

The explanation of King Wen's order of the 64 hexagrams.

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The I Ching is a mysterious book . Numerous researchers have tried to figure out why the 64 hexagrams are arranged in their particular order . Up to now, no satisfying solution has been found .

In this article, will be shown some basic keys for explaining the order of the I Ching hexagrams .

In King Wen's order the hexagrams are clearly arranged in pairs.

So, explaining the order involves two steps:

- Explaining the order of the 32 hexagram pairs.
- Explaining the order of the hexagrams within each pair.

The problem of the order of the 32 pairs has to be tackled first:

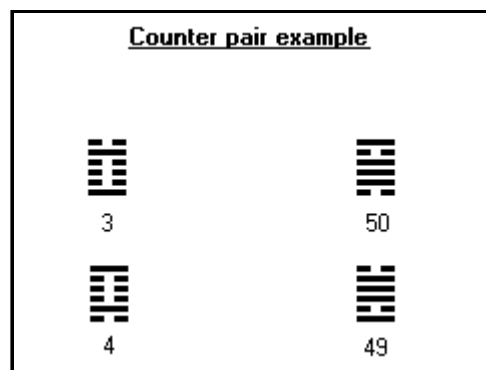
The basic structure.

The hexagrams are arranged in 32 pairs

Most hexagrams are coupled with their inverse hexagram (the inverse hexagram is obtained by turning it upside down) .

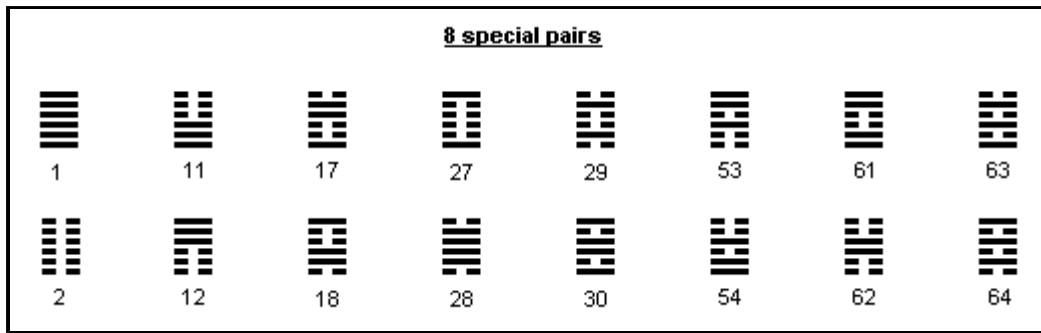
Eight hexagrams (1,2,27,28,29,30,61,62) don't change by turning them upside down because they are symmetric . These hexagrams are coupled with their counter hexagram (the counter hexagram is found by changing all the lines) .

This means that most pairs have a counter pair. For example the counter pair of hex 3 and hex 4 is the pair hex 49 and hex 50 :

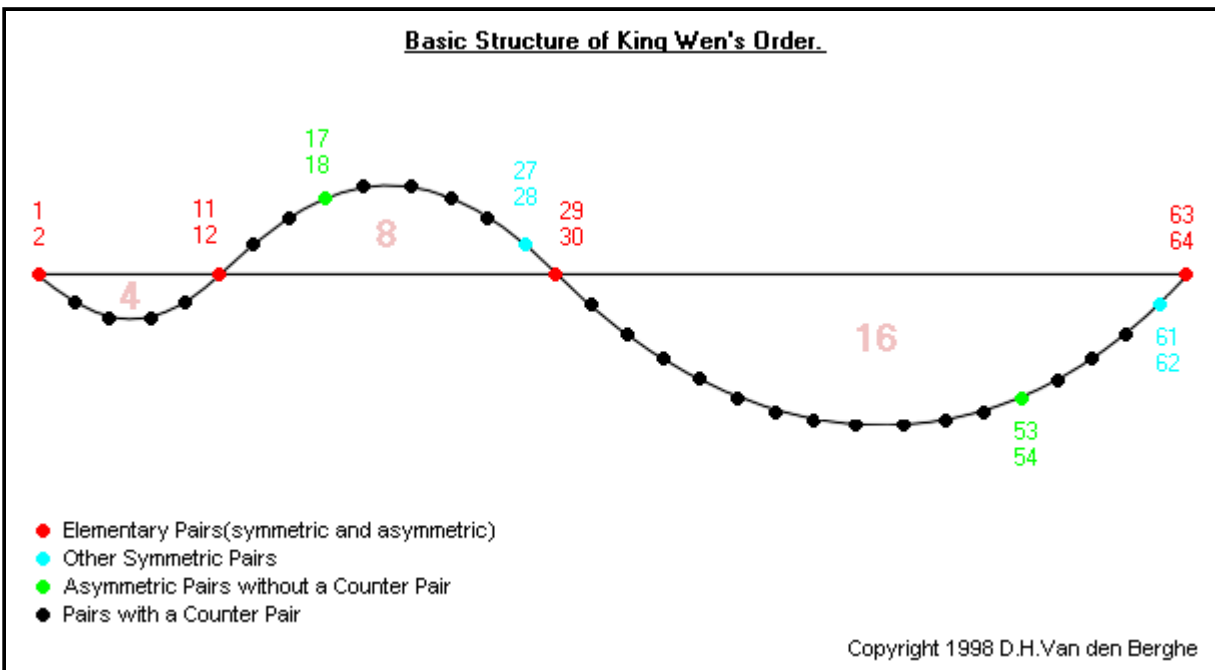


Besides the symmetric hexagrams (1,2,27,28,29,30,61,62) there are four more pairs that have no counter pair (11/12,17/18,53/54,63/64) because for these hexagrams inverse and counter hexagram are the same.

