

Some Cultural Principles
Expressed by the Sequence of
Hexagrams in the I-ching

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A paper discussing cultural principles expressed by the sequence of hexagrams in the I-ching does not seem at first glance to have much in common with the topic of this session--Mass Mobilization through Literature and Press in China. However, if we consider the unique contents and history of this first of all Chinese classics, we find that the simplicity and universality of its system of symbols have made it accessible to all levels of Chinese society, from the highly sophisticated ruling classes to the illiterate peasants.

The symbols of the I-ching represent numbers, images, and principles. These three basic aspects of the classic have profoundly influenced Chinese culture in almost every area: art architecture, literature, mathematics, medicine, philosophy, religion, agriculture, and politics. In a sense the I-ching is a handbook of holistic and practical cultural principles that not only integrate the sciences and humanities, they also underlie every field of knowledge, every culture. Perhaps it is this holistic value that enables the I-ching to influence many people of different times and places in diverse ways.

In this paper I will define some cultural principles expressed by the sequence of symbols that we find in the I-ching text. Hopefully this will begin to answer the question of why the hexagrams were arranged in such an apparently curious order. In my discussion I will suggest some phrases or terms from the Chinese text that may be taken to describe those principles. Also I will represent these terms in English with corresponding terms or principles drawn from a modern holistic system of thought known as the Science of Creative Intelligence, or SCI. This, I hope, will help to illustrate the truly universal nature of the principles involved.

What is SCI? Like the Book of Changes the Science of Creative Intelligence is also an holistic system that integrates knowledge and experience, sciences and humanities, and formulates a set of abstract principles that govern all processes. We may briefly define SCI as a systematic study of orderly processes of change. Science is any systematic study. Creativity we define as a tendency to generate change, especially change toward quantitative or qualitative growth. Intelligence is a tendency to recognize or display orderly processes or structures. SCI was formulated in 1971 by Maharishi Mahesh Yogi as an intellectual framework to facilitate scientific study and description of the principles, practice, and effects of an experiential tech-

nique for unfolding maximum creativity, intelligence, and enjoyment in the life of any individual. Known as the Transcendental Meditation program (or TM program,) this technique is a simple mental procedure that is practiced twice daily for periods of about twenty minutes, and involves no particular cultural background, level of education, or religious beliefs to learn or practice. During those brief periods the practiser's attention systematically, but spontaneously, experiences increasingly refined and subtle levels of thinking, and may encounter numerous moments of "transcending," a state of pure awareness where the mind becomes restfully alert and is infused with qualities of unboundedness and bliss. Activity following these daily experiences is characterized by abundant creative energy, rapid positive personal growth, ability to integrate well with the environment, and richer appreciation of cultural values.

I mention the above points, not as a digression, but because my own experience of this program has led to a much more intimate, holistic, and profound understanding of the changes and the principles which they express. Similar holistic experiences have been reported by nearly two million people of all cultures practicing the TM program in the world today. It would appear, then, that SCI may provide a simple means to mobilize the vast population of China for rapid modern scientific growth that can simultaneously remain in stable accord with the cultural integrity of China's own ancient traditional wisdom.

The Sequence of Hexagrams:
Some Past Approaches, and This Paper's Approach

The ninth Wing of the I-ching is a text purporting to explain the sequence of the hexagrams, but its statements are very arbitrary and often contradict the definitions of the hexagrams found in the other Wings. However, the comments on the beginning, middle, and end of the sequence do, I think, identify some important principles: for example, the text begins by asserting that "When there were heaven and earth, then afterwards all things were produced;" and ends by stating that "the succession of events cannot come to an end, and therefore Ki Zi (chi-chi 既濟) is succeeded by Wei Zi (wei-chi 未濟)." Also, the explanations seem to indicate a pattern of cycles of change, though there are no apparent rules governing the sequence of those cycles or their relationships. (A copy of James Legge's translation of this text is appended to this paper, pp. 10-13.)

Beginning in the Han dynasty and continuing in the Sung dynasty, some I-ching scholars used the binary properties of the hexagrams as a basis for constructing symmetrical and mathematically precise sequences. Such inventiveness perhaps suggests that these scholars felt some dissatisfaction with the apparent arbitrariness of the I-ching sequence and were searching for more obviously coherent sequences or patterns of arrangement. To mention a few notable examples:

1. Ching Fang 京房 generated a system of eight "houses" by doubling the trigrams in the Fu Hsi arrangement and then systematically changing lines in successive positions. See charts 2-4.
2. Yü Yen 俞琰 arranged Chu Hsi's 朱熹 classification of hexagrams by number of yin and yang lines into a sequence that clearly correlated the rising and falling "princely" cycle with Fu Hsi's trigrams and Wei Po-yang's 魏伯陽 central axis principle. See charts 5-6.
3. Shao Yung 邵雍 laid out circular and square arrangements that followed the sequence of binary numbers through six places. See charts 7-8.

The best analysis I have seen of the sequence of hexagrams in the I-ching is presented in a little book entitled Chou-i t'u 周易圖 by Wang Chao-tsung 王肇宗, a Ch'ing dynasty scholar from Shang-yuan 上元 in Chiang-su 江蘇 province. (This work also contains prefatory notes by Wu T'ang 吳瑭 and Ku Ch'un 顧純 of the mid-Ch'ing period.) The Chou-i t'u is very helpful, but it still leaves a number of questions unanswered or unsatisfactorily answered. In my discussion I follow the Chou-i t'u closely, bringing out the cultural principles that seem to apply at each step in constructing the sequence.

The Principles Expressed by the Sequence of Hexagrams:
Classification of Keys, Eyes, Correct Hexagrams,
and Correlative Hexagrams

1. The principle of the highest first. The Absolute is symbolized by the fullness of pure creative energy expressed by ch'ien 乾 ☰ (the binary number 111111, or 63) and by the fullness of pure emptiness and receptivity to all possibilities expressed by k'un 坤 ☷ (the binary number 000000, or 0.) Similarly, for SCI the highest first is to locate pure creative intelligence, the home of all the laws of nature, and the nonchanging field on the basis of which all possible changes and processes may take place.

2. Pure creative intelligence evolves from fullness to fulfillment. The evolution of the Absolute (that is, the pure, undifferentiated state of a system) ranges from the fullness of perfect purity--pure abstract creativity, or consciousness--which is the Absolute existing by itself, through all possible relative conditions (expressed by the sequence of hexagrams in the I-ching) to the fulfillment of the Absolute in a perfect integration of Absolute and Relative (expressed by the final pair of hexagrams, chi-chi ☱☲ and wei-chi ☳☶.)

* Also called Chou-i hsi-kua t'u 周易序卦圖. In his Illustrated Commentary on the I-ching (易經來註圖解) of 1618, pp. 16.21ab-22a, Lai Chih-te 來知德 provides an analytic chart of the sequence that represents an earlier stage in the development of Wang's charts.

大哉乾元，萬物資始。(象1)*
 天地定位。(說3)
 乾坤共易之門邪。(繫辭2.5)
 有天地然後萬物生焉。(序1)

3. The principle of coexistence of opposites (relativity.) The perfect integration of Absolute and Relative achieved by the alternation of yin and yang lines in the final pair of hexagrams is an excellent example of this principle. But this is a fundamental ordering principle that operates throughout the sequence. All hexagrams are grouped in pairs either by inversion or, in case the hexagram is symmetrical, by complementarity. 錯綜 All opposites tend to correlate with each other, 相對, 交錯, and progress arises through steps of cyclic alternation of opposites 往來, 反復, 消息:

憧憧往來，日月從爾思。(繫辭2.3)
 日往月來，月往日來
 小往大來 (泰)
 大往小來 (否)
 反復其道 (復) (cf. Lao-tzu)

4. The principle of wholeness (especially of two wholenesses or 200%.) The sequence is built up around a "backbone" of KEY 綱 hexagrams that express strong qualities of unity. The pure unity keys are the eight trigrams doubled 乾, 坤, 坎, 離, 震, 巽, 兌, 艮... This symbolizes perfect inner and outer, mind and body, subjective and objective coordination. The complementary keys closely simulate the unity keys by structuring a complementary correlation between the inner and outer trigrams: 泰, 否, 既濟, 未濟, 咸, 恒, 損, 益...

5. The principle that the whole is something more than the sum of its parts (group consciousness.) Between the keys are placed pairs of EYES 目, most of which resemble large "macroscopic" trigrams in their structures. e.g. 臨, 中孚.

6. The principle of purposefulness (in the sense of high orderliness and coherent symmetry.) Many of the eyes display pronounced properties of symmetry or closely resemble other properties of the keys. They also tend to locate near keys in the sequence. They nest between the keys and hold other sets of hexagrams between them.

* The citation numbers given in this paper follow the text in the Harvard-Yenching Institute's Concordance to the Yi Ching (see p. 31 of this paper.)

