

Tai Xuan Jing as Vedic Literature

By John Frederick Sweeney



Abstract

The Tai Xuan Jing (T'ai Hsuan Ching) or Classic of the Great Mystery, although attributed to Chinese writers and preserved in China for two thousand years, probably originated in Vedic India. The Tai Xuan Jing pertains to the dynamic Raja form of 9 x 9 matter, which is a fundamental aspect of Vedic Physics. This paper argues for Vedic origins of the Tai Xuan Jing and provides supporting material for that argument, based on the mathematical argument proposed by Frank "Tony" Smith on his website.

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Introduction

Around 2003 or so I delved deeply into Chinese metaphysics, trying to learn as much as possible about the I Ching and related subjects. A few hard guys online were trying to crack the Tai Xuan Jing, and this group attracted my attention. The Classic of the Great Mystery had supposedly been written by Chinese during the Han Dynasty, but since then, few had bothered with the tome, although it was selected for inclusion in the Qing Dynasty archive of Chinese literature, the *Si Ku Quan Shu* (Four Treasures Archive).

Not long after this, I discovered the monumental website of physicist Frank “Tony” Smith, who discusses the Tai Xuan Ching:

It seems to me as though [Vedic divination](#) and **Tai** Shuan **Ching** are based on the [Triality](#) aspect of the 256-dimensional $Cl(8)$ [Clifford algebra](#) of [IFA](#), while I **Ching** is based on the 64-dimensional $Cl(6)$ [Clifford subalgebra](#) of the $Cl(8)$ of [IFA](#).

This sentence frightened me at first reading, since I had no clue as to what Triality, Clifford Algebras or IFA meant, and the word sub - algebra brought me back to my terror – filled adolescence experiences of junior middle school algebra. Smith knows how to explain things in simple terms, and soon I found myself devouring his website intellectually and exploring the realms of the Cornell archive math physics server. Smith knew something about the I Ching and the Tai Xuan Jing that no one else knew. This was rare and worth exploring.

Following the intellectual trail, I traced back through Chinese metaphysics to Vedic Astrology, to mathematical physics and then to Vedic Physics, for an explanation of Smith’s mysterious sentence. Indeed, his statement is correct, in the sense that not only the people of the Vedas, but the people of remotely ancient Egypt, shared in a superior science which makes contemporary science seem child’s play.

The Chinese have known of the Tai Xuan Jing for some two thousand years, during which the classic was all but ignored. While the Chinese readily took to the Confucian Book of Changes or I Ching, they have for the most part ignored the Tai Xuan Jing, with few scholars lending any time or space to its

exploration.

If number leads to philosophy, and philosophy provides a guide to successful living on Earth, then Chinese culture can be constructed from the 8 x 8 Satvic I Ching, starting from the Luo Shu (Book of Luo) and the He Tu (River Diagram). While supposedly mythic origins, these symbols were apparently painted on the underbelly of a sea tortoise and the side of a horse. If Earth experienced natural catastrophes some 13,000 years ago, as this author has previously suggested on Vixra, then one intelligent way to transfer the seeds of a new culture would be to pain the Luo Shu symbols on a long – lived animal, such as the sea tortoise, which lives for as many as a thousand years.

From the Luo Shu, one may derive the Eight Trigrams and then the Sixty – Four hexagrams of the I Ching, which enjoy an isomorphic relationship with the 64 amino acids of DNA, both of these systems characterized by the $8 \times 8 = 64$ stable structure of the Satvic domain of matter. The Chinese have created the longest – lived and most stable society known to humanity, based on the I Ching, with “wing” commentaries by Confucius. The Confucian system spread to Japan and Korea as well, and now dominates East Asia, from Hei Long Jiang to Saigon (HCM City).

This begs the question, why did the Chinese ignore the Tai Xuan Jing? While there may have been some group of “Chinese” people some eight thousand years ago in what is now Shan Dong Province, it remains equally plausible to argue, as does Frank “Tony” Smith, that Chinese civilization devolved from African Ifa civilizations. One way that a Vedic civilization may have colonized outlying areas would have been to base a new colony on the stable 8×8 philosophy with its socially conservative Confucian ideology.

Academic generally posits that the Chinese established themselves first as kingdoms under their own Chinese cultural rubric, which nevertheless borrowed key elements from India. If this is so, then why did the Chinese import the Tai Xuan Jing and then choose to ignore it for two millennia? Certainly the $8 \times 8 = 64$ Satvic philosophy and the 9×9 Raja philosophy originated in Vedic literature and not with some mythological animal.

Chinese like to claim that their people invented everything, short of pizza. However, it remains highly unlikely that such a conservative and cowardly nation would invent anything. As Berkeley historian David Johnson put it in his history class, the Chinese “were afraid of anything that exploded.” Thus, gunpowder was kept as a tool for ceremonial purposes and never developed into guns, muskets or dynamite. When the oceans proved dangerous, the emperor simply forbade overseas trading. Thus it appears unlikely that the Chinese invented the Tai Xuan Jing or even the I Ching.

Here, the author wishes to make a note of explanation: early in my studies of the Tai Xuan Jing, I worked with a group involved with the Roger Clough website, at first, harmoniously. Eventually, the author came to the conclusion that medical divination was not only a firm section of Chinese metaphysics, but was indispensable, if not the primary reason for the existence of Chinese metaphysics. My erstwhile Tai Xuan Jing colleagues argued adamantly in the opposite direction, and so I have not been able to associate with them since.

This paper provides Wikipedia definitions and descriptions of key concepts, including the Tai Xuan Jing, the three Guna of Vedic Physics, Thaamas, Satva and Raja, and their descriptions in Vedic Philosophy. Next, this paper compares a few of the 81 concepts of the TXJ with their Sanskrit counterparts, as described in the Monier – Williams dictionary. Finally, this paper includes several appendices which form an amalgamation of web sources on the TXJ.

A final note, the first English version of the Tai Xuan Jing was evidently based on a woodcut version in the British Library. The Qing Dynasty collected and re – published a version of the Tai Xuan Jing in its *Si Ku Quan Shu* or Four Treasures Archive.

Mathematics of the Tai Xuan Jing

By Frank "Tony" Smith

As the I **Ching** is based on hexagrams of binary lines, for a total of $2 \times 2 \times 2 \times 2 \times 2 \times 2 = 8 \times 8 = 64$ hexagrams, the **Tai Hsuan Ching** is based on tetragrams of ternary lines, for a total of $3 \times 3 \times 3 \times 3 = 9 \times 9 = 81$ tetragrams. The ternary number arrangement is similar to the [Fu Xi binary number arrangement](#) of the I **Ching**.

The 81 tetragrams correspond to the 81 verses of the [Tao Te Ching](#).

The **Tai Hsuan Ching** may be at least as old as the [King Wen arrangement](#) of the I **Ching**, since such tetragrams have been found on Shang and Zhou dynasty oracle bones.

To construct the **Tai Hsuan Ching**, start with the 3x3 I **Ching** [Magic Square](#)

4	9	2
3	5	7
8	1	6

whose central number, 5, is also central in the sequence 1, 2, 3, 4, 5, 6, 7, 8, 9 which sequence corresponds to the [octonions](#) 1, i, j, k, 0, E, I, J, K

whose total number for each line is 15,

the dimension of the largest [Hopf fibration](#)
and the dimension of the imaginary [sedenions](#).

If you take into account the direction in which you add each
of the 8 ways, and add all directed ways together
you get a total of $16 \times 15 = 240$
which is the number of vertices of a [Witting polytope](#).

