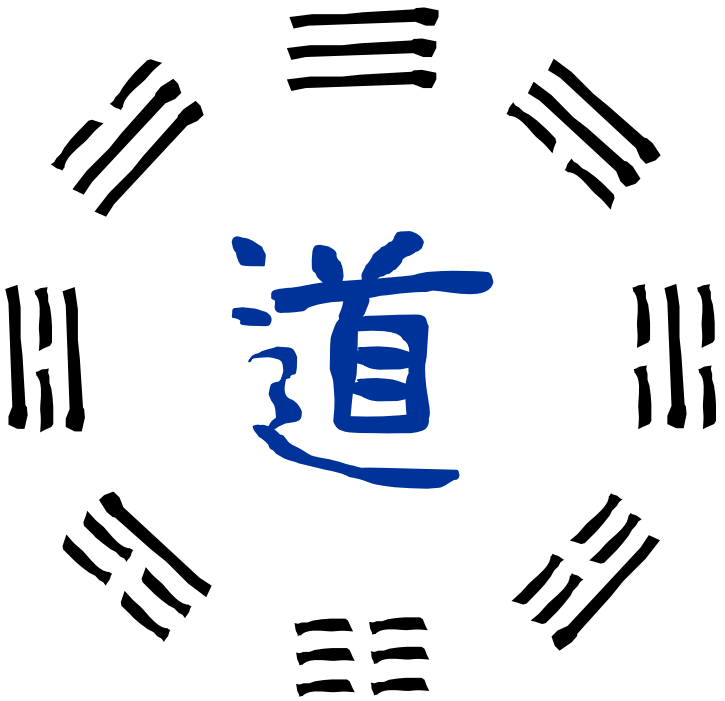

The Tao of the I Ching

A Mathematical - Spiritual Revelation
Lost for Over Three Millennia

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The Tao of the I Ching

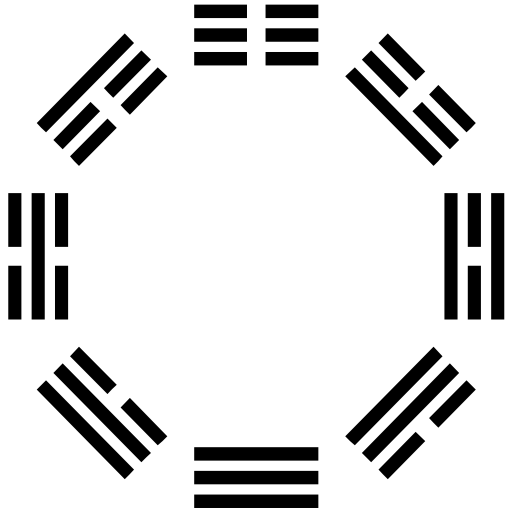
"It cannot remain in the dark forever that we are touched here on an Archimedean principle, with the help of which our occidental thinking could be unhinged".

CG Jung

INTRODUCTION

Although the true origins of the I Ching are lost in the mists of time the widely accepted legend is that the eight tri-grams line patterns of the I Ching was observed as a pattern on the back of a tortoise as it came out of a river by the sage Fu Hsi around 3000 BC.

This paper provides significant new insights into the structure of the 8 tri-grams and the 64 hexagrams created from them by King Wen 2000 years later . These insights are gained through a realization that the trigrams of the I Ching are not only a symbolic representations of the binary system but also the Base 8 (octal) system. These new insights will contribute to a major paradigm shift in Western mathematical thinking, a deeper appreciation for the ancient wisdom of the Chinese and also provide an aid for deeper understanding of oracle readings.



Fu Hsi Trigrams Pattern

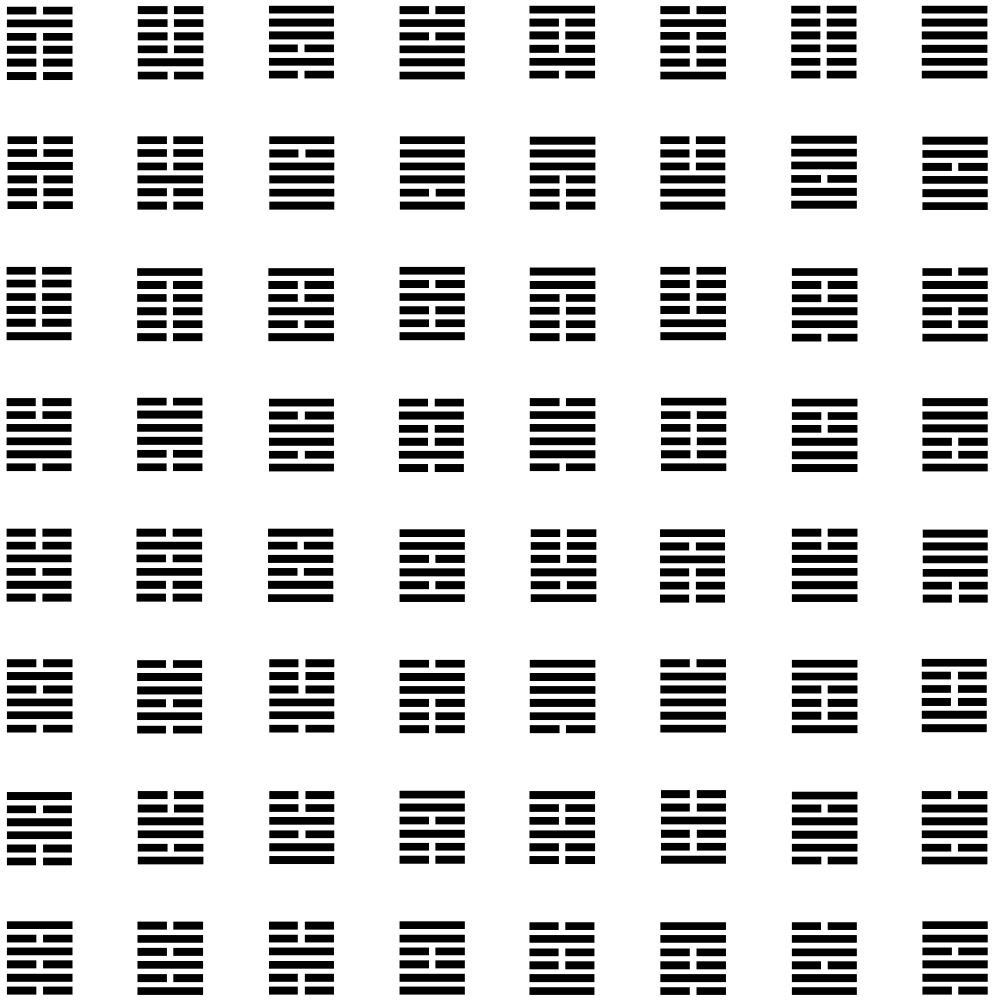
EAST MEETS WEST

Leibniz, the mathematician who shared with Newton the credit for the creation of calculus, was sent a copy of the I Ching from China by the Jesuit priest Bouvet in 1689. This copy included a list of the hexagrams (see next page) and Fu Hsi tri-gram diagram.

Even though the hexagrams were not in numerical order Leibniz recognized these as binary representations and the hexagrams as the first 64 integers from 0 to 63. He was amazed to find in so ancient a source the very idea he was working on i.e. that 0 and 1 (yin and yang) can in principle build all numerical systems. In 1703 he published his first paper on binary integers in which he acknowledged their oriental origin.

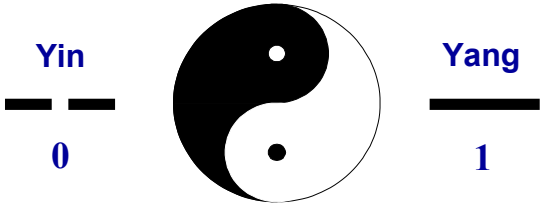
LIST OF HEXAGRAMS IN

THE TRADITIONAL HEXAGRAM ORDER



BINARY NUMBERS

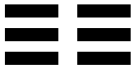
Binary numbers only consist of **zero** and **one**. As will be shown on the following pages, all the numbers in the decimal system (the number system we use on a daily basis), can be renamed in binary. The binary sequence is reflected in the symbols of the yin and yang, the broken line representing **zero** and the unbroken line representing **one**.



BASE 8 SYSTEM

Base 8 (octal) system only go up to 7 and doesn't use the numerals 8 and 9. In the same way as binary, all the decimal numbers can be renamed using the numbers 0 to 7. The inherent nature of the tri-grams and hexagrams is binary (or on and off) and octal. The octal sequence of the tri-grams representing is shown below. A new set of trigrams is required to continue the count beyond 7 is shown on page 9.

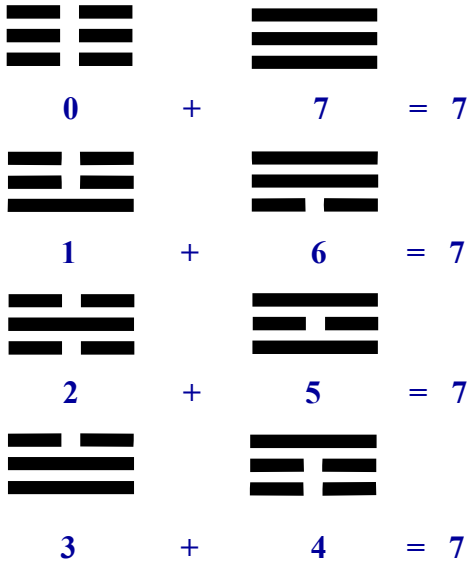
THE FIRST 8 TRIGRAMS WITH BINARY NUMERALS

NUMBER	BINARY	TRI-GRAM
0	000	
1	001	
2	010	
3	011	
4	100	
5	101	
6	110	
7	111	

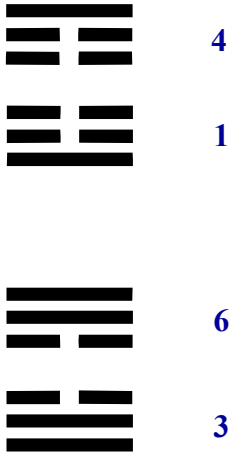
PROPERTIES OF PAIRED TRI-GRAMS

The following are the main properties of paired tri-grams.