7. The principle of the gap. Any two dissimilar components of a system must be linked by a gap whose mechanism is essential to the coherence of the whole system. Two important pairs of eyes bridge the critical gap between Absolute and Relative, unmanifest and manifest, potential and actual, that connects heaven and earth to all things. The structures of these hexagrams describe the structure of the gap by combining heaven and water 天一生水 ䷛ or earth and fire 地二生火 ䷔. These transition structures connect the beginning of each book of the I-ching to the rest of the sequence that follows. Possessing "correct" properties, they adhere to the correct hexagrams; possessing "correlative" properties as well, they correlate between books I and II. See chart 12.

8. The principle that the individual is the basis of the group (as expressed, for example, in the Great Learning, where the community is based on the family, and the family is based on the individual.) The concept of individuals building a family is a very important ordering principle in the sequence. The first generation of the family includes all the hexagrams that contain either heaven or earth (defined in the Shuo-kua text as father and mother.) The parents (the first key pair 乾坤 ䷀ ䷁) interact in the second key pair (泰否 ䷊ ䷋) to beget their first group of children--the correct hexagrams of book I, consisting of ch'ien or k'un with one central line in position 2, 3, 4, or 5 changed. These children are arranged symmetrically about the keys t'ai and p'i which represent the parents interacting (天地交) 天地交: ䷋, ䷊, ䷁, ䷀, ...

參伍以變。錯綜其數。通其變。遂成天地之文。
(繫辭 1.9)

乾天也。故稱乎父。坤地也。故稱乎母。震一索而得男。故謂之長男。巽一索而得女。故謂之長女... (說 9)

The remaining hexagrams begotten by the parents are combinations of heaven and earth with the four images (天地四象卦; thunder, mountain, wind, and lake are the four images.) They are classed as correlative hexagrams and match by balancing opposition and reversal with corresponding hexagrams made from fire and water joined with the four images.

The remaining hexagrams with fire and water combining with the four images form the correct sequence of book II and balance with the correct sequence of heaven-and-earth first-born hexagrams in book I. They are the first-born of the second generation.

Chart 9 shows how the sixty-four hexagrams may be distributed into classes that mutually correspond. Chart 10 shows how these various classes form symmetrical patterns in Shao Yung's square arrangement (Charts 13a-p from the Chou-i t'u further elucidate the relationships with Shao's square, which is a matrix of the binary numbers tabulated sequentially.) Now that the classification of correct and correlative sets is complete, they are inserted between the eyes as shown in charts 11 and 12. Note the alternation of correct and correlative sets.

Some Questions

Although the above principles enable us to approximate the structure of the sequence of hexagrams found in the I-ching, some questions still remain. I have proposed one method; perhaps there are other explanations, as yet undiscovered or unknown to me, that will give an even better explanation, and deal with some of my unanswered questions, the most important of which I list below.

1. What determines the order of the members of an inverted or complementary pair of hexagrams? Most pairs place first the hexagram whose inner trigram is either a yang trigram (☰, ☱, ☲, or ☳) or the eldest family member of the two inner trigrams (see Shuo-kua 9) However, there are a number of notable exceptions, some of which are hard to explain.

2. If hsü 需 ☵☳ and chin 晉 ☳☱ represent the transition or gap between the initial pair and the sequence that follows, why are two other pairs (lin 臨 ☳☱ and t'un 遁 ☱☳) inserted between them and the initial pairs? Perhaps to contrast with i 頤 ☶☱ and chung-fu 中孚 ☱☲. Otherwise, I do not know.

3. Why does hsien 咸 precede sun 損? The Chou-i t'u says that hsien deals with the beginnings of human affairs, and sun deals with the flourishing and decline of human affairs. But this does not seem to me to be based firmly enough on objective structural criteria.

4. Chi-chi/wei-chi 既濟, 未濟 (the most integrated pair) goes to the end of book II in order to express the fulfillment of the entire sequence according to principle number 2. But why are sun 損 and t'ai 泰 inserted into the middles of two correct sequences? A possible answer is that sun moves inward so that the number of keys at the end of book II will match the number at the beginning of book I, and so that chung-fu 中孚 and chi-chi 既濟 can correlate with i 頤 and k'an 坎. (This also explains why book I ends with the k'an/li pair.)

5. Why are sui 隨 and i 頤 in book I, and ch'ien 漸 and chung-fu 中孚 in book II, instead of the other way around? A possible answer is that i/ta-kuo 頤/大過 is closer to ch'ien/k'un 乾/坤 because it expresses greater values of purity and fullness in its structure. Sui must group with i because of the similarity of structure between them. Ch'ien and chung-fu also share a similar structure.

6. What determines the order of the correct hexagrams? In book I the correct hexagrams seem to alternate both by complementarity and by alternation of yang and yin, but I don't yet understand why shih 師 should be first, instead, for example, of ch'ien 謙. In book II I don't really understand why feng 豐 could not come first, instead of chia-jen 家人.

7. Why does lin 臨 switch with chun 屯 instead of wu-wang 无妄 or another correlative hexagram from book I? I don't know. Presumably lin then moves next to sui so that the three remaining pairs of correlative hexagrams can stick together.

Conclusion

In spite of the questions which remain, I think it is clear that some principles, perhaps the ones I have suggested, determined the composition of the sequence, though some aspects of the sequence may have been composed randomly, perhaps intentionally so. That the framers of the I-ching hexagram sequence may have had in mind the principles I have mentioned is rendered plausible by presence of such ideas in the I-ching text itself, and by general currency of similar ideas (e.g., the highest first, correlation and alternation of opposites, or the individual as the basis of society) in Chinese thought of the Chou and Han periods. That these principles can be located in other holistic systems, such as the Science of Creative Intelligence, which developed independent of Chinese culture, suggests that these principles may indeed be of a very broad, if not universal nature. It is also interesting to observe how in recent years the Science of Creative Intelligence has been making the systematic study and experience of the principles of creativity and intelligence available in a practical format to nearly two million people. These people seem to be experiencing a lively awareness of the same fundamental principles of life that were expressed nearly three thousand years ago in the Book of Changes.

Notes on Additional Charts

Charts 13a-p: The following charts from the Chou-i t'u show how the various classes of hexagrams that structure the sequence of the Chou-i correlate with Shao Yung's mathematically precise matrix arranged in binary sequence. Of particular interest are charts 13ab that show how the keys form diagonals through the square. Chart 13c shows the eyes located between the diagonals. The heaven-and-earth hexagrams, including the princely rising and falling series, form the outer perimeter of the square, while the correct hexagrams of book II form an axis in the center of the square (13j-n). The binary sequence of the square with its marked symmetries illuminates the relationships among the various classes of hexagram by inversion and complementarity.

Charts 14-15: The sixteen fundamental principles of the Science of Creative Intelligence may be correlated with the sixty-four hexagrams. The SCI principles follow a sequence which appears to unfold in a binary fashion similar to Shao Yung's sequence. However, the SCI sequence, when correlated to the hexagrams by matching similar themes, does not seem to agree with any orderly sequence of hexagrams. On the other hand, the hexagram themes listed under each principle of SCI serve to bring out four different major aspects of each principle. For this reason, I feel that such a correlation is fruitful. Further study may reveal a better correlation that does fit an orderly hexagram sequence.

Chart 1

THE HEXAGRAMS, in the order in which they appear in the Yi, and were arranged by king Wän.

8 pi	7 eze	6 sung	5 hsiü	4 mäng	3 zun	2 khwän	1 k'ien
16 yü	15 k'ien	14 t'ü yü	13 tung zän	12 phi	11 thai	10 li	9 hsiäo k'ü
24 fü	23 po	22 pi	21 shih ho	20 kwän	19 lin	18 kü	17 sui
32 häng	31 hsien	30 li	29 khan	28 t'ü kwo	27 i	26 t'ü k'ü	25 wü wang
40 kieh	39 k'ien	38 khwei	37 t'ü zän	36 ming f	35 jin	34 t'ü kwang	33 thun
48 jing	47 khwän	46 shäng	45 jhui	44 käu	43 kwai	42 yi	41 sun
56 lü	55 fang	54 kwei mei	53 kien	52 kän	51 kän	50 ting	49 ko
64 wei j'ü	63 k'ü j'ü	62 hsiäo kwo	61 lung f'ü	60 kieh	59 hwän	58 tui	57 sun

The Orderly Sequence of the Hexagrams.

SECTION I.

1-3. When there were heaven and earth, then afterwards all things were produced. What fills up (the space) between heaven and earth are (those) all things. Hence (*Khien* and *Khwân*) are followed by *Kun*¹. *Kun* denotes filling up.

3-6. *Kun* is descriptive of things on their first production. When so produced, they are sure to be in an undeveloped condition. Hence *Kun* is followed by *Mãng*. *Mãng* is descriptive of what is undeveloped—the young of creatures and things. These in that state require to be nourished. Hence *Mãng* is followed by *Hsü*. *Hsü* is descriptive of the way in which meat and drink (come to be supplied)². Over meat and drink there are sure to be contentions². Hence *Hsü* is followed by *Sung*.

6-8. *Sung* is sure to cause the rising up of the multitudes³; and hence it is followed by *Size*. *Size* has the signification of multitudes³, and between multitudes there must be some bond of union. Hence it is followed by *Pi*, which denotes being attached to.