The total of all 9 numbers is 45,
the dimension of the D5 [Lie algebra](#) Spin(10)
that is used in the [D4-D5-E6-E7 physics model](#)
in which
the D4 Spin(8) subgroup of Spin(10) corresponds
to 28 bivector gauge bosons
and the 16-dimensional homogeneous space
Spin(10) / Spin(8)xU(1)
corresponds to an 8-dimensional complex domain
whose Shilov boundary is $RP^1 \times S^7$
corresponding to an 8-dimensional spacetime.

Notice that the 3x3 Magic Square gives
the gauge bosons and the spacetime
of the [D4-D5-E6-E7 physics model](#)
but
does not contain the spinor fermions.

The [3 generations of spinor fermions](#)
correspond to a [Lie Algebra Magic Square](#).

The **Tai Hsuan Ching** construction will
give us the spinor fermions,
and therefore corresponds to
the complete [D4-D5-E6-E7 physics model](#).

To construct the **Tai Hsuan Ching**,
consider the Magic Square sequence as a line

3 8 4 9 5 1 6 2 7

with central 5 and opposite pairs at equal distances.

If you try to make that, or a multiple of it, into a 9x9 Magic Square whose central number is the central number 41 of $9 \times 9 = 81 = 40+1+40$, you will fail because 41 is not a multiple of 5.

However, since $365 = 5 \times 73$ is the central number of $729 = 364+1+364$, you can make a 9x9x9 [Magic Cube](#) with $9 \times 9 \times 9 = 729$ entries, each 9x9 square of which is a Magic Square.

The [Magic Cube](#) of the **Tai** Hsaun **Ching** gives the same sum for all lines parallel to an edge, and for all diagonals containing the central entry.

The central number of the [Magic Cube](#), 365, the [period of a Maya Haab](#).

The total number for each line is $3,285 = 219 \times 15$.
The total of all numbers is $266,085 = 5,913 \times 45$.

Since 729 is the smallest odd number greater than 1 that is both a cubic number and a square number, the 729 entries of the 9x9x9 [Magic Cube](#) with central entry 365 can be rearranged to form a 27x27 Magic Square with 729 entries and central entry 365.

$27 = 3 \times 3 \times 3 = 13+1+13$ is a cubic number with central number 14, and there is a [3x3x3 Magic Cube](#) with central entry 14 (14 is the dimension of the exceptional [Lie algebra G2](#)) and sum 42:

10	24	8	26	1	15	6	17	19
23	7	12	3	14	25	16	21	5
9	11	22	13	27	2	20	4	18

The lowest dimensional non-trivial representation of the [Lie algebra E6](#) is 27-dimensional, corresponding to the 27-dimensional [Jordan algebra](#) of [3x3 Hermitian octonionic matrices](#).

E6 is the 78-dimensional Lie algebra
that is used in the [D4-D5-E6-E7 physics model](#)
in which
the 32-dimensional homogeneous space
 $E6 / Spin(10) \times U(1)$
corresponds to a 16-dimensional complex domain
whose Shilov boundary is two copies of $RP^1 \times S^7$
corresponding to Spin(8) spinors, representing
8 fermion particles and 8 fermion antiparticles.

All 4 components of the [D4-D5-E6-E7 model](#),
arising from the 4 fundamental representations of Spin(8),
are contained within E6:
8 half-spinor fermion particles;
8 half-spinor fermion antiparticles;
8-dimensional spacetime
 (4 Physical Spacetime dimensions and
 4 Internal Symmetry dimensions);
and 28 gauge bosons
 (12 for the Standard Model,
 15 for Conformal Gravity and the Higgs Mechanism, and
 1 for propagator phase).

The Lie algebra E6 is $72+6 = 78$ -dimensional,
and has Weyl group of order $72 \times 6! = 51,840$
which is the symmetry group of the 6-dimensional polytope 2_21
with 27 vertices and $27+72$ faces
which is also the symmetry group of the 27 line configuration:

The total dimension of the Clifford algebra
is given by the Yang Hui (Pascal) triangle
pattern of binary expansion $(1 + 1)^n$,
which
corresponds to the number of vertices of
a [hypercube](#) of dimension n.

The spinors of the Clifford algebra of dimension n
are derived from the total matrix algebra of dimension 2^n
with pattern

Clifford Spinors

n

```
0           1
1          2
2         4
3        8
4       16
5      32
6     64
7    128
8   256
```

This can be expanded to a pattern

n

```
0           1
1          2  1
2         4  2  1
3        8  4  2  1
4       16 8  4  2  1
5      32 16 8  4  2  1
6     64 32 16 8  4  2  1
7    128 64 32 16 8  4  2  1
8   256 128 64 32 16 8  4  2  1
```

in the same form as the Yang Hui (Pascal) triangle.

Call each row a spinor string.

For a given row in the binary $(1+1)^n$ Yang Hui (Pascal) triangle the string product of a spinor string and a wedge string

$$(2^N, 2^{(N-1)}, 2^{(N-2)}, \dots, 2^{(N-J)}, \dots, 4, 2, 1) \\ (1, N, N(N-1)/2, \dots, N^k J^{(N-k)/(k!(N-k)!)} J, \dots, N(N-1)/2, N, 1)$$

gives the rows of the ternary $(1+2)^n$ power of 3 triangle

n

0											$3^0 = 1$
1											$3^1 = 3$
2											$3^2 = 9$
3											$3^3 = 27$
4											$3^4 = 81$
5											$3^5 = 243$
6											$3^6 = 729$
7											$3^7 = 2,187$
8											$3^8 = 6,561$

Just as the binary $(1+1)^n$ triangle corresponds to the I **Ching**, the ternary $(1+2)^n$ triangle corresponds to the **Tai Hsuan Ching**. The ternary triangle also describes the [sub-hypercube structure of a hypercube](#).

The ternary power of 3 triangle is not only used in representations of the spinors in the [D4-D5-E6-E7 model](#), it was also by [Plato in describing cosmogony and music](#).

Tai Xuan Jing in Chinese Studies

太玄經

The text *Tài Xuán Jīng* ("Canon of Supreme Mystery", [Chinese](#): 太玄經) was composed by the Confucian writer [Yáng Xióng](#) ([Chinese](#): 揚雄/扬雄; [pinyin](#): *Yáng Xióng*; [Wade-Giles](#): *Yang Hsiung*; 53 BCE–18 CE). The first draft of this work was completed in 2BCE (in the decade before the fall of the [Western Han Dynasty](#)). This text is also known in the West as *The Alternative I Ching* and *The Elemental Changes*. ^{[[citation needed](#)]}

In the Unicode Standard, the **Tai Xuan Jing Symbols block** is an extension of the [Yi Jīng](#) symbols. Their Chinese aliases most accurately reflect their interpretation; for example, the Chinese alias of code point U+1D300 is "rén", which translates into English as *man* and yet the English alias is "MONOGRAM FOR EARTH".^[2] The monograms are:

- the unbroken line (—) for heaven ([Chinese](#): 天; [pinyin](#): *tiān*),
- once broken line (— —) for earth ([Chinese](#): 地; [pinyin](#): *dì*),
- twice broken line (— — —) for man ([Chinese](#): 人; [pinyin](#): *rén*).

Numerically the symbols can be counted as — = 0, — — = 1, — — — = 2, and grouped into sets of four to count from 0 to 80. This is clearly intentional as this passage from chapter 8 of the *Tài Xuán Jīng* points out the principle of carrying and place value.