This means that we have 8 special pairs which have no counter pair:



Now, if we take a look at the arrangement of these 8 special pairs in King Wen's order, we notice something very interesting: (Note: The sequence is already shown in a curving diagram here. We will see the significance of this curve a little later on, when we discuss the I Ching Landscape.)



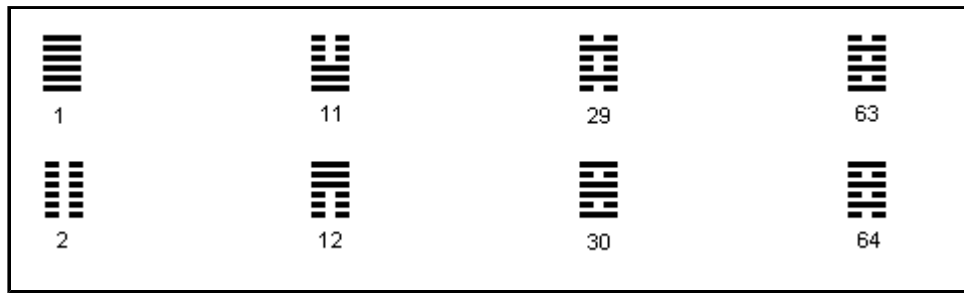
The pairs 1/2, 11/12, 29/30, 63/64 stand out in this group because they are simple combinations of the Heaven/Earth and Water/Fire trigrams respectively. I call them Elementary pairs.

They form the backbone of the whole I Ching structure. They are found at doubling intervals: there are 4, 8 and 16 pairs in between them.

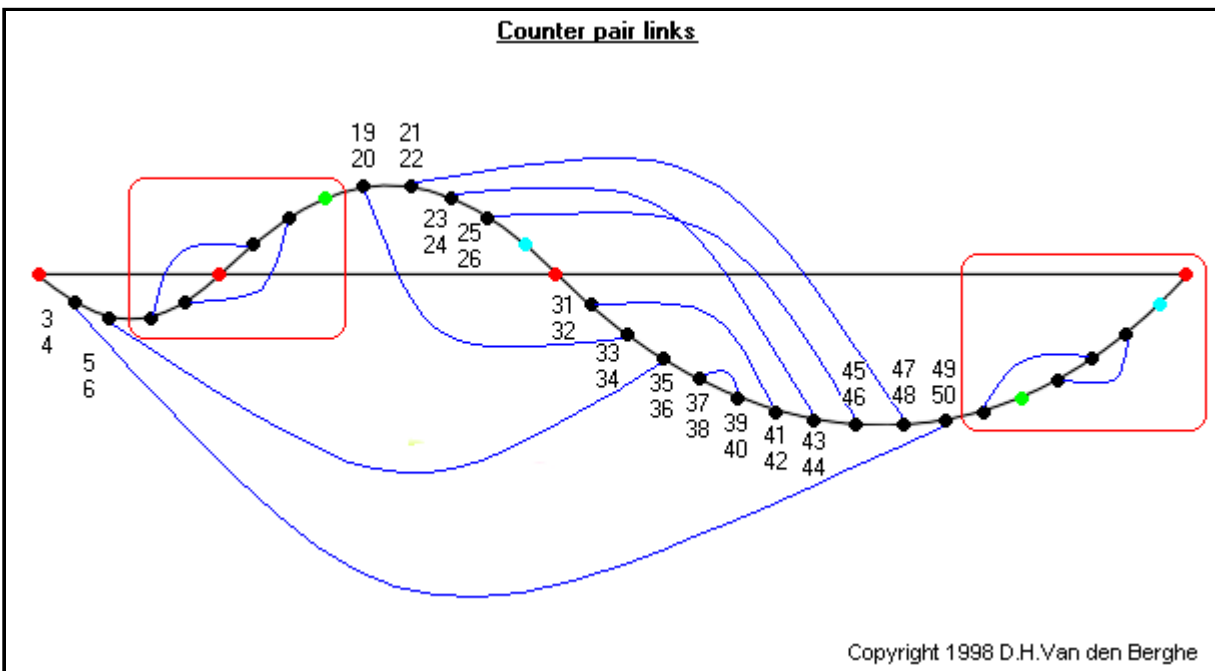
The two other symmetric pairs (27/28 and 61/62) are found in similar spots: just before 29/30 and 63/64.

The two asymmetric pairs without a counter pair (17/18 and 53/54) are found in interesting spots too: the first pair is six spots before and the second one is twelve spots after the elementary pair 29/30 (again a doubling of the distance).

