall number, image, or principle. This technology is intimately involved with the mechanics of the creation and experience cycle described earlier in my commentary (01.04.03).

The hexagrams slide “sideways” like crabs, shifting from one to another, and do not go beyond their boundaries. This ability to do a dimensional shift while still present in the world is the secret of the magical power of the Wizard. For hexagrams this means all the possible combinations of yin and yang lines change only within the six positions of the hexagram. The farthest the Creative can go is to change all its lines and become the Receptive, which is its own complementary opposite partner.

The Wizard has fun. He understands his own mind and the minds of others (the various possibilities in the Plane of Heaven), and he knows his destiny and the destiny of others (the evolution of the Plane of Earth). He has nothing to worry about, since he knows the mechanics of creation and can handle any issue responsibly. He is well grounded on the Plane of Earth and has compassion for everyone. Thus, he can express love in his own life and in the lives of others. This little paragraph in the Appendices is some of the finest writing in the Chinese language. It is simple and eloquent. If you want to know why a person is unable to express love, simply reverse the sense of the next to the last sentence. The sentence becomes, “He finds no rest on the land and lacks benevolence.” If you want to be able to love, make peace with your physical existence and treat others as you want them to treat you.

1.04.06 His scope encloses the transformations of heaven and earth with no exceptions, and, in an indirect fashion, he completes all things with none left out. He penetrates into the pathways of day and night and he knows. Thus, Spirit is boundless and the Change Maker is undefined.

範圍天地之化而不過，曲成萬物而不遺，通乎晝夜之道而知，故神无方而易无體。
The changes of the Change Maker are quantum in nature, and the range of heaven and

earth is finite. Therefore, the scope of the transformations is complete, and how many transformations we see depends on the level of resolution with which we observe. The Planck scale is the finest level of resolution possible within the physical world, as far as we know. However, at that scale, the density of information is so complete that it becomes a Unified Field and enfolds the entire universe. Nothing is left out of the scope of the Change Maker. He also penetrates all possible pathways of time as well as space. The word “indirectly” refers to the way that space/time folds in on itself by means of particles that reflect back and forth in time. This is how the illusion of multiplicity gets generated. It is also why the hexagrams (or whatever resolution of archetypes we use) form into complementary opposite pairs. In physics this is the principle of matter and antimatter. It also shows up as positive and negative magnetic poles and many other such phenomena of complementary pairings. However, the level of Transcendental Spirit, The Change Maker Source of all changes, remains beyond all definition and all attempts to give it boundaries or limitations. We give it labels to talk about it, but these are not really correct definitions. You can not define or describe something that is undefined. You can not imagine a structure that has no boundaries. It is bigger than the biggest and smaller than the smallest. It underlies and interpenetrates everything. We can also call it the Aware Will, because that is how it seems to function in our lives. Every creation can be found in it. It is omnipresent and eternal, and it does whatever it chooses with no limitations other than whatever limitations that it chooses. One simple path to No Limit Transcendental Spirit is to identify the change you occupy and merge with its complementary opposite. Thus, each line cancels out and the hexagram loses all definition.

第五章

1.05.01. One yin and one yang – this is called the Path. Its continuity is improvement, and its perfection is [its own] nature.

一陰一陽之謂道，繼之者善也，成之者性也。

The procedure by which the Change Maker generates changes is very simple. It consists of binary contrasts (yin and yang) that alternate back and forth to generate the appearance of motion along a pathway. The alternating contrasts can be at any possible scale in space or at any frequency in time or any other dimension. Evolution is the grand scale process of improvement. This means that the changes continue to change, but there is a gradual improvement in the structure of the changes. In a shorter time frame we call this growth, and in a longer time frame we call it evolution. The purpose of evolution is to create something better. This is skill in action. Thus, we might call evolution the development of skills. And here is where

the funny irony comes in. What is the standard for how “good” some object or some skill is? We compare it downward to an earlier version that has flaws. What is the basis for saying that something has flaws? We compare it upward to an ideal standard. Ultimately, it is all relative to a particular viewpoint. The Change Maker has no judgment about what is good or bad. From its viewpoint, all changes are his creations and therefore must be good. We discover then that the standard for perfection is the Change Maker himself. His nature is perfection, and his game is to create creations that as closely as possible reflect his own perfection. This is ironic, because from his viewpoint all creations must be perfect. If that is so, then what is the motivation to continue? The Change Maker uses his yang energy to generate some interesting challenges. One of the creations of the Change Maker is ignorance (KAN). From this comes the vast unknown waiting for exploration. Imagine the perfection of ignorance. Another creation is inertia (GEN). Imagine perfect inertia. From this comes stubborn matter such as protons that persists over countless eons for billions of earth years, refusing to change or evolve even though they somehow are still able to form into complex atoms and molecules. Yet another remarkable creation is the shock of sudden transitions (ZHEN). This brings unexpected surprises and breaks apart any fixed ideas that this is how it is or should be. Just these three creations, all of them immature “male” creations compared to the Creative Will, can stir up enough situations to keep the game of evolution going for a long time. The “female” yin energy transforms shock into growth (XUN), ignorance into knowledge (LI), and inertia into bliss (DUI). But every time the women get things nicely organized, the male energy insists on pushing the limits further and brings up new issues. Thus we face paradoxes regarding how to understand ignorance, to enjoy inertia, and to grow by breaking out of ignorance and inertia. Evolution is a belief that exists not only on the level of the Change Maker, but on the level of an individual or a species viewpoint. Ironically, despite evolving, the Change Maker himself never changes. Always he is the Change Maker. By the way, another possible translation of the last phrase is that what perfects it is sex. This is the natural interaction between the yang and yin, male and female that produces evolutionary growth.

1.05.02 When a benevolent person sees it, he calls it benevolence. When a wise person sees it, he calls it wisdom. The people use it every day, but do not understand it. Thus the Way of the Wizard is rare indeed.

仁者見之謂之仁，知者見之謂之知，百姓日用而不知，故君子之道鮮矣！

This section tells us something of the nature of the Aware Will Change Maker. He is totally flexible, and willing to accept any point of view. This is the source of

relativism. When you choose a viewpoint, it defines who you are. When you look at the world, what you see is a reflection of yourself. Compassionate people see a compassionate world. Wise people look at the world with a vision of wisdom. The former emphasizes the value of the heart. The latter emphasizes the value of the intellect. Ordinary people see the world as very ordinary. They believe they are not very bright, so they find many things in the world that they do not understand. Yet they love every day to play the game of going around indoctrinating others with their ignorant beliefs. Thus, they are fully indoctrinated with loads of ignorant beliefs and use them every day in the belief that they are right. Wizards see the world as a Wizard's magical playground. However, most people are much too serious about their beliefs to consider the Wizard's viewpoint, because he does not take beliefs very seriously. For the Wizard a viewpoint is a temporary belief that he creates for the purpose of experiencing reality from a certain perspective, and not something to get stuck in until it becomes "that is the way it is". Thus, Wizards tend to be rare and eccentric characters in a culture. Most people are busy living practical ordinary lives and trying to be as practical and ordinary as possible in spite of their innate infinite potential. They usually try to pretend to get some education, work hard, make some money, raise a family, and have a bit of fun here and there. These are their choices and as such are fine. Leaders are busy being wise or compassionate. The Wise ones have a deep understanding of how things work. The Compassionate ones care about the suffering of living beings and want to relieve that suffering by doing good deeds. These are worthy viewpoints. Of course there is a broad range within each viewpoint with various combinations, including other possibilities. The Wizard is fully aware of all these viewpoints and enjoys exploring them, but takes his primary viewpoint from the undefined Change Maker. Thus, his viewpoint is transcendental and has no fixed viewpoint, but can operate effortlessly within any given viewpoint.

1.05.03. He manifests various benevolent expressions, and hides the various practical applications. He encourages all creations, but does not get into the same worries that the Sages have. His Manifold Power and Great Work are indeed Perfections!

顯諸仁，藏諸用，鼓萬物而不與聖人同憂，盛德大業至矣哉！

This section explains the character of a Wizard. He is like a benevolent person, because he has great compassion, and he expresses benevolence in whatever he does. However, he is weird, because he generally hides his benevolent activities. He performs acts of charity, but takes no credit for this application of his benevolence. He helps people behind their backs. He encourages everyone, but does not fret about the moral condition of the country and other such things that Sages worry about.

This describes how he hides his wisdom just like he hides his benevolence. He prefers to work behind the scenes. He has no worries, because he understands how everything works out in the long run. The “Manifold Power” derives from his ability to act deliberately from Source as the Change Maker. The Great Work is the evolution of an Enlightened Planetary Civilization. At the level from which he works, these are Perfections, so there is no room for doubts or worries.

1.05.04 “Affluence” describes [his] Great Work. “Daily renewal” describes [his] Manifold Power. “Continual creation” describes [his role as] Change Maker. “Forming images” describes [his] Creative Will. “Effective rules” describes [his] Receptive Awareness.

富有之謂大業，日新之謂盛德。生生之謂易，成象之謂乾，效法之謂坤，

This section elaborates further on the description of how the Wizard functions. Traditionally Wizards, wherever they live and however they operate, carry on a vast project called the **Great Work** 大業. The purpose of this is to generate affluence. In many cultures, including China, Wizards possess a technology known as alchemy that enables them to transmute “base” materials into “gold”. This is a metaphor for transmuting the ordinary into the sublime, the worthless into the precious, ignorance into enlightenment, sorrow into bliss, and so on. Personal affluence in terms of money is of no interest to the Wizard. He has total certainty in his own existence and well-being. He thinks in terms of the affluence of the world. Of course, from the Change Maker viewpoint, this already is how it is, so there is really no magic in his magic. It is all a matter of viewpoint. The magic of a Wizard is simply skill in shifting viewpoints. “Magic” is how his operations look to a person who is stuck in a particular fixed viewpoint. The interesting challenge of the Great Work is to find ways to convince others of the reality of this flexible Reality and how easy it is to shift viewpoint into that Reality once you really believe it is easy. The Wizard’s Manifold Power comes from his daily renewal 日新, a routine by which he identifies with the Change Maker and its ability to recycle itself back to Creative Source from any creation. This includes a special form of meditation and certain other yogic techniques. The expression 日新 keys to a great secret mantra that is found in cultures around the world. The Great Learning also refers to this technology in its comment about the inscription on Shang Tang’s (商湯) bath tub. “If you renew daily, renew every day, and then renew another day.” (苟日新，日日新，又日新。) I have traced this technology back to the Vedas and to pre-dynastic times in ancient Egypt, but it certainly goes back much further to the early origins of mankind in Africa, and probably exists on countless planets scattered throughout the universe. This principle of continual creative renewal 生生 is the hallmark of the Change Maker 易.

The Wizard is a living avatar of the transcendental Change Maker. The Creative Will defines pure undefined awareness into the configurations of various images. This is the path of manifesting creations from Pure Awareness into the Plane of Heaven. The Receptive Awareness accepts these definitions as prototypes rules, procedures, and methods. Then it allows situations to imitate the prototypes in an iterative fashion, until they generate solid states and multiplicity. This is the path of manifesting creations on the Plane of Earth. The Wizard also masters this path. However, his Great Work expresses his Higher Purpose that reflects his role as an avatar of the Change Maker Higher Cosmic Self, and his Manifold Power derives from the ability to constantly renew himself by washing away the creations of the day and returning to the pure awareness of the Change Maker. This is his Great Meditation, known in ancient Egypt as the Ocean Awareness Meditation or the Solar Higher Self Meditation.

1.05.05. “Counting numbers to [their] limits [in a plane] to know what comes” describes [his] divination. “Passing completely through the cycle of transformations” describes [his] service. “Unfathomable yin and yang” describes [his] Spirit.

極數知來之謂占，通變之謂事，陰陽不測之謂神。

This section continues with three other aspects of a Wizard's Great Work. **Divination** is the science of understanding how a system behaves to the point at which it is possible to predict with strong certainty how it will continue to behave in the future. It is not just tossing coins, shuffling cards, or drawing straws to guess about the future. The first step of divination is to observe the system in question and gather awareness of the details of its behavior and the range within which that behavior occurs. Once the range is understood, the Wizard can assign numerical values to the various states of the system and track its behavior. Scientists can describe such behavior with great precision using mathematical tools. Given a proper understanding of the initial conditions and a formula for the behavior pattern, a Wizard can accurately predict conditions at certain points in the system's evolution. The Wizard's predictions will only be as good as the accuracy of his data and calculations. If he neglects certain factors, his predictions may be off the mark. Divination is important for a Wizard, because it allows him to set priorities with regard to actions that he may take so as to ensure maximum effectiveness in his Great Work. The Wizard's "service" is more than just doing business. Service means a complete consideration of the cycle of a given system. This consideration is lacking in the economies of our day. Companies produce products, but have no thought for the recycling of the trash that these products eventually become. This leads to

pollution problems. The world is filling up with leftover creations that nobody wants to take responsibility for. Someone makes it, sells it to you, takes your money, and thinks that is the end of the story. That is ignorance of the Changes. A Wizard considers the entire life cycle of a system and takes into account every phase from obtaining resources, to manufacture, to packaging, delivery, marketing, and recycling. For example, any culture based on “throwaway” consumer mentality, or “slash and burn” agriculture had better limit its production of material goods to using only unrefined natural resources that biodegrade. They should also maintain a small, thinly distributed population. This is how many aboriginal tribes subsisted for thousands of years with no special difficulties. If a culture wishes to have large urban centers with a complex material culture consisting of sophisticated vehicles, powerful tools, and multitudes of consumables and material possessions, then it has to address environmental issues with careful attention so as not to overstress the living space. The Spirit of the Wizard is undefined, and therefore can not be described using any information encoded in binary format or any other format. This is Transcendental Spirit. We can only say that it is boundless and undefined. If the Wizard hides, no one but another Wizard can find him in the relative universe. On the other hand, all Wizards know how to contact each other any time they wish. They simply refer back to their own self nature as Creative Source. All Wizards meet at the “Transcendental Change Maker Clubhouse” otherwise known as Creative Source. They do not need any equipment to do that. They have instantaneous access from any time, place, or dimension in the universe.