8-11. (Multitudes in) union must be subjected to some restraint. Hence *Pi* is followed by *Hsiào*

Khò. When things are subjected to restraint, there come to be rites of ceremony, and hence *Hsiào Khò* is followed by *Lì*⁴. The treading (on what is proper) leads to *Thái*, which issues in a state of freedom and repose, and hence *Lì* is followed by *Thái*.

11-16. *Thái* denotes things having free course. They cannot have that for ever, and hence it is followed by *Phi* (denoting being shut up and restricted). Things cannot for ever be shut up, and hence *Phi* is followed by *Thung 3än*. To him who cultivates union with men, things must come to belong, and hence *Thung 3än* is followed by *Tà Yü*. Those who have what is great should not allow in themselves the feeling of being full, and hence *Tà Yü* is followed by *Khien*. When great possessions are associated with humility, there is sure to be pleasure and satisfaction; and hence *Khien* is followed by *Yü*.

16-19. Where such complacency is awakened, (he who causes it) is sure to have followers⁵. They who follow another are sure to have services (to perform), and hence *Sui* is followed by *Khò*⁶. *Khò* means (the performance of) services. He who performs such services may afterwards become great, and hence *Khò* is followed by *Lin*. *Lin* means great⁶.

19-23. What is great draws forth contemplation, and hence *Lin* is followed by *Kwân*. He who attracts contemplation will then bring about the union of others with himself, and hence *Kwân* is followed by *Shih Ho*. *Shih Ho* means union. But things should not be united in a reckless or irregular way, and hence *Shih Ho* is followed by

Pi. Pi denotes adorning. When ornamentation has been carried to the utmost, its progress comes to an end; and hence Pi is followed by Po. Po denotes decay and overthrow.

23-26. Things cannot be done away for ever. When decadence and overthrow have completed their work at one end, reintegration commences at the other; and hence Po is followed by F*u*. When the return (thus indicated) has taken place, we have not any rash disorder, and F*u* is followed by W*u* Wang. Given the freedom from disorder and insincerity (which this name denotes), there may be the accumulation (of virtue), and W*u* Wang is followed by T*u* K*u*.

26-30. Such accumulation having taken place, there will follow the nourishment of it; and hence T*u* K*u* is followed by I. I denotes nourishing. Without nourishment there could be no movement, and hence I is followed by T*u* K*u*. Things cannot for ever be in a state of extraordinary (progress); and hence T*u* K*u* is followed by K*h*an. K*h*an denotes falling into peril. When one falls into peril, he is sure to attach himself to some person or thing; and hence K*h*an is followed by L*i*. L*i* denotes being attached, or adhering, to.

II

SECTION II.

31, 32. Heaven and earth existing, all (material) things then got their existence. All (material) things having existence, afterwards there came male and female. From the existence of male and female there came afterwards husband and wife. From

husband and wife there came father and son. From father and son there came ruler and minister. From ruler and minister there came high and low. When (the distinction of) high and low had existence, afterwards came the arrangements of propriety and righteousness.

The rule for the relation of husband and wife is that it should be long-enduring. Hence Hsien is followed by H*ang*. H*ang* denotes long enduring.

32-37. Things cannot long abide in the same place; and hence H*ang* is followed by T*hun*. T*hun* denotes withdrawing. Things cannot be forever withdrawn; and hence T*hun* is succeeded by T*u* K*u*ang. Things cannot remain for ever (simply) in the state of vigour; and hence T*u* K*u*ang is succeeded by S*in*. S*in* denotes advancing. (But) advancing is sure to lead to being wounded; and hence S*in* is succeeded by M*ing* I. I denotes being wounded. He who is wounded abroad will return to his home; and hence M*ing* I is followed by K*i*an Z*an*.

37-40. When the right administration of the family is at an end, misunderstanding and division will ensue; and hence K*i*an Z*an* is followed by K*h*wei. K*h*wei denotes misunderstanding and division; and such a state is sure to give rise to difficulties and complications. K*h*wei therefore is followed by K*ien*. K*ien* denotes difficulties; but things cannot remain for ever in such a state. K*ien* therefore is followed by K*ieh*, which denotes relaxation and ease.

40-44. In a state of relaxation and ease there are sure to be losses; and hence K*ieh* is followed

by Sun. But when Sun (or diminution) is going on without end, increase is sure to come. Sun therefore is followed by Yi. When increase goes on without end, there is sure to come a dispersing of it, and hence Yi is followed by Kwai. Kwai denotes dispersion. But dispersion must be succeeded by a meeting (again). Hence Kwai is followed by Kâu, which denotes such meeting.

44-48. When things meet together, a collection is then formed. Hence Kâu is followed by Shui, which name denotes being collected. When (good men) are collected and mount to the highest places, there results what we call an upward advance; and hence Shui is followed by Shāng. When such advance continues without stopping, there is sure to come distress; and hence Shāng is followed by Khwān. When distress is felt in the height (that has been gained), there is sure to be a return to the ground beneath; and hence Khwān is followed by Jing.

48, 49. What happens under Jing requires to be changed, and hence it is followed by Ko (denoting change).

49-55. For changing the substance of things there is nothing equal to the caldron; and hence Kô is followed by Ting. For presiding over (that and all other) vessels, no one is equal to the eldest son, and hence Ting is followed by Kân. Kân conveys the idea of putting in motion. But things cannot be kept in motion for ever. The motion is stopped; and hence Kân is followed by Kân, which gives the idea of arresting or stopping. Things cannot be kept for ever in a state of repression, and hence Kân is followed by Kien, which gives the idea of

(gradually) advancing. With advance there must be a certain point that is arrived at, and hence Kien is succeeded by Kwei Mei. When things thus find the proper point to which to come, they are sure to become great. Hence Kwei Mei is succeeded by Fāng, which conveys the idea of being great.

55-57. He whose greatness reaches the utmost possibility, is sure to lose his dwelling; and hence Fāng is succeeded by Li (denoting travellers or strangers). We have in it the idea of strangers who have no place to receive them, and hence Li is followed by Sùn, which gives the idea of (penetrating and) entering.

57-59. One enters (on the pursuit of his object), and afterwards has pleasure in it; hence Sùn is followed by Tui. Tui denotes pleasure and satisfaction. This pleasure and satisfaction (begins) afterwards to be dissipated, and hence Tui is followed by Hwan, which denotes separation and division.

59-62. A state of division cannot continue for ever, and therefore Hwan is followed by Jieh. Jieh (or the system of regulations) having been established, men believe in it, and hence it is followed by Kung Fû. When men have the belief which Kung Fû implies, they are sure to carry it into practice; and hence it is succeeded by Hsiao Kwo.

62-64. He that surpasses others is sure to remedy (evils that exist), and therefore Hsiao Kwo is succeeded by Ki Si. But the succession of events cannot come to an end, and therefore Ki Si is

succeeded by Wei 3i, with which (the hexagrams) come to a close.

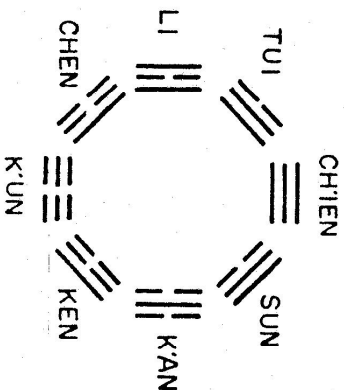
The few sentences on this Appendix in the Introduction, pp. 54, 55, are sufficient. It shows the importance of the meaning of the name in the attempt to explain the lineal figures, and prepares us to expect on each one a brief enigmatical essay, which, it has been seen, is the nature of the Text. But the writer, whoever he was, is by no means careful always to follow that Text in the significance of the characters, as will appear in the few instances to which attention is called in the following notices. The treatise is too slight to require, or to justify, an exhibition of all its inaccuracies.

¹ But Xun does not denote filling up. It is the symbol of being in a state of distress and difficulty. The writer is thinking of the result of the interaction of heaven and earth as being to fill all between them with the various forms of living beings; and to represent that he gives the result of Xun, and not its meaning. He makes a blunder which might have been easily avoided, for he adds immediately that the character is descriptive of things on their first production.

Chart 2ab

THE "FU HSI" ARRANGEMENT OF EIGHT TRIGRAMS

K'UN	KEN	KAN	SUN	CHEN	LI	TUI	CHIEN
OLD YIN		YOUNG YANG		YOUNG YIN		OLD YANG	
YIN				YANG			
GREAT ULTIMATE							



² It is difficult to follow the writer here. Hsi in the Text is the symbol of the idea of waiting. Does he mean that a provision of food and drink can only be made gradually? There is nothing in the character Hsi to awaken in the mind the idea of nourishment. Then the Genesis of contention which is given is strange. The writer probably had in his mind the lines of the Shih, II, i, ode 5. 3 :—

The loss of kindly feeling of
From slightest things shall grow,
Where all the fare is dry and spare,
Resentments fierce may glow.³

But what is allowable, good even, in poetry, is out of place in this treatise.