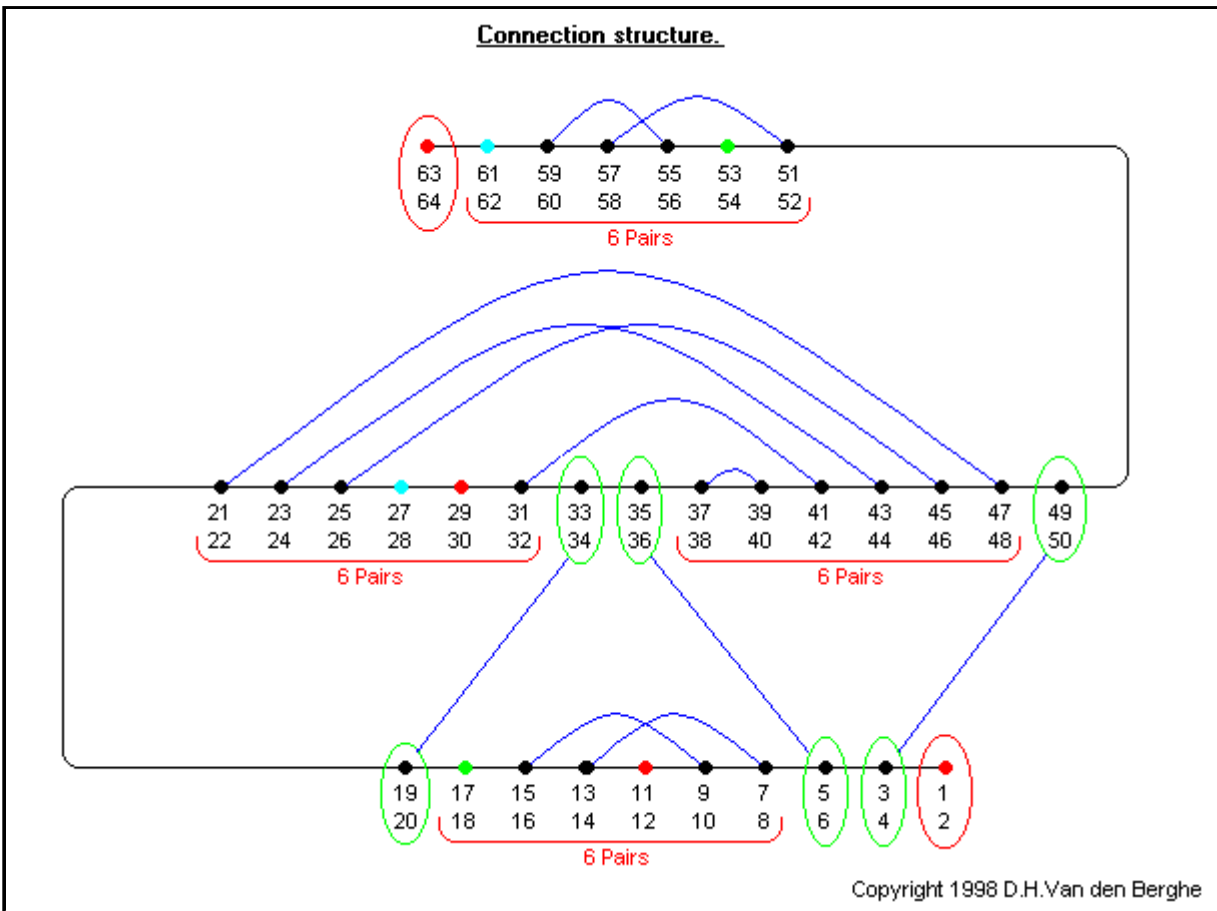
The 4 Elementary pairs evolve beautifully from completely unmixed hexagrams (1/2 pair) to perfectly mixed hexagrams (63/64 pair):



If we now connect the remaining hexagram pairs with their respective counter pairs, we can see what the author of the I ching book has tried to do: most of the connected pairs are put in the same slope of the curve, and arranged in a beautiful symmetric way . This does not look like a random arrangement :



If we present the arrangement in a different way it is easier to see the connections within each of the three slopes of the curve, and now another secondary structure (see later) is revealed, showing four groups of six pairs, nicely seperated by the interslope connecting pairs (3,4; 5,6; 19,20; 33,34; 35,36; 49,50) :