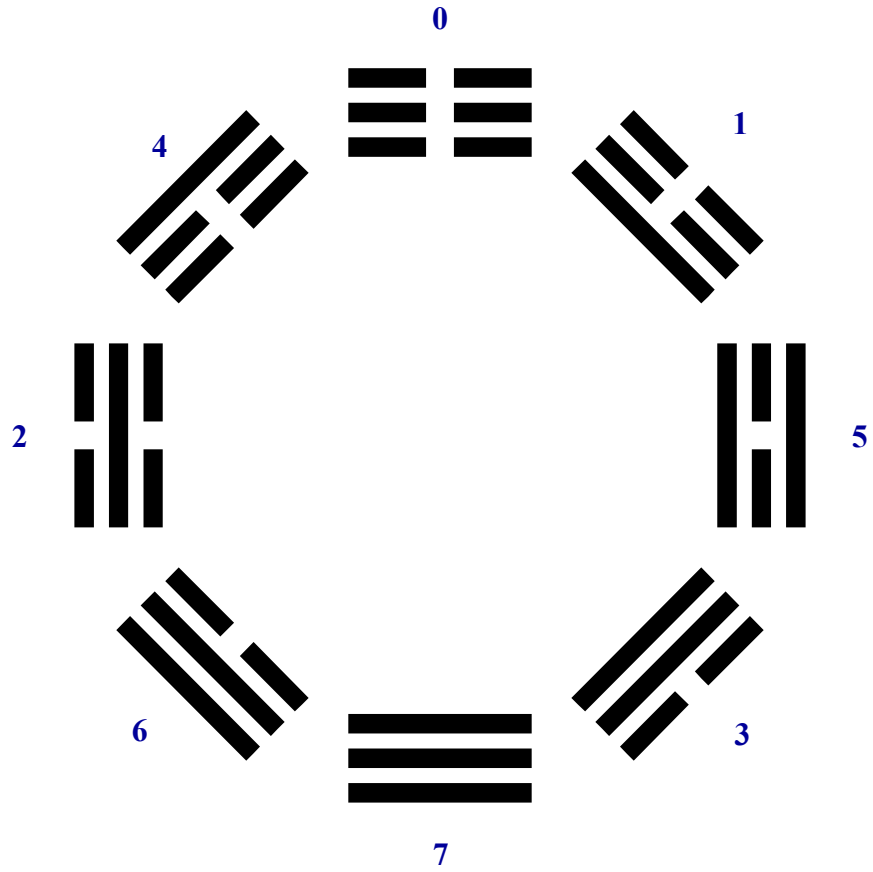
Each tri-gram has an opposite. Each pair of **opposites** add up to 7.



Two pair of tri-grams are also **reflections** of one another.



Opposites and reflections and their inter-relationships are a recurring theme at both levels, tri-grams and hexagrams. Below is how the reflecting and opposing tri-grams interact within Fu Hsi's pattern along with their octal numbers.


0
1
2
3
4
5
6
7

CREATING HEXAGRAMS

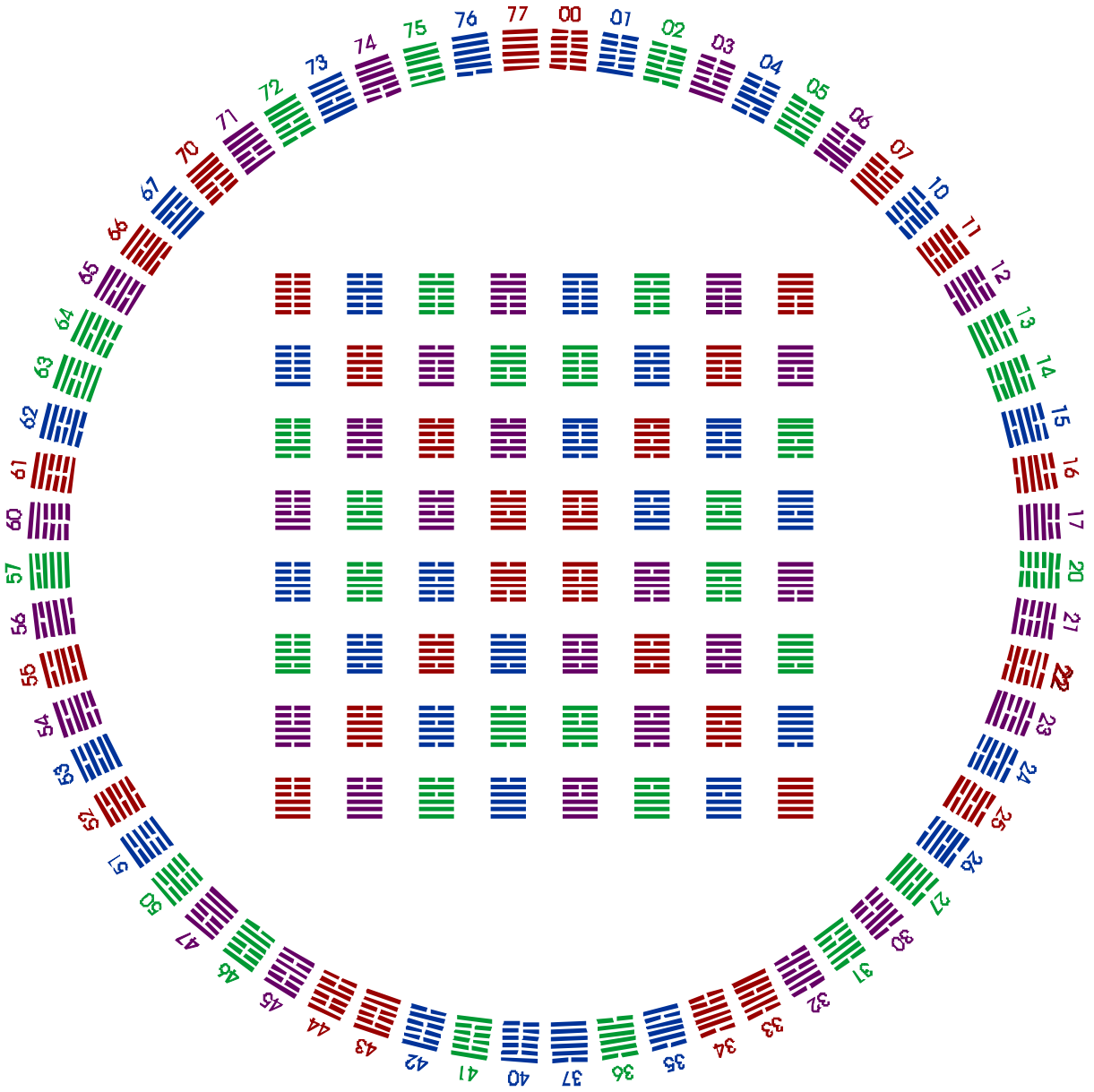
To continuing counting beyond 7, base 8, using the yin yang lines in sets of tri-grams another set of trigrams is required. The chart below shows the tri-grams down the sides as the ones and the tri-grams along the top representing the tens base 8. This chart along with the one on the next page clearly demonstrates that the hexagrams are a base 8 numbering system.

THE HEXAGRAM - BASE 8 NUMBERING SYSTEM

	00	10	20	30	40	50	60	70
	01	11	21	31	41	51	61	71
	02	12	22	32	42	52	62	72
	03	13	23	33	43	53	63	73
	04	14	24	34	44	54	64	74
	05	15	25	35	45	55	65	75
	06	16	26	36	46	56	66	76
	07	17	27	37	47	57	67	77

The colors of the numbers above and the hexagrams on the next page indicate their position within the Great I Ching Circle shown on page 32.

HEXAGRAMS IN BASE 8 ORDER



PROPERTIES OF HEXAGRAMS

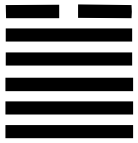
The following are the main properties of hexagrams:

Opposites

Hexagram opposites occur when all yin (broken) lines become yang (whole) and yang lines become yin within a hexagram. All hexagrams have an opposite with no exceptions. These pairs of hexagrams also add up to 77.

Example:

40



37

Reflections

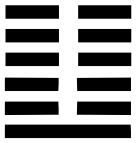
All hexagrams have a reflection with the exception of 00, 14, 22, 36, 41, 55, 63 and 77 which only self reflect.

Examples:

40

76

46



01

37

31

Number Reflections

All the hexagram's octal numbers have a reflection, with the exception of 00, 11, 22, 33, 44, 55, 66, 77. These numbers only self reflect.