Vedic Philosophy

Guṇa ([Sanskrit](#): गुण) means 'string' or 'a single thread or strand of a cord or twine'. In more abstract uses, it may mean 'a subdivision, species, kind, quality', or an operational principle or tendency. ^[1]

In [Samkhya](#) philosophy, there are three major guṇas that serve as the fundamental operating principles or 'tendencies' of [prakṛti](#) (universal nature) which are called: [sattva guṇa](#), [rajas guṇa](#), and [tamas guṇa](#). The three primary guṇas are generally accepted to be associated with creation (sattva), preservation (rajas), and destruction/transformation (tamas) (see also [Aum](#) and [Trimurti](#)). ^[2] The entire creation and its process of evolution is carried out by these three major guṇas. ^{[1][3][4]}

The term guṇa in [Classical Sanskrit](#) literature in general (e.g. [Mahabharata](#), the [Bhagavata Purana](#), etc.) is the term for the [five elements](#) ([mahabhutas](#)), as well as the [five senses](#), and five associated body parts:

- [Akasha](#) ([space](#)), associated with the guṇa [śabda](#) ("sound") and with the [ear](#).
- [Vayu](#) ([air](#)), associated with the guṇa [sparśa](#) ("feeling") and with the [skin](#).
- Tejas or [Agni](#) ([fire](#)), associated with the guṇa [rūpa](#) ("appearance", and thus color and tangibility) and with the [eye](#).
- [Apas](#) or [Jalam](#) ([water](#)), associated with the guṇa [rasa](#) ("taste", and thus also flavor and tangibility, as well as shape) and with the [tongue](#).
- [Prithivi](#) ([earth](#)), associated with all the preceding guṇas as well as the guṇa [gandha](#) ("smell") and with the [nose](#).

Bhagavad Gita

Book 17 of [Bhagavad Gita](#) discusses *Guna*.^[5] Verse 17.2 refers to the three Guna – sattvic, rajasic and tamasic – as innate nature (psychology or personality of an individual).^{[6][7]} Sattvic guna is one driven by the pure, truth, compassionate, without craving, doing the right because it is right, positive and good declares Bhagavad Gita. Tamasic guna is one driven by impure, dark, destructive, aimed to hurt another, contemptuous, negative and evil. Rajasic guna is one that is ego-driven, out of personal passion, active, ostentatious, seeking approval of others, and showy states Bhagavad Gita.^{[5][7]}

In Samkhya philosophy

In [Samkhya](#) philosophy, a *guṇa* is one of three “tendencies”: [tamas](#), [sattva](#), and [rajas](#). These categories have become a common means of categorizing behavior and natural phenomena in [Hindu philosophy](#), and also in [Ayurvedic medicine](#), as a system to assess conditions and [diets](#). For this reason Triguna and [tridosha](#) are considered to be related in the traditions of [Ayurveda](#). *Guṇa* is the tendency, not action itself.

For instance, *sattva* *guṇa* is the tendency towards purity but is not purity itself. Similarly *rajas* *guṇa* is that force which tends to create action but is not action itself. Each of the three *gunas* is ever present simultaneously in every particle of creation but the variations in equilibrium manifest all the variety in creation including matter, mind, body and spirit.^{[1][4]}

All creation is made up by a balance composed of all three forces. For creation to progress, each new stage “needs a force to maintain it and another force to develop it into a new stage. The force that develops the process in a new stage is *rajo* *guna*, while *tamo* *guna* is that which checks or retards the process in order to maintain the state already produced, so that it may form the basis for the next stage”.

- [Sattva](#) (originally “being, existence, entity”) has been translated to mean balance, order, or purity. [Indologist Georg Feuerstein](#) translates *sattva* as “lucidity”.^[8]

- [Rajas](#) (originally "atmosphere, air, firmament") is also translated to mean change, movement or dynamism.^{[2][9]} (Rajas is etymologically unrelated to the word [raja](#).)
- [Tamas](#) (originally "darkness", "obscurity") has been translated to mean "too inactive" or "inertia", negative, [lethargic](#), dull, or slow.^[9] Usually it is associated with darkness, delusion, or ignorance.^[10] In some contexts, a tamas quality can also refer to a tendency towards breaking down or entropy. In his *Translation and Commentary on the [Bhagavad-Gita](#)*, [Maharishi Mahesh Yogi](#) explains "The nature of tamo guna is to check or retard, though it should not be thought that if the movement is upward tamo guna is absent".^[3]

In Nyaya philosophy

In [Nyaya](#) philosophy, 24 guṇas are enumerated as properties or characteristics of all created things.

1. [rūpa](#): [appearance](#) (shape and color).
2. [rasa](#): [taste](#).
3. [gandha](#): [smell](#).
4. [sparśa](#): [feeling](#) ([touch](#)).
5. [sāmkhya](#): [amount](#).
6. [parimāna](#): [dimension](#).
7. [prthaktva](#): [distinctness](#).
8. [samvoga](#): [conjunction](#).
9. [vibhāga](#): [disjunction](#).
10. [paratva](#): remoteness.
11. [aparatva](#): [proximity](#).
12. [gurutva](#): gravity.
13. [dravatva](#): [fluidity](#).
14. [sneha](#): [viscosity](#).
15. [śabda](#): [sound](#).
16. [buddhi](#)/[jñāna](#): enlightenment/knowing.
17. [sukha](#): [pleasure](#).
18. [duḥkha](#): [pain](#).
19. [icchā](#): desire.
20. [dveṣa](#): [aversion](#).
21. [prayatna](#): [effort](#).
22. [dharma](#): [merit](#) or [virtue](#).
23. [adharma](#): demerit.
24. [samskāra](#): the [self-reproductive](#) quality;

In grammar

In the [Sanskrit grammatical tradition](#) ([Vyakarana](#)), *guṇa* is a technical term corresponding to what is now termed the *full grade* in [Indo-European ablaut](#). That is, it refers to a set of normal-length vowels that are less reduced than the basic set (in modern terms, the *zero grade*), but more reduced than the [vrddhi](#) vowels (in modern terms, the *lengthened grade*).

As an example, *r*, *i*, *u* are basic (zero-grade) vowels, with corresponding *guṇa* (full-grade) vowels *ar*, *e*, *o* and *vrddhi* (lengthened-grade) vowels *ār*, *ai*, *au*. (This is more understandable once it is realized that, at an earlier stage of development, Sanskrit *e* and *o* were *ai* and *au*, and Sanskrit *ai* and *au* were *āi* and *āu*.) This classification was developed by [Pānini](#) in his [Ashtadhyayi](#).
[\[11\]](#)

In medicine

In the terminology of [Ayurveda](#) (traditional medicine), *guṇa* can refer to one of twenty fundamental properties which any substance can exhibit, arranged in ten pairs of antonyms, viz. heavy/light, cold/hot, unctuous/dry, dull/sharp, stable/mobile, soft/hard, non-slimy/slimy, smooth/coarse, minute/gross, viscous/liquid.
[\[12\]](#)

Guna is also a district of Madhya Pradesh, India

In Physics

The Hindu translator and scholar [I. K. Taimni](#) in *The Science of Yoga* [\[13\]](#) describes the *gunas* as [dynamical](#) states. In his discussion of aphorism 2.18 of Patanjali's [Yoga Sutras](#), Taimni states:

"Although the theory of *Gunas* is one of the fundamental doctrines of Hindu philosophy it is surprising how little it is understood.

There is a vague idea that they have something to do with properties because the word *Guna* in Samskrta generally means a property or attribute.