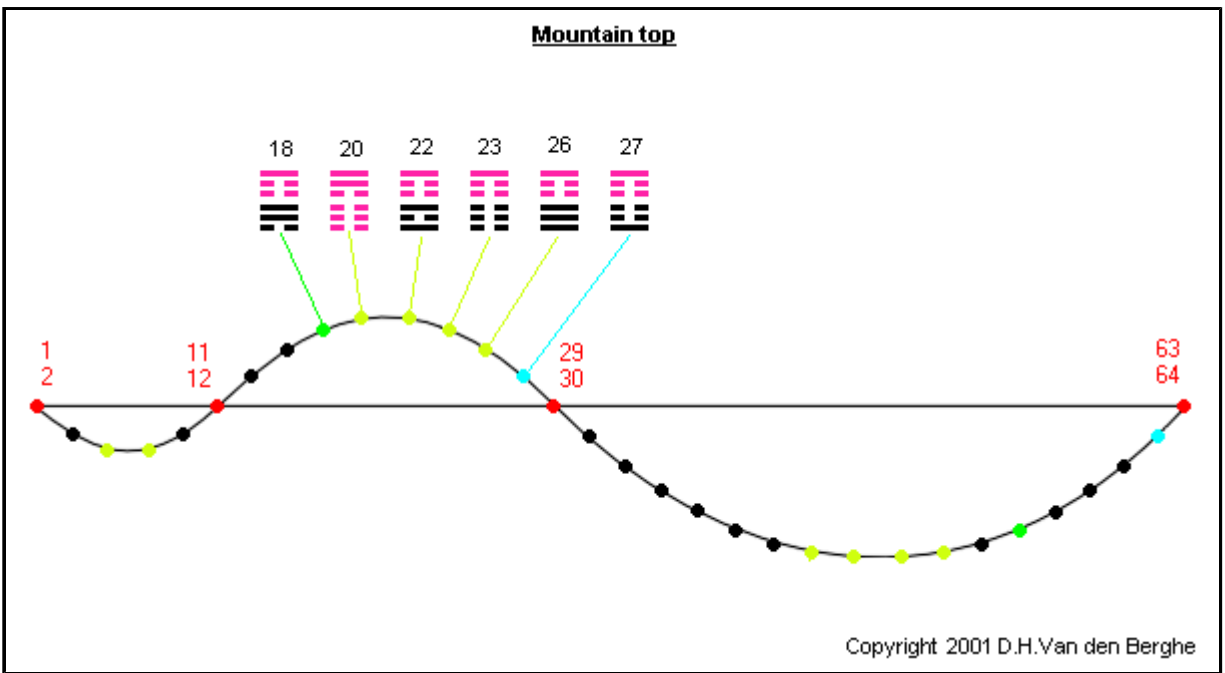
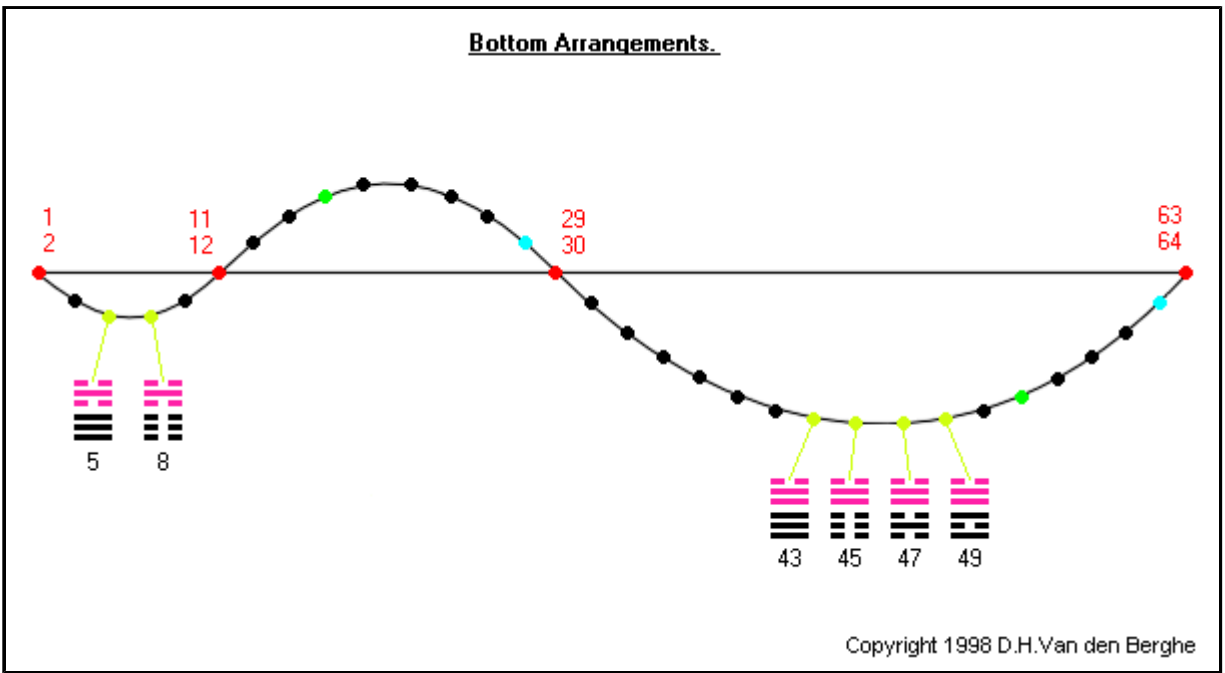
The Landscape.

Once we look closer at the placing of the individual hexagram pairs it becomes apparent that King Wen has drawn inspiration from a landscape.