Examples:

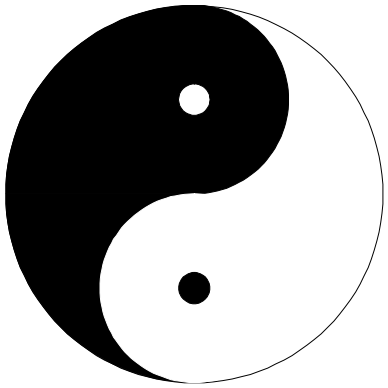
73 **37**
40 **04** etc

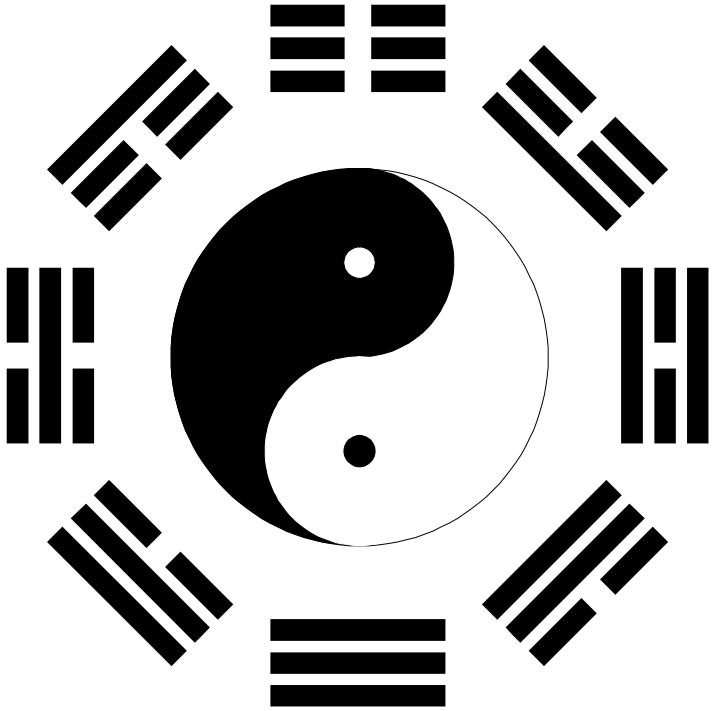
CYCLING OPPOSITES AND REFLECTIONS

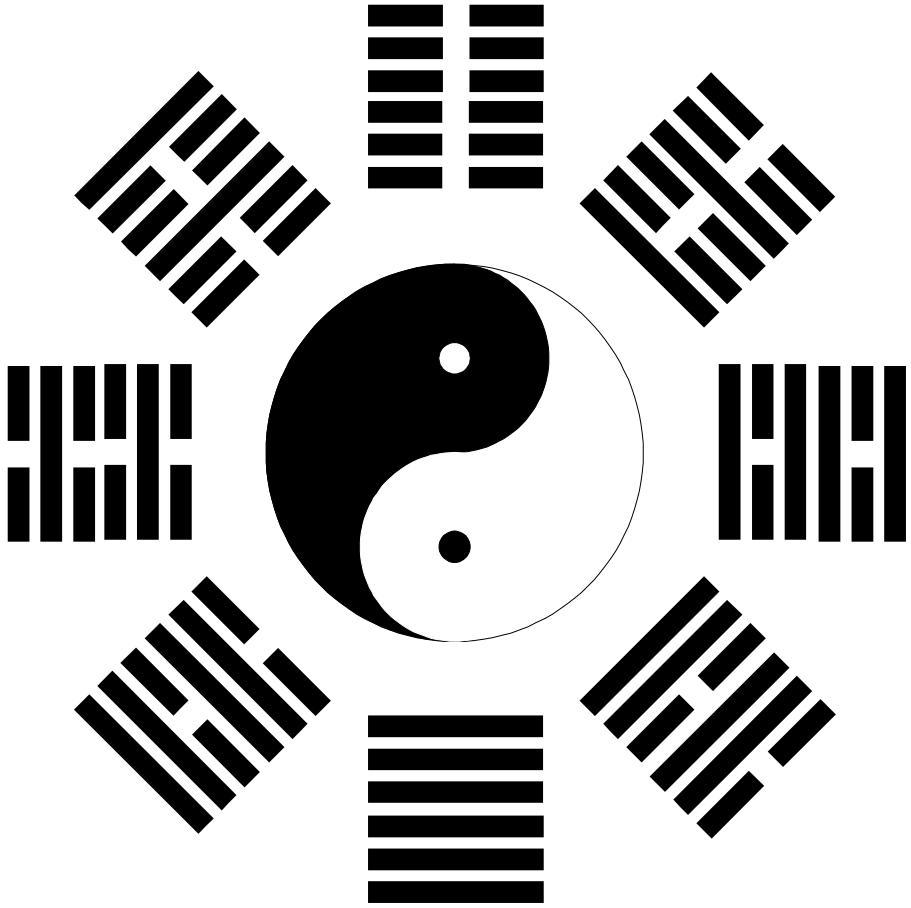
For the opposites and reflections to be revealed all the zeros in all six positions of the binary numbers need to be shown. This is an important quality of the yin lines within the hexagrams which has been carried over into the binary numbers shown to the left. The highlighted rows contain the hexagrams that only reflect or oppose themselves, all the other rows contain two pair of hexagrams.

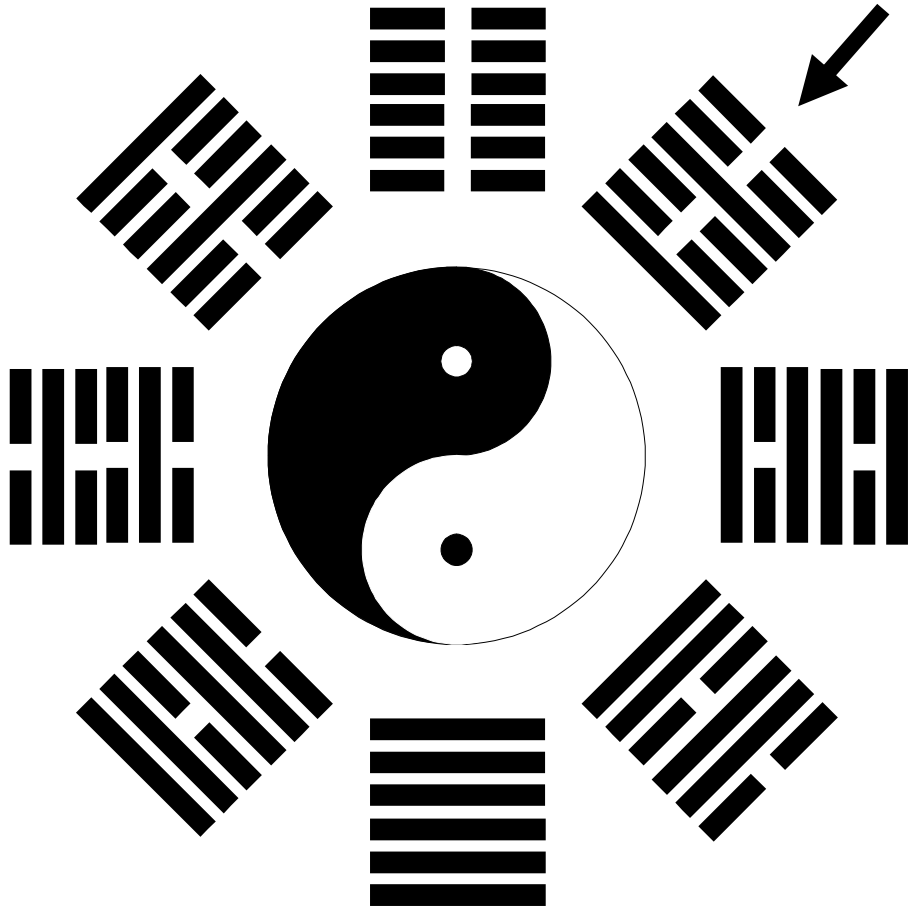
The inter-relationship of all the **opposites**, **reflections** and **cycling** of the 64 hexagrams of the I Ching when combined into one integrated whole through the process of **rotation** creates The Great I Ching Circle as follows:

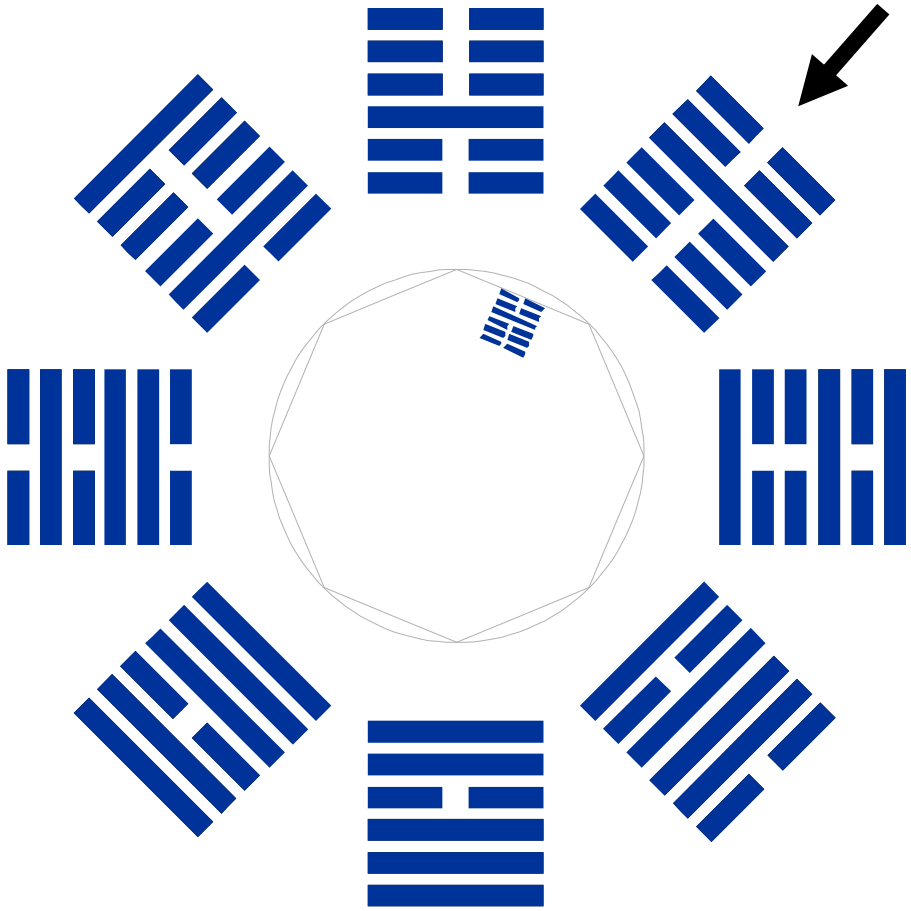
000 000	0	111 111	77	111 111	77	000 000	0
000 001	1	111 110	76	011 111	37	100 000	40
000 010	2	111 101	75	101 111	57	010 000	20
000 011	3	111 100	74	001 111	17	110 000	60
000 100	4	111 011	73	110 111	67	001 000	10
000 101	5	111 010	72	010 111	27	101 000	50
000 110	6	111 001	71	100 111	47	011 000	30
000 111	7	111 000	70	000 111	7	111 000	70
001 001	11	110 110	66	011 011	33	100 100	44
001 010	12	110 101	65	101 011	53	010 100	24
001 011	13	110 100	64	001 011	13	110 100	64
001 100	14	110 011	63	110 011	63	001 100	14
001 101	15	110 010	62	010 011	23	101 100	54
001 110	16	110 001	61	100 011	43	011 100	34
010 001	21	101 110	56	011 101	35	100 010	42
010 010	22	101 101	55	101 101	55	010 010	22
010 101	25	101 010	52	010 101	25	101 010	52
010 110	26	101 001	51	100 101	45	011 010	32
011 001	31	100 110	46	011 001	31	100 110	46
011 110	36	100 001	41	100 001	41	011 110	36