第六章

1.06.01. The Change Maker is wide and expanded. If we speak in terms of distance, then he is unbridled. If we speak in terms of proximity, then he is quiet and orderly. If we speak in terms of the range between heaven and earth, then he is complete.

夫易，廣矣大矣！以言乎遠，則不禦；以言乎邇，則靜而正；以言乎天地之間，則備矣！

Section 1.06.01 begins with a discussion of the way the Change Maker operates in the physical world. When discussing him, we must define the range at which we are observing. The style of behavior at one scale may be different from the style of behavior at another scale. We see this in nature. The behavior of galaxies and giant black holes is quite different from mechanical objects on earth. The behavior of machines is different from chemical behavior. And chemical behavior is different from atomic processes. When the text speaks of “distance” it means far from the scale we are used to. Processes at the ordinary human scale are generally quiet and

orderly. Processes in the core of the sun are extremely violent relative to human scale. Processes at the subatomic scale are also very dynamic and occur at speeds that we can barely imagine. If we open up the range to cover the entire Plane of Heaven and the entire Plane of Earth, then we include all possible processes and phenomena in the universe.

1.06.02. As for the Creative Will, when it is quiescent, it is coiled, and when it is active, it is straight. Thereby, what is expanded is born there. As for the Receptive, when it is quiescent, it is closed, and when it is active, it is open. Thereby, what is wide is born there.

夫乾，其靜也專，其動也直，是以大生焉。

夫坤，其靜也翕，其動也闢，是以廣生焉。

This passage describes the Creative Will and Receptive Awareness in sexual terms. The quiescent male penis is soft and coiled, but when it activates, it grows erect and straight. The female vagina is closed when it is quiescent, but when it activates, it opens up to receive the penis. The writer plays on the terms “expanded” and “wide”, associating expansion with the way the penis expands when it becomes active, and associating wideness with the way the vagina opens wide to receive the penis. This sheds light on the Receptivity of the Earth Plane, comparing it to the way a female receives the seed from her partner. The creation of the whole universe follows this same model.

1.06.03. The wideness and expansion match heaven and earth. The transformations and cycles match the four seasons. The significance of yin and yang matches the sun and moon. The skill of easiness and simplicity matches the perfect power.

廣大配天地，變通配四時，陰陽之義配日月，易簡之善配至德。

This section takes the model of human sexuality to the cosmic level and compares copulation to how the Plane of Heaven and the Plane of Earth interact. The transformations and cycles of the changes on a large scale in the environment give us the seasons of the year.. **Yin** and **yang** are abstract terms. However, the sun and moon provide handy models in nature. It is a strange coincidence that the sun and the moon appear in our sky from our perspective to be almost exactly the same size and shape although they are at vastly different locations in space and have very different sizes. We now know from observing other planets and their moons that this is extremely unlikely from a random statistical point of view. Some believe that this coincidence of the sun and moon having the same size in our sky is not an accident, but was deliberately designed that way in the far distant past. The word I translate as

“skill” appears earlier in the beginning of section 1.05 as “improvement”. Emphasis on different skills causes the physical body to adapt to the performance of those skills. In the past on our planet evolution of new and improved skills required thousands or even millions of years over countless generations. The planet functioned almost entirely on the Plane of Earth, and the Plane of Heaven was extremely attenuated. Now that we have developed a greater balance by restoring the Plane of Heaven, we can evolve much more quickly. Understanding of physics and biology now allows us to begin the deliberate engineering of new skills that we may desire to acquire and the life forms that are best suited for exercising such skills. We find that the basis of computer technology and DNA technology, just to give two key examples, is the mathematical information structure described in the **Book of Changes**. We thus attain great power in the manipulation of changes once we understand this binary information system, because we are tapping into the simplicity by which the whole system functions on all levels of creation. There is a hint in the last sentence that the word for “Yi4” 易 comes from the characters for the sun 日 and the moon 月 combined. Another hypothesis is that the character originally is the drawing of a chameleon (“yi4” 蜥) and derives from the ability of the chameleon to shift its colors.



Oracle Bone 易 Bronze Vessel 易

Above are two examples of the ancient writing of the character 易. The first is an early oracle bone inscription, and the second is from a Middle Zhou Dynasty (Spring and Autumn period) bronze vessel. The oracle bone character may suggest an animal with a long body or tail and three legs, which may be shorthand for four legs. However, it is very abstract. The bronze vessel version is a bit more concrete. Four legs and a head with an eye are discernible.

The problem with the sun-and-moon theory is that the part of the character that supposedly represents the moon 月 (the “legs” of 易) is not at all a good representation of the ancient oracle bone form of the moon character, and only vaguely resembles the modern form of the character. The glyph for “Yi4” does resemble fairly well the ancient glyph for a lizard and is still used in the character combination “xi-yi4” (蜥蜴 or 蜥蜴) to represent such lizards and chameleons. Regardless of the linguistic origins of the word, the commentator clearly makes a play on the effortless ease with which the sun and moon move about in their orbits and the way in which the words for sun and moon can be envisaged in the character for the

Change Maker --易.

第七章

1.07.01 The Master said, “How perfect is the Change Maker! The Change Maker is that by which the sages exalt their Powers and broaden their Works. Knowledge is exalted, and ritual is lowly. The exaltation follows the efficiency of the Heavenly [Plane]. Lowliness follows the method of the Earthly [Plane].

子曰：「易其至矣乎！」夫易，聖人所以崇德而廣業也。知崇禮卑，崇效天，卑法地，

Tradition holds that the “Master” is Confucius. There is Confucian influence in the text, but there is no definite proof that he made these statements. If he did say these utterances, they were recorded by his students. We also do not know for sure whether the whole section is a quotation or only a portion of it. In ancient Chinese there is an open quote mark, but there is no close quote mark. We have only bits and pieces of sayings attributed to Confucius, because he apparently did not write any books. This section in the Appendices is significant from a Confucian point of view, because it makes clear the principle that **ritual** 禮 is part of the Earthly Plane. What motivates ritual is **knowledge** or **wisdom** 知 from the Heavenly Plane. The ritual depends on the wisdom behind it. Without the wisdom, the ritual is an empty show. We may classify the writing of books as a form of ritual. The Master mentions the Manifold Power and the Great Work of the Wizard that were described in the previous paragraphs. He allows that Sages as well as Wizards may have such things.

1.07.02. Heaven and Earth establish [relative] positions, and the Change Maker operates in their midst. The perfect nature exists forever and is the Gate of the Significance of the Way.

，天地設位，而易行乎其中矣。成性存存，道義之門。

The Heavenly and Earthly planes define the range of the system. The Change Maker performs all operations within that range. This introduces the concept of **centrality** 中 that is very important in the **Zhou-Yi**. One way the masters of the changes represented centrality was by arranging the trigrams or hexagrams in circular layouts. The center of the arrangement transcends all the changes, but also organizes them into a coherent system in the same way that the hub organizes a wheel. The expression **perfect nature** refers back to section 1.05.01 above. Everything that occurs through the operation of the Change Maker is perfect, because it is an expression of the perfect nature of the Change Maker. Mistakes or flaws are illusions that result from assuming viewpoints that obscure the perfect nature. The last sentence of this section is a paraphrase of the statement in the first chapter of Lao-zi (道德經):

“Subtler than the subtlest is the Gate of the Manifold Wonderments.” (玄之又玄，眾妙之門。) This phrase by Lao-zi refers to the Tai-ji as the gateway between the transcendental Change Maker and the diverse marvels of the cosmos. .

第八章

1.08.01. The Sages have a way of observing the superficial phenomena of the world and then organizing them with their [appropriate] descriptive images. They imagine what is appropriate [as a graphic representation] for a thing, and thus it is called an image. The Sages have a way of observing the motions of the world and then contemplating their meeting points and cycles to perform their ceremonies. They append comments to them to decide their [influence for] well-being or misfortune. Thus they are called transition bits.

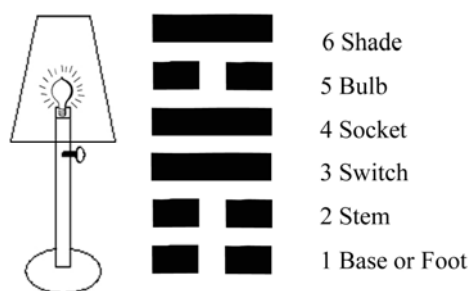
聖人有以見天下之賾，而擬諸其形容，象其物宜；是故謂之象。

聖人有以見天下之動，而觀其會通，以行其典禮。

繫辭焉，以斷其吉凶；是故謂之爻。

This section gives more details about the motivations behind the various layers of text. The text on the **images** of the hexagram arises from observation of phenomena in the world. The author of this layer of text analyzes situations in terms of general images taken from nature. The image is a simple graphic representation of the phenomenon it symbolizes. The Sage abstracts the graphic image from studying natural objects. For example, the Sages noticed that mountains and large bulky inert objects form a general class of phenomena, so they chose the trigram GEN to represent that quality because the shape of the trigram’s symbolic notation roughly suggests a large bulky object. The layer of text that comments on the changing lines derives from observation of the way things change. The Sages noticed that systems have critical **transition points** where transformation initiates. For example, the two points on a lamp that are most likely to fail may be the switch and the bulb. These are the “meeting points” where the most stress gathers on the system. Thus, such nodes also become transition points. The switch turns the light on and off. Thus, although the whole system is necessary for the cycle to complete, and each point can transition, the critical point in the cycle is the switch because it is a moving part as well as a critical component. The secondary critical point is the bulb because it depends on a very fine filament and the electric current heats the filament every time it is turned on. The current and its attending heat stress the thin filament more than the rest of the wire circuit. Other components of the system such as the shade, the stand, the cord, and so on are less critical. When a Sage designs a lamp, he makes the switch and the filament as robust as possible. Also, without an energy source to light the bulb, the lamp is useless as a lamp, although it might be useful for some other purpose. For

example, it might be a handy place to hang your hat. Every component of a system is subject to transformations that will have greater or lesser impact on the overall system. For example, if the lamp shade cracks or changes color, this affects its performance but is probably not critical to the usability of the lamp. If you move the lamp away from its intended location such as a writing desk, then its efficiency may diminish, although it will still function. If the cord is damaged or frayed, you may still use the lamp, but you must use caution, because it may lead to danger of fire. In this analogy the foot of the lamp with its attached cord is line one, the lamp stand is line two, the switch is line three, the socket is line four, the bulb is line five, and the shade is line six. The hexagram most descriptive would be #56 The Inn. GEN is the tall lamp stem with its base and LI is the light mounted on top. The large KAN that runs from position two to position five is the electrical cord through which the electricity flows.



The comments on the major transition points of such a system elucidate each detail in terms of the performance of the overall system. The **Book of Changes** represents each major transition point with a symbolic binary digit (**bit**). The system only covers the six major transition points of any system, so it is not a very high resolution image for a complex system, but it still captures the key points by working from prioritization. Thus, for example, a tool may have 200 components, but the text will target for you the six most important ones. The problem is that you as an observer must figure out which of the 200 are the six most critical. Once you can do that, the system of the text will help you prioritize those six most important points and how they inter-relate. The Sages also set up holidays and ceremonies to mark key transition points in the course of temporal processes. For example, (1) birth, (2) graduation, (3) wedding, (4) career, (5) leadership and recognition, (6) retirement and death mark important transition points in a person's life. (1) Plowing, (2) sowing, (3) tending, (4) harvesting, (5) packaging or processing, (6) and storing or consumption are important transition points in the agricultural process.

1.08.02. They speak of the most superficial things in the world, but must not become biased against them. They speak of the most dynamic things in the world, but must not become confused about them. They organize the topics before they speak. They discuss them before they move. They organize and discuss to achieve [mastery over] their transformations.