The advances which have taken place in the field of physical sciences and the light which this has thrown on the structure of matter and

the nature of physical phenomena has now placed us in a position to be able to gain a faint glimpse into the essential nature of the Gunas.

If we analyse the flux of physical phenomena around us in the light of modern scientific knowledge we shall find three principles of a fundamental character underlying these phenomena.

These three principles, which ultimately determine the nature of every phenomenon, are all connected with motion and may be called different aspects of motion.

It is very difficult to express these principles by means of single words, for no words with a sufficiently comprehensive meaning are known, but for want of better words we may call them: (1) vibration which involves rhythmic motion of particles (sattva guna), (2) mobility which involves non-rhythmic motion of particles with transference of energy (rajas guna), (3) inertia which involves relative position of particles (tamas guna).”

In modern terms, Taimni defines the three gunas as dynamical [attractor](#) states as follows:

1. Tamas is the [fixed point](#)^[*disambiguation needed*] attractor.
2. Sattva is the [limit cycle](#) attractor.
3. Rajas is the chaotic or [strange attractor](#).

Taimni imparts a modern definition to the gunas that illustrates clearly how the gunas can act as the fundamental substrate for manifested existence. From this view [prakrti](#) becomes synonymous with [dynamics](#).

तमस्

In the [Samkhya](#) school of [philosophy](#), **tamas** ([Sanskrit](#): तमस् *tamas* "darkness") is one of the three [gunas](#) (or qualities), the other two being [rajas](#) (passion and activity) and [sattva](#) (purity, goodness). Tamas is the template for [inertia](#) or resistance to action. It has also been translated from Sanskrit as "indifference".

Sattva, Rajas and Tamas is seen in various facets (including dietary habits) of [Hinduism](#), [Buddhism](#) and [Sikhism](#), where tamas is the lowest of the three. Tamas is a force which promotes [darkness](#), dissolution, [death](#), [destruction](#), [ignorance](#), [sloth](#), and resistance.

Tamas is a [Guna](#) or Quality that is much needed to counter Evil, as an example [Bhairava](#) Incarnation of [Lord Shiva](#) is a Tamasic Avatar, and Lord Shiva Himself out of the Trinity represents [Tamas](#), where Shiva drinks the poison of his devotees to get rid of their sin, hence absorbing the Tamo-Guna of devotees, in [Devi](#) worship, there are many goddesses which incarnate within the [Shakta](#) sect of Hinduism where goddess are offered animal sacrifice.

In the holistic-universal creation Tamas is where the demons and asuras dwell, their energy is purely tamas. Since Tamas can't be controlled by mortal energy, [vedic](#) philosophy dictates [Sattva](#) as the preferred guna.

The gunas are defined and detailed in [Samkhya](#), one of the six schools of classical [Indian philosophy](#). Each of the three gunas has its own distinctive characteristics and it is believed that everything is made up of these three. Tamas is lowest, heaviest, slowest, and most dull (for example, a stone or a lump of earth). It is devoid of the energy of the rajas and the brightness of sattva.

Tamas cannot be counteracted by tamas. It might be easier to counteract it by means of rajas (action), and it might be more difficult to jump directly from tamas to sattva.

Occurrence of Tamas

The [Bhagavad Gita](#) says,

Once a man, having sattva as his main habitual behaviour, feels that it is not easy to live in this world by the means of sattva, he will start being Rajasic. As per rajas, the man starts habitual working thinking only of what he wants. It becomes hard for him to think about his Karmic actions as good (satkarmi) or bad (akarmi). Then, he feels good in giving harm or any of bad feeling to other peoples. He then thinks, how can I provide harm to others and attain my goal. This behaviour is under control of a power in this nature called mohamaya and brings about asakti (Sanskrit: *Āsakti* - selfishness).

Quotes

- "You should know, O Arjuna, tamas as the cause of delusion enslaving all embodied beings born of nescience; by negligence, listlessness and somnolence." (BG [14:8](#))
- "O Arjuna, nescience, inertness, neglectfulness and also illusion; when these arise tamas predominates." (BG [14:13](#))
- "Succumbing to death in rajas one takes birth among those beings attached to fruitive activities; similarly, dying in tamas, one takes birth from the womb of an animal" (BG [14:15](#))
- "The Fourteenth Day: One who enters into the fourth state, overcomes time, and the three qualities of raajas, taamas, and satva" (SGGS [\[1\]](#))
- "Those who embody the energies of sattva-white light, raajas-red passion, and taamas-black darkness, abide in the Fear of God, along with the many created forms." (SGGS [\[2\]](#))
- "Your Power is diffused through the three gunas: raajas, taamas and satva" (SGGS [\[3\]](#))
- "Raajas, the quality of energy and activity; Taamas, the quality of darkness and inertia; and Satvas, the quality of purity and light, are all called the creations of Maya, Your illusion. That man who realizes the fourth state - he alone obtains the supreme state" (SGGS [\[4\]](#))
- "Raajas, the quality of energetic activity shall pass away. Taamas, the quality of lethargic darkness shall pass away. Saatvas, the quality of peaceful light shall pass away as well. All that is seen shall pass away.

रजस्

In the [Samkhya](#) school of [Hindu philosophy](#), **rajas** (Sanskrit: रजस्) or **rajoguna** is one of the three [gunas](#). Of these, *rajas* is responsible for motion, energy and preservation,^{[1][2]} and thereby upholds and maintains the activity of the other two gunas, known as [sattva](#) and [tamas](#).

Rajas is the force which promotes or upholds the activity of the other aspects of nature (*prakriti*) such as one or more of the following:

1. [action](#),
2. change, [mutation](#);
3. passion, excitement;
4. [birth](#), creation, generation.

If a person or thing tends to be extremely active, excitable, or passionate, that person or thing could be said to have a preponderance of rajas. It is contrasted with the quality of *tamas*, which is the quality of inactivity, darkness, and laziness, and with [sattva](#), which is the quality of purity, clarity, calmness and creativity.

Rajas is viewed as being more positive than *tamas*, and less positive than *sattva*, except, perhaps, for one who has "transcended the gunas" and achieved equanimity in all fields of relative life.^[3] The rajas stage of life gives a slight clue to the realization of the [absolute truth](#) in the forms of fine sentiments in [philosophy](#), [art](#) and [culture](#) with [moral](#) and [ethical](#) principles, but the mode of *sattva* is a still higher stage of material quality, which actually helps one in realizing the absolute truth.

सत्त्व

In [Vedic philosophy](#), **sattva** (Sanskrit *sattva* / सत्त्व "purity", literally "existence, reality"; adjectival *sāttvika* "pure", anglicised **sattvic**) is the most [rarefied](#) of the three [gunas](#) in [Samkhya](#), *sāttvika* "pure", *rājasika* "excitable", and *tāmasika* "indifferent". Importantly, no value judgement is entailed as all *guna* are indivisible and mutually qualifying.

For an object or food to be *sattvic*, it must be uncontaminated and should not spread [evil](#) or disease in the world. On the contrary its presence must purify the surroundings. Thus when an individual consumes such a food, he must feel that he is eating pure food. The food should be healthy, nutritious and clean.

It should not weaken the power or equilibrium of mind. This idea disallows [aphrodisiac](#) or other drugs and intoxicants that can affect the mind in such a way. It disallows food or objects obtained after killing or causing pain to a creature. This is because the object would then have source in an [evil](#) act. It excludes stale and pungent-smelling food.