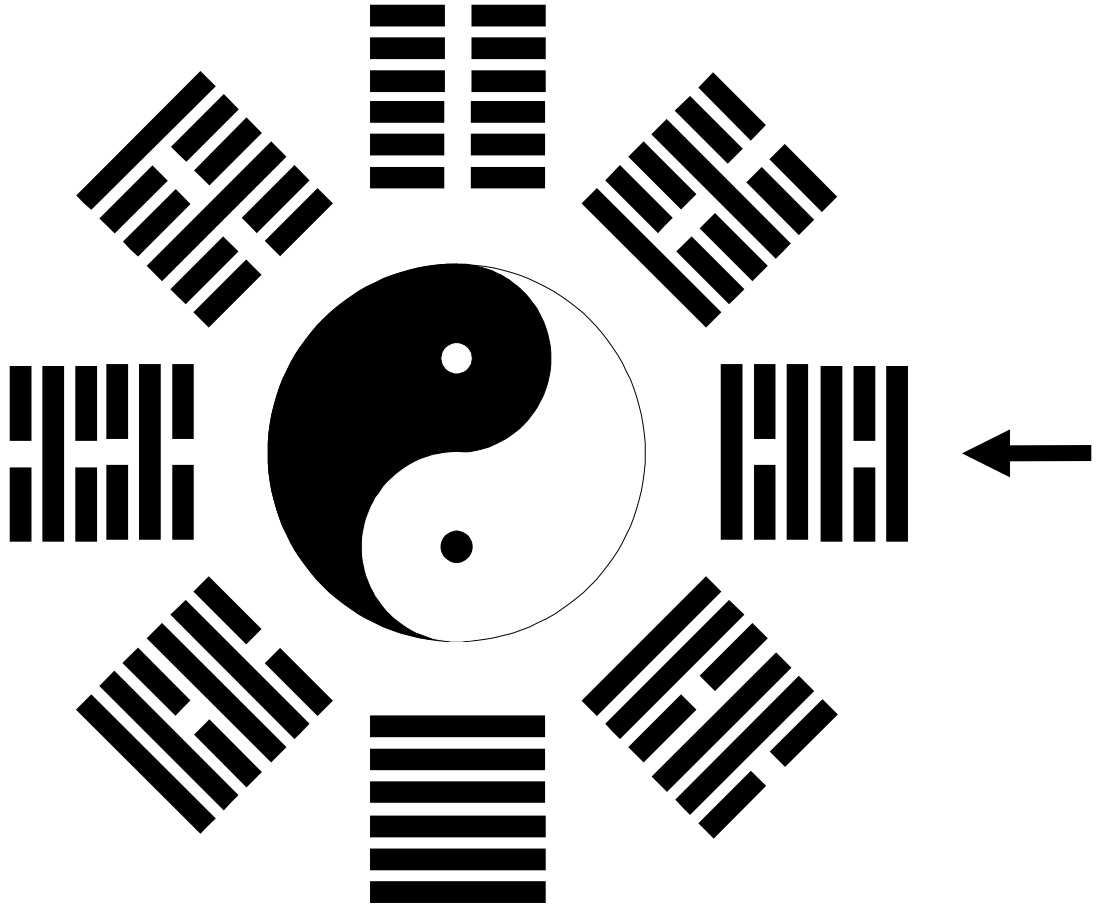


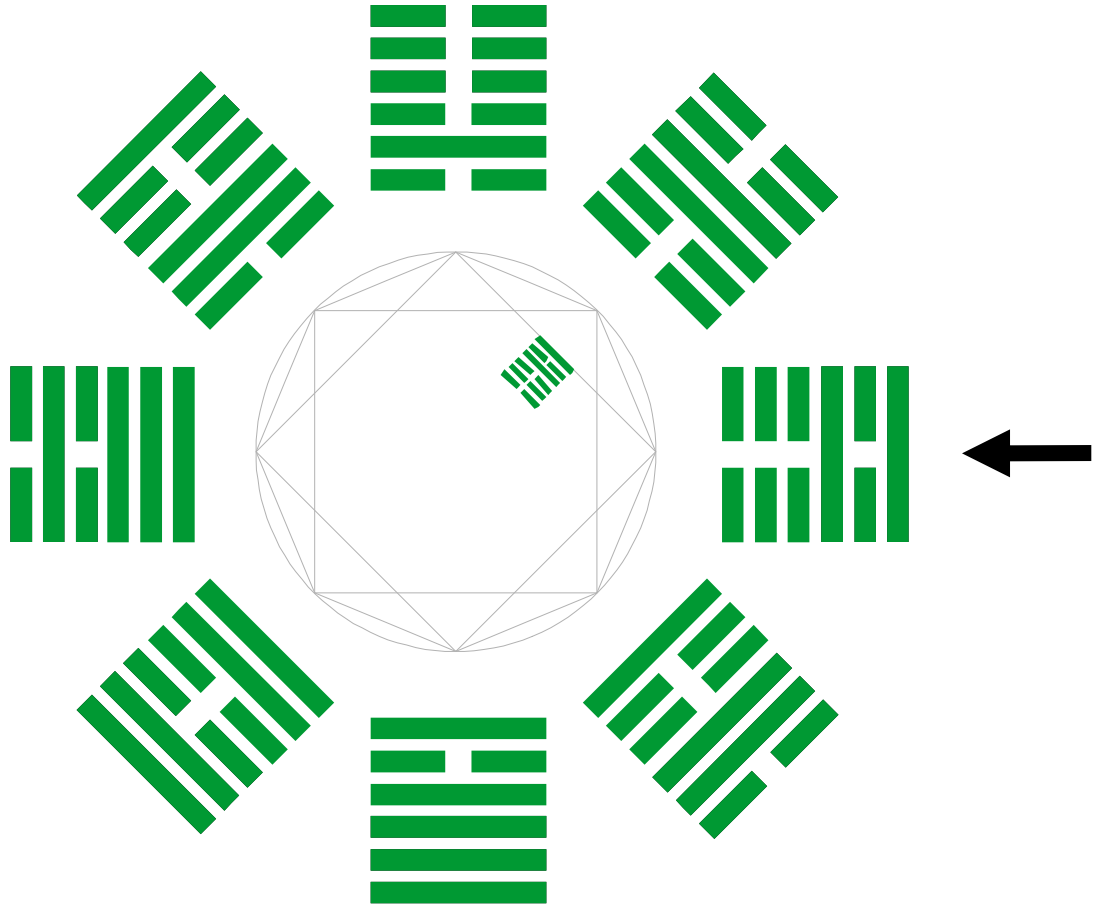


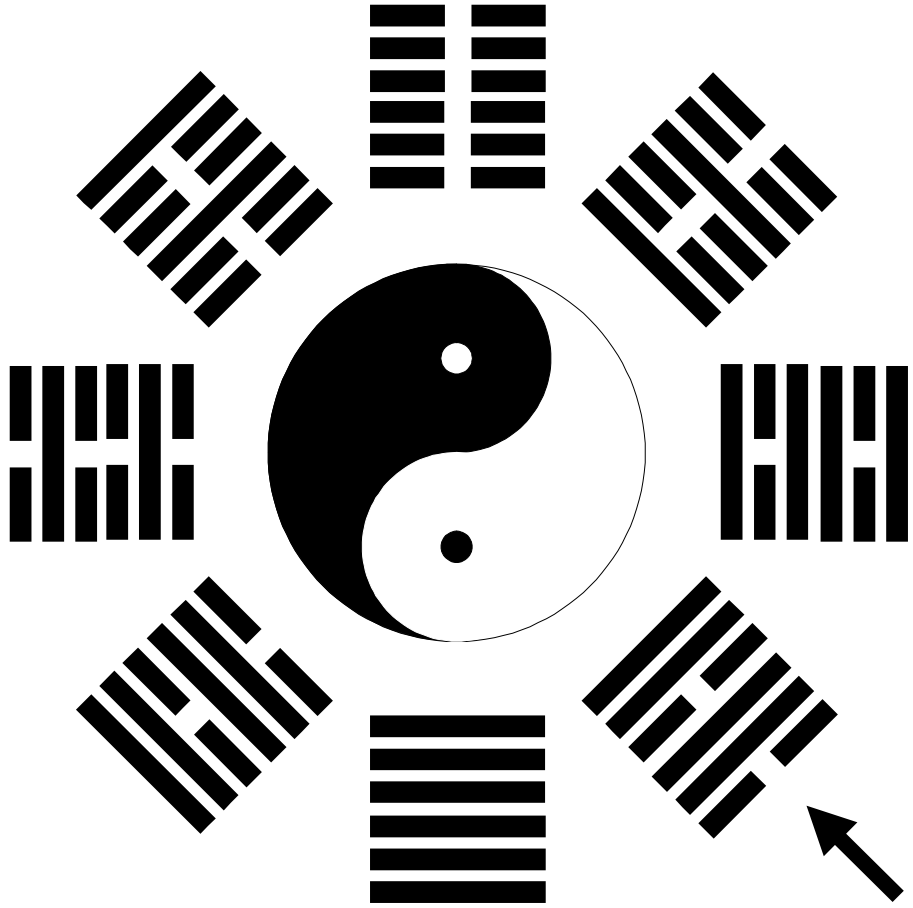


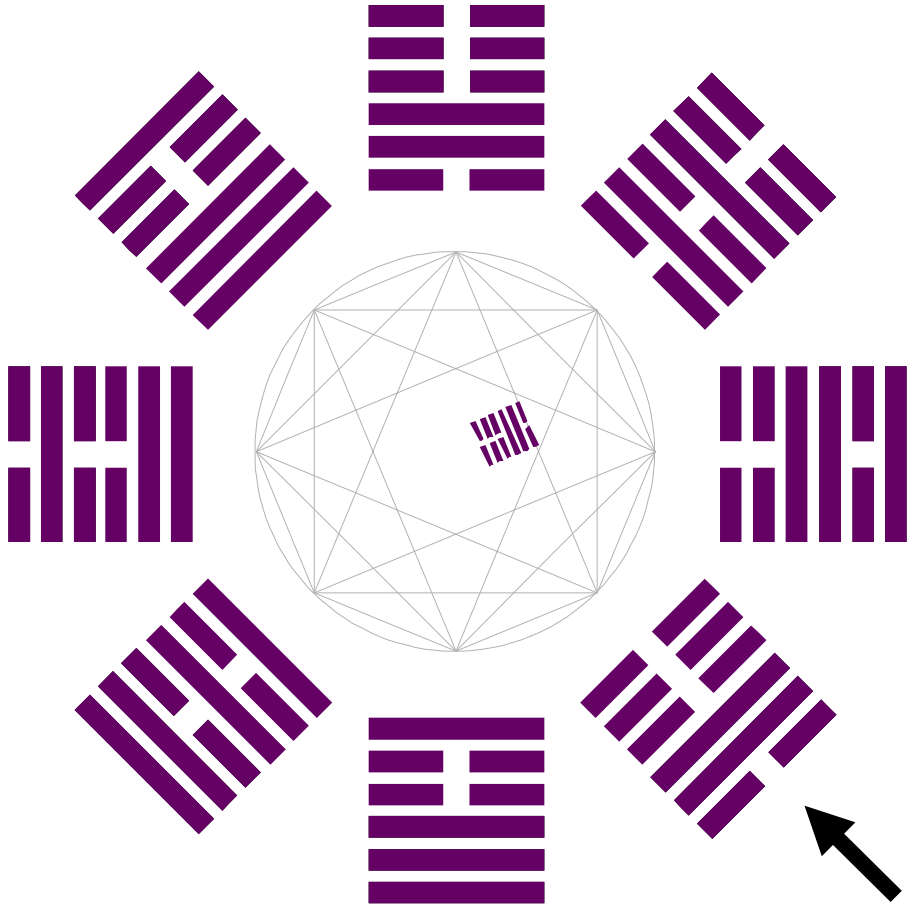


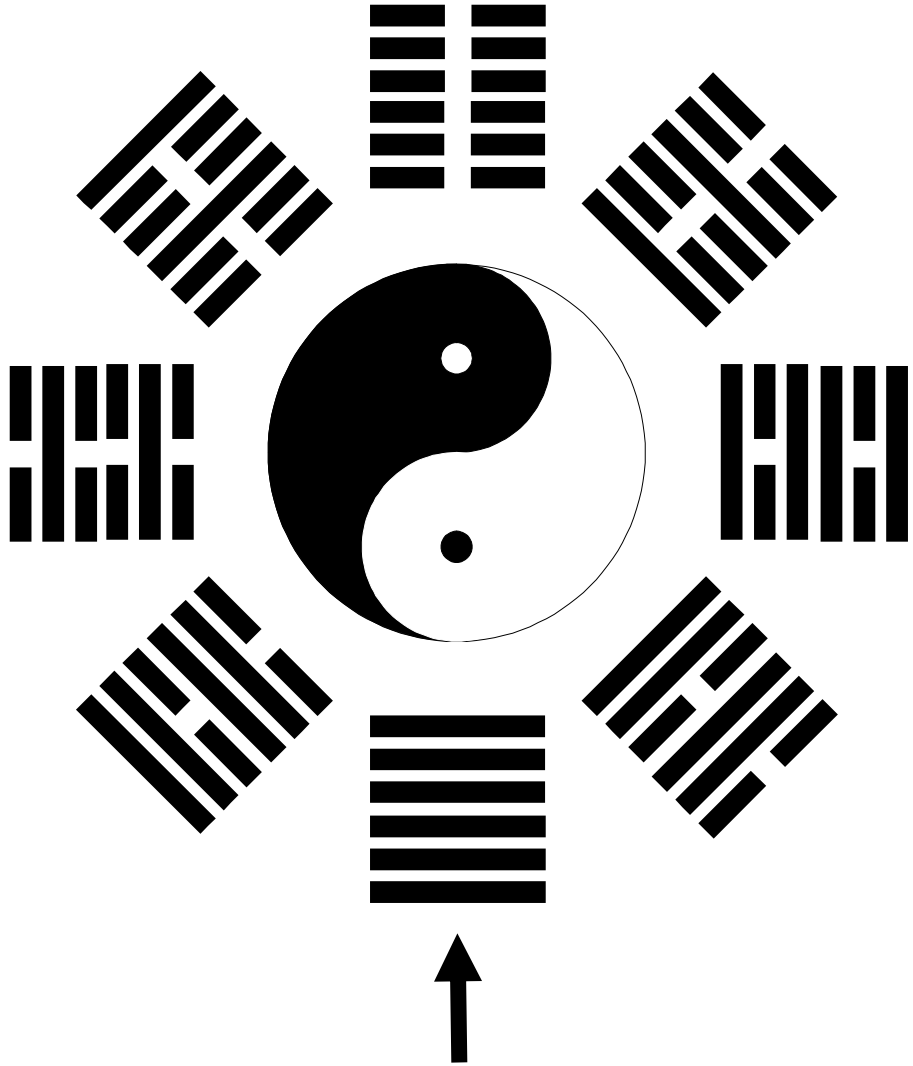
The line within the circle indicates where each inner tri-gram has move from and to. An example of a new hexagram, which is indicated by the arrow, is created by the tri-gram moving to its new position . The hexagrams are then located halfway along the line which becomes there position within the Great I Ching Circle. The example of the created hexagrams is show in its position along the line. This process is repeated eight times as the inner trigrams move from there initial positions to each new position as follows…….