言天下之至赜，而不可惡也。言天下之至動，而不可亂也。擬之而後言，議之而後動，擬議以成其變化。

This passage points out a key principle of the **Book of Changes**. There is no discrimination or negative bias toward any creation as being too gross or inappropriate for consideration. That would violate the principle of universality and place limitations on the Change Maker. Also, there is no chaos, not even in chaos. This is a remarkable statement that is borne out in modern physics research. Careful observation of what appears to be chaos reveals that it contains orderly binary cascades that are structured according to the binary principles of the **Book of Changes**. Careful observation of orderly systems shows that they also contain intermittent binary cascades of disorderly gaps. This apparent disorder is actually a fractal cascade that forms the transition from one condition of order to another condition of order. Order and chaos are perfect complementary opposites, so there really is no such thing as disorder. There is only a range between complexity and simplicity. In ancient Greece Zeno showed logically that motion is an illusion. A different interpretation of motion is that Awareness never moves, but within Awareness the Will can establish any number of viewpoints. It can also decide to focus attention on a certain viewpoint or set of viewpoints. What appears to be physical motion and interaction is the result of decisions made by the Will to shift viewpoints. The core belief decided on by Cosmic Will is that everything changes in a continual flow that is equivalent to a constant shifting of viewpoints. Without that core belief about reality nothing would happen. Within the continual flow the Will appreciates itself from different viewpoints, but never actually leaves the field of Awareness. Motion is the experience caused by the Will shifting viewpoints within the flow of Awareness. Without a shift of viewpoints, even the fundamental flow of Awareness within itself would be imperceptible. The viewpoints are imagined beliefs in the Plane of Heaven. They are mental creations defined by the Creative Will. In the Plane of Earth these creations seem like different locations in space, time, and other dimensions. The Creative Will projects them within Receptive Awareness as if they were separate from a special belief called an individual identity. This identity represents the viewpoint assumed by Creative Will for experiencing the creations that have been defined and projected at any particular moment. In the Transcendental Plane of Man, the Change Maker, all these creations have no reality

other than a resemblance to images projected onto and into the Screen of Awareness. The Screen of Awareness never changes or goes anywhere. It simply exists. To get a feeling for this, closely watch an action movie on TV and notice that, in spite of all the apparent action that the TV displays on its screen with moving and shifting images, your TV set, including its screen, sits quietly on its table for the entire duration of the film. Extrapolate this analogy to the scale of your Reality. The Sages study the images and transformations that flicker about on the Screen of Awareness as a guide to their own plans and actions. They study, speak out, and then discuss. Once they reach an informed decision, they engage in action to fulfill a plan. Each person is the author, director, and main character in the screenplay of his or her life. You can carry this Great Work out with supreme gusto and creativity, or pretend that you are just a bit player hired as a walk-on extra. Pretend that someone else handles the screenwriting and directing. This is delegation of responsibility, with all the responsibility that it entails.

1.08.03. “A crane calls out in the shadows, and her children echo her [call]. I have a good flagon of wine that I will share with you.” The Master said, “When a Wizard stays in his house and speaks good words, then people a thousand miles away will respond to him. How much more so those who are close by! If he speaks bad words while staying in his house, then people a thousand miles away will turn away from him. How much more so those who are close by? Words come from one’s own person and indoctrinate the people. Behavior starts close by, but is seen at a distance. Speech and behavior are the Wizard’s triggers. Once he pulls the triggers, they determine glory or ignominy. Speech and behavior are the means by which the Wizard moves heaven and earth. Must not one be careful?”

「鳴鶴在陰，其子和之，我有好爵，吾與爾靡之。」子曰：「君子居其室，出其言善，則千里之外應之，況其邇者乎？居其室，出其言不善，則千里之外違之，況其邇者乎？言出乎身，加乎民；行發乎邇，見乎遠；言行，君子之樞機，樞機之發，榮辱之主也。言行，君子之所以動天地也，可不慎乎？」

The remainder of this section consists of examples that supposedly represent comments by Confucius on certain lines of certain hexagrams. The opinions are in line with the Confucian school of thought. The first example comes from the comments on line two of Inner Confidence [61]. The subject of that line is the principle of communication between friends and relatives. Communication works best if there is a true bond of intimacy between people. The comment by Confucius takes the idea off in a very different direction and discusses the influential power of speech. The thrust is that speech and actions are much more powerful than most

people realize. Masters of speech and action can shape the world and determine their own fate. The tone is cautionary, and the writing is elegant. For more on the “trigger” see 1.10.05 and 2.05.10.

1.08.04. “Companions first weep and wail, but later laugh.” The Master said, “The way of the Wizard, sometimes is to go out, and sometimes is to stay put, sometimes to be silent, and sometimes to speak. When two people are of the same mind, their sharpness can cut metal. Same-minded speech has the fragrance of orchids.”

「同人，先號咷而後笑。」子曰：「君子之道，或出或處，或默或語，二人同心，其利斷金；同心之言，其臭如蘭。」

This example comes from the comments on line five of Companionship (13). Again the topic here is communication between people who have a good bond of Companionship. In this case there is an initial problem or misunderstanding, but they soon work things out. People of different minds may talk all day, but will not come to an agreement much less lighten up and have a good laugh. The Master's comments are nicely put. The first part suggests that a Wizard is skilled at doing what is appropriate at the moment. The reference to ideas that are sharp enough to cut metal suggests that good Companions can cooperate efficiently at finding a solution to a dangerous or difficult problem. The soft writing brush (or even the eloquent tongue) can be mightier than the sharp sword. By working together on the basis of fundamental agreement, true Companions can cut through to the core issue and come up with an effective solution to the problems they face. The reference to the fragrance of orchids may allude to the poetry of Qu Yuan² 屈原. Qu uses botanical allusions to describe various kinds of human personalities. The orchid is an example of a virtuous scholar.

1.08.05. 6-1. “If you cushion [a Great Excess of weight] with white straw, there is no blame.” The Master said, “If you just put it on the ground, -- that would be all right. If you cushion it with straw, what blame is there in that? This is the perfection of care. As an item, straw is not worth much, but its usefulness can be significant. If one proceeds onward with such a professional level of care, he will never go wrong.”

「初六，藉用白茅，无咎。」子曰：「苟錯諸地而可矣；藉之用茅，何咎之有？慎之至也。夫茅之爲物薄，而用可重也。慎斯術也以往，其无所失矣。」

This example comes from the comment on line one of Great Excess (28). In this case something that is bulky but of considerable value is being moved and set in a temporary location. The movers place straw under the item so that it will not be

scratched by the rough ground. The Master notes the professional care that the movers take to avoid damaging the article when it touches the ground. This suggests the respect one should show in the handling of other people's valuables, and even one's own valuables. Mishandling of a fine cabinet is an insult to the craftsman who spent many hours building it. The Master's comment does not add much, but shows his appreciation of the comment on that line.

1.08.06. "The Wizard, through accumulated Modesty in his work, has a conclusion which brings well-being." The Master said, "To work and not boast, or to have success and not exhibit power, this is the ultimate of deep kindness. In his speech he considers his achievements below that of others. Power is about manifold capabilities. Politeness is about respect. Modesty is showing the utmost respect to preserve one's position."

「勞謙君子，有終吉。」子曰：「勞而不伐，有功而不德，厚之至也，語以其功下人者也。德言盛，禮言恭，謙也者，致恭以存其位者也。」

This example is from the comment on line three of Balance/Modesty (15). A Wizard does his work with no thought of reward or recognition. He does it because he enjoys it and it is the right thing to do. What he does is what he figures anyone in his position would do. So there is nothing special about it. Line three governs the hexagram Modesty because it represents the top of the mountain image (GEN). It is the arm of a Balance. The mountain has significant bulk, but it keeps a low profile and supports the arm of the Balance. The KUN trigram represents level ground and the level fairness of the Balance, so the Wizard is like an underground mountain that sets the standard for fairness. Here the KUN trigram can also represent the mass of people. The Wizard achieves his successes, but maintains a profile as an ordinary person not putting on airs or expecting any preferential treatment. An example of this is Sam Walton, the founder of the Walmart store chain. He became perhaps the richest man in the world with a personal worth of around \$100 billion dollars. Yet throughout his life it is said that he drove around Arkansas in an old pickup truck and dressed in clothes from his own discount store. His whole philosophy of business was to give ordinary people who live on low incomes the best prices on the best possible quality with satisfaction guaranteed or your money back. The store policy even today is to refund returned products with a smile. Customers appreciate this respect showed to them by store employees. Despite his huge success in retailing, Walton did not boast about it or flaunt his power. Instead he worked on creative ways to better serve his customers. People who complain about Walmart stores are mostly jealous of their success. They do not have to shop there if they prefer not to. During his lifetime Walton established and then maintained his position as a leader in

the discount retail market. What happens to Walmart in the future will depend on the management that handles the business after his passing. The famous phrase “The customer is always right” was coined by Harry Selfridge, a London department store owner in 1909. Many businesses try to follow it, but the statement is too extreme to work all the time. A business owner must first wisely choose his employees, and value them above all. Then they will treat the customers with respect. Sometimes it is better to let a difficult customer go than to make an excellent employee’s life miserable. Confucius did say that he preferred to show respect to difficult people, but to keep a distance from them. Nevertheless he spent much of his life traveling around the country trying to persuade difficult people to change their ways.

1.08.07. “An arrogant [Creative] dragon will have regret.” “The Master said, “To be a noble, but without [real] position; or to be on high, but without the people [supporting you]; or to have worthies in lower positions and not to help them – in such cases, whenever you act, you will have regret.”

「亢龍有悔。」子曰：「貴而无位，高而无民，賢人在下位而无輔，是以動而有悔也。」

This example comes from the comment on line 6 of the Creative Will (1). This line is at the top of the hexagram, and is susceptible to pride. When a person occupies a high position, but lacks the real Creativity to warrant that position, he usually heads for a fall that will cause him regret. In 2008 Robert Mugabe, who originally led Zimbabwe to independence after a colonial period 28 years earlier, was reelected president after bullying the populace and fixing the vote in his favor. He reached the highest position in his country by helping it achieve independence. However, once he achieved the highest position, he led the country into economic collapse. The current rate of inflation there is estimated to be 2.2 million percent, an economic condition that is hard to imagine. The same amount of money that would buy a large house a few years ago, will only buy you only small piece of a single brick. Mr. Mugabe currently behaves like an arrogant dragon. In the recent election Mugabe essentially forced his opponent to back out of the campaign through violence and threats of violence. His opponent appears to be a worthy man in a lower position. Rather than supporting him, Mugabe fears him and puts him out of the way. Of course, Mr. Mugabe need not stay that way unless he so chooses. Intimidation of people by threats of violence works for a while if you have a corps of violent people willing to carry out your threats. However, the long term prognosis for this approach is not good, because it works against the overall welfare of the people who must put up with this treatment, -- and people happen to value their own welfare. If they do not, they will not be around as a people very long. There are some signs that

Mugabe is moving in the direction of a coalition government that may be able to ameliorate the serious problems the country faces. Time will tell.

1.08.09. “He does not go out from his dooryard, but there is no blame.” The Master said, “Whenever there is a reason for the rise of discord, language will be the platform. If the lord does not keep his private counsel, then he will lose his ministers. If the ministers do not keep their private counsel, then they will lose their lives. When critical issues are not kept private, injury is the result. Therefore, the Wizard is cautious about his secrets and does not let them go out.”

「不出戶庭，无咎。」子曰：「亂之所生也，則言語以爲階。君不密，則失臣；臣不密，則失身；幾事不密，則害成；是以君子慎密而不出也。」

This example comes from the comment on line one of Limitations (60). Although this is line one of the hexagram, the Limitation applies as well to higher levels of position in the manner that the Master interprets it. Whether on the level of a family, a corporation, or a country, there are counsels that are best kept private. This is not due to any evil intent, but simply because certain information may be inappropriate for others to know, because it may lead to misunderstandings or premature reactions to a plan that is still under discussion and not finalized. This happens frequently in the form of leaks to the press about certain political issues that are under discussion. Such a leak may be necessary in the case of whistle blowing about wrong doing. However, it is highly inappropriate to spoil a plan that is intended for the general welfare. It might be like telling a birthday boy ahead of time about his surprise birthday party and spoiling the surprise. In some cases the private issue is very complex and involves sensitive negotiations among a number of parties all of whom have strongly held and differing opinions. To one person it may be a disaster in the making that must be prevented by blowing the whistle. To another such a leak constitutes treason, because it interferes with critical policy decisions that, for example, may affect national security. The key principle is that privacy and secrecy are appropriate in the case of proprietary information, and generally also any information that if not withheld, might work to someone's disadvantage, or that when divulged may injure other parties. On the other hand, for a person to hold secrets concerning harm he has already done or plans to do to others is actually more damaging to the holder of the secret than to the victim.

1.08.10. The Master said: “The author of The Changes indeed understood thieves. The [Book of] Changes says, ‘If you fawningly flatter [those above] and ride roughshod [over those below], you attract the arrival of bandits.’ Fawning flattery is the business of petty people. Riding is the prerogative of a leader. If

a petty person rides in a gentleman's vehicle, a bandit will think of seizing it. When a person is thoughtless toward those above and harsh toward those below, robbers will think to attack him. Thoughtlessness in storing [valuables] instructs in robbery. Sexy makeup instructs in licentiousness. The [Book of] Changes says, 'If you fawningly flatter [those above] and ride roughshod over [those below], you attract the arrival of bandits.' This is [like the] summoning the bandits."