³ Contention on a great scale will put all the population of a state in excitement and motion, and military measures of repression will be necessary. But the idea of the multitudes in Sze would seem to be simply that of number, and not that of a numerous host. In a feudal kingdom, however, all the able-bodied people might be required to join the army.

Chart 3

THE EIGHT HOUSES

Returning Soul

Wandering Soul

5th Generation

4th Generation

3rd Generation

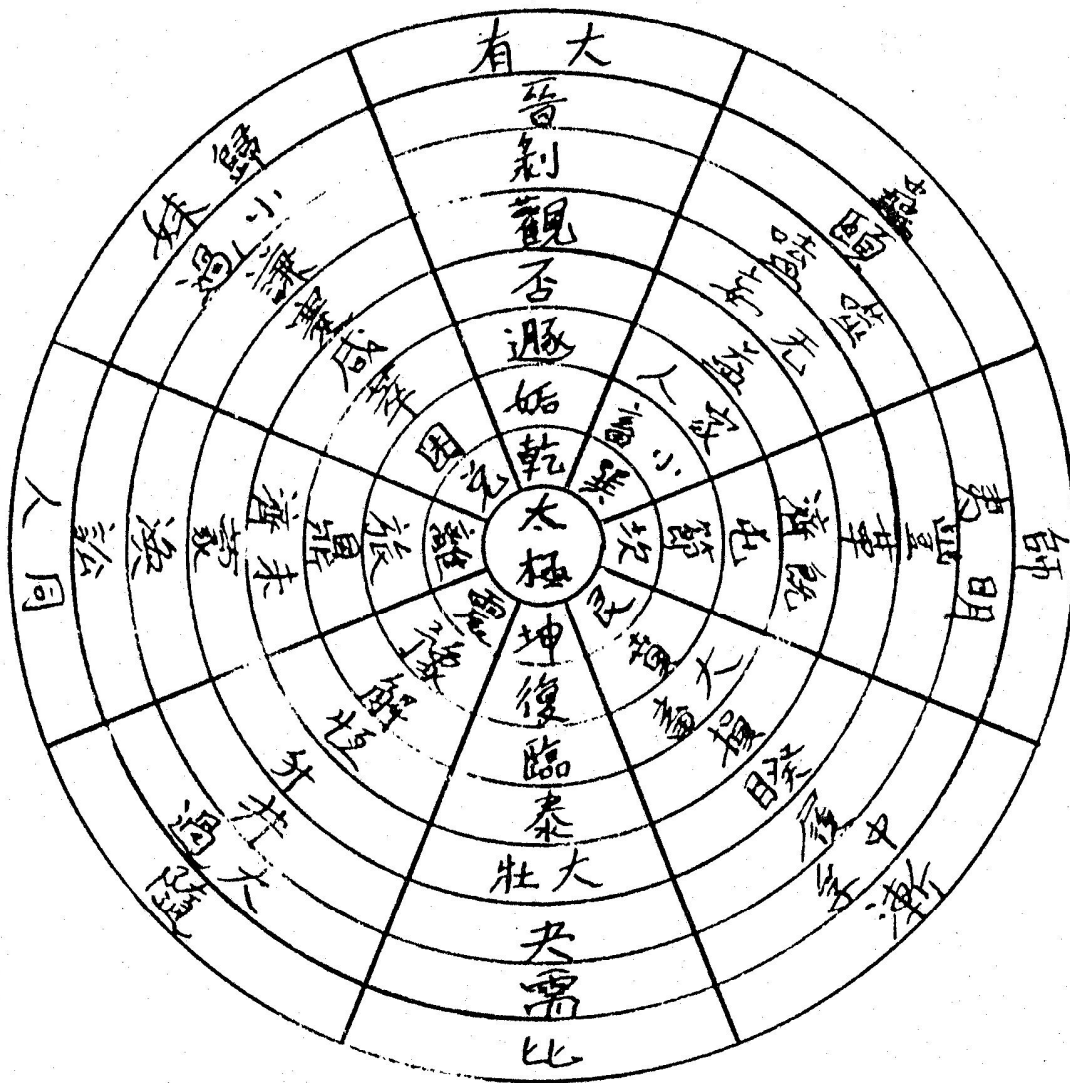
2nd Generation

1st Generation

Pure Hexagrams

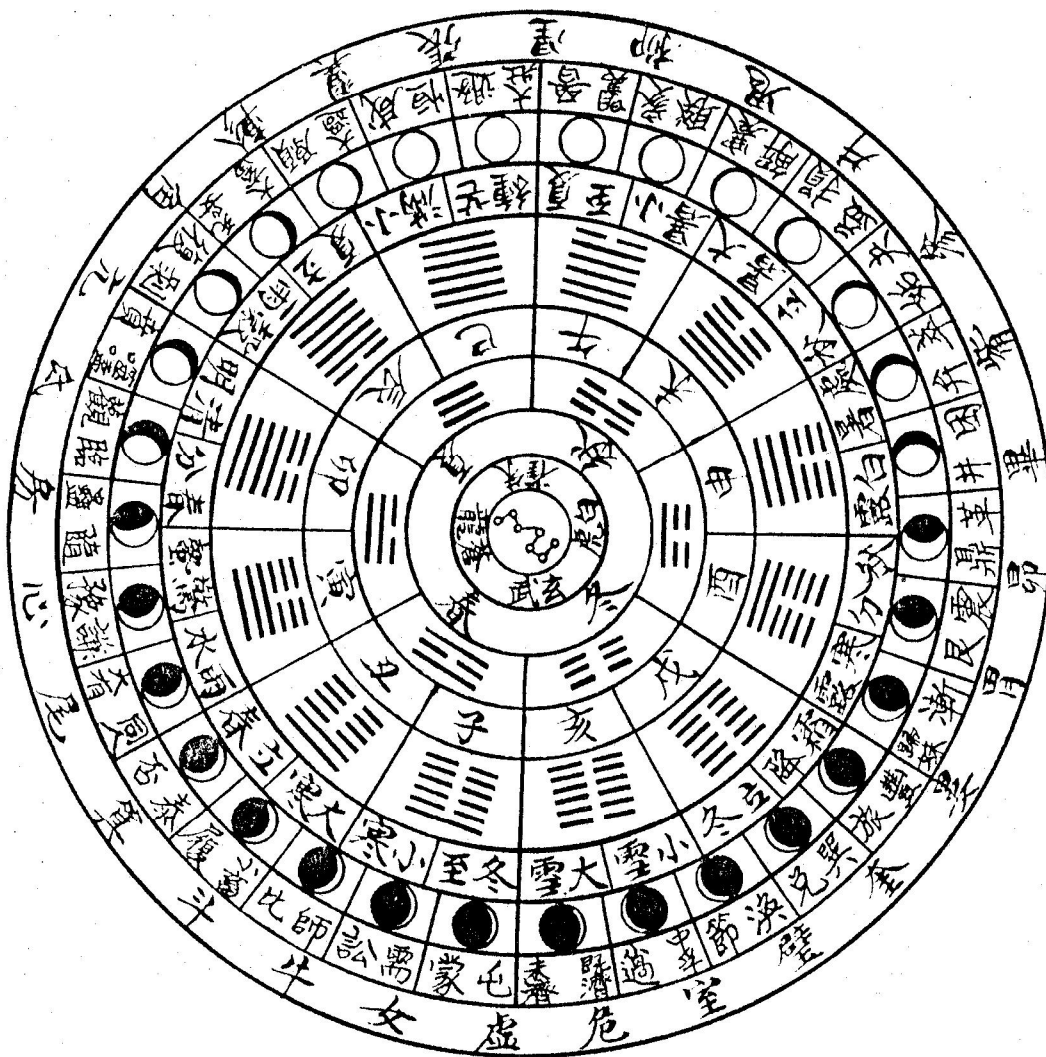
乾 震 坎 艮 坤 巽 離 兌

Chart 4



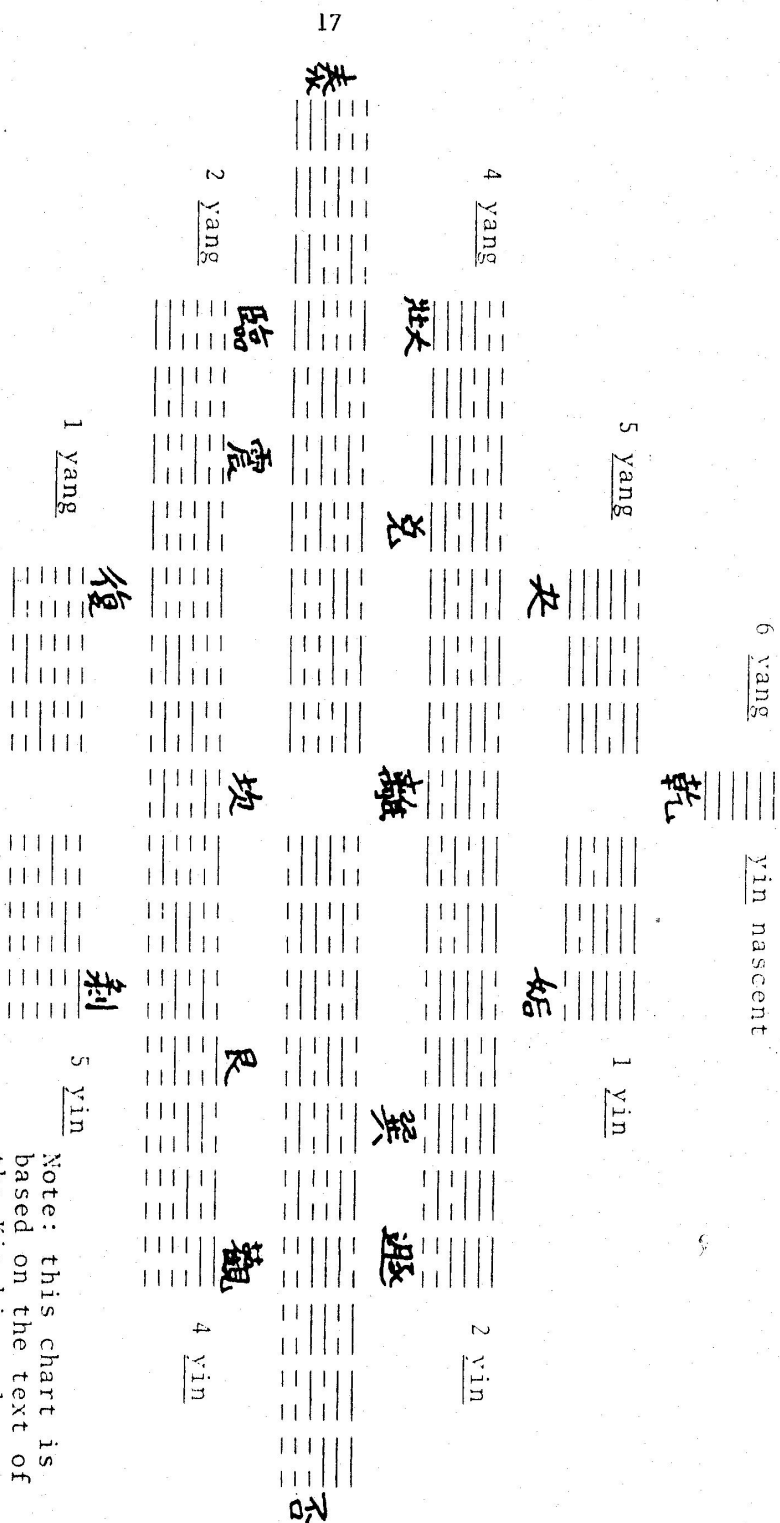
THE RADIAL SYMMATRY OF CHING FANG'S EIGHT HOUSES

Chart 5



PENG HSIAO'S BRIGHT MIRROR CHART

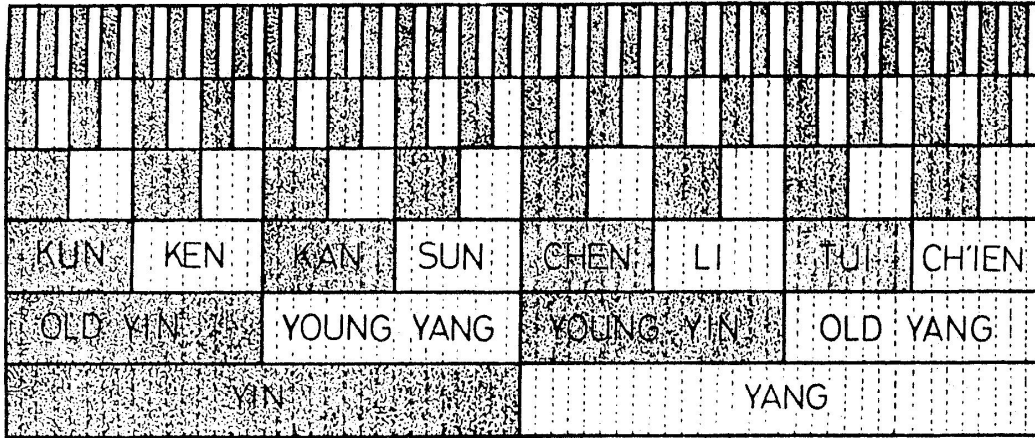
Chart 6



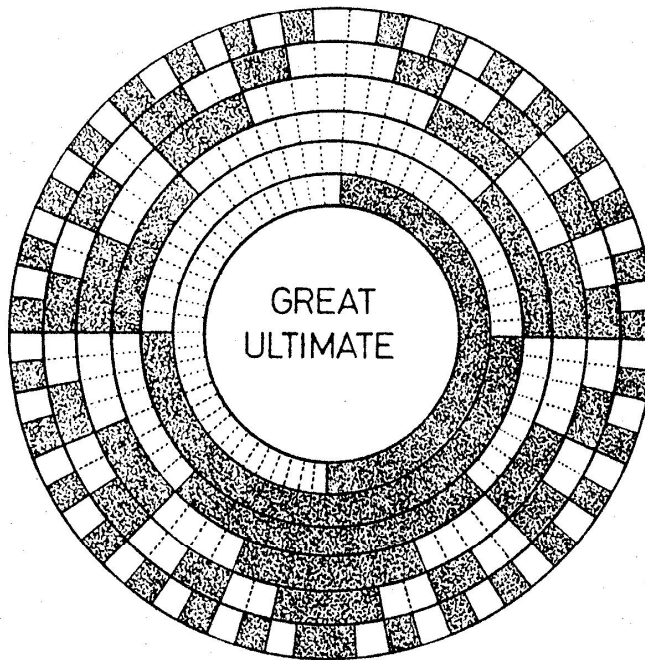
LINEAR CHART OF THE STRUCTURAL ARRANGEMENT OF THE SIXTY-FOUR HEXAGRAMS BY YU YEN

Note: this chart is based on the text of the Kinship and a more orderly arrangement of Chu Hsi's transformations which he learned from Li T'ing-chih through Shao Yung (I-t'u ming-pien 405.)

SHAO YUNG'S RADIAL AND SQUARE HEXAGRAM CHARTS



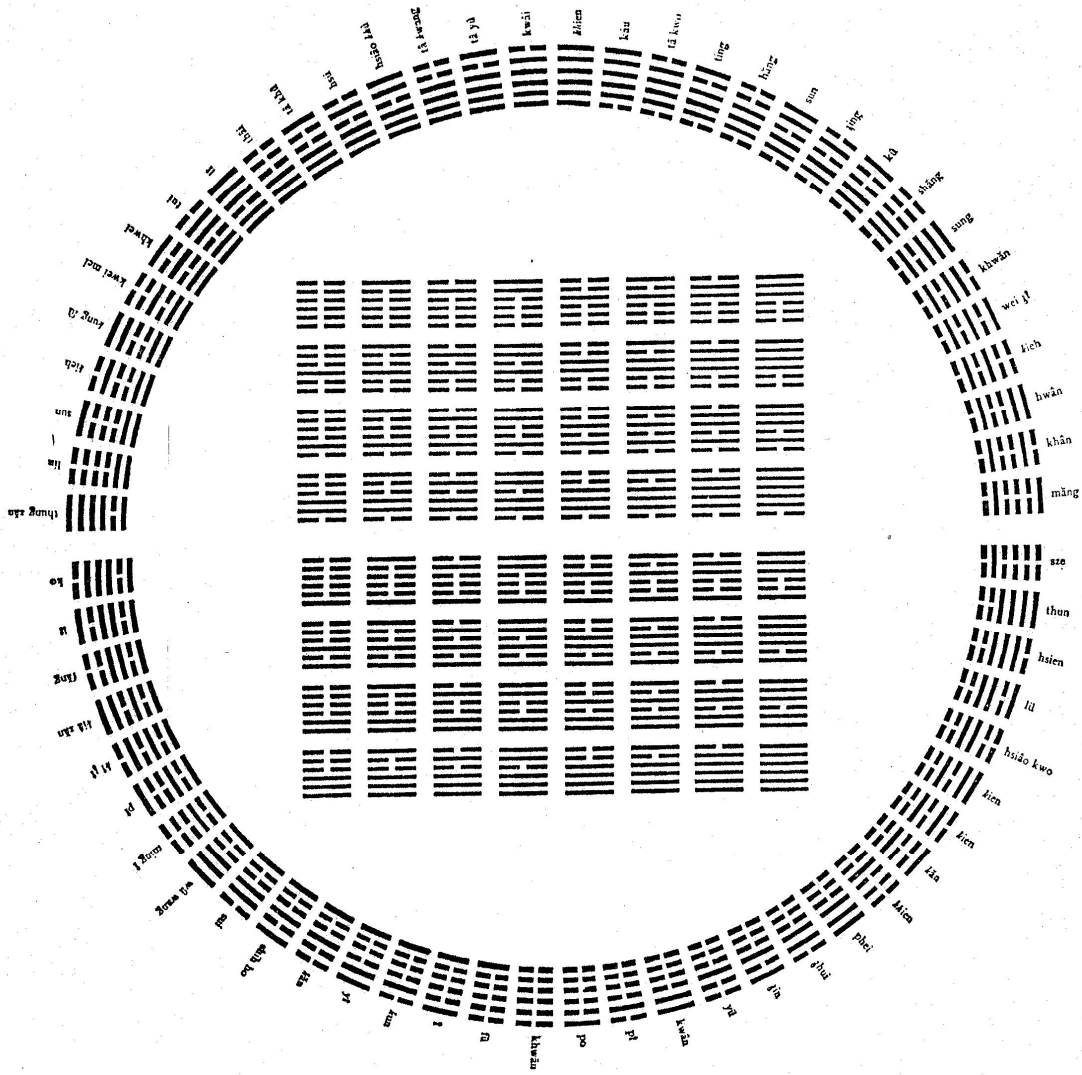
THE RADIAL CHART



The Great Ultimate forms the region of "infinite correlation."