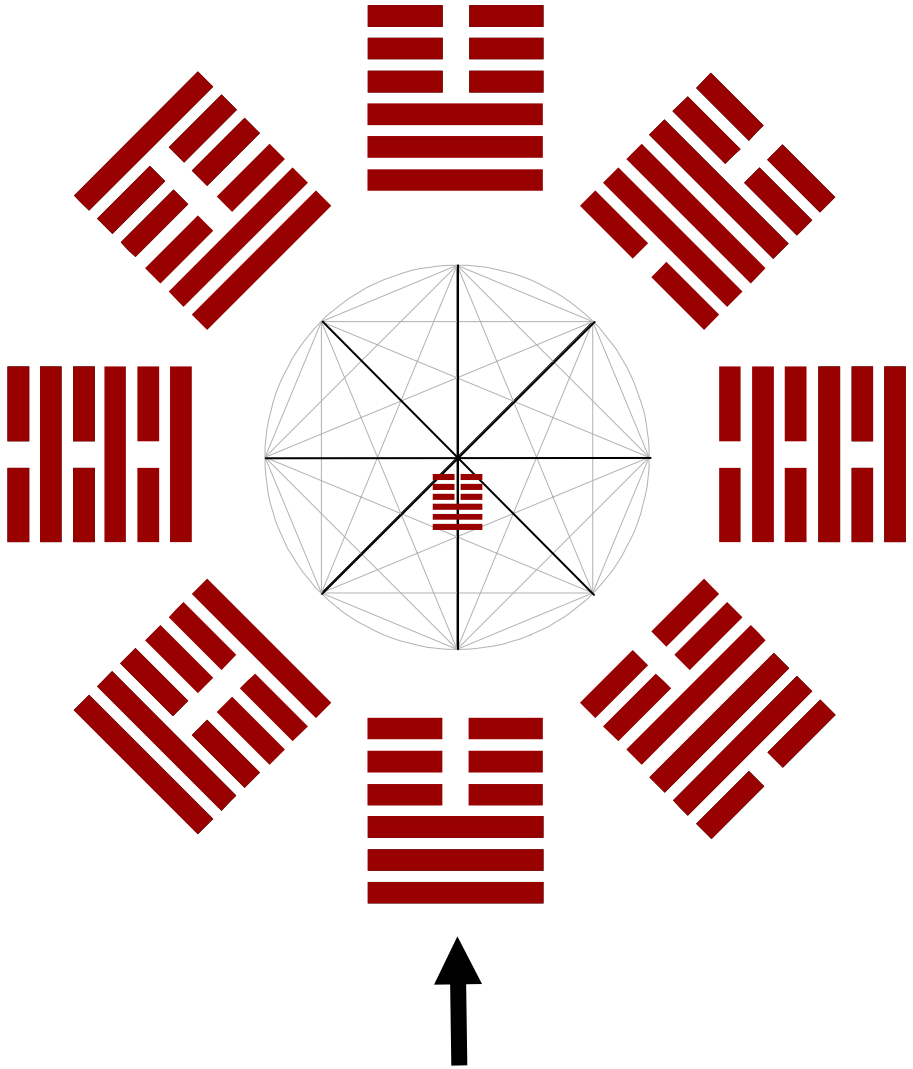


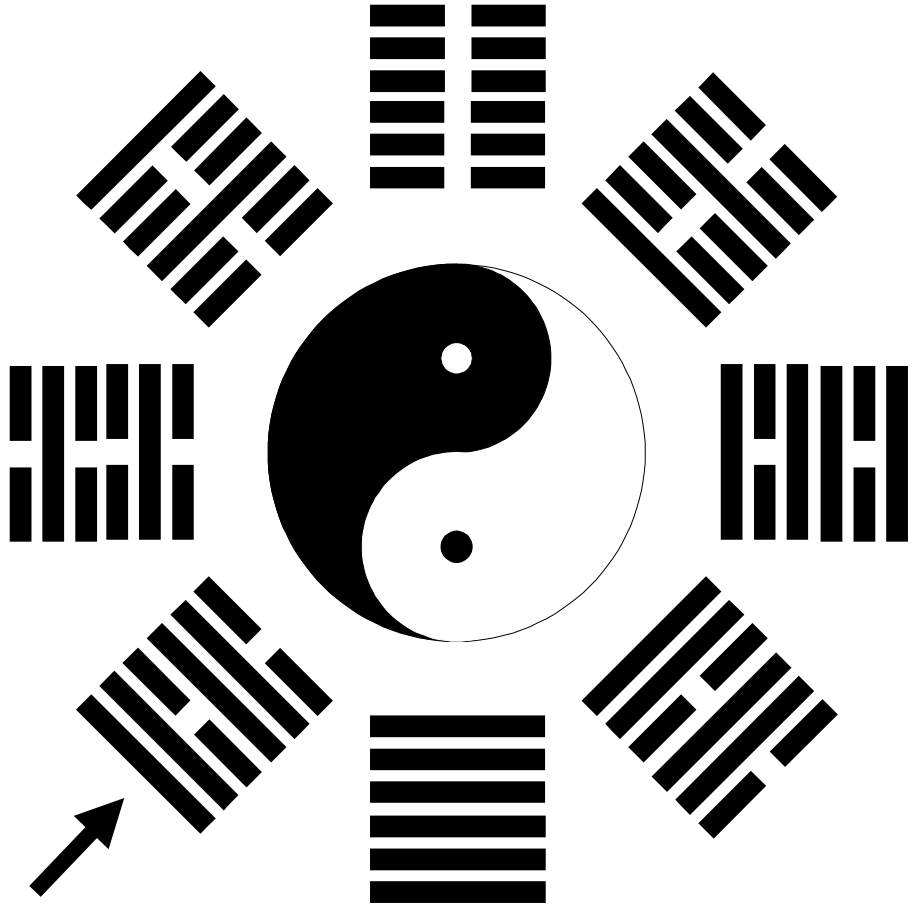


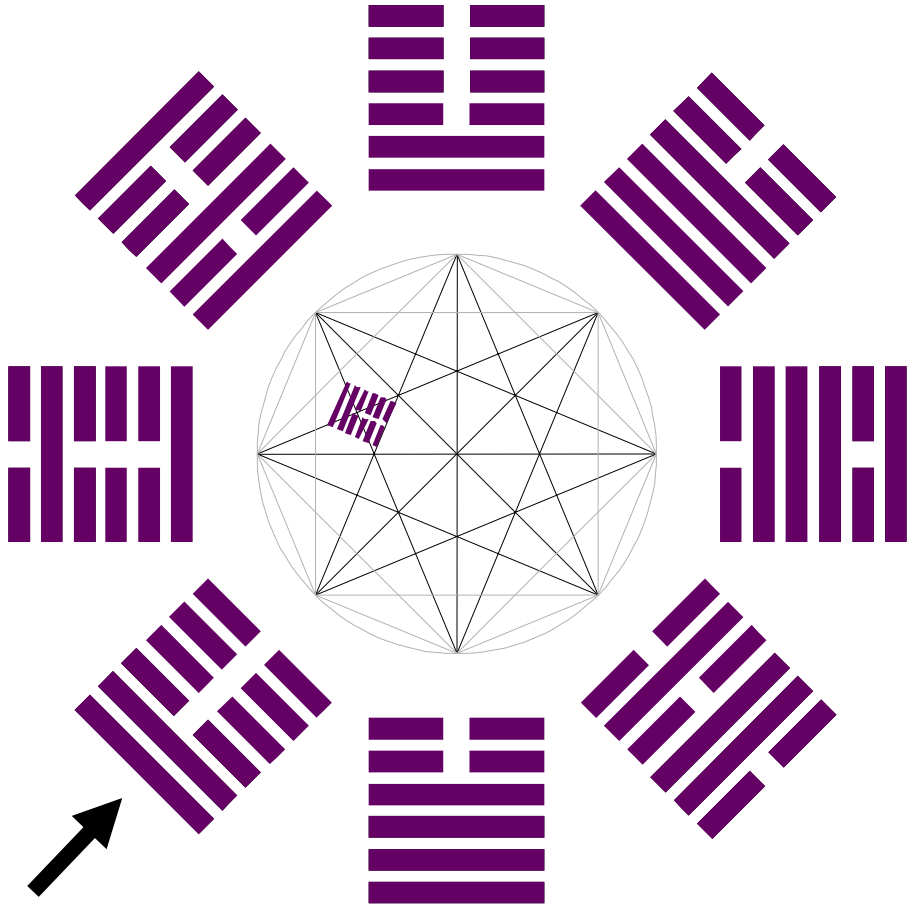


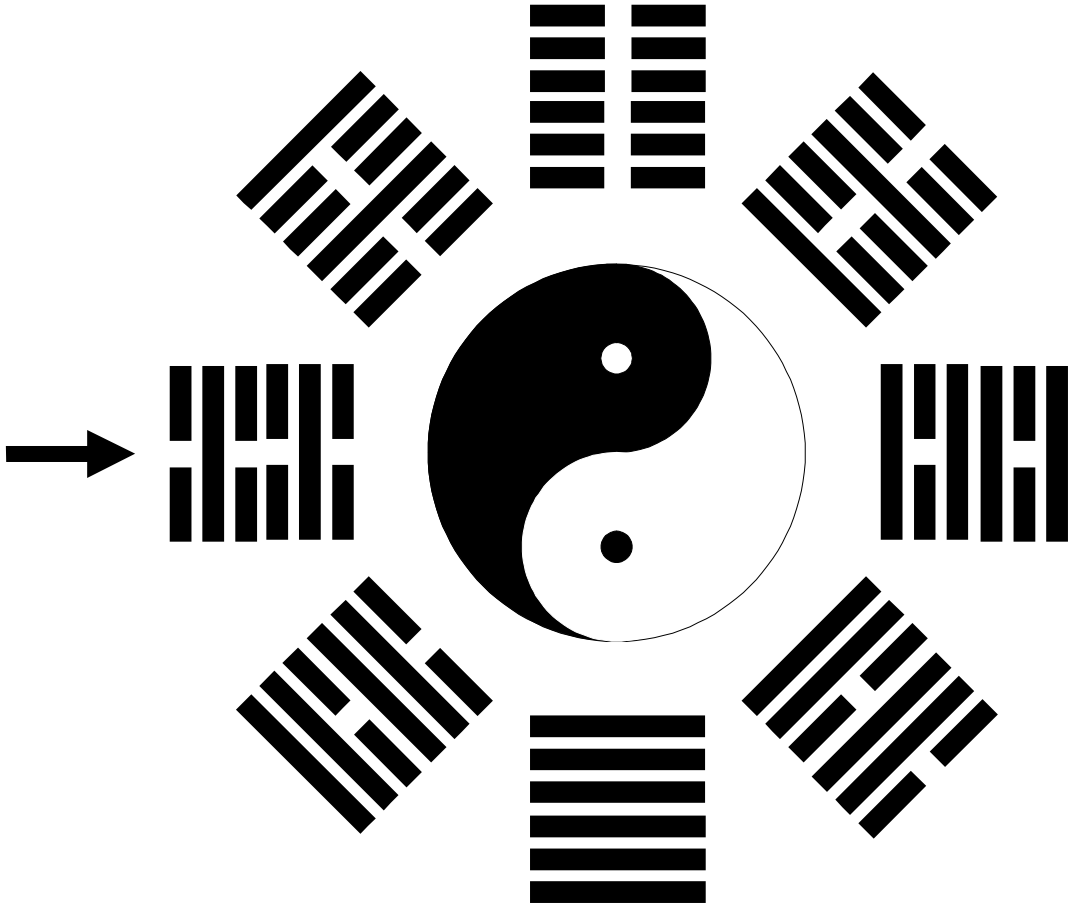


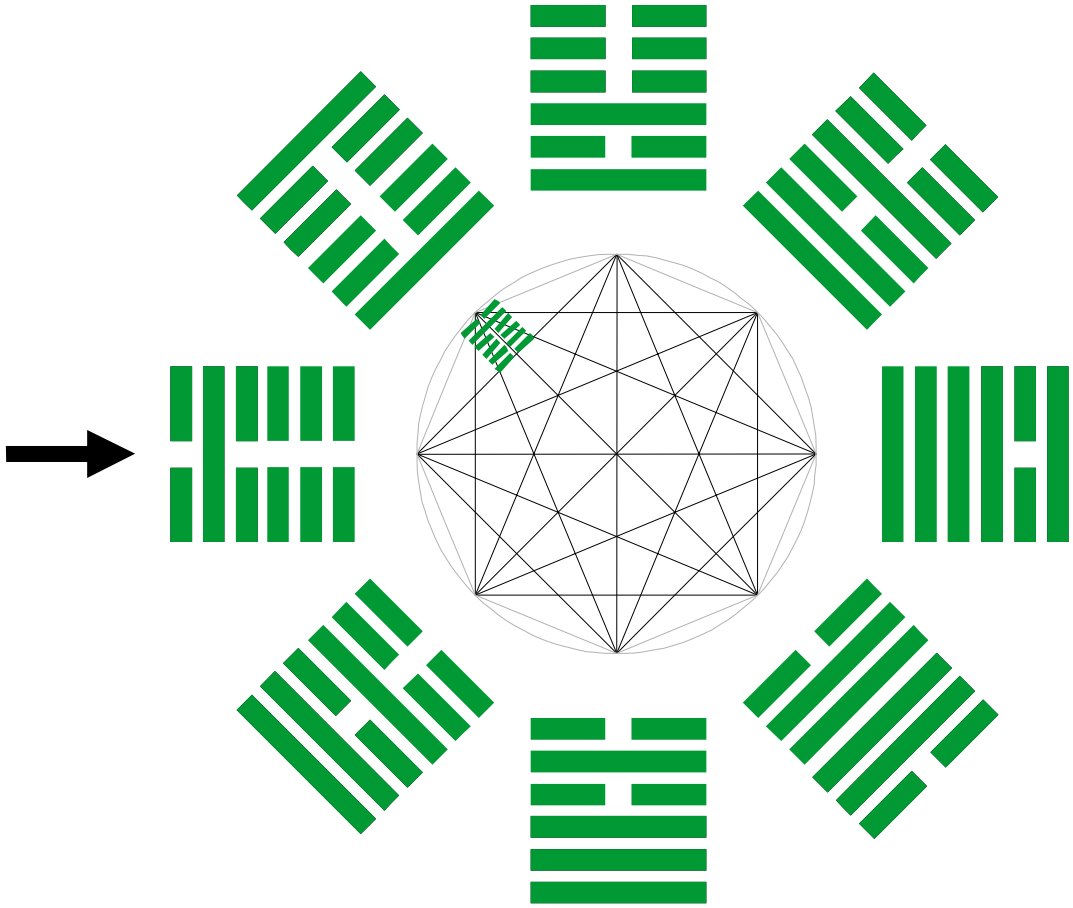


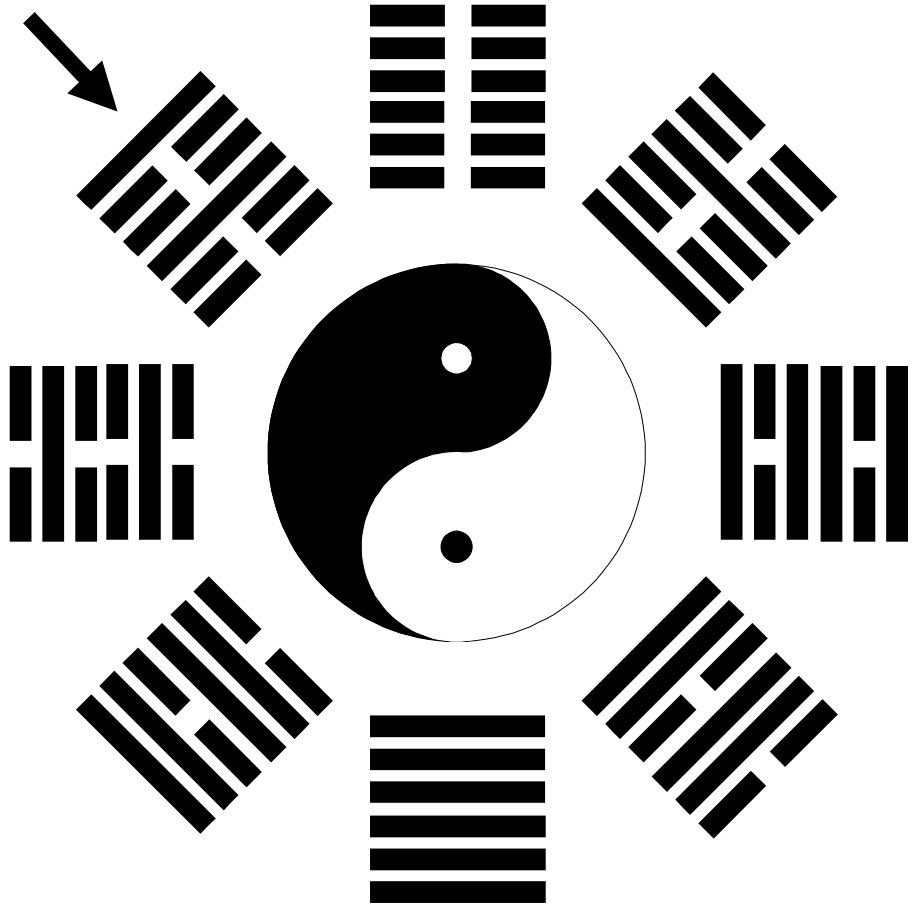


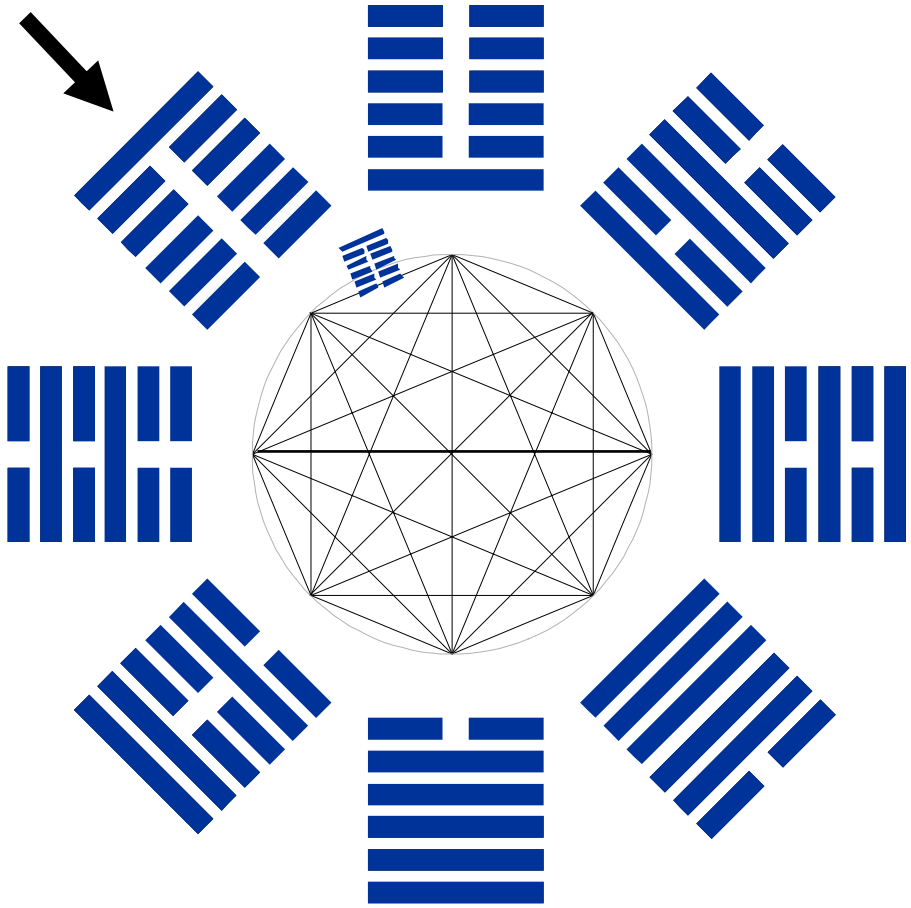


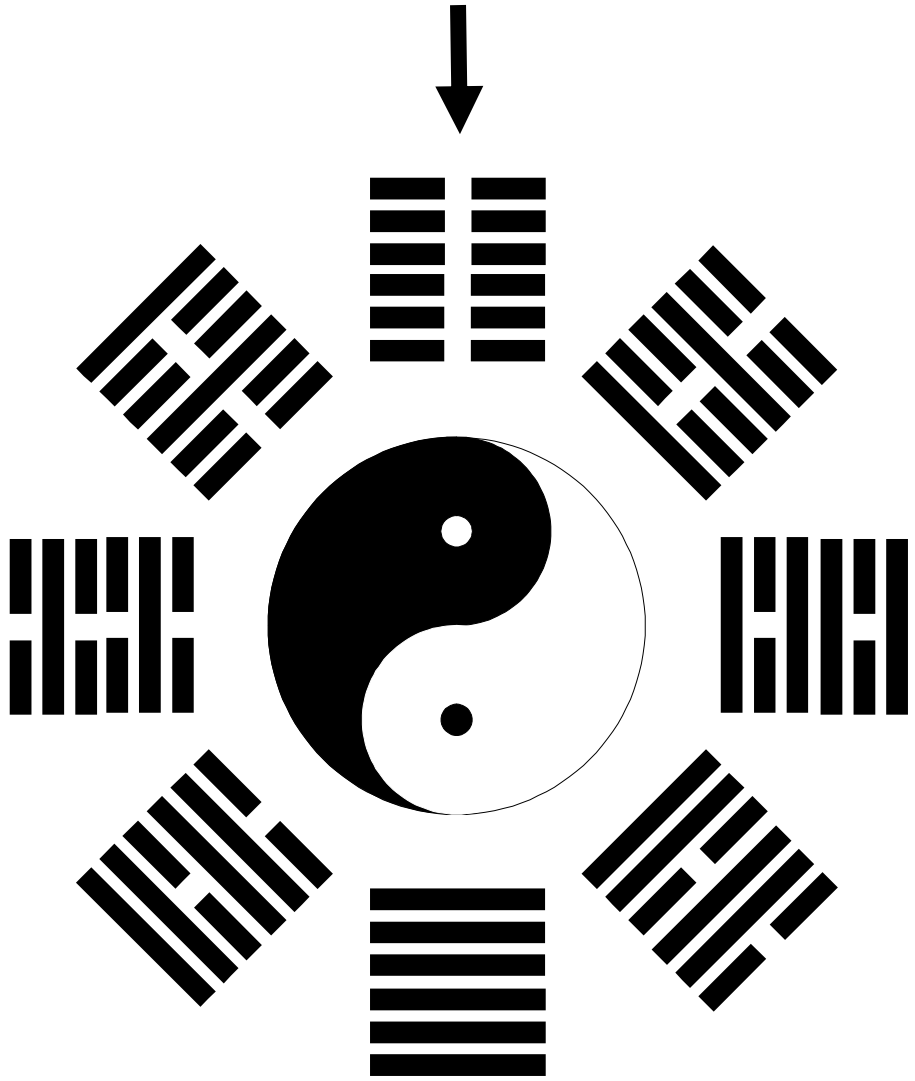


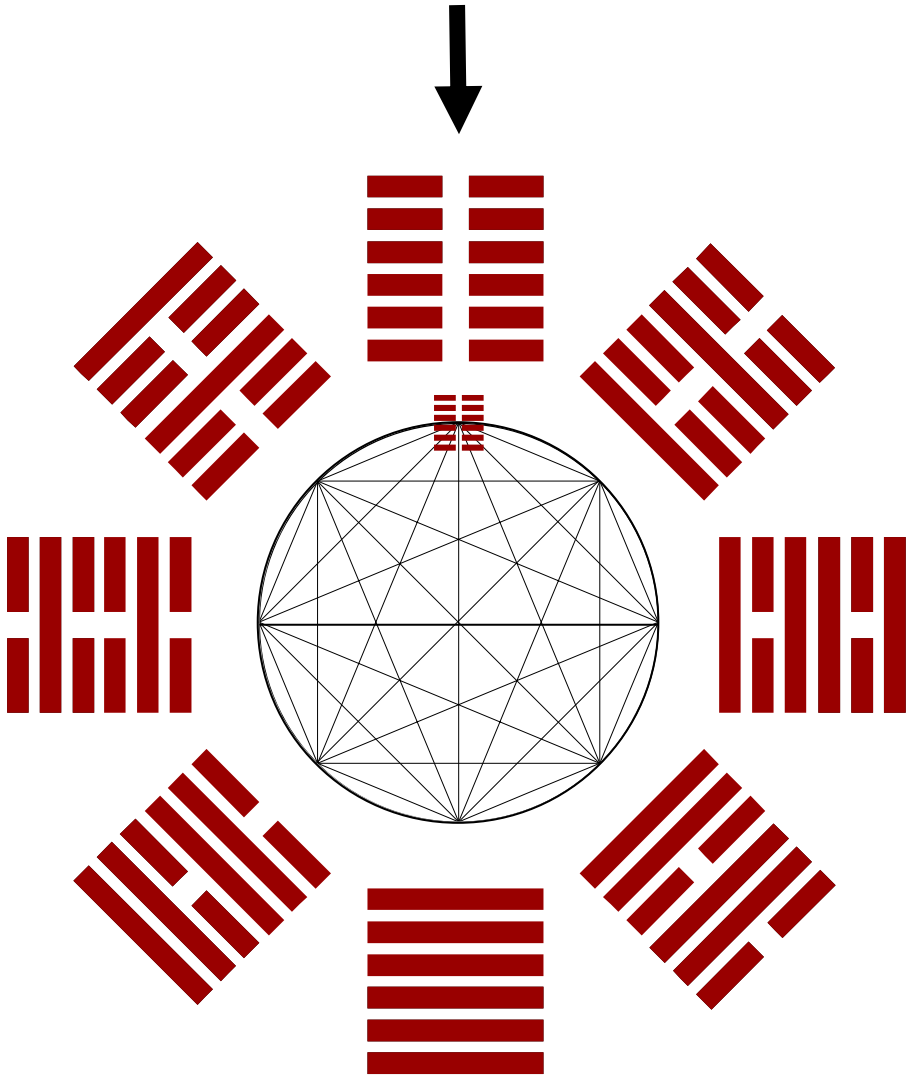










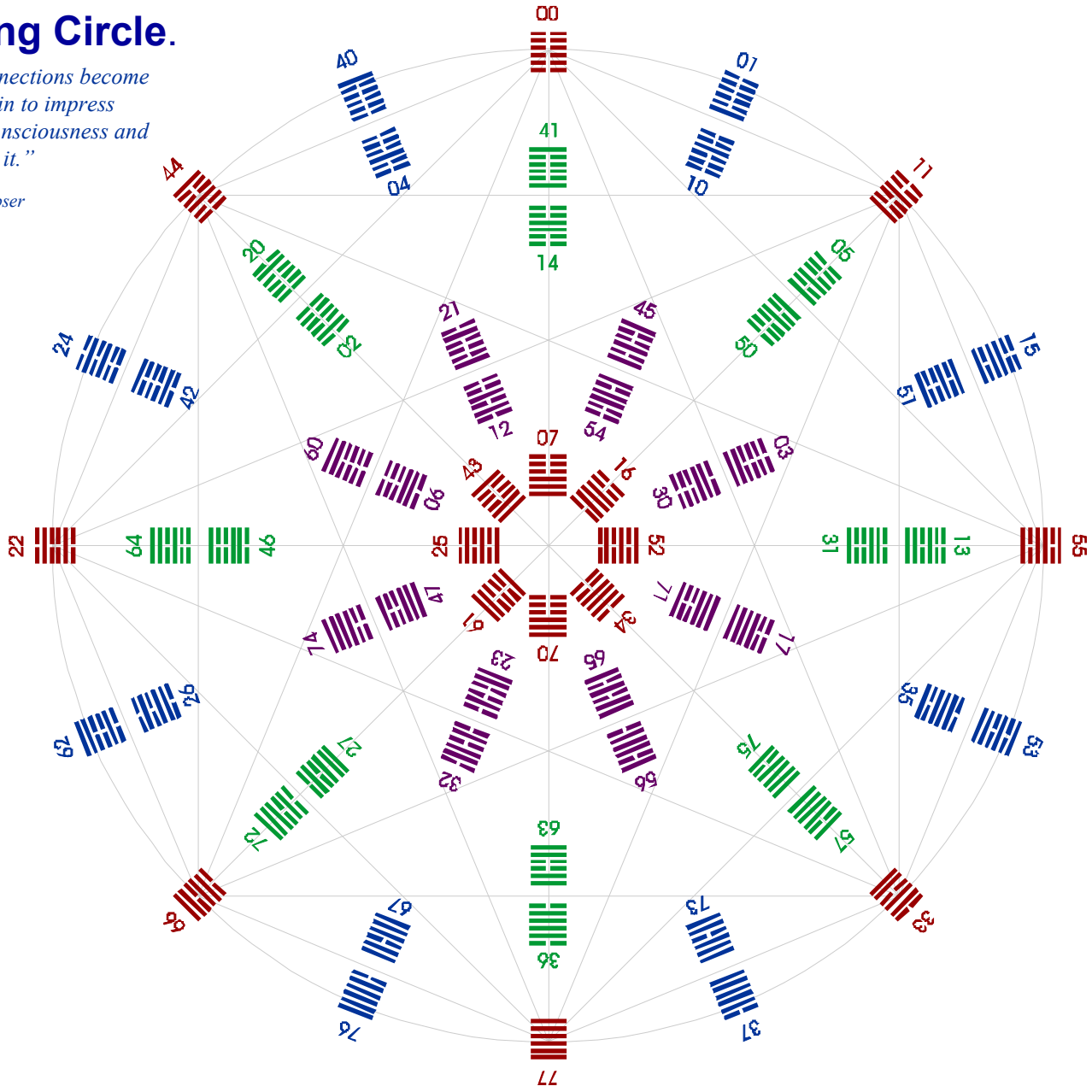


All the hexagrams and their position along the lines are shown on the next page followed by the properties of the **Great I Ching Circle**.

Great I Ching Circle.

"If certain inner connections become evident, they begin to impress themselves on our consciousness and to guide it."

Jean Gebser



PROPERTIES OF THE GREAT I CHING CIRCLE

The properties of the hexagrams within The Great I Ching Circle are as follows:

1. The numbers of the hexagrams paired across a line reflect one another and the upper and lower positions of the two tri-grams within the hexagrams are swapped over.

   E.g.

2. Any two hexagram numbers directly opposite each other through the center of the circle add up to 77 base 8. The lines within each pair of hexagrams are yin-yang opposites of each other.

   E.g.

3. The numbers of any two hexagrams, between two hexagrams at the end of a common line, when added, have the same answer

   E.g. **53 + 35 = 55 + 33.**

4. The numbers of the hexagrams on a common circle, which are the same color, add up to 374 base 8.

   E.g. **10, 51, 35, 73, 67, 26, 42, 04**

5. All hexagrams numbers along a common axis also add up to 374 base 8.

   E.g. **44, 20, 02, 43, 34, 75, 57, 33.**

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