子曰：「作易者其知盜乎？易曰：『負且乘，致寇至。』負也者，小人之事也；乘也者，君子之器也。小人而乘君子之器，盜思奪矣！上慢下暴，盜思伐之矣！慢藏誨盜，冶容誨淫，易曰：『負且乘，致寇至。』盜之招也。」

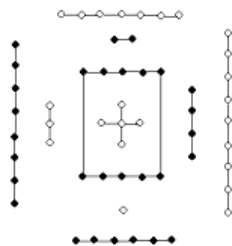
In this example the Master expands in a nice literary manner on the comments to line one of Deliverance (40) but does not add much in the way of further insights. He does add some nice examples supporting the general principle that people attract their own problems.

第九章

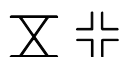
1.09.01. Heaven is one, earth is two, heaven is three, earth is four, heaven is five, earth is six, heaven is seven, earth is eight, heaven is nine, and earth is ten. There are five heavenly numbers and five earthly numbers. The five positions [on the Yellow River Chart] form a set, each with a pair [of numbers]. The heavenly numbers add up to 25, and the earthly numbers add up to 30. The sum of the heavenly and earthly numbers is 55. This is the means by which physical transformations take shape and spiritual behaviors proceed.

天一地二，天三地四，天五地六，天七地八，天九地十。天數五，地數五，五位相得而各有合。天數二十有五，地數三十，凡天地之數，五十有五，此所以成變化而行鬼神也。

This section begins an analysis of the number theory behind the **Book of Changes**. The number system that we use is base ten, because we have ten fingers, and because it is convenient for calculations. The **Book of Changes** uses a binary system. The first sentence of this section maps the binary number system to the decimal number system. This also brings to awareness the alternation of odd and even numbers that is clearly marked in the binary system, but not so obvious in the decimal system. Students have to memorize which decimal numbers are odd and which are even. The Chinese achieved an elegant integration of the decimal and binary numbers, plus the ordinal and cardinal aspects of numbers, plus the relation of the cardinal numbers to metaphysics and physics, all by means of a single chart known as the Yellow River Diagram. 河圖



The Appendix (1.11.09) specifically mentions this chart by name, so it must go back at least to Han times, although tradition dates it back to a legendary sage, known as Fu Xi (伏羲 = 包羲). On the chart odd numbers have light dots and even numbers have dark dots. Light represents yang, or heaven. Dark represents yin, or earth. Here is how the Chinese integrate Ordinality and Cardinality. The numbers from 1 to 5 represented by dots in the chart form a star-like arrangement with five in the center (also in a star-like arrangement that calls attention to the star-like structure of the whole chart). The numbers 1 through 4 are placed in the four cardinal directions. In the Chinese compass point conventions on maps North is below and South is above. In the beginning there is **Nothing** 〇. **One** 一 begins the ordinal sequence in the Northern position, and represents the cardinal state of unity at the North Pole. At the beginning there is **Nothing** 〇, and this **Nothing** is a Unified **Oneness** 一. Thus, **One** comes from **None**. **Two** 二 is in the Southern position, and represents the **Duality** of this binary system of a **Nothing** that is also **One**, because it is a **Oneness**. **Three** 三 is in the Eastern position. Actually, it starts out in the middle between **One** and **Two**, as the Chinese character for the number itself demonstrates. This represents that the contrast of **Duality** is really only **Two** aspects of the same **Oneness**, like the **Two** sides of a coin. **Three** represents the principle of **Relationship** that is inherent in **Duality**. **Four** 四 is in the Western position, and indicates that the existence of a **Third** something between **Two** things implies a Gap of **Space** in the middle. **Four** thus represents **Space**, and displaces **Three** to the East. The numbers **One** to **Four** thus form a square **Space**. By pushing **Three** to the side, **Four** creates Motion in the **Space**. This generates the cardinality of **Five** 五, and makes the separation of **One** and **Two** into a vibrating, pulsating **Space** filled with **Motion**. **Five** thus fills the Central position and completes the generation of **Five Dynamic Elements** 五行. The ancient forms of these characters for the **Five Elements** are descriptive of dynamic interaction at a central crossroad:



1 = water, north; 2 = fire, south; 3 = wood, east; 4 = metal, west; 5 = earth, center.

Here is a chart of the earliest forms of the numbers as written in ancient China.

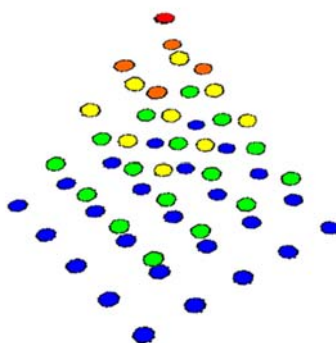
—	==	≡	≡	⌘
1	2	3	4	5
↗	↑	↘	↙	↓
6	7	8	9	10
∪	∩	⊕	⊗	⌘
20	30	40	50	60
⊗	⊕	⊗	⊕	⊗
100	200	300	400	500
↗	↗	↗	↗	↗
1000	2000	3000	4000	5000

Motion is equivalent to Time, so the metaphysical sequence generates **Unity**, **Duality**, **Relationship**, **Space**, and **Time** in a natural sequence all out of **Nothing**, so long as the **Nothingness** includes Everything as a possibility and is a Complete **Oneness**. After **Five** comes the physical sequence. **Six** 六 goes with **One**, **Seven** 七 goes with **Two**, **Eight** 八 goes with **Three**, **Nine** 九 goes with **Four**, and **Ten** 十 goes with **Five**. **Seven** and **Nine** are yang male numbers. **Seven** is the dynamic energy of the erect phallus. **Nine** is the tired yang energy of an old man or a subdued prisoner reduced to kneeling or crawling. **Six** and **Eight** are yin female numbers. **Eight** is the vagina opening up to receive the male seed, and **Six** is the old female with her arms sagging down. **Ten** begins a new sequence at the next order of magnitude, and represents this in the ancient written form of the number by rotating **One** by ninety degrees. The Han versions of these numbers depict these cardinal interpretations even more clearly..

The Chinese understood the physical world as a continuous cyclical system that proceeded as follows: 7 --> 9 --> 8 --> 6 --> 7 The numbers 6, 7, 8, and 9 grew out of 2 and 3 combined in all possible ways as sets of three (2+2+2, 2+2+3, 2+3+2, 3+2+2, 2+3+3, 3+2+3, 3+3+2, 3+3+3.) The Chinese used 3 for yang energy instead of 1, because triplet combinations of 1 and 2 do not take you out of the metaphysical realm into the physical realm (except for 2+2+2). One is Wholeness. Three generates a trigram system, which is 2^3 , or eight possible combinations. One combination is all 2's and sums to 6. Another combination is all 3's and sums to 9. The other six combinations give three sums of 7 and three sums of 8. Thus, statistically speaking, 7 and 8 represent the top of a "bell" curve, the most probable state of the system, whereas 6 and 9 represent the least probable state of the system. The least probable state is its transition point. The transition point at 6 is an old yin state transmuting into a young, stable yang state with the symbolic value 7, while the transition point at 9 is an old yang state transmuting into a young, stable yin state with the symbolic value 8.

A simple way of generating an oracle is to use three coins, taking heads as yang and tails as yin. Randomly toss the three coins and you will get one of the eight possible combinations. A sum of 6 or 8 gives a yin line, and a sum of 7 or 9 gives a yang line. Lines with the values of 6 or 9 are unstable and change into their opposite value. This gives you the possibility that your initial trigram or hexagram is changing. The convention is to generate the line at the bottom position on the first toss, and then to work your way up through the sequence of positions line by line. Thus, we discover that the Yellow River Diagram contains Chinese number theory and a system for generating trigrams and hexagrams from the permutations of the numbers from 1 to 10. The comments on the lines in the text related to a hexagram only apply when the lines change, so the text labels them based on the above number system as a 6 or 9 appearing in such and such a position.

The final statement of this section tells us that the sum of all the yang numbers is 25, and the sum of all the yin numbers is 30. The sum of all the numbers from 1 to 10 is 55. This number is worth studying. For one thing, it is the sum of the squares of the numbers 1 through 5, and forms a perfect square pyramid in three dimensions as the 5th pyramidal number.

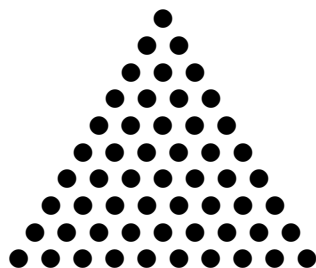


The 5th Square Pyramidal Number

(Drawing based on <http://mathworld.wolfram.com/SquarePyramidalNumber.html>)

It is also the 10th member of the famous Fibonacci series (1, 1, 2, 3, 5, 8, 13, 21, 34, 55, . . .): $34 + 21 = 55$. $4 + 9 = 13$, and $6 + 7 = 13$. 13 is a Fibonacci number, as is 8. $8 + 13 + 13 = 34$. $10 = 5 + 5$, and 5 is a Fibonacci. $1 + 2 + 3 + 5 + 5 + 5 = 21$. In binary 55 is 110111. Since the least significant digit represents the top of the hexagram, this is hexagram #10 in the hexagram sequence (Behavior) of the classical text. Hexagram #55 is Affluence. In several languages the number 10 also implies Affluence. Fifty-five is the sum of ($2^0 + 2^1 + 2^2 + 2^3 = 1 + 2 + 4 + 8 = 15$) which is the generation of the trigrams, plus ($3^0 + 3^1 + 3^2 + 3^3 = 1 + 3 + 9 + 27 = 40$). This sum is known as the Platonic Lambda and is mentioned in the Timaeus 35b as

the “Soul of the Universe”. Aristotle also discusses the mystical qualities of 55 in his Book “Lambda”. As we saw above, 2 and 3, when they are taken in groups of three, generate the physical world values of the hexagram digits. Furthermore, 55 is the 10th triangular number (arrange beads into a regular triangle shape to see this).



The 10th Triangular Number

Thus, 55 is a key to the original, most basic, “pyramid” generator in both two and three dimensions. (What culture is most famous for building great pyramids?) The sequence for triangular numbers is 1, 3, 6, 10, 15, 21, 28, 36, 45, 55, It is also a binomial coefficient, since all triangular terms are such. It is the largest triangular number in the Fibonacci sequence and is the sum of 5 triangular numbers in sequence (3 + 6 + 10 + 15 + 21). Also, 55 is a heptagonal number. The sequence for these is 1, 7, 18, 34, 55, It is also a centered nonagonal number (arrange beads in a nonagonal shape with one in the center and count them. The layers are 1, 10, 28, 55, It is also an 18-gonal number. Thus, the innocuous-looking number 55 has many remarkable features in mathematics and geometry that drew the attention of ancient wise men in both East and West.

1.09.02. The number of the Great Expanded [Divination Procedure] is 50, but we use only 49 [tokens, so we set one aside]. We divide [the remaining 49 tokens] into two [piles] to symbolize Duality. Then we lay out one [from each of the two piles] to symbolize Trinity. Next we sort [the tokens the yang pile] by [sets of] four to symbolize Four seasons until we end up with a remainder [of between 1 and 4 of the yang tokens] between the fingers to symbolize the intercalary month. There is another intercalary month within five years, so we again [sort until we] have [a remainder of tokens] between our fingers and then lay them out.

大衍之數五十，其用四十有九。分而爲二以象兩，掛一以象三，揲之以四以象四時，歸奇於扚以象閏，五歲再閏。故再扚而後掛。

This passage describes a more complex divination system than the use of three coins. Hence, it is called a “Great Expansion” (大衍) version of the divination process. Another interpretation of the phrase (*Da4 Yen3*) takes it as a “Great Explanation”, but in any case we do not find any briefer method or explanation of the divination process in the Appendices. The process involves the use of 50 bamboo strips, or some other

similar material. In ancient times they often used yarrow or milfoil stalks or other plant straws in addition to bamboo slips. To my mind the evidence points more toward bamboo strips being commonly used, since ancient books and records were written on bamboo strips, and the word commonly used for divination (for example, in the **Zuo Zhuan** 左傳 and **Guo Yu** 國語) was 筮, written with the bamboo radical. In the Egyptian **Book of the Dead** we often encounter pictures of Thoth recording an oracle with black and red ink on a strip of papyrus. In Egypt the oracle was called Weighing of the Heart and was a procedure to help a person become completely honest with self and others.

There is speculation that the number 50 derives from the numbers 5 and 10 in the center of the Yellow River Diagram. Perhaps it is the number 5 (the symbolic completion of the metaphysical realm) times the number 10 (the symbolic completion of the physical realm). Each step of this divination process symbolizes one of the metaphysical aspects of the Yellow River Diagram. The above text in the Appendix is very terse, so the exact procedure of manipulating the stalks or cards is not certain. However, the text is clear that each major step of the process symbolizes one of the metaphysical numbers. A key point is that there are five major steps and then a hexagram appears [as the last step], suggesting that there may be a symbolic step for each line on the hexagram.

The Great Expanded Divination Method

In the ancient Chinese method described all too briefly in the Appendices section 1.09.02 you traditionally use straws of stiff grass, twigs, or thin bamboo strips. Theoretically you can use any set of 50 tokens that are relatively easy to manipulate. Many prehistoric shamans used pebbles, shells, or seeds for divination. In our day I find it convenient to use an ordinary set of 52 Poker playing cards from which you first remove two cards so that you begin with 50 cards. You must repeat the following procedure for each of the six lines because the procedure only generates a single line of the hexagram each time. Since there are three main operations to get the number for each line, there are altogether 18 main operations in the procedure to obtain a hexagram divination. The procedure requires no marks on the tokens that you use, and only depends on the correct number of tokens. So you may ignore the suits and numbers on the playing cards if you decide to use them as your tokens.