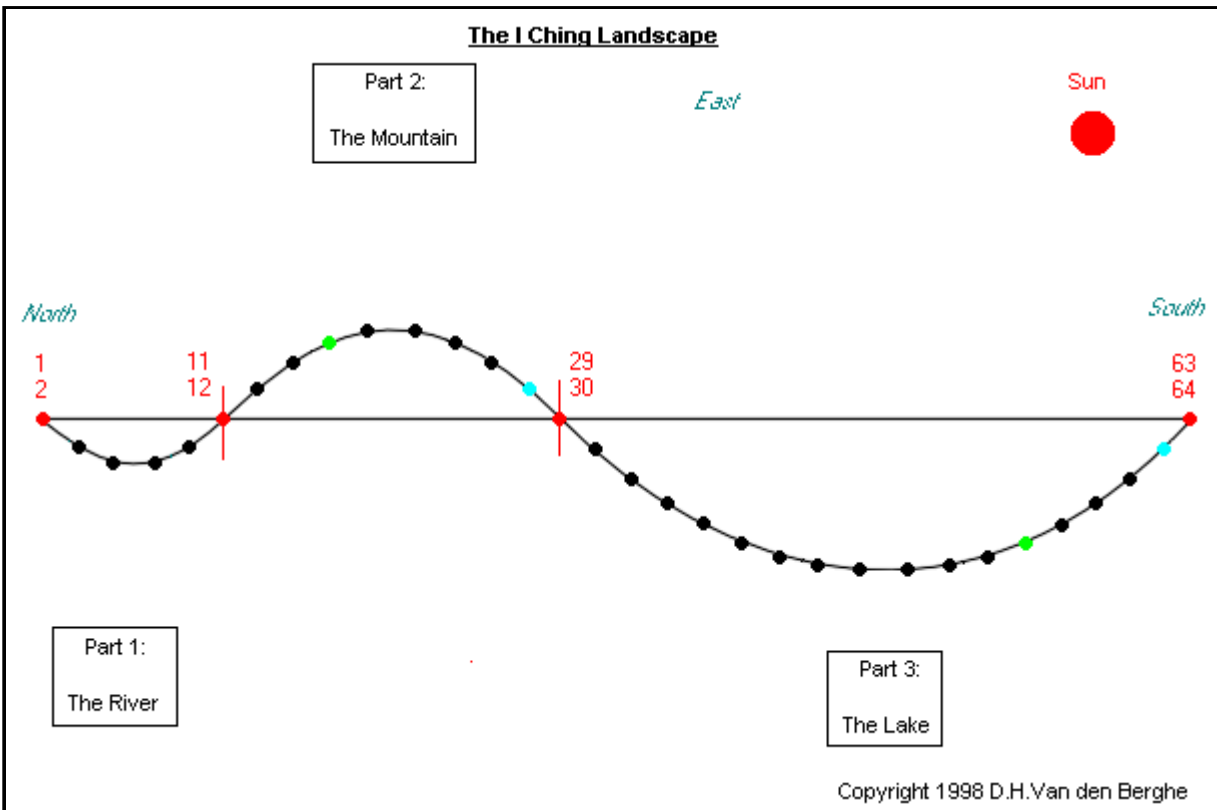
Each hexagram is a combination of an upper and a lower trigram, and we can see that the eight trigrams are not evenly distributed throughout the hexagram order.

We have the Water trigram for six hexagrams in row (3,4,5,6,7,8) in the first part; the Fire trigram is found mostly in the second half of the book; the Mountain trigram is found very frequently between hex 12 and hex 29; and the Lake trigram is abundant after hex 30... Heaven and Earth trigrams appear mostly very early in the book too.

Exactly in the middle between the Elementary pairs, we find interesting clusters of hexagrams, which are very similar:



This brings us to the I Ching Landscape, consisting of three parts: the river, the mountain and the lake:



In this landscape we are facing East, and the West is at our back. North is to the left, and South is to the right.