Some objects that are considered *sattvic* are:

- Flowers, fruits, and food that are allowed as offerings to God
- [Neem](#) tree
- The milk of a cow which has grown in good surroundings, is healthy and has been obtained after the calf of the cow has been fed well. In cases when the cow has been ill treated, it becomes sinful or evil to drink such milk (Note that the [cow is sacred](#) in Hinduism)
- Nature has always had a connotation with being *sattvic*. Because of this, Hindu philosophy does not encourage the eating of animals, or the destruction of nature and its habitats.

Sattva is a state of mind in which the mind is steady, calm and peaceful. A sattvic man or woman works with no attachment to the result. Other's disagree. Citing the Bhagavad Gita, all three gunas (satvas, rajas, tamas) are chains, be they of gold, silver or steel. Thus working without attachment requires rising above all three gunas, including the sattvic guna.

Sattvic creatures

A person or creature can be called *sattvic* if the creature has predominantly *sattvic* tendencies. The name "sattvik" implies one who is divine, pure, and spiritual.

Sattvic individuals always work for the welfare of the world. They are hardworking, alert, generous. They live life moderately, and have

good memory and concentration. Sattvic qualities include leading a chaste life, eating moderately, using precise language and speaking truths palatably. A sattvic individual speaks compliments and avoids vulgar or insulting language, is never jealous, and is unaffected by greed and selfishness. Such an individual is confident and experiences abundance.

It is not in the nature of a sattvic individual to cheat or mislead others. A sattvic person will show what is and describe destinations, but then allow others to choose for themselves. A sattvic person does not allow evil tendencies to enter his or her mind but supports an inner paradise that broadcasts out to the world; he or she will have keen interest in improving spiritual knowledge and will spend time worshiping divinity or meditating and, in an extreme state, may even perform penance or uninterrupted meditation.

A *sattvic* individual can be recognized if their mind, speech and actions synchronize: [manasa](#), [vacha](#), [karmana](#) are the three Sanskrit words used to describe such a state.

Some of the people considered by Hindus to be *sattvic* are:

- Holy men and [bhaktas](#) like [Tulsidas](#), [Tyagaraja](#), [Dnyaneshwar](#), [Tukaram](#)
- Ancient [rishis](#) like [Vashishta](#), [Kashyapa](#)
- Modern day sages like [Ramana Maharshi](#), [Aurobindo](#), [Vivekananda](#)
- Divine beings in the heavens
- Some flora and fauna like lotus (symbolizes purity), cow (symbolizes the earth [mother](#))

The Mathematics of Satwa

By Frank “Tony” Smith

Since the DNA genetic code can be represented by
4 things taken 3 at a time,
or $(2 \times 2) \times (2 \times 2) \times (2 \times 2) = 64$,

and since the [I Ching](#) (which is based on 6 bars,
each of which can be in 2 states – broken or unbroken)
can be represented by 2 things taken 6 at a time,
or $2 \times 2 \times 2 \times 2 \times 2 \times 2 = 64$,

and since pairs of octonionic half-spinors of the $\text{Spin}(0, 8)$
[Clifford algebra \$Cl\(0, 8\)\$](#) on which the [D4-D5-E6-E7 physics model](#) is
based
can be represented by 8 things taken 2 at a time,
or $(2 \times 2 \times 2) \times (2 \times 2 \times 2) = 64$,

the [genetic code](#), the [I Ching](#), and the [D4-D5-E6-E7 physics model](#)
are all just different representations
of the same [fundamental structure](#).

The [fundamental structure](#) of 8 trigrams can not only be extended
to $8 \times 8 = 2^6 = 64$ hexagrams,
but also to 24-grams, of which there are $8^8 = 2^{24} = 16,777,216$.
24-grams are directly related to [Golay codes and the Leech lattice](#).

In that connection,
the hexacode H6 is related to [Golay codes and the Leech lattice](#).
The hexacode H6 can be used to construct
[quantum-error-correcting codes](#) that are based on $\text{GF}(4)$,
and
an [RNA code](#) is based on 4 nucleotides UGAC, taken 3 at a time.
Katya Walter has shown that
the I **Ching** representation of the DNA genetic code
can be transformed in a natural way to
an I **Ching** representation of the RNA genetic code.

The same [fundamental structure](#) is also shared
by [Penrose tilings and musical sequences](#).

Further,
you can [represent genetic information](#) by
[DNA](#) sequence [music \(215k wav\)](#).

Vedic Physics

The theory of Vedic Physics divides the universe into three material realms:

Thaamasic: Dark Matter, unseen matter which comprises the Substratum, which Buddhism and Catholicism, as well as the religion of the ancient Egyptians in the Am Duat, mistakenly characterize as Hell. As humanity has devolved over the past 13,000 years, so has its understanding of spiritual science grown corrupted, and concepts such as Hell were invented by the intelligentsia to scare the ignorant masses. When matter dies, it returns to Dark Matter, before returning into the visible world as either Satvic or Rajic matter.

Satvic: This stable 8 x 8 form of matter makes up solid and stable materials such as stone and diamonds. It is not for nothing that diamonds contain the 8 x 8 = 64 structure and so make up the hardest substance known to man. The 64 amino acids of DNA contain this structure, which is reflected in the 8 x 8 = 64 hexagram structure of the I Ching.

Rajic: This 9 x 9 dynamic form of matter forms more fluid materials, with its structure copied by the Tai Xuan Jing, the Dao De Jing and the Celestial Pivot of the Yellow Emperor's Internal Canon.

The Universe consists of nothing more than these. Vedic and Hindu literature describe these states on multiple levels. Thus, the Bhagavad Gita, for example, may seem to describe some religious scene, when in fact, it describes nuclear physics, albeit on a higher level of understanding, which lies encoded in the Sanskrit characters. Multiple meanings become apparent to humans only when they themselves are mentally prepared to understand the given level. This requires mental cultivation and devotion to Hindu spiritual practices. As such, humans were unable to understand nuclear physics, for the most part, until the 1930's, although Indian swami's could perceive atoms during the 1800's.

Sanskrit Concepts

This section compares Tai Xuan Jing concepts with their Sanskrit dictionary meanings, with definitions taken from the University of Chicago website with the Anthony Arthur McConnell dictionary published in 1929.

Center

vyaghra ([p. 300](#)) [viâ-ghrá] m. [scenter: &root;ghrâ; *not in RV., but often in AV.*] tiger (*type of man hood*); --° ree; (C.) tiger among = pre-eminent, chief; N.: (a)-ketu, m. N.; -karman, n. tiger-skin; -tâ, f., -tva, n. tigerhood; -pad, m. N.; -parâkrama, m. N.; -pâda, m. N.; -bala, m. N.; -bhata, m. N. of a warrior; -sena, m. N.