The following description differs from that of Wilhelm (p. 721), because his interpretation introduces bias into the system. The process of divination must be free of bias toward yang or yin values. The interpretation I offer is free of bias and

follows the brief symbolic description provided by the Appendices.

1. Take up a set of 50 cards. Then remove one card and set it aside on your table as the Transcendental Card to represent the **Unified Field** of the **Plane of Man**. As a symbolic transcendental witness it will play no further active role in the procedure, so you only work with 49 cards. (大衍之數五十，其用四十有九。)
2. Next cut the deck of 49 cards into two piles to represent the two contrasts of yang and yin and place them side by side before you under the **Card of Man**. (分而爲二以象兩。) The yang pile (the right hand pile) will represent the **Plane of Heaven**, and the yin pile (the left hand pile) represents the **Plane of Earth**. The changes all appear from the interaction of these two contrasts of yang and yin, Heaven and Earth. The cutting of the deck will be repeated at the beginning of each of the 18 main operations to follow.
3. Put the top card from the yang pile up next to the **Card of Man**. This will be the **Heaven Card** and represents the **Plane of Heaven**. It serves as a lively witness of the individual mind and will also play no further active role in the process. Then put the top card from the yin pile next to the **Heaven Card** to represent the **Plane of Earth**. Now you have a pack of 47 cards cut into two piles and have laid out (掛 literally is to “hang”) three cards on the table, one for each of the **Three Planes**. (掛一以象三。) The word 掛 puns on the three lines that make up a trigram.
4. Next take up the yang pile (on the right) as your **Heavenly Pile** and pull off cards from it four at a time until all that remain between your fingers are four cards or fewer. This process represents the **Four Seasons** of a year. The cards that remain between your fingers after the sorting symbolize an intercalary month. You will end up with 1, 2, 3, or 4 remainder cards. Place them aside. (揲之以四以象四時，歸奇於扚以象閏。)
5. Next take up the yin pile (on the left) as your **Earthly Pile** and pull off sets of four cards until you end up with a final set that has four or fewer cards. Place the remainder set of four or less cards from the **Earthly Pile** next to the remainder from the **Heavenly Pile**. This second sorting represents the second intercalary lunar month that comes within **Five Years**. (五歲再閏。故再扚而後掛。)
6. Your two sets of “intercalary” remainder cards at this point altogether will total either 3 cards or 7 cards. Three cards stands for a 3, and seven cards stands for a 2. (To the value of 7 we add the Earth Card that we pulled, so there is a total Earth number of 8.) Record on paper the value of 3 or 2 for the first component of the first line of your hexagram.
7. Now put the unused Earth Pile and Heaven Pile cards that were pulled out in sets

of four all back together. Again cut this pile into two piles and then pull a card from the Earth Pile and place it with your first Earthly Plane card. (You will now have 2 Earthly Plane cards, indicating the number of operations you have done for the first line of the hexagram.) Then repeat the process of sorting by fours a second time. As before you will end up with a total remainder from the two sorting procedures of 3 or 7. The 3 represents a value of 3, and the 7 represents a value of 2.)

8. Repeat the process one more time, again obtaining a third remainder pile of either 3 or 7 cards. This again gives you a 3 or a 2.
9. You may now add up the 3's and 2's that you obtained from the remainder piles from each of the three repetitions of the procedure. The sum of these three numbers will be 6, 7, 8, or 9. You now have determined the numerical value for the first line of the hexagram and should record that value (6, 7, 8, or 9) on a piece of paper.
10. Next you must repeat this whole process five more times to calculate each of the remaining five line positions in the hexagram.

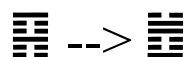
A Simpler Method Using Playing Cards

For this simple method you use an ordinary deck of 52 playing cards. I like to use playing cards, because they are readily available, easy to manipulate, and can stack with the card face down. Also, they are already marked. Arbitrarily we take the black suit cards of a poker deck as yang and the red suit cards as yin. In the coin system described earlier, we found a set of 8 combinations of triplets among which 6 represent stable states and 2 represent transition points. The deck has 52 cards and 8 times 6 equals 48. Therefore, we arbitrarily remove all four jacks. This gives you exactly 48 cards, half red suits and half black suits. Ace through 6 of spades we will take to represent yang transition points (lao yang 老陽), and we will assign them the value of 9. Ace through 6 of hearts we will take to represent yin transition points (lao yin 老陰), and we will assign them the value of 6. All other black suit cards have the value 7, and all other red suit cards have the value 8. I like to place the cards face down as I select them and turn them over after the hexagram is complete. However, you can place the cards face up from the start if you prefer.

Shuffle your deck and fan the cards out face down. Then randomly choose from the deck six cards in sequence for lines one to six that will form your hexagram. If you have not turned the cards face up, do so now and record the results as a sequence of numbers (a 6, 7, 8, or 9 for each card representing each position in the hexagram) on a piece of paper or in a notebook. Translate the numbers into the relevant hexagram

lines. Mark stable yang lines with — , and mark stable yin lines with -- . Mark changing yang lines with O, and mark changing yin lines with X. Record each changing hexagram according to the instructions given earlier in Appendix section 1.9.01. Now you are ready to interpret. You can use my translation and commentary or any other version that is available.

There is also a problem regarding the way ancient **Zhou-yi** divinations were recorded in the **Zuo-zhuan** and **Guo-yu**. These records do not tell us how the diviners generated the hexagrams other than that they manipulated some type of straws. However, several cases have interesting wording. For example, at Zuo, Xiang 9 (左, 襄 9) the text says: …筮之。遇艮之八。史曰。是謂艮之隨。[She consulted the **Zhou-yi** about it and encountered the line 8 of Stillness (52). The diviner said, “This means that Stillness goes to Following (17).”]

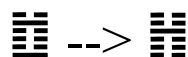


艮 之 隨

We know there are only six lines in a hexagram, so the scribe means that the divination indicated only one line as special, and that line was marked with a value of 8, and therefore was a stable yin line. That means the line could not change, as I explain in section 1.03.01 above. The diviner therefore interpreted that all five other lines must change. The only line that does not change in this case is the yin line in position two. My understanding of this notation is that lines 1, 3, 4, 5, and 6 were changing. Therefore, to save writing out all those numbers, the historian simply wrote “8” and the resultant hexagram. This elegant shorthand method immediately tells us the critical line and that it is the other lines that are transitioning. We therefore can write out the sequence following the guidelines described at 1.03.01 above.

Here is another example from the **Guo Yu**, (Jin 4): 臣筮之，得泰之八。 The result of the divination was “line 8 of Peace (11)”. In this case the diviner chose simply to draw comments from the Tuan and Image text on Peace, so we can not tell for certain which lines changed. There are three yin lines in Peace, any combination of which could have had the 8. If we assume that the convention was to give one unchanging line when all others changed, then the outcome could have been Observation (20), Progress (35), or Gathering (45). The question had to do with crossing a river, and the diviner supported the idea of crossing. So the most probable outcome must have been the hexagram Progress, although the diviner did not bother to mention it.

Another interesting example comes just before the previous example in **Guo Yu** (Jin 4) 公子親筮之，曰：“尚有晉國。”得貞屯、悔豫，皆八也。“The Duke’s son himself divined the issue, saying, ‘Will the state of Jin still exist?’ He got Integrity Sprouting (3) and Regretful Joy (16), all 8’s.” The gist seems to be that if there is integrity during a challenging beginning, although some regrets may occur, joy will prevail. There follows an interesting analysis of the hexagrams, their component trigrams, and their symbolism. Sprouting seems to have the epithet “Integrity” (貞) because the term appears in the text for that hexagram six times. Line three of Joy has regret (悔) because it does not quite reach the Joy of line four and even gets stepped on, so “regretful” seems to have been an ancient epithet for that hexagram. The text says “They were all 8’s”. This can not mean that all the yin lines had 8, because there is at least one changing yin line, and that must be a 6. There are also two changing yang lines, and they would be 9’s. If the change goes the other direction, there are two changing yin lines and one changing yang line.



Thus, the problem here is that lines 1, 4, and 5 must all change while lines 2, 3, and 6 are stable. Moreover, line four of Sprouting must be a 6 rather than an 8. The numbers must be 988698 --> 888788, or possibly 688968 --> 788878 if the transition goes the other way. The historian simply gives us the initial hexagram and the final hexagram and tells us that “they were all 8’s”. We know that both yang lines changed as well as the yin line in position four. Thus the historian simply means that all three lines that remained stable were 8’s, and there were no stable yang lines. He gives us the outcome hexagram so we know which three lines changed and which three yin lines were all 8’s and did not change. The mention of “8’s” and presumably also of “7’s” (although I have no surviving examples of 7’s) is an interesting shorthand convention to specify by the non-changing line or lines which group of lines change. Chen Shih-chuan has an article, “How to form a Hexagram and Consult the **I-ching**” in which he discusses these ancient records of divination and proposes a theory (**JAOS**, 92.2 [1972], 237-249). I think his theory is far too complicated, and favor the shorthand notation idea presented above.

1.09.03. The bamboo slips involved in generating the Creative (1) are 216. The bamboo slips involved in generating the Receptive (2) are 144. Altogether they are 360, and represent the days of a [year] period.

乾之策，二百一十有六。坤之策，百四十有四。凡三百有六十，當期之日。

The number 216 divided by 6 is 36, and 36 divided by 4 is 9. The number 36 gives the total number of bamboo slips, tokens, or cards accumulated during sorting by fours when one generates all six yang lines of the Creative Will (1) when they reach transition point (用九). [After we subtract the uninvolved 2 from 50 for the 48 active cards, each operation that gives a component of a changing yang line involves removing 1 Earth Plane card and 3 remainder cards from the active piles. After we subtract out the 3 Earth Cards and 9 remainders from the 48 initial active cards during 3 operations, we then have $48 - 12 = 36$ active cards when we get the result of a single changing yang line. Repeating this result of 36 active cards six times for six lines equals 216 active cards.] There is a special text for this condition of all six lines changing in the hexagram of the Creative Will.

The number 144 divided by 6 is 24, and 24 divided by 4 is 6. This gives the total number of bamboo slips, tokens, or cards accumulated during the sorting by fours to generate all six yin lines of the Receptive Awareness (2) when they reach transition point (用六). [Each operation that gives a component of a changing yin line involves removing from the active piles 1 Earth Card plus a remainder of 7 cards, or a total of 8 cards. Three operations to generate a component of a changing yin line with a value of six require 3 times 8 (i.e. 24) cards. Subtracting the Earth Plane and remainder cards from the initial 48 we also get 24. Thus, for six changing yin lines we have a total of $6 \times 24 = 144$ active cards.

The sum of 144 and 216 is 360, the length of an official **Egyptian** solar year. This provides further evidence of cultural influence from Egypt in the mathematics of the Changes. The six transitions for each of these two hexagrams also give us the Twelve Cyclical Hexagrams that represent the 12 months of the solar year. The Egyptians divided their year into 12 months of 30 days each and then added special 5-day intercalary week (half decan) to complete the alignment of the official solar year with the astronomical year of 365 days. Egypt also divided the year into 36 ten-day (decan) weeks, so that each solar month had 30 days divided neatly into 3 decan weeks. At the end they added 5 intercalary days as an extra half-decan. China also has the notion of a ten-day week or decan that is called in Chinese “*xun2*” 旬 (another symptom of Egyptian influence). Each Egyptian decan week had a five-day waxing period and a five-day waning period. Thus, there were 72 official half-weeks (pentads or half decans), and these pentads later became the 72 angels of the Qabbalah’s Shem-hamphorah. Each half-week had a male and a female (yang and yin) aspect represented by a god who had a goddess consort. Thus, each decan week had four heavenly components, and there were 144 fundamental earthly

components to the Egyptian year that were generated from the basic heavenly number of $4 \times 9 = 36$ ($4 \times 36 = 144$), and each heavenly component had a value of 9. However, if you divide the 144 heavenly components of the year by the 6 lines of a hexagram, you get 24, the number for earthly yin lines. The extra five-day short week at the end of each year was necessary to fit the calendar to the actual solar year of 365 days. This short week was a “transcendental period” relative to the calendar, and the Egyptians thought of those five days as the birthdays of their five national gods (Osiris, Horus, Set, Isis, and Nephthys). These five deities also correspond to the five Chinese elements (the Chinese added metal to the Egyptian earth, air, fire, and water). Osiris is wood (god of agriculture), Horus is metal (god of weapons and war), Set is fire (god of the fiery desert), Isis is earth (goddess of the fertile delta land), and Nephthys is water (goddess of the Nile’s annual orgasmic flood).

1.09.04. The bamboo slips accumulated for the two books are 11,520, and represent the number of the “ten thousand things”.