Charts 8ab

THE HEXAGRAMS, exhibited circularly and in a square, according to the natural process of development from the whole and divided lines, and the order of arrangement ascribed to F0-lish.



Note: The "Complementary" pairing of water and fire moves from the end of Book I to the end of Book II because of its perfect mixing of yin and yang lines.

Class of Hexagram

TYPES OF TRIGRAMS

	Heaven and Earth	Water and Fire	The Four Images (Thunder, Mountain, Wind, Lake)
KEYS The Pure Keys	☰ 乾 ☷ ☷ 坤 ☰	☵ 坎 ☲	☳ 震 ↔ ☶ 巽
The Complementary Keys	☰ 泰 ☷ Book I	☵ 既 ☲ Book I	☳ 咸 ↔ ☶ 損 Book II Book II
EYES	☰ 臨 ☱ ↕ Bk I ☷ 遯 ☶ Bk II	☵ 需 ☲ ↕ Bk I ☳ 晉 ☱ Bk II	☳ 隨 ☱ ↕ Bk I ☱ 漸 ☲ ↕ Bk II
The Correct Hexagrams	☳ 師 ☱ ↕ ☱ 同人 ☲ Bk I	☳ 家 ☲ ↕ ☲ 既濟 ☵ Bk II	
The Correlative Hexagrams	☳ 剝 ☱ ↕ Bk I ☱ 萃 ☷ Bk II	☳ 噬 ☲ ↕ Bk I ☱ 困 ☲ Bk II	Combine with Thunder or Mountain Combine with Wind or Lake

Each symbol represents a pair of hexagrams.
 The arrows indicate complementarity 交錯 relationships.
 A bent arrow ☺ means that a pair is self-complementary.

Sets of Ts'o-tsung 錯綜 Hexagrams in Shao Yung's Square Arrangement

Book II Keys

四象綱
(下經)

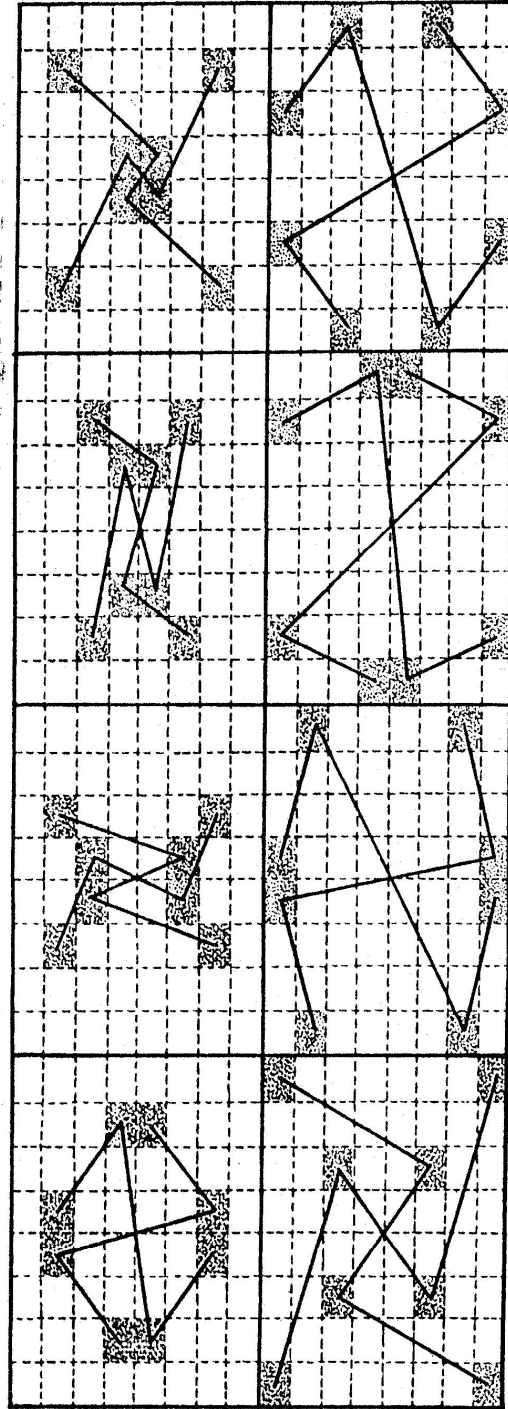
Book II Correct

水火四象正
(下經)

Fire-water
Correlative
水火四象對
(上下經)

Four-image
Eyes

四象目
(上下經)



Fire-water Eyes

Book I Correct
天地水火目
天地水火正
(上經)

Heaven-earth Eyes

Book I Correct
天地四象目
天地四象正
(上經)

Heaven-earth
Correlative

天地四象對
(上下經)

Book I Keys

天地水火綱
(上經)

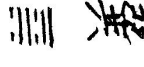
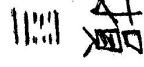
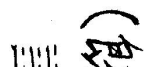
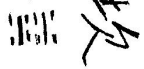
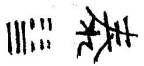
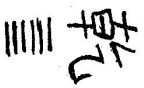
Chart 10

Basic Pattern of Hexagram Sequence in the I-ching

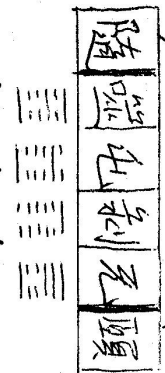
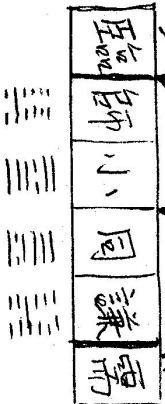
Book I

Book II

網 The Keys:



目 The EYES:



Correct
正

Correlative
对

Correct
正

Correlative
对

Correct
正

Fire Water Earth Heaven

(Heaven Fire Water Earth)

Heaven Earth Water Fire

Love between man and woman
Beginning of human affairs. 咸 Key

2 yin 4 yang 遯 (Eye) (Eye)

Earth is two (二) begets fire 晋 (Eye)

Water and fire combined with four images 家人 震

Beginning of flourish and decline middle of human affairs 损 Key

Heaven and Earth Water and fire combine with wind and lake 天 萃 困 革

First thunder and mountain 震 Key

Wind and thunder over mountain and lake 渐 Eye

Water and fire combined 丰 Key

Then Wind and Lake with four images 涣 Key

Wind and thunder over lake and mountain 中 Eye

Interaction of water and fire 既 Key

Chart 12

Heaven and Earth Establish the Sequence 乾 Key

Three sons Correlative (Belongs with 坤, 兑, 离) 屯 (Eye)

Heaven is one (一) begets water 需 (Eye)

Heaven and Earth Combined with Six children 1 solid line → son 1 broken line → daughter 师 小 Key

Heaven and Earth Interact 泰 Key

1 line gives a son 同

1 line gives a daughter 谦

lake and mountain over Thunder and wind 随 Eye

2 yang 4 yin 蛊 (Eye)

Heaven, Earth Water, Fire with thunder and mountain 噬嗑 无

mountain and lake over Thunder and wind 颐 Eye

End of Book I Start of Book II 坎 Key

of Hexagram Sequence in the (I Ching) 周易

Correct

Correlative

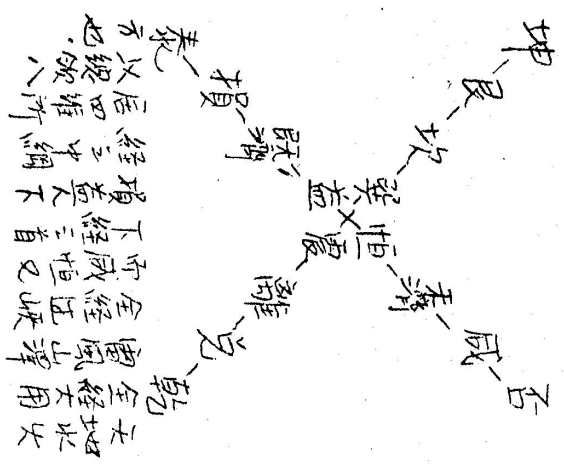
Correct

先天位次圖

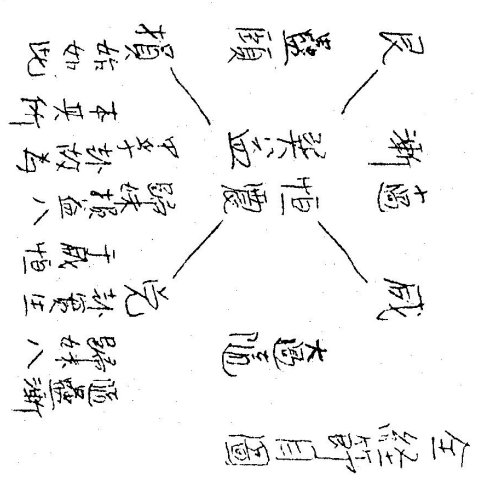
八七六五四三一
 否 遯 訟 姤 姤 妻 貞 履 乾
 萃 咸 困 否 遁 通 革 兌 夬
 晉 旅 泰 夬 鼎 謙 睽 睽 睽 睽
 豫 謙 過 解 恒 震 豐 歸 妹 壯
 觀 漸 渙 益 益 夬 中 孚 富
 比 蹇 屯 坎 井 也 既 濟 師 需
 剝 艮 蒙 豐 頤 賁 損 泰 否
 坤 謙 師 升 復 明 泰 臨 泰