Ascent

A search found 6 entries with ascent in the entry word or full text. The results are displayed using roman characters without diacritics and South Asian scripts.

samaradhana ([p. 337](#)) [sam-â-râdhana] n. gratification, propitiation; means of propitiating *any one* (g.); -rurukshu, des. a. wishing to ascend to (ac.); -ropa, m. placing in (lc.); stringing (a bow); transference to (lc.); attribution; -ropana, n. transference; stringing (of a bow); -rôhana, m. ascent, to (g.; Br.); n. (C.) ascending to (--° ree;); growth (of hair).

samsakta ([p. 325](#)) [sam-sakta] pp. &root;sañg: -tâ, f. condition of having stuck, -yuga, a. yoked, harnessed, -vadanaâsvâsa, a. having *her* breath cleaving to *her* mouth, with suppressed breath; -sakti, f. intimate union, close contact, with (--° ree;); -sa˙ga, m. connexion; -sa˙gin, a. (-î) attached or adhering to, intimately associated with: -î-tva, n. close connection with (--° ree;); -sâd, f. (sitting together), as ssembly; court (of a king or of justice); company, multitude; -sarana, n. going about; transmigration, mundane existence (as a series of transmigrations); -sarga, m. union, connexion, contact, with (in., g., --° ree;);

indulgence *or* participation in, contamination with (—° ree;); contact *with the world of sense*, sensual indulgence (*pl.*); social contact, as sociation, intercourse, with (*in. ± saha, g., lc., —° ree;*); sexual intercourse with (*in. + saha, g., —° ree;*): **-vat**, *a.* coming in contact *or* connected with (—° ree;); **-sargi-tâ**, *f.* social relations; **-sargin**, *a.* connected, with (—° ree;); possessed of (—° ree;); **-sargana**, *n.* commingling, combination, with (*in.*); attaching to oneself, conciliation of (*g.*); **-sârpa**, *m.* *N. of the thirteenth month (V., C.)*; **-sarpama**, *n.* ascent, of (*g.*); creeping, gliding motion; **-sarpad dhvaginî-vimarda-vilasad-dhûlî-maya**, *a.* (*î*) filled with dust rising through the tramp of a marching army; **-sarpin**, *a.* creeping along; swimming about; gliding over, extending to (—° ree;): **(-i)-tâ**, *f.* extension to (—° ree;); **-sava**, *m.* simultaneous Soma sacrifice *of two neighbouring adversaries (Br., S.)*.

rudhi ([p. 252](#)) [rûdhi] *f.* [*&root;ruh+-ti*] rise, ascent (*also fig.*); growth; decision; notoriety; traditional usage; current usage *of speech*; conventional acceptance *of a word (not immediately deducible from the etymology)*: **-m i**, attain an elevated position; **-m kri**, come to a decision; **dridhâm rûdhim nî**, assist to assured development: **-sabda**, *m.* word *used* in a conventional sense: **-tâ**, *f.* conventional use of a word.

udgama ([p. 051](#)) [ud-gama] *m.* rise (*of heavenly bodies*); ascent; rising, elevation, breaking forth, appearance; springing up; shoot; departure; **-tva**, *n. abst. n.*

uccairabhijana ([p. 048](#)) [ukkair-abhigana] *a.* of high descent; **-ukkaih-sravas**, *m.* the exalted *Uk kaih-sravas*; **-ukkais-tarâm**, *ad.* higher and higher; **-gati**, *f.* ascent; **-dvish**, *a.* having mighty foes; **-dhâman**, *a.* of exalted splendour; **-bhâshana** *or* **-bhâshya**, *n.* loud talk; **-bhuga**, *a.* having uplifted arms.

aroaha ([p. 041](#)) [â-roh-á] *m.* rider; mounting; heap, mountain; woman's hips; ascending scale; rise; **-aka**, *m.* rider; **(rôh)-ana**, *a.* (*î*) ascending; *n.* ascent; production; raised platform for dancing; ladder, stair; **-in**, *a.* ascending; leading up to (—° ree;).

Penetration

praveka ([p. 176](#)) [pra-veka] a. choice, chief, exquisite, most excellent of (--°ree;); **-vega**, *m.* great swift ness; **-vegita**, *den. pp.* moving rapidly; **-ve-nî**, *f.* braid of hair; coloured woollen cloth; **-vetri**, *m.* charioteer; **-vettri**, *m.* connoisseur of (--°ree;); **-vedana**, *n.* making known, pro claiming; **-vedin**, *a.* thoroughly knowing (--°ree;); **-vedya**, *fp.* to be made known; **-vedha**, *m.* shot; **-vepin**, *a.* trembling; **-verita**, *pp.* cast, hurled; **-vesa**, *m.* entrance, entry, pene tration, intrusion, into (*lc.*, *g.* ±antar, or --°ree;); appearance on the stage; getting into the house, coming into *one's* possession (*e. g. of a deposit*); obtrusiveness, meddlesomeness; entering into=admissibleness, applicability in (*lc.*); employment or utilization of (--°ree;); entrance, door: **-ka**, *a.* --°ree; *id.*; *m.* interlude (*explaining what has happened between two acts and is essential for the understanding of what follows*); **-vesana**, *n.* entering, en trance or penetration into (*g.*, *lc.*, or --°ree;); co pulation; introduction, into (*lc.*); driving home (*of cattle*); **-vesa-bhâgika**, *m.* collector of taxes; **-vesayitavya**, *fp.* to be introduced; **-vesita**, *cs. pp.* introduced, made or allowed to enter; *n.* causing to appear on the stage; **-vesin**, *a.* entering, into (--°ree;); accessible through or over (--°ree;); having sexual intercourse with (--°ree;); **-vesya**, *fp.* to be entered; **-played** (*musical instrument*); **-introduced**; **-vesh-tavya**, *fp.* to be entered; **-allowed to enter**; *n.imps.* one should enter or penetrate into (*lc.*); **-veshtri**, *m.* one who enters: **-tva**, *n.* condition of –

Opposite

A search found 29 entries with opposite in the entry word or full text. The results are displayed using roman characters without diacritics and South Asian scripts.

sulaksana ([p. 351](#)) [su-lakshana] a. having auspicious marks (**-tva**, *n. abst. n.*): **â**, *f. N.*; **-lakshita**, *pp.* carefully examined; **-lagna**, *pp.* firmly adhering, to (*lc.*); *m.* (?) (*astrologically*) auspicious moment; **-labha**, *a.* easy to ob tain or find; easy of access, to (--°ree;); cheap; adapted, appropriate, proper, fit, suitable (to, for, --°ree;): **-kopa**, *a.* irascible, **-tva**, *n.* fre quency, cheapness, **-½avakâsa**, *a.* having easy access to, easily reflected (*image*) in (*lc.*); **-labhâ**, *f. N.*; **-labha½itara**, *a.* (opposite of =) not easy of attainment; **-lalita**, *pp.* very dainty or delicious (*meat*); very charming or lovely: **-latâ-pallava-maya**, *a.* (î) consist ing of the young shoots of lovely creepers; **-lokana**, *a.* fine-eyed: **â**, *f. N. of a Yakshinî*; *N.*; **-lola**, *a.* eagerly longing for (--°ree;).

sitetara ([p. 349](#)) [sita½itara] a. (opposite of white), black, dark, blue: **-saroga**, *n.* blue lotus.

sabhikama ([p. 347](#)) [sa½abhi-kâma] a. loving; **-gñâna**, °ree; **-or -m**, *ad.* together with tokens of recog nition; **-nivesa**, *a.* attended with a great predilection for *sthg.*; **-prâya**, *a.* having a distinct aim,

knowing *one's* mind; spoken with a purpose (*words*); **-mâna**, *a.* full of self-satisfaction, proud, of (*lc.*); self-interested (*action*): **-m**, *ad.* proudly; **-lâsha**, *a.* full of longing, for (*esp. the opposite sex, lc., prati, --° ree*); **-sara**, *a.* together with companions.

savyetara ([p. 341](#)) [*savya*¹/*itara*] *a.* opposite of left, right.

sammukha ([p. 337](#)) [*sam*-*mukhá*] *a.* (**î**, *sts.* **â**) confronting, facing (*g.*, --° *ree*); favourable, to *any one* (*g.*), propitious (*fortune*); intent on (*lc.*, --° *ree*): **-m**, *ad.* (*come etc.*) towards; (*draw*) to (*oneself, âtmanah*); (*look*) into *one's* face; face to face; opposite, in the presence of (*g.*); *lc.* oppo site, before, in front or the presence of (*g.*): *w.* **bhû**, oppose *any one* (*g.*); *w.* **sthâ**, look *any one* (*g.*) in the face; ° *ree*--, towards; into *one's* face; **-mukhî-kri**, place opposite, make *one's* aim; **-mukhîna**, *a.* confronting, facing, opposite; favourable to (*g.*): **-tva**, *n.* condition of facing; presence; **-mukhî-bhû**, post oneself opposite; **-mugdham**, (*pp.*) *ad.* clandestinely; **-mûdha**, *pp.* & root; *muh*: **-tâ**, *f.*, **-tva**, *n.* dazed condition; **-mûrkhana**, *n.* congealment, densification, accumulation; **-melana**, *n.* meeting together, mixture, union; **-mohá**, *m.* stupefaction, swoon; infatuation, delusion; **-mohana**, *a.* (**î**) deluding, infatuating; *m. N. of one of the arrows of the god of love*; *n.* leading astray, deluding, infatuating; *a certain mythical missile.*

Conclusion

This paper has presented the mathematical argument from Frank “Tony” Smith that the mathematical structure of the Tai Xuan Jing most likely forms a part of the Ifa 256 – dimensional algebra from Africa, and that the I Ching and Tai Xuan Jing originated there, not in China.

The author of this paper provided additional arguments to support the concept that the Tai Xuan Jing was borrowed by and then rarely used by the Chinese some two thousand years ago. The Tai Xuan Jing fits in with the dynamic $9 \times 9 = 81$ structure of some well – known Chinese documents, which makes it likely that the Chinese borrowed this structure from Vedic literature and philosophy.

Finally, in terms of daily divination, each form of divination covers only one portion or one aspect of daily events. The I Ching can be accurately cast each morning to predict an event, if not the major event of an individual’s daily existence. Yet this event occurs on the stable 8×8 level of human existence.

In the same way, the 78 – dimensional Tarot card set may be used to accurately predict the “emotional weather” an individual may experience during any given day.

The Tai Xuan Jing may be used to divine a daily event in the life of an individual, but on the dynamic $9 \times 9 = 81$ level of existence, which differs from that of the I Ching and the Tarot, and for western astrology for that matter, not to mention Chinese divination systems such as Qi Men Dun Jia and Da Liu Ren. At times, the divination results of these systems may intersect, but that intersection would occur infrequently.

Thus, the Tai Xuan Jing is neither inferior nor inferior in terms of divination, but only that the Tai Xuan Jing predicts events on the dynamic $9 \times 9 = 81$ level of daily human existence. The most accurate way to interpret TXJ results would be to return to the original Sanskrit meanings of the 81 concepts of the Tai Xuan Jing.

Appendices

Translation of the *Mystery*

LIST OF TETRAGRAMS

No. 1. Center / Chung

中 ䷄

Dec. 22–Dec. 26 (A.M.)

No. 7. Ascent / Shang

上 ䷊

Jan. 18–Jan. 22 (A.M.)

No. 13. Increase / Tseng

增 ䷗

Feb. 14–Feb. 18 (A.M.)

No. 2. Full Circle / Chou

周 ䷊

Dec. 26 (P.M.)–Dec. 30

No. 8. Opposition / Kan

干 ䷀

Jan. 22 (P.M.)–Jan. 26

No. 14. Penetration / Jui

銳 ䷗

Feb. 18 (P.M.)–Feb. 22

No. 3. Mired / Hsien

磳 ䷄

Dec. 31–Jan. 4 (A.M.)

No. 9. Branching Out / Shu

狩 ䷆

Jan. 27–Jan. 31 (A.M.)

No. 15. Reach / Ta

達 ䷇

Feb. 23–Feb. 27 (A.M.)

No. 4. Barrier / Hsien

閑 ䷄

Jan. 4 (P.M.)–Jan. 8

No. 10. Defectiveness /
Distortion / Hsien

羨 ䷄

Jan. 31 (P.M.)–Feb. 4

No. 16. Contact / Chiao

交 ䷗

Feb. 27 (P.M.)–Mar. 3

No. 5. Keeping Small /
Shao

少 ䷄

Jan. 9–Jan. 13 (A.M.)

No. 11. Divergence / Ch'a

差 ䷄

Feb. 5–Feb. 9 (A.M.)

No. 17. Holding Back /
Juan

𨔵 ䷄

Mar. 4–Mar. 8 (A.M.)

No. 6. Contrariety / Li

戾 ䷄

Jan. 13 (P.M.)–Jan. 17

No. 12. Youthfulness /
T'ung

童 ䷌

Feb. 9 (P.M.)–Feb. 13

No. 18. Waiting / Hsi

俟 ䷄

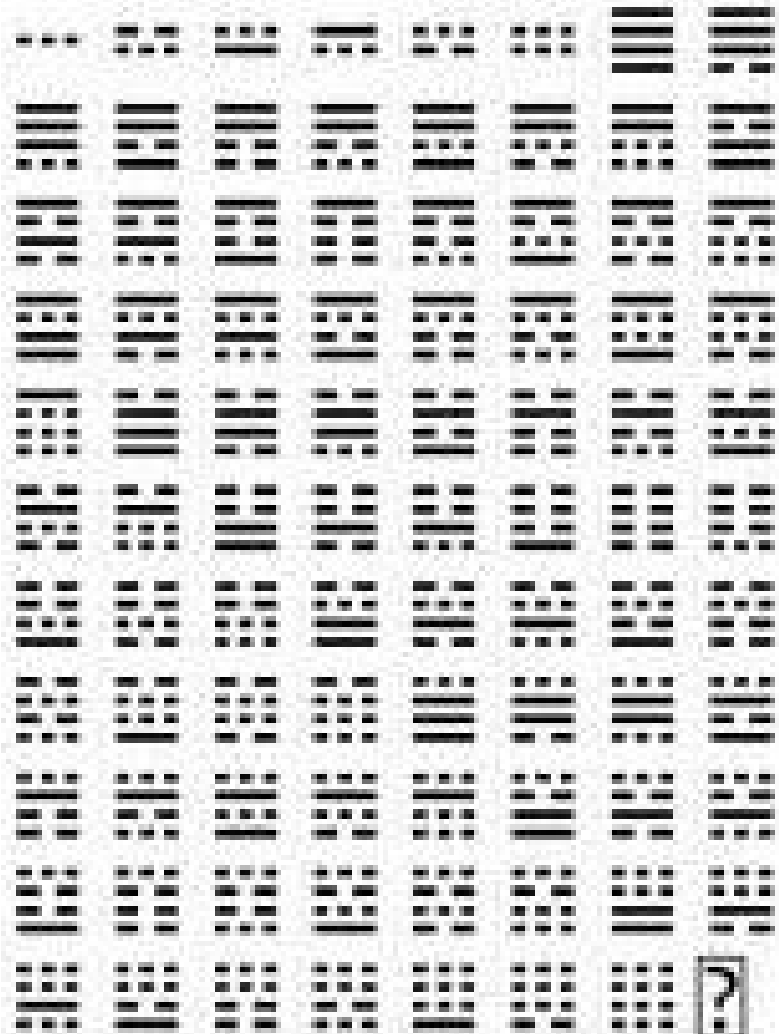
Mar. 8 (P.M.)–Mar. 12

Translation of the Mystery

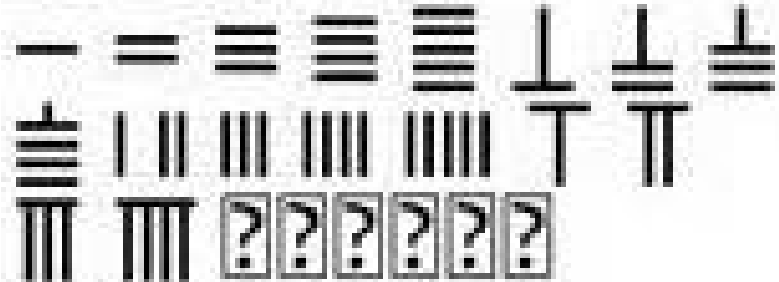
No. 73. Completion / Ch'eng 成 ䷗ Nov. 11–Nov. 15 (A.M.)	No. 76. Aggravation / Chü 劇 ䷌ Nov. 24 (P.M.)–Nov. 28	No. 79. Difficulties / Nan 難 ䷌ Dec. 8–Dec. 12 (A.M.)
No. 74. Closure / Chih 闕 ䷗ Nov. 15 (P.M.)–Nov. 19	No. 77. Compliance / Hsün 馴 ䷗ Nov. 29–Dec. 3 (A.M.)	No. 80. Laboring / Ch'in 勤 ䷗ Dec. 12 (P.M.)–Dec. 16
No. 75. Failure / Shih 失 ䷗ Nov. 20–Nov. 24 (A.M.)	No. 78. On the Verge / Chiang 將 ䷗ Dec. 3 (P.M.)–Dec. 7	No. 81. Fostering / Yang 養 ䷗ Dec. 17–Dec. 21 (A.M.)
Intercalary Heads 躋 羸 Dec. 21 (P.M.) and Leap Year Feb. 29		

TI			JEN			T' IEN		
73 CHENG	64 CH'EN	55 CHIEN	46 K'UO	37 TSUI	28 KENG	19 TS'UNG	10 HSIEN	1 CHUNG
74	65	56	47	38	29	20	11	2
75	66	57	48	39	30	21	12	3
76	67	58	49	40	31	22	13	4
77	68	59	50	41	32	23	14	5
78	69	60	51	42	33	24	15	6
79	70	61	52	43	34	25	16	7
80	71	62	53	44	35	26	17	8
81	72	63	54	45	36	27	18	9

The 81 Tetragrams, arranged in T'ien.



☰☷☱☱☱☱☱☱☱☱



☰☷☱☱☱☱☱☱☱☱

Russell Cottrell Website

The Mathematics of the *Tai Xuan Jing*

The *Tai Xuan Jing*, or *Canon of Supreme Mystery*, is a four-line, base 3 oracle that is clearly patterned after the *I Ching*. In addition to solid and once-broken lines, a third, twice-broken line, is added, so that in combination they represent heaven, earth, and man. It contains 43, or 81, tetragrams, or Shou, reminiscent of the number of chapters in the *Tao Te Ching*. Most of the texts, depending on which edition you are using, are accompanied by nine Apprasials, or Tsan, which resemble the line texts of the *I Ching*.

The first nine tetragrams:

Two English translations (Walters and Nylan; see the bottom of the page) are commercially available; and even though they are ostensibly about the same subject, they are completely different books. Nylan's is based on the "standard edition," and the text is more structured, possibly reflecting more editing; while Walters says his is based on a simpler, alternative version found in an old woodcut book in the British Library.

The books take a completely different approach to consulting the oracle as well, which will be analyzed in detail below. Concerning the overall process, Nylan is very clear that the tetragram lines are generated from the top down, unlike the *I Ching*, while Walters says to do it from the bottom up.

remainders	sum
0 (1)0 (1)1	3
0 (1)1 0 (1)3	
0 (1)2 2 5	
1 0 (1)0 (1)3	
1 1 2 4	
1 2 1 4	
2 0 (1)2 5	
2 1 1 4	
2 2 0 (1)5	

The yarrow stalk method

In addition to horoscopic and numerological methods along the lines of the Plum Blossom method, Walters describes a method of determining the Shou using yarrow stalks. 64 stalks are divided into three bundles, and each bundle counted off by threes until 0, 1, or 2 is left. If the remainder is 0, one stalk is added from its bundle to make 1. The remainders are combined; the total will be 3, 4, or 5, which represent solid, once-broken, and twice-broken lines, respectively. The process is repeated three times to generate four lines.

The remainder possibilities are displayed in the table to the right. The relative probabilities of the three lines are 3:3:3, or in other words, equal. A simpler method would be to just divide a bundle of stalks (big enough to divide randomly, exact number not important) and count off one half by threes until 1, 2, or 3 is left. Let 1 represent a line of one segment, or unbroken; 2 represent a line of two segments, or once-broken; and 3 represent a line of three segments, or twice broken.

To determine the Tsan, one counts off a bundle of stalks by nines after creatively dividing it. Nine is a relatively large number when it comes to a handful of yarrow stalks, and it may be hard to make a simple division of a bundle without coming up with remainders that tend to cluster near each other. So one divides the bundle into three, saves the right-hand bundle, and combines the left-hand and central bundles to again divide into three.

The new right-hand bundle is added to the original right-hand bundle. A total of four threefold divisions are made, so that the bundle to be counted consists of the original right-hand bundle with three smaller bundles added. The latter add some additional randomness to the outcome. (One might wonder if making two divisions of a bundle before counting off by threes would similarly enhance the process.)

Another method of determining the Tsan is described, that of performing the original yarrow stalk division above two more times to generate two more lines, and reading them as numbers. Like the tetragram numbers themselves, they are base 3, with 1 added so that they begin with 1 rather than 0.

1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

heads per throwtotal

1	1	2
1	1	2
1	2	3
1	1	2
1	1	2
1	2	3
2	1	3
2	1	3
2	2	4

The four-coin method

Nylan describes two coin methods for determining the tetragram lines, one simple and one rather complex. In the simple method, one first throws two coins. If both come up tails, throw them again until at least one comes up heads. The resulting possibilities are: first coin heads, second coin heads, or both heads. Repeat this process with another two coins.

The total number of heads showing determines the tetragram line: 2 for solid, 3 for once-broken, and 4 for twice-broken.

(These lines are assigned values of 7, 8, and 9, respectively, reminiscent of the *I Ching* line numbers. Add 5 to the number of

heads to arrive at these values; or, what I would do, just subtract 1 to indicate lines of 1, 2, or 3 segments.)

The possibilities are displayed in the table to the right. Curiously, the relative line probabilities with this method are 4:4:1 for solid, once-broken, and twice-broken. A coin method which yields equal odds for each line like the yarrow stalk method above would be to throw two coins in succession. Again, if both coins are tails, start over. Then treat the coins as a two-digit binary number, tails = 0 and heads = 1.

Let 01 represent a line of one segment, 10 (2 in base 10) a line of two segments, and 11 (3 in base 10) a line of three segments.

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first division, 32
remainderstotal coins left
1  1  2  29
2  3  5  26
3  2  5  26
second division, 29
remainderstotal coins left
1  1  2  27
2  3  5  24
3  2  5  24
second division, 26
remainderstotal coins left
1  1  2  24
2  3  5  21
3  2  5  21
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The 36-coin method

I call this method “36-coin” even though