二篇之策，萬有一千五百二十，當萬物之數也。

The “ten thousand things” was a standard Chinese phrase for everything in the universe and usually was not meant to be taken as an exact number. The number 11,520 is the total of all the piles of bamboo slips that would be used to generate all the changing lines of all 64 hexagrams using the expanded divination procedure. There are altogether 384 lines, of which half are yin and half are yang. Thus, we have 4608 slips accumulating for transition yin lines, and 6912 slips accumulating for transition yang lines. The grand total is 11,520. Mathematically this is an interesting idempotent number. An idempotent number has the following definition:

$$B_{n,k}(1,2,3,\dots) = \begin{bmatrix} n \\ k \end{bmatrix} k^{n-k}$$

The component $B_{n,k}$ represents a Bell polynomial, and the $\begin{bmatrix} n \\ k \end{bmatrix}$ represents a binomial coefficient. A Bell polynomial is an exponential polynomial, such as $x^3 + 3x^2 + x$. These polynomials are used in combinatorial mathematics, which is an extension of the **Book of Change** mathematical principles. We have already encountered the binomial coefficient. It is one of the main modern mathematical expressions found in the **Book of Changes**. The number 11,520 is the result when $n = 2$ and $k = 10$. When $n = 1$, the resulting series is simply the counting numbers. With $n = 2$ we get the series, 1, 6, 24, 80, 240, 672, 1792, **4608**, **11520**, \dots . (The standard code number for this series is A001788.) Note that the number of slips for the yin transition points comes up in the series just before the total number of

transition points. $11520 / 360 = 32$, and 32 is the number for a stable yin line. $[48 - 4 - 4 - 8 = 32.]$ The 360 is a yang number calculating time, and the 32 is a yin number calculating space and matter. The number 11520 is also 64×180 (the number of hexagrams times half a standard Egyptian year) and 60×192 (a sexagesimal cycle or two standard Egyptian solar months times the total number of yin or yang lines) and 30×384 (a standard Egyptian solar month times the total number of lines in the **Book of Changes**). The **Book of Changes** seems closely correlated with the Egyptian standard solar calendar.

The sexagesimal system (counting by 60's) was developed in ancient Egypt, Sumeria, and Babylonia. From there it passed into China as the Heavenly Stems and Earthly Branches system (天干地支) which the Chinese still use today in their traditional calendar notations. The Egyptian system became the basis of British chronology and linear measurement. Along with the binary system it formed the traditional weights and volume systems as well. The U.S. also follows these traditions. (Gallons, half-gallons, quarts, pints, cups, gills, tablespoons, . . .) The well-known "Space Ship Earth" geosphere at Disney's Epcot is a pentakis dodecahedron design based on the work of Buckminster Fuller. It (theoretically of course, because of the need for doors and supports) has 60 equilateral triangular faces each divided into 16 smaller equilateral triangles. This creates 960 surfaces each with four triangular faces, each of which divides into three isosceles triangles, for a total of 11,520 identical isosceles triangles. Thus, the geosphere is a modern architectural structure that physically represents the entire set of possible divination transformations in the **Book of Changes**.



Photo by Katie Rommel-Esham

Source: [http://en.wikipedia.org/wiki/Spaceship_Earth_\(Epcot\)](http://en.wikipedia.org/wiki/Spaceship_Earth_(Epcot))

Hires version: http://upload.wikimedia.org/wikipedia/commons/7/7a/Spaceship_Earth_2.jpg

<http://commons.wikimedia.org/wiki/User:Bdesham> (for bdesham's awesome night-time photo)

Let us summarize the divination procedures presented in section 1.9. If you want a very simple divination process, use three coins. If you want a slightly more complex system, use the playing card method I described that uses the suits as codes. If you want a very detailed and symbolic ritualistic process, use the most ancient system of counting straws or other unmarked tokens.

One method that is even simpler than the widely adopted and very convenient coin tossing method is to use a special set of dice. You need two octagonal dice to represent the inner and outer trigrams. Then you need six tetrahedral dice to indicate the changing lines. Mark each die with a separate color so there is one unique die for each line and each trigram. Then you can toss all eight dice at once and immediately get a complete hexagram plus its possible changing lines all in one shot. This procedure is equivalent to the various other more complex methods described in this section. Of course, you can also program a slot machine or a computer to do the job in one shot. Computer algorithms are not as perfectly random as a mechanical interface can be, but they are close enough for divination purposes..

1.09.05. Therefore, the four operations produce the changes, and 18 transformations produce a hexagram.

是故，四營而成易，十有八變而成卦，

The four operations are the four possible combinations of coins or tokens that produce an outcome of 6, 7, 8, or 9. By whatever method you decide to generate a hexagram, you must produce one of these four numbers for each line. These numbers determine whether a line changes or not and represent the four major phase states of a cyclical process in which a line may be at a given time. When performing the expanded divination, each line requires three processes of manipulation to arrive at one of the four outcomes. There are six lines, so the process must be done altogether 18 times. The three processes symbolize the planes of man, heaven, and earth (天地人); spirit, breath energy, and material essence (精氣神); knower, process of knowing, and known. In addition to representing the six stages of a process, the six positions of a hexagram represent the six senses: vision, hearing, smell, taste, touch, and thinking (in that order from position 1 to position 6.) Each has an organ (eye, ear, nose, tongue, body, mind), and each has a type of object that it perceives (sights, sounds, smells, tastes, objects, and ideas). Thus, the expanded divination process symbolically enlivens all eighteen fundamental realms of experience that are available to humans. Study the **Heart Sutra** and the Buddhist analysis of dharma psychology to understand the 18 realms more deeply. The human body from head to toe is in the six components of a hexagram. These are the general areas covered by the

hexagram lines, although individual hexagrams may have some variation in the details. Position one covers the toes and feet. Position two covers the legs and genitals. Position three covers the waist and belly region. Position four covers the chest and heart region. Position five covers the throat and face up to the brow. Position six covers from the brow to the crown and from there beyond to the Higher Self.

1.09.06. The eight trigrams constitute a small set. You can draw them out and extend them, to fit any collection of items, and they will completely handle any possible situation in the world. The paths of manifestation are the operations of the spiritual power. Therefore, you can offer libations to them and work with the spiritual power.

八卦而小成。引而伸之，觸類而長之，天下之能事畢矣。顯道神德行，是故可與酬酢，可與祐神矣。

The set of eight trigrams is a short binary set defined by $2^3 = 8$. The larger set of 64 hexagrams is just enough to be manageable without becoming too complex. Each hexagram also divides nicely into two trigrams and three bigrams. The four possible bigrams (yin-yin, yin-yang, yang-yin, yang-yang) represent the four directions, four seasons, and generally the four major phases of any process. The eight trigrams are easy to remember and have enough detail that we can associate concrete images with them. This greatly aids in the analysis of hexagrams. Therefore, anyone who studies the **Book of Changes** should begin by getting very familiar with the short set of 8 trigrams. These are very general archetypes. If you deal with a complex system that contains many aspects or components, then you can simply expand your set. The general formula is m^n , where m and n are any natural numbers (positive integers). If you allow more general values, such as negative values and fractional values, then you get imaginary sets and fractal sets. The **Book of Changes** text does not discuss these possibilities, but informs us here that the basic example of 8 trigrams not only extends to include the 64 binary hexagrams, but any set that you can imagine. With the applications of this general notion you can handle any possible situation for any collection of items, however large. The physical phenomena that we can detect are manifestations of a transcendental awareness that the text calls “spirit” or “spiritual power”. This spiritual power is undefined potential and therefore has infinite flexibility to manifest as any possibility you can imagine and even beyond that to things you have never yet imagined. Notice how the writer weaves Lao-zi’s *Dao4* 道 and *De2* 德 into the text. The mention of “libations” suggests a process of ritual alignment with the spiritual power. The metaphor is one of drinking a pledge cup of wine with a good friend. This is a means of facilitating a deep alignment between friends. Aligning with the spiritual power gives access to unlimited

possibilities. Some may think of this spiritual essence as God. The “libation” procedure represents communication with God. Of course, the external ritual of drinking a pledge cup is a metaphor for a spiritual alignment of small self with Higher Self.

1.09.07 The Master said, “He who understands the pathways of the transformations, will understand the behavior of the Spirit Potential.”

子曰：「知變化之道者，其知神之所爲乎！」

You can not understand an undefined transcendental potential. All you can understand is its manifestations as behavior. The transformations described by the **Book of Changes** cover the whole range of possible transformations. By understanding these transformations we can understand the behavior of Spirit Potential. The behavior of Spiritual Awareness is simply to take on the attributes of whatever you decide to create. Thus, this understanding of the behavior of the Spiritual Awareness is equivalent to understanding your own behavior. If you wish to understand Spirit Potential in its essence, rather than its behavior, then you must transcend all transformations, pass through the Tai-ji, and reach the undefined source of behavior in Wu-ji, no-limit being. This is a state of pure existence, and does not have any transformations. One approach is to study the hexagram Stillness (53), since this is a transformation that approximates the essential condition of pure being. However, the complementary condition of Stillness is the Shock (54) of sudden dynamic transition that disturbs Stillness.

第十章

1.10.01. The Book of Changes includes the four pathways of a Sage. With regard to speech, the emphasis is on the words. With regard to action, the emphasis is on the transformations. With regard to the fashioning of implements, the emphasis is on the images. With regard to divination, the emphasis is on the oracles.

易有聖人之道四焉，以言者尙其辭，以動者尙其變，以制器者尙其象，以卜筮者尙其占。

This section deals with how a person can use the **Book of Changes** effectively. A Sage is a person with great wisdom. The four “pathways” that the author of the Appendix mentions, are the abilities of a Sage that make him wise: speech, action, invention, and understanding. The author elaborates on each of these abilities, each of which is an application of the data in the hexagrams from a different viewpoint. The following passages elaborate on these applications.

1.10.02. Therefore, when the Wizard is about to do something or about to go somewhere, he inquires of it and takes the words as an echo of his mission. There is nothing far or near, subtle or deep but that he knows what is coming. If this is not the most refined thing in the world, then what can compare with it?

是以君子將有爲也，將有行也，問焉而以言，其受命也如響，无有遠近幽深，遂知來物。非天下之至精，其孰能與於此。

The first ability is skill in the use of language. The book has explanatory text attached to it. A Sage does not just work a job and live a life. He has a Life Mission (受命) that he unfolds during his lifetime. He comes to this planet with a higher purpose. This purpose has its basis in the undefined Spiritual Awareness that is the core of the Plane of Man, and takes shape in the Plane of Heaven as a thought or idea. He brings this idea to the Plane of Earth and implements it as his Mission from Heaven (天命). The Sage sees the words of the **Book of Changes** text as an echo of his own Mission. It is like advice and encouragement to inspire his performance. By understanding the transformations, he knows how events unfold. A Master Change Maker does not need to divine the future. He determines the future, because that is the success of his Mission. In this sense he knows the future with complete certainty. The term “refined” refers to the quintessential aspect of the material world 精.

1.10.03. He obtains a transformation by three fives. Their numbers are arranged by inversion and opposition. By completing the cycle of transformations he produces a pattern of heaven and earth. By taking their numbers to the limit, he then determines the images of the physical world. If this is not the most transformational thing in the world, then what can compare with it?

參伍以變，錯綜其數，通其變，遂成天地之文；極其數，遂定天下之象。非天下之至變，其孰能與於此。

Wilhelm and other scholars of the **Book of Changes** think this passage has to do with the divination process. He may be right with regard to the first sentence. “Obtaining a transformation by three fives” refers back to the previous section 1.09 that describes the expanded method of divination. To generate a single line you have to complete a five-step process three times. You do this for each line of the hexagram. The terms inversion and opposition refer to the way the hexagrams pair up. The standard **Book of Changes** text follows a sequence in which the hexagrams pair by inversion and/or complementary opposition. The sequence begins with Creativity and Receptivity. These two hexagrams are complementary opposites (綜卦). The first consists of the trigram Heaven doubled, and the second consists of the

trigram Earth doubled. It is strange that the hexagrams are arranged this way instead of into the natural sequence of binary numbers from the power set 2^6 . The text contains all 64 possibilities for six digit binary numbers. This set is merely an example. You can expand the set to contain as many numbers as you like, and the numbers can each be interpreted as images. In modern computer science we can produce a high resolution digital image of any object. With digital cameras we can capture the “real world” and translate it into digital numbers. The consideration of numbers and symbols that represent worldly phenomena is the expression of Qi (氣). Qi is energy. This passage elaborates on the sage’s ability to manage the energy of transformations and images.

1.10.04. The Change Maker has no thought, and no action. It is still and motionless, but it responds to feeling by completely expressing all possibilities in the world. If it were not the most Spiritual thing in the world, what could compare with it?

易无思也，无爲也，寂然不動，感而遂通天下之故。非天下之至神，其孰能與於此。

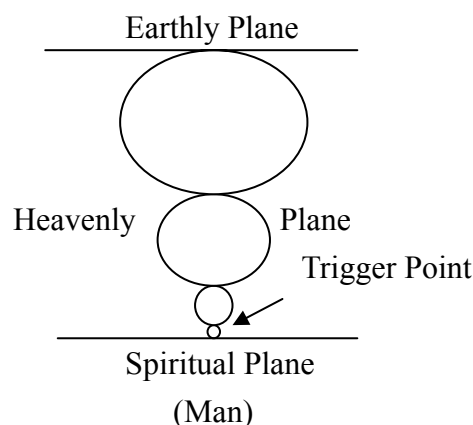
The transcendental undefined Change Maker exists as Pure Undefined Being on the level of Spirit. In its transcendental nature, it does not participate in the world although it completely interpenetrates it. On the other hand, it responds to an innate ability to feel by expressing all possibilities in the phenomenal world. Whatever you decide, the Change Maker activates and presents that as an experience for you to feel.

1.10.05. The Change Maker is that by which a Sage reaches the utmost depth and studies the Source of creation. Only by his depth can he plumb the will of the world. Only by [operating from] Source can he achieve the work of the world. Thus, without haste he moves quickly, and without going, he arrives. The Master said, “The Book of Changes includes the four pathways of a Sage.” This is what he meant.

夫易，聖人之所以極深而研幾也。唯深也，故能通天下之志；唯幾也，故能成天下之務；唯神也，故不疾而速，不行而至。子曰：「易有聖人之道四焉」者，此之謂也。

A Sage is a wise person. A wise person uses his time on earth as an opportunity to accomplish a Life Mission. This is not for personal benefit. He works for the benefit of the world. Therefore, a Sage must be very clear about the purpose of world consciousness. He must know where the world really wants to go. Only then can he help the world achieve its larger purpose. Because the scope is so vast, he must go very deep. He must go to the Source of Creation. This trigger point (機

or 幾 or 机) is at the Tai-ji junction between Undefined Spirit and the Heavenly Plane. This is where an idea first emerges into some very faint form of definition. From there it can take shape as a physical phenomenon. To shift world consciousness, he must operate from the Source of Creation at the deepest level of world consciousness. For more on the “trigger” see 1.08.03 and 2.05.10. This deep meditation is the true method of divination and goes far beyond the manipulation of straws or tossing coins.



第十一章

1.11.01 The Master said, “What is the Change Maker? The Change Maker is the beginning of things and the completion of tasks. It covers the pathways of the world. That is all.”

子曰：「夫易何爲者也？夫易開物成務，冒天下之道，如斯而已者也。」

This section begins with the Master praising the comprehensiveness of the Change Maker.

1.11.02. Therefore, a Sage by means of it completely comprehends the will of the world, and thereby determines the [Great] Task of the world and settles the doubts of the world.

是故，聖人以通天下之志，以定天下之業，以斷天下之疑。」

Because there are no close quotes in the Chinese text, we do not know exactly where the quotation of the Master ends and the comments by the author of the Appendix continue. It does not really matter, because we do not know for sure the identity of either one, and the author agrees fully with the Master. This passage returns to the theme of the previous section, which is about the way a Sage operates. He does not work for personal gain. Instead he works for the benefit of the world. To do this, he must first understand what the world consciousness really wants. This is the will of the world 天下之志. Once he knows this, he can define his Mission 命 as the

particular contribution he will make to the world as part of the Great Work of Wizards and Sages. Most people are very confused about their own lives and the world as well. This leads to many doubts. By identifying the common purpose of life on earth, a Sage can cut through the doubts and identify what is worthwhile. Life is diverse, and there are many worthwhile contributions to make. Each wise person has unique capabilities that are also part of the world consciousness. Thus, each person must discover the right path for him (or her) to follow that will maximize his (or her) ability to contribute.

1.11.03. Therefore, the power of the straws is round and spiritual. The power of the hexagrams is square and informational. The significance of the six lines is easy and facilitating.

是故，蓍之德，圓而神；卦之德，方以知；六爻之義，易以貢。

In this passage the commentator describes how various aspects of the changes embody the functions of a Sage. Manipulating the straws matches the creative energy of the Heavenly Plane. The straws are round cylinders that you can grasp in bundles. Manipulating them is like the dynamic spiritual quality that activates the Plane of Heaven. The resulting hexagram is a fixed image that has a square shape. This suggests the quality of the Earthly Plane, with its cardinal directions and inert matter. The structure of the hexagram contains information that you can interpret to gain knowledge of a situation. The lines are very simple. They are either yang or yin, and are either stable or transitioning. The purpose of the comments on the transitioning lines is to facilitate the contributions that you wish to make to the world.

1.11.04. A Sage thereby purifies his mind, and withdraws to hide in Secret. As for well-being or misfortune, he shares these with the people. By means of Spirit, he knows what comes. By means of information, he stores what is past. Who else can compare with this? The intelligent wisdom of the ancients is a Spiritual Martial Art that does not kill.

聖人以此洗心，退藏於密，吉凶與民同患。神以知來，知以藏往，其孰能與于此哉！古之聰明睿知，神武而不殺者夫！

The life of a Sage is like a mirror of the Change Maker. This famous passage describes how a Sage meditates to purify his mind. He takes time to withdraw from busy activity to a secret (i.e. private) location where he can commune with the Spiritual Awareness and awaken his connection to Source. On the physical level as a Sage he is just like any other person and must experience the ups and downs, joys and sorrows of life. The difference is that he communes with Spirit, and knows the future. How does he know what will come? He knows what the World Will wants

and he deliberately works to provide it. A Sage knows that all phenomena are cyclical. That means knowledge of the past gives information about the future and therefore has value. A Sage works from the compassion of full Spiritual Awareness. Therefore the wisdom he wields is like a powerful weapon that handles a problem without harming life.

1.11.05. Thereby he is clear about the Path of Heaven, and observes the condition of the people. This arouses Spiritual Phenomena to anticipate applications for the people. A Sage thereby fasts and disciplines himself to make his power Spiritual and Bright.

是以，明于天之道，而察於民之故，是興神物，以前民用。聖人以此齋戒，以神明其德夫！

The Path of Heaven is the operation of creative intelligence in consciousness, the Plane of Heaven. A Sage first gets very clear about how consciousness works. Then he observes the practical situations that people face. Once he understands what is appropriate for the time, he stirs up images in his creative imagination that will anticipate what will be useful for the people. This is his creative spirit of service. It may lead to the invention of creative products and services that will help people solve their problems. Fasting and discipline 齋戒 are aspects of his meditation and personal cultivation.

1.11.06. Therefore, closing the door is called the Receptive, and opening the door is called the Creative. A closing and an opening we call a transformation. Going and coming without end we call a cycle. What is visible we call an image. What has a physical form we call an implement. Making and using such we call a process. Using for benefit externally and internally, and things that are useful for the general populace, we call Spirit.

是故，闔戶謂之坤；闢戶謂之乾；一闔一闢謂之變；往來不窮謂之通；見乃謂之象；形乃謂之器；制而用之謂之法；利用出入，民咸用之謂之神。

A Sage cultivates himself with physical, mental, and spiritual regimens. These promote good health, an intelligent mind, and attunement with Spirit Awareness. “Closing the door” refers to the way a Sage retires to his private space for meditation and study. “Opening the door” refers to the way a Sage goes out to engage in society and apply his creative ideas for the benefit of the world. A Sage alternates these two phases of his creation cycle over and over throughout his life. His procedure of invention is to begin with meditation. From that silent Source of awareness, an idea forms in his Plane of Heaven. When the idea becomes clear enough that he can visualize it, it has become an image. Then he builds a prototype of the image he has

visualized. This takes on physical form as an implementation of his creative idea. Once the prototype is complete, people can begin to manufacture and use the invention. A Sage embodies the Spirit Awareness by continually producing ideas and inventions that benefit society. The language of this passage is reminiscent of the **Great Learning**.

1.11.07. Therefore, the Change Maker has a Great Ultimate. This produces two Contrasts (Monograms). The two Contrasts produce four Images (Bigrams). The four Images produce eight Trigrams. The eight Trigrams determine well-being and misfortune. Well-being and misfortune produce the Great Work.

是故，易有太極，是生兩儀，兩儀生四象，四象生八卦，八卦定吉凶，吉凶生大業。

In mathematics a power set of a given set S is the set of all subsets of S . For example, let us say the set S consists of three items: a , b , and c . The power set of S is then the following set of subsets: $\{\}, \{a\}, \{b\}, \{c\}, \{ab\}, \{ac\}, \{bc\}, \{abc\}$. The first case is always the null set that is empty. If the set S contains n members, then the power set of S contains 2^n members. In the above example we had 3 members. Thus, the power set contains $2^3 = 8$ members. We can represent these with binary numbers: $\{000\}, \{001\}, \{010\}, \{100\}, \{011\}, \{101\}, \{110\}, \{111\}$. In this passage the commentator describes the generation of the power set up to the third power of two: $2^0, 2^1, 2^2, 2^3, \dots (1, 2, 4, 8, \dots)$ You can carry the sequence on as far as you like, and at each step the number of members in the set doubles. Notice that the sequence that emerges in the above list of binary numbers is not in binary ordinal sequence, but is according to the mother and the sons, and then the father and his daughters (or vice versa, depending on how we define the yin and the yang.) The final comment about the eight trigrams indicates that we can interpret these binary numbers in terms of various human conditions. From this we can determine how to proceed with the Great Work.

1.11.08. Therefore, there is no model of the images greater than heaven and earth. There is no cyclical transformation greater than the four seasons. There is no suspension of the images [in the sky] greater than the sun and moon. There is no reverence for loftiness greater than toward wealth and nobility. As for matching of things to their perfect application and setting up implements for the benefit of the world there is none greater than a Sage. As for exploring the diversity and searching out the hidden, for hooking into the depths and reaching the far distances to determine the well-being or misfortune of the world so as to

achieve the improvement of the world, there is nothing greater than the straws and tortoise.

是故，法象莫大乎天地；變通莫大乎四時；縣象著明莫大乎日月；崇高莫大乎富貴；備物致用，立成器以爲天下利，莫大乎聖人；探賾索隱，鈎深致遠，以定天下之吉凶，成天下之亹亹者，莫大乎蓍龜。

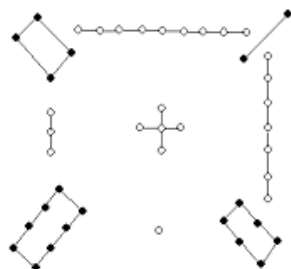
In this passage the commentator continues his poetic praise of the various aspects of the **Book of Changes**. You can apply it as a model of the entire universe and use it to study time, space, astronomy, social status, and, above all, for developing practical applications that improve the lives of the people. The “straws” represent the traditional tokens used for **Book of Changes** divination. The “tortoise” refers to the tortoise plastron that was commonly used during the Shang and Zhou Dynasties for “oracle bone” divination. Divination is an art that facilitates the amplification of intuition so that a person can detect faint signals and interpret them into an understanding of events. The tortoise shell oracle was the first primitive method developed in China for divination. It gave very simple answers. The **Book of Changes** provided a much richer framework with which to explore a situation. This included images, relationships, numbers, and the texts attached to the various symbols. The Egyptians used early versions of both the **Changes** and the Tarot. However, they generally seem to have preferred the Tarot for divination because it tied in so intimately with their mythology. The **Changes** system came from the earliest prehistoric level of Egyptian culture – the Ogdoad of Thoth. This was much more abstract, so the Egyptians adapted it mainly to scientific and mathematical applications. The Chinese were drawn to the abstract system of **Changes**, and only took a few elements from the Egyptian Tarot mythology, because they had their own rich mythology. However, the Chinese developed the **Book of Changes** with yin and yang line notation in a much more scientific manner than the Egyptians, and it became the foundation for much of Chinese science.

1.11.09. Therefore, [the Plane of] Heaven produces Spiritual Phenomena, and the Sages took them as models. Heaven and earth go through transformations, and the Sages took their efficiency from them. Heaven suspends its images, and well-being or misfortune appear. The Sages took the images from these. The Yellow River gave forth a Diagram, and the Lo River gave forth a Document. The Sages took them as models.

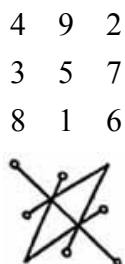
是故，天生神物，聖人則之。天地變化，聖人效之。天垂象，見吉凶，聖人象之。河出圖，洛出書，聖人則之。

Because a Sage attunes himself first to undefined Spirit Awareness, and secondly to world consciousness, the thoughts that arise from the Spring of Creative Source in the

Heavenly Plane of his mind are pure Spiritual Phenomena that are useful for his Great Work of benefiting society. Therefore, a Sage will pick up such a Spiritual Phenomenon, which we might call an intuition, and use it as the model for his creative activity. A Sage's creative activity is like the transformation cycles of the universe that efficiently bring forth all sorts of evolutionary developments. Thus, his activity has the same creative efficiency as the universe. A Sage learns the basics of astronomy and can establish an almanac for scheduling activities such as farming, fishing, and hunting. He also knows when to expect flooding and other environmental challenges. Some say that Yu3 the Great (大禹) found the Diagram and the Document. Some say that Fu Xi (Bao Xi) found them. Nobody really knows. I have already discussed the Yellow River Diagram in some detail under section 1.09.01. The Lo River Document is basically a magic square of three.



If you count the beads in any direction of this three-by-three square, you will obtain a sum of 15. There are transformations of this chart that are equivalent, and there are magic squares of any size. The methods of generating magic squares are well studied and the Internet contains numerous articles that discuss the subject, so I will not go into the details. The key question we must discuss here is: what does this little magic square have to do with the **Book of Changes**? First, we note that we can arrange the eight trigrams around the outside of the magic square. This then assigns a number to each trigram. However, there is a problem with such an approach, because these numbers do not correspond to the binary values of the trigrams: 5 appears in the center, there is no 0, and there is a 9 in the sequence. If we connect the numbers in sequence with straight lines in sets of three (1,2,3; 4,5,6; 7,8,9), we get the figure known in western mysticism as the Sigil of Saturn, which is based on what in the West is called Saturn's Magic Square.



These figures of Saturn's Magic Square and Saturn's Sigil in the West and the Lo

Document in China probably were discovered independently, since they represent the simplest example of a magic square. Anyone who plays around with numbers soon discovers the principle of the magic square. The numbers in the Lo Document magic square do not fit either the Fu Xi arrangement or the King Wen arrangement of trigrams. They therefore must represent some different arrangement.

The fundamental principle of a magic square is that the numbers balance in every direction. I believe that the Lo Document is a 3x3 magic square that serves as shorthand for an 8x8 magic square that represents the complete set of hexagrams arranged into a perfectly balanced matrix. There is a simple general formula for magic squares of odd order that was developed by De La Loubere, a French diplomat. Johann Faulhaber also produced a method, as did the British mathematician J. H. Conway. However, an 8x8 square is of even order, and unfortunately there is not a single method known that will generate every even order square. Conway developed a method he called LUX for even order magic squares when the order is divisible by 4, as the hexagram 8x8 matrix is. You have to lay out the square with the numbers in order, row by row. Next you divide the whole square into 4x4 grids. Then mark diagonals that crisscross the 4x4 grids. Finally swap the number pairs on the diagonals that add up to n^2+1 , where n is the order of the square. For example, consider the simplest case – a 4x4 square. First we write out the matrix with the cells numbered in order.

```
01 02 03 04
05 06 07 08
09 10 11 12
13 14 15 16
```

Then we swap the cell numbers along the diagonals according to the formula.

```
16 02 03 13
05 11 10 08
09 07 06 12
04 14 15 01
```

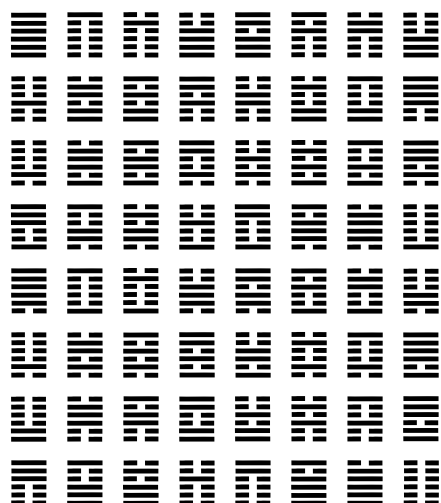
To make an 8x8 magic square matrix, we must divide into the sequential matrix into 4x4 submatrices and then apply the wrap-around rule when you swap along the diagonals.

```

64 02 03 61 60 06 07 57
09 55 54 12 13 51 50 16
17 47 46 20 21 43 42 24
40 26 27 37 36 30 31 33
32 34 35 29 28 38 39 25
41 23 22 44 45 19 18 48
49 15 14 52 53 11 10 56
08 58 59 05 04 62 63 01

```

Above is an 8x8 Magic Square generated by means of Conway's LUX rules that represents a symmetrical array of 64 hexagrams. Now we are ready to convert our 8x8 square to a hexagram array written in binary. Because our binary numbers begin with 000000 and proceed to 111111, our cells correspond to numbers from 0 to 63 in our decimal system instead of 1 to 64 (subtract 1 from each base-ten number and convert to binary.).



In the above chart I put the high bit on the bottom and the low bit on the top of each hexagram. In the matrix each hexagram is balanced by its complementary opposite hexagram at the complementary opposite position in the array. This is what I believe the Lo River Document is meant to convey in a shorthand notation. The above is just one example of a coherently balanced matrix of hexagrams. There are 880 different arrangements for an order 4 magic square, and 275,305,224 possibilities for an order 5 square. Mathematicians estimate that an order 6 square has over 1,000,000,000,000,000,000 possibilities. Thus the order 8 magic square for the hexagrams of the **Book of Changes** must have a mind-boggling number of possibilities. Just as a wild guess, perhaps there are over 10^{29} possibilities!

100,000,000,000,000,000,000,000,000.

(Expressed in US dollars that number looks to be about the size the US National Debt will reach in a few more years. That's just a joke, I hope.)

1.11.10. The Change Maker has four [bigram] Images with which to display [itself]. Words are appended to them so as to explain [them]. We define them as auspicious or inauspicious for the purpose of decision making.

易有四象，所以示也。繫辭焉，所以告也。定之以吉凶，所以斷也。

Wilhelm believes that the number “four” is a mistake for “eight”, because each of the eight trigrams has an image. However, in the previous section the word “image” clearly was used to refer to the four bigrams that generate the four seasons and four cardinal directions. These can be thought of as the four major phases of a cycle by which the cycle displays itself. Each of these major phases then consists of two subphases, and this gives us the total of eight trigrams.

第十二章

1.12.01 The Book of Changes says, “He receives assistance from heaven. There is well-being, and everything is beneficial.” The Master said, “Assistance is help. Whatever heaven helps goes smoothly. Whatever man helps brings trust. When we perform with trust, our thoughts go smoothly. It is also a way to value the worthy. Thereby, “he receives assistance from heaven, there is well-being, and everything is beneficial.”

易曰：「自天祐之，吉无不利。」子曰：「祐者助也。天之所助者，順也；人之所助者，信也。履信思乎順，又以尚賢也。是以自天祐之，吉无不利也。」

The quotation appears in the comments on the top line of Great Possession (14). The Master takes the idea to the level of trust between people. When we work together in a spirit of trust, the mind is not cluttered with unnecessary doubts and worries. Then everyone focuses on the issues at hand. This is like assistance from heaven. When people assist a worthy person, this is like the operation of heaven. They help smooth the path so that a capable person can display his abilities for the benefit of all.

1.12.02. The Master said, “Writing can not fully express words, and words can not fully express ideas. But then does this mean that we can not see the ideas of a Sage?” The Master said, “A Sage establishes images to fully express his ideas, and he designs the hexagrams to plumb true and false feelings. He appends text to them to express his words. He transforms and completes them to fully benefit. He drums them and dances them to fully express Spirit.”

子曰：「書不盡言，言不盡意；然則聖人之意，其不可見乎？」子曰：「聖人立象以盡意，設卦以盡情偽，繫辭焉以盡其言，變而通之以盡利，鼓之舞之以盡神。」

This passage deals with the problem of communication. Since a Sage can not fully express himself through speech and writing, how is he to communicate the deeper value of his ideas? Like a poet or a painter, a Sage uses concrete images. The structure of the hexagrams can reveal in the line structures how a person relates to a situation – with sincerity or pretense. A Sage still uses words to direct his ideas toward the maximum benefit. If words and images are not enough, he expresses his ideas through music and dance. This can convey subtle nuances of feeling through direct perception and dramatizing of emotion. Music has a powerful ability to set the environment vibrating in a certain manner that supports subtle ideas. Music is a highly spiritual medium.

1.12.03. Creativity and Receptivity are the generative forces of the Change Maker. When the Creative and Receptive establish an order, the Change Maker stands in its middle. When the Creative and Receptive are destroyed, then there is no way to perceive the Change Maker. If the Change Maker can not be perceived, then the Creative and Receptive seem almost extinguished.

乾坤其易之緼邪？乾坤成列，而易立乎其中矣。乾坤毀，則无以見易；易不可見，則乾坤或幾乎息矣。

In this passage the author of the Appendix promotes the Creative Will (1) and Receptive Awareness (2) as the key hexagrams in the **Book of Changes**. They form the poles of the system, as we saw in the Diamond Layout of Yu Yen. We can only perceive the Change Maker in terms of the changes that he supports. Thus, the Change Maker appears in the middle between the two poles. This is the principle of centrality in the **Book of Changes**. For example, the Change Maker appears in a hexagram through the central lines of the inner and outer trigrams. He also appears in the gap between the inner and outer trigrams. The Creative and Receptive represent the entire range of the hexagrams in the same way that we indicate a range of numerical values, -- for example, the natural numbers from 0 to 63. All possible changes then appear within the range that we have defined. Without the two contrasting poles, it seems that the relative world collapses. However, such a thing does not ever really happen. The undefined aspect of the Change Maker always remains still and silent in the transcendental background as an eternal witness to all possibilities, including the possibility of nothingness, the null set all by itself.

1.12.04. Therefore, the metaphysical realm is called the Way, and the physical realm is called the implement. To shift and manage them we call

transformation. To extrapolate and operate them we call the cycle. To elevate and organize them is what the people of the world call business enterprise.

是故，形而上者謂之道；形而下者謂之器；化而裁之謂之變；推而行之謂之通；舉而措之天下之民，謂之事業。

The Way is the path of the creation cycles. It is abstract metaphysics and consists of a dynamic flow from one archetypal situation to another. This is the world of ontology, philosophy, and psychology. The physical world is involved with physical implements that embody the ideas and energies of the metaphysical realm. You can do transformations in either realm or back and forth between them or in both at once. When you know that systems operate in cycles, you can extrapolate how they operate within the range of the system. Ordinary people see skill in management as the hallmark of an entrepreneur. This skill can be developed in any field -- business, government, education, research, and so on.

1.12.05. Therefore, the images are what a Sage uses to see the manifestations of the world, and make plans according to their descriptive properties. They imagine the particular object's appropriate attributes and thus call it an image.

是故，夫象，聖人有以見天下之賾，而擬諸形容，象其物宜，是故謂之象。

The images are mental constructions. A Sage can imagine various possibilities and visualize them in his mind. This is how he sees the world. The great 20th century scientist Tesla could imagine a device, creating and testing an entire design for the device in his mind. Then he could build the device according to his mental image and it would work as he imagined it would. This suggests the potential creative power of imagination when used by a Master who fully understands how the mind works.

1.12.06. Sages have a way to perceive the motions of the world, and observe how they integrate and form complete cycles. Thereby they may operate their archetypes. They append text to them to determine their auspicious and inauspicious aspects, and so they call them [texts on the] "lines".

聖人有以見天下之動，而觀其會通，以行其典禮，繫辭焉，以斷其吉凶，是故謂之爻。

A key to understanding how to use the **Book of Changes** is the ability to observe carefully actual phenomena as they unfold. This is the scientific method. From these observations the Sage generates a hypothesis regarding the phenomena. This is his "archetype". In ancient China these archetypes were often symbolized through rituals. The Sage then describes his hypothesis with written comments and gives his analysis of the detailed auspices in what the **Book of Changes** calls the "lines".

These represent the finest level of detail in the mathematical model. A hexagram or set of hexagrams is a simple mathematical model of a process. In our day we use powerful computers to carry out much more sophisticated calculations at super fast speed, but the basic principle is the same.

1.12.07. The limit of the world's diversity is stored in the n-gram. Encouragement of the world's activities is stored in the text. The shifting and managing is stored in the transformations. The extrapolation and operation are stored in the complete cycle. Spiritualization and enlightenment are stored in the person. Being silent and achieving, not speaking, and the giving of trust are stored in virtuous behavior.

極天下之賾者，存乎卦；鼓天下之動者，存乎辭；化而裁之，存乎變；推而行之，存乎通；神而明之，存乎其人；默而成之，不言而信，存乎德行。

These are powerful generalizations. The first tells us that when you decide on the size of your set (your n-gram and base), you determine how much diversity your system can handle. For example, you can work with 2 monograms, 4 bigrams, 8 trigrams, 64 hexagrams, 256 octograms, 1024 decagrams, and so on. The purpose of the text is to encourage people to improve their lives. The principles of shifting and managing situations can be learned by studying the transformations. For example, given a certain hexagram, the probability is that it will be fairly stable most of the time, and then occasionally change in certain ways. Some changes are more probable than others. For example, it is more likely for one line to change than for more than one line. For all six lines to change is possible, but not very likely. Also, the outer lines appear to change faster than the inner lines. The influence of a particular line change depends on its role in the whole hexagram. Once you understand that systems move in cycles, you can identify the phases of the cycle and study the behavior in each phase. Then you can predict outcomes. Even without data on parts of the cycle, you can extrapolate to fill in the blank areas until such time as data surfaces. Sometimes you can predict where the data is and then go find it. This is a major triumph of modern science. The managers of the space program would never dare to venture to the moon unless they had engineering calculations and tests that demonstrated they could actually arrive there and return safely. One of the key applications of the **Book of Changes** is to attain personal enlightenment. The Appendices provide lots of hints about the technology involved. The Confucian scholars also valued the **Book of Changes** as a handbook for inspiring virtuous behavior. The key to this is the self esteem a person builds by performance rather than talk. When you silently trust another, you build that person's self esteem. When you carry out a trust on your own, you build your own self esteem.

Monitoring the behavior of others is a sign of distrust. The proliferation of video monitors in the cities of the world is a sign of deep distrust by the government of its citizens. If society can build mechanisms by which people can practice carrying out operations on a basis of trust, the world will become a much friendlier and more comfortable place.