先天
 方圖
 文王
 序卦
 之根
 也

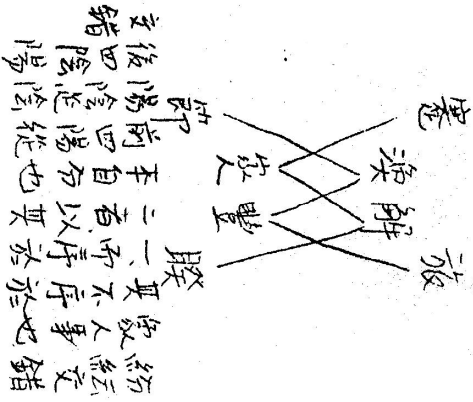
周易圖
 全經綱領圖



全經節目圖
 二十三

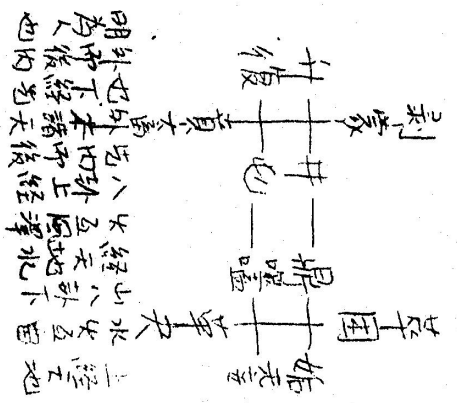


Charts 13a-c

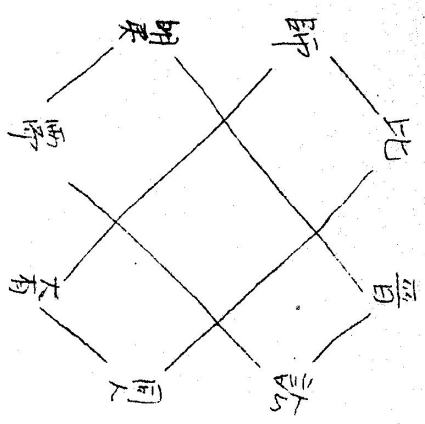


下經正卦圖

上下經卦行圖

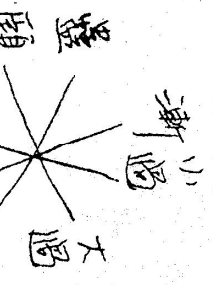
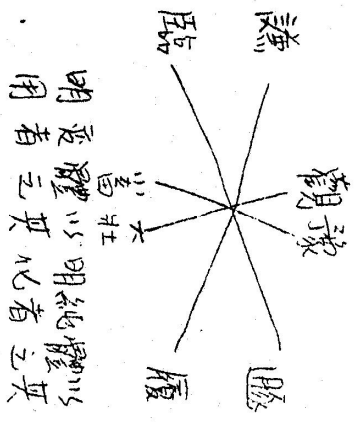


Charts 13d-1



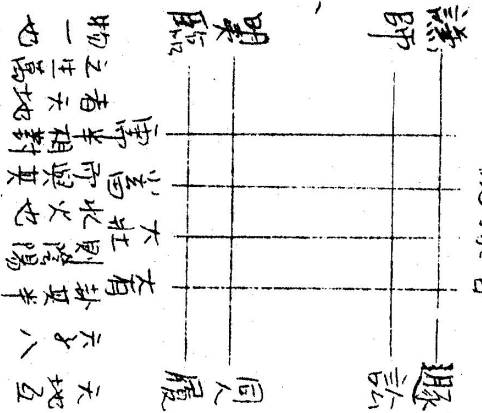
上經正卦圖

以其
生數
明象
以其
成數
明用。

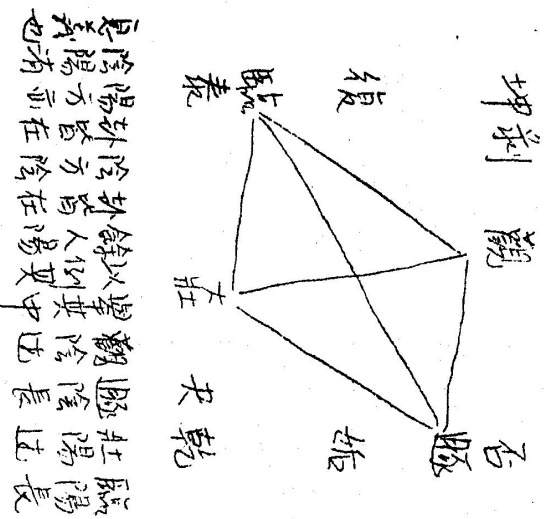


節日卦圖

上經正卦圖



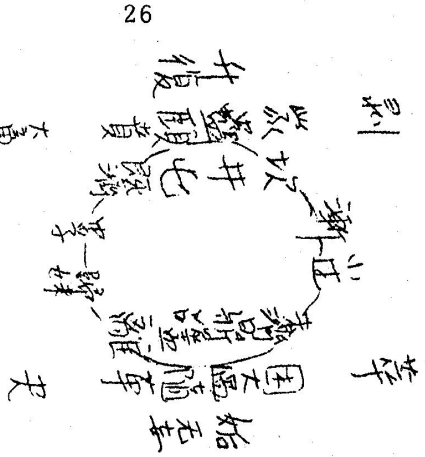
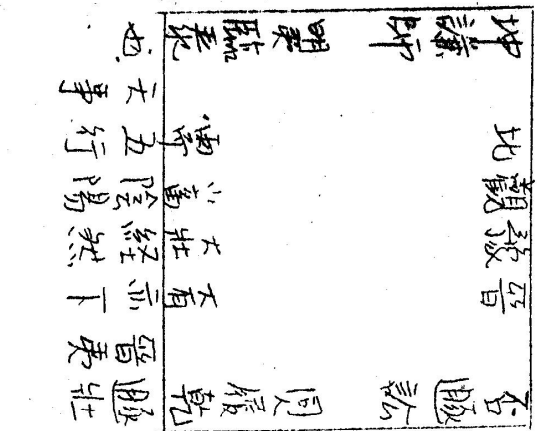
陰陽卦圖



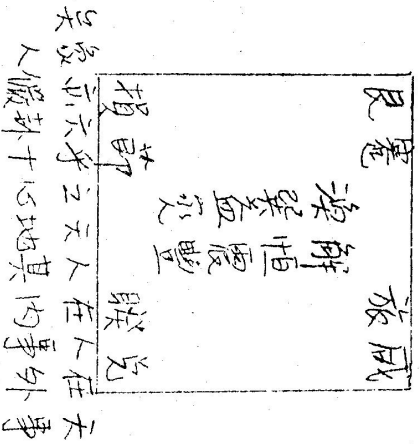
上經天事在外圖

下經人事在內圖

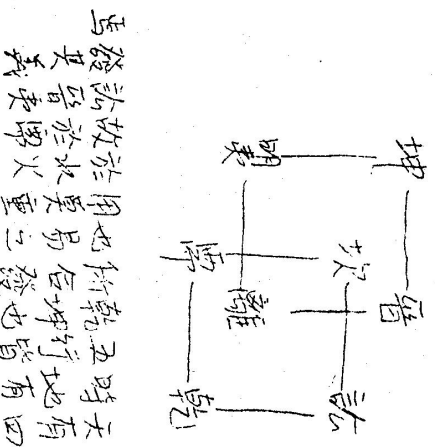
說卦經紀大人內外圖



其質圓之十
二卦訂前之
八目以及水
其方列之十
六卦即上下
也 用質亦體卦
方員象天方
象地數四示自
地之數矣



六一生水地二生火圖



天有四時地有五行
乾行坤皆合發也
也易之用莫重
故於水火
論皆秉義
發其義

天地統二十四卦圖

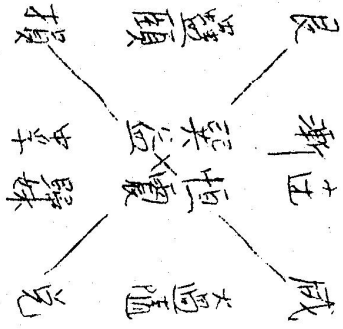
否 遜 訟 始 老 妾 簡 人 履 乾

萃 夬 大有 大壯 當 寧 金 謙

剝 比 觀 豫 晉 坤 謙 師 升 復 明 泰 臨

泰 臨 師 升 復 明 泰 臨

巽風山澤統八卦圖



水火統十六卦圖

困 革

旅 泰 晉 歸 離 睽

解 豐

渙 家人

蹇 坎 井 屯 臨 師

蒙 貴

邵子指明圖意惟十六卦餘則毫無解說又於周易無徵今各支分節解無不一一脗合然則孟子所稱先聖後聖莫揆一者豈不然乎豈不然乎

The 16 Principles

Hexagrams with Themes that Relate to Principles

Principle	Hexagram	Theme	Principle	Hexagram	Theme	Principle	Hexagram	Theme
Fullness	Pure Creativity	Great Power	Inner Truth	Return				
Purposefulness	Beginning	The Abyss (flow of energy)	Resoluteness	Decrease (prep. for increase)				
Spontaneity	Humility	Innocence	Oppression (Nature challenges)	The Well (Nature supports)				
Activity	Treading (Conduct)	Revolution	Action	Before Completion				
Direction	Education	Leadership (the Army)	Knowledge (Clinging)	Signs (The Inn)				
Progress	Following	Progress	Obstacles	Small Passing				
Transcending	Peace	Awareness (Contemplation)	Release	Disclusion				
Acceleration	Approach	Courtship	Increase	Rising				
Integration	Union	The Family	Coexistence of Opposites	Encountering				
Stability	Waiting	Duration	Gathering	Rest				
Adaptability	Receptivity	Strategic Retreat	Overshadowing	Penetration				
Joyfulness	Enthusiasm	The Caldron (Good Food, Celebration)	Abundance	Joy				
Evolution	Small Cultivation	Great Cultivation	Nourishment	Gradation				
Purification	Stagnation	Working on Leftovers	Biting Through	Breaking Off				
Harmony	Litigation	Comradeship	Culture	Marriage				
Fulfillment	Great Possession	Great Passing	Imitation	After Completion				

Chart 14

SCI Principles Derived from the Sixteen
Fundamental Principles

1. The Highest First: The first step in any science is to isolate in pure form the essential governing element of the system.
2. Coexistence of Opposites: Opposition on the level of the parts indicates coherence on the level of the whole. It is easy to handle opposition from the level of coherence.
3. Cyclic Alternation of Rest and Activity for Progress: The quantum nature of change disallows a continuum of either motion or rest to generate progress.
4. Integration: Coordination of mind and body, subject and object, or moving and nonmoving components lends stability to any process.
5. The Whole is Something More than the Sum of Its Parts: A house is more than a collection of building materials; a university is more than an assemblage of students, professors, and books.
6. The Gap: Any two dissimilar components of a system must be linked by a "gap" whose transitional mechanism is essential to the coherence of the whole system.
7. The Individual is the Basis of Society: Green trees make a green forest; the symmetry of a crystal is based on the symmetries of its component molecules as well as their group symmetry (principle 5.)
8. Intelligence: Orderliness, coherence, and symmetry are fundamental properties of intelligence.
9. Efficiency by Setting the Proper Initial Conditions: Well begun is half done; when a diver takes the correct angle for his dive, nature makes the rest easy and automatic.
10. Increasing Charm: As one nears a desirable goal, the charm of the goal increases in intensity. (This principle of subjective experience is somewhat analogous to Newton's law of gravity.)
11. Least Action: Given a set of initial conditions, the motion or change of a system always follows the path of least action to a state of equilibrium.
12. Comfortable Ride: Skill in action minimizes disrupting elements to allow the principle of least action to provide the smoothest possible transition from one state to another.
13. Infinite Correlation: When a system achieves perfect coherence, there is at least one point in the system that equally correlates with all components of the system.

14. Knowledge is Structured in Consciousness, Action is Structured in Knowledge, Achievement is Structured in Action, and Fulfillment is Structured in Achievement:
A dull or sleepy consciousness seldom knows what it sees or what to do with what it sees; successful science depends on the developed consciousness of the scientist.
15. Knowledge is Different in Different States of Consciousness: The same room looks different during active alertness, restful alertness, dreaming, or deep sleep.
16. The Maharishi Effect: Communities approaching one per cent of their populations participating in the Transcendental Meditation program show reductions in crime and accidents and improvements throughout society. This principle, of a few individuals increasing orderliness in their individual consciousness and bringing harmony to the whole society, is known as the Maharishi Effect. When this influence reaches sufficient intensity to bring coherence to the collective consciousness of the nation, then cultural integrity is restored and the nation rises to enjoy invincibility. (We can find numerous analogies to this principle in physics, chemistry, biology, etc.)

A Brief List of Relevant Texts

1. Chang T'ai-yen 章太炎 et al. I-hst'eh lun-ts'ung 易學論叢. Taipei: Kuang-wen shu-ch'ü, 1971.
Contains mention of the Chou-i t'u on p. 36a of the reprint of I-ching section of the Chiang-su sheng-li kuo-hst'eh t'u-shu-kuan t'u-shu tsung-mu 江蘇省立國學圖書館圖書總目
2. Ching Fang 京房. Ching-shih i-chuan 京氏易傳, 3 ch. In Han-Wei ts'ung-shu 漢魏叢書. 2 Vols. Reprint of Ming, Ch'eng Jung's ed. Taipei: Hsin-hsing shu-ch'ü, 1959.
3. Chu Hsi 朱熹. I-hst'eh ch'i-meng 易學啟蒙. Taipei: Kuang-hst'eh she yin-shu-kuan, 1975.
4. Hst'eh Hst'eh-ch'ien 蘇學濟. I-ching shu-li k'o-hst'eh hsin-chieh 易經數理科新解 (originally titled Ch'ao-hsiang-tuei lun 超相對論.) No place, publisher, or date. Probably Taipei: Ching-ming hst'eh-she 淨名學舍.
This work contains a fascinating, but technical, mathematical study of the square matrix arrangement of hexagrams.
5. Hung, William, Nieh Ch'ung-ch'i, et al. A Concordance to Yi Ching. Harvard-Yenching Institute Sinological Index Series, Supplement No. 10. Taipei: Authorized Reprint by Chinese Materials and Research Aids Service Center, 1973.
6. Lai Chih-te 來知德. I-ching Lai-chu t'u-chieh 易經來註圖解. 16 ch'uan. Reprint of Mr. Lai's private ed. of 1618. Taipei: Hui-wen ch'u-pan-she, 1972.
7. Legge, James, trans. The Yi King. Pt. 2 of The Sacred Books of China, The Texts of Confucianism. In Sacred Books of the East, edited by F. Max Muller, Vol. 16. Oxford: Clarendon, 1882. 2nd ed., 1899. Paperback of 2nd ed. New York: Dover Publications, 1963.
8. Maharishi Mahesh Yogi. The Science of Being and the Art of Living. London: International SRM Publications, 1963.
An early expression by Maharishi of principles later formulated as a Science of Creative Intelligence. For an overview of recent research growing out of the thesis proposed in this work see the next item in this list.
9. Orme-Johnson, D.W. and Farrow, J.T., ed. Scientific Research on the Transcendental Meditation program: Collected papers. Vol. 1. New York: Maharishi International University Press, 1976.

10. Shao Yung 邵雍. Huang-chi ching-shih shu hstü-yen 皇極經世緒言. 2 Vols. Notes, charts and appended essays by Pao I-an 包逸蒼. Ssu-pu-pei-yao ed. Taipei: Chung-hua shu-chü, 1968.
11. Wang Chao-tsung 王肇宗. Chou-i t'u 周易圖. Also called Chou-i hstü-kua t'u 周易序卦圖. Ch'ing ed. I also have a dittoed copy made in Taipei from a xerox copy of the volume held in the Harvard-Yenching Library. This was prepared by an unknown scribe at the behest of Professor Nan Huai-chin 南懷瑾. It contains a number of obvious scribal errors, but is readable.
12. Wei Po-yang 魏伯陽. Ts'an-t'ung-ch'i 參同契. Commentary by Ch'u Hua-ku 信者華谷. 3 ch. In Tao-tsang 道藏, 629.
13. Wilhelm, Richard, trans. The I Ching or Book of Changes. Translated from German by Cary F. Baynes. 3rd ed. Bollingen Series, XIX. Princeton: Princeton University Press, 1968.
14. White, Douglass A. Interpretations of the Central Concept of the I-ching During the Han, Sung, and Ming Dynasties. Unpublished dissertation, Harvard University, 1976.
15. Yü Yen 俞琰. I-wai pieh-ch'uan 易外別傳. 1 ch. Tao-tsang 629.