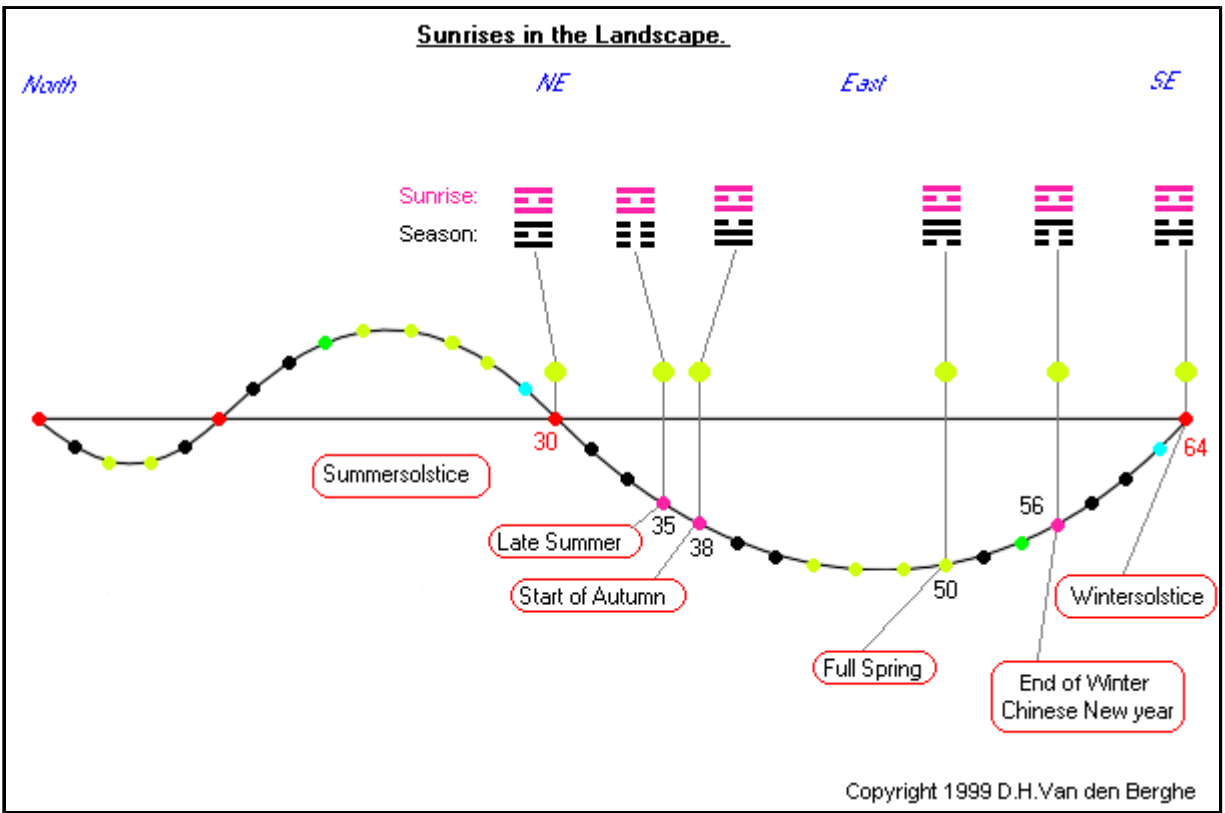
Considering the landscape and climat attributes that are known for each of the trigrams, we are now able to judge the placement of some other hexagram pairs as well.

Here is a short list we can use in this respect:

Trigram	Geo	Climat	Season	Astro
☰ Heaven	Sky		Late Autumn	
☷ Earth	Earth		Late Summer	
☵ Water	River	Rain, Clouds, Mist	Midwinter	Moon
☲ Fire		Sunshine	Midsummer	Sun
☳ Thunder		Thunder	Early Spring	
☴ Wood/Wind	Forest	Wind, Storm	Full Spring	
☱ Lake	Lake, Ocean		Autumn	
☶ Mountain	Mountain		Late Winter	

The hexagrams with Fire as the upper trigram are especially interesting because they depict a sunrise. In the Northern hemisphere the sun rises more to the North East in winter, and more to the South East in summer. In spring and autumn the sun rises close to the East.

In King Wen's order we find six hexagrams depicting sunrise exactly in the spot where the sun is to rise in the season indicated by the lower trigram:

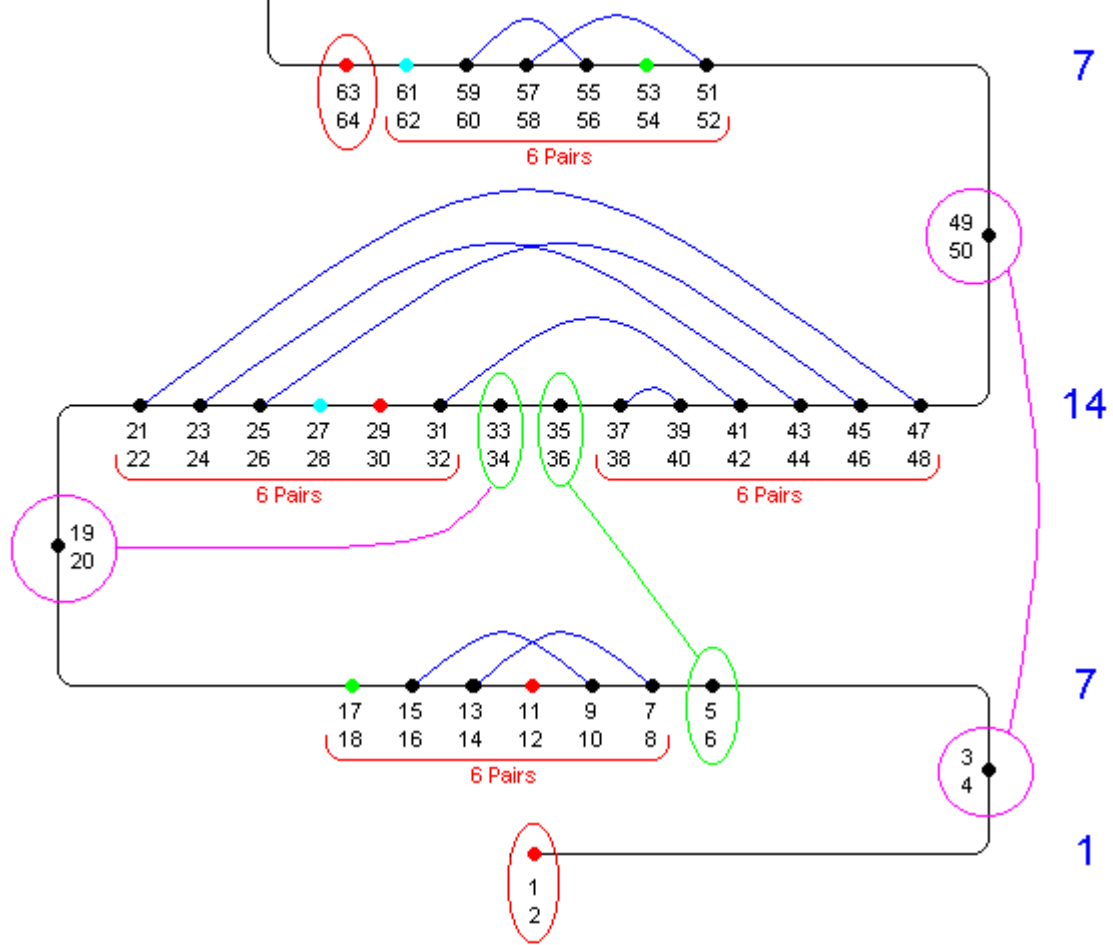


So, the hexagram order also contains an accurate system to determine the seasons by observing the place where the sun rises. Of course this was very important in an agrarian society. This is a reconfirmation that the landscape was used as model for King Wen's order.

The secondary structure.

There is more however. The I Ching is not only about mountains and lakes , rain and sunshine.... The hexagrams also carry deeper meaning which can be used as a guide in human life. The secondary structure, which was briefly shown before, is significant in this respect. Here it is represented in a slightly different form:

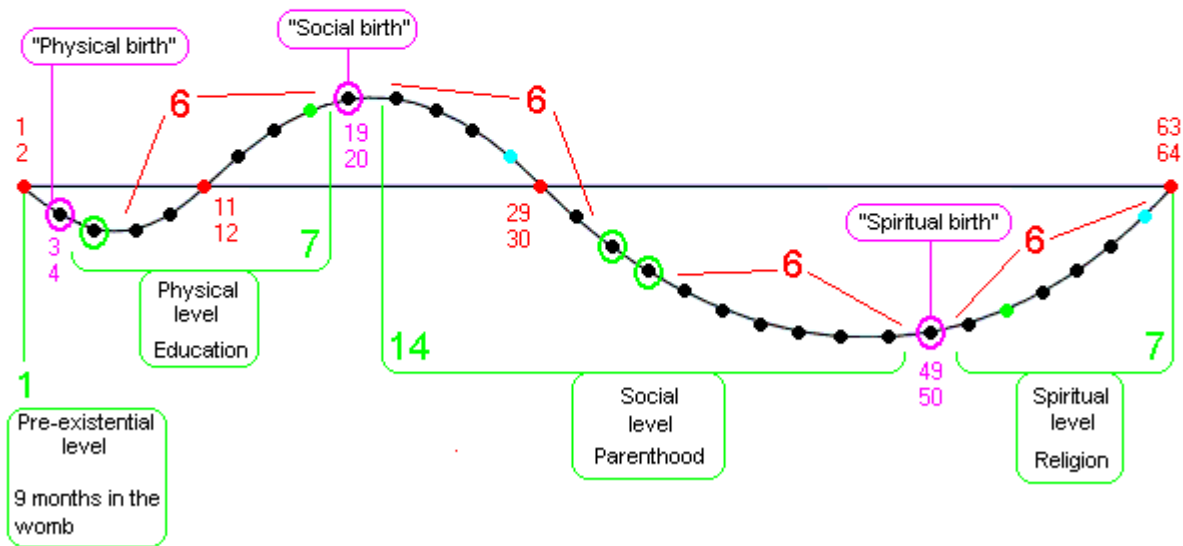
4 Levels of I Ching



Childhood and youth

Adult

Old Age



Four stages of human life are represented by the four slopes :

- Stage 1: hex 1 and 2: pre-existential level.
In this stage Yin and Yang meet and a new life is produced. This is the 9 months in the mother's womb.
- Hex 3 is the physical birth of the child. Hex 4 it learns to walk and talk..
- Stage 2 : hex 5 - hex 18: physical level.
In this stage there is learning of physical skills and education for adult life. Topics include: patience (hex 5), healthy competitiveness (hex 6), self discipline (hex 7), solidarity (hex 8), adaptability (hex 9), manners (hex 10), harmony (hex 11), aloneness (hex 12), cooperation (hex 13), intelligence (hex 14), ordinariness (hex 15), responsibility (hex 16), friendliness (hex 17), cleanliness (hex 18)
- Hex 19 is the final growing up stage and in Hex 20 one enters the social stage of life as an aware adult person. This is the social birth.
- Stage 3 : hex 21 - hex 48: social level.
In this stage one encounters all the realities of adult life. There is: decision making (hex 21), misfortune (hex 25), opportunity (hex 26), risk taking (hex 29), love (hex 31), relationship (hex 32), compromising (hex 37), individuality (hex 38), difficulties (hex 39), understanding (hex 40), loss (hex 41) and gain (hex 42), sex (hex 44), effort (hex 46), exhaustion (hex 47), etc..
- In hex 49 one enters a stage of metamorphosis and in hex 50 one wakes up to the spiritual dimension of life. This is the spiritual birth.
- Stage 4 : hex 51 - hex 64: spiritual level.
In this final stage the responsibilities of adult life are dropping away and the physical body starts getting weaker. This is a time to grow up in spirit and prepare for death. Among the hexagrams in this stage we find: meditation or yoga (hex 52), transformation (hex 54), the seeker of truth (hex 56), healing (hex 59), inner voice (hex 61), perfection (hex 63), waiting to cross the great river (hex 64)

3 Hexagram pairs (3/4 , 19/20 and 49/50) function as bridges between the four levels , each representing a birth, an initiation into the next level.

Conclusion: Life is a journey from hex 1 to 64 , and beyond...

The I Ching is a manual for life that is based directly on the infinite wisdom that we can see in nature : in the earth and the sky , in the mountains and lakes , in the rivers and the trees, in the sun and the moon, in the wind and the thunder, in the seasons ...

By learning from the harmony in nature, human life can rise up to the same level of harmony and beauty.

This is the message of the I Ching book.

This is the true spirit of Taoism...

Appendix 1 : Probabilities.

I made some rough calculations for the probabilities involved (as far as my meagre math background allows.) :

- The number of possible arrangements of 32 hexagram pairs is $32! = 2.63 * 10^{35}$ (an astronomic number with 35 zeros!)
- The chance to find the 4 elementary pairs exactly in the 4 pivotal spots of the "landscape curve" is

$(4 \cdot 3 \cdot 2 \cdot 1) / (32 \cdot 31 \cdot 30 \cdot 29)$, which is 1 in 35960 .

- The chance to find them in the right order too, is only 1 in 863040.
- Even if you take the position of the first and last hexagram pair for granted , the possibility for the other two elementary pairs (11-12 and 29-30) to fit the curve is still only 1 in 870 ($1 / 30 \cdot 29$).
- The chance to have the two bottom arrangements is in the order of 1 in 10000000.
- The possibility to have almost 100% of the counter pair connections within the same slope is about 1 in 20000.
- The chance to find the "Sunrises in the landscape" arrangement is estimated at 1 in 40000.
- Total chance to have 4 elementary pairs in the right spot, and the two bottom arrangements, and the interslope connections, and the Sunrise arrangement is approximately 1 in $1 \cdot 10^{22}$.

(If anybody manages to calculate more exact figures for these probabilities , please let me know)

Appendix 2 : The order within the pairs.

Once the arrangement of the 32 pairs is found, there are still 2^{32} (4290000000) possibilities to order the hexagrams within each pair. King Wen used the nuclear hexagrams to perform this task. In a maximum of two steps every hexagram can be reduced into one of the four main nuclear hexagrams (1, 2, 63 or 64):

Hexagram	Nuclear 1	Nuclear 2	Hexagram	Nuclear 1	Nuclear 2
1	-	-	33	44	1
2	-	-	34	43	1
3	23	2	35	39	64
4	24	2	36	40	63
5	38	63	37	64	-
6	37	64	38	63	-
7	24	2	39	64	-
8	23	2	40	63	-
9	38	63	41	24	2
10	37	64	42	23	2
11	54	63	43	1	-
12	53	64	44	1	-
13	44	1	45	53	64
14	43	1	46	54	63
15	40	63	47	37	64
16	39	64	48	38	63
17	53	64	49	44	1
18	54	63	50	43	1
19	24	2	51	39	64
20	23	2	52	40	63
21	39	64	53	64	-
22	40	63	54	63	-
23	2	-	55	28	1
24	2	-	56	28	1
25	53	64	57	38	63
26	54	63	58	37	64
27	2	-	59	27	2
28	1	-	60	27	2
29	27	2	61	27	2
30	28	1	62	28	1
31	44	1	63	-	-
32	43	1	64	-	-

The ordering is done in a systematic way:

- For those pairs that have 63-64 as Nuclear 1 or Nuclear 2 : the hexagram that generates hex 63 comes first ; for the hexagrams from 17 until 54 the order is reversed, so hex 64 comes first. (purple colored)
- Only three pairs result in 1-2 : always the hexagram generating hex 2 comes first.(green colored)
- For those pairs that give a 1-1 or 2-2 , we have to consider Nuclear 1 : the hexagram that generates hex 24 or hex 44 comes first.(yellow colored)
Here there is an exception: the pair 3-4 .
- 6 Pairs show no differentiation at all in their Nuclear gua: 1-2 and 63-64 are the main nuclear hexagrams themselves , the other 4 pairs (23-24, 43-44, 55-56, 59-60) are arranged as follows : the hexagram with the elementary trigram in the lower position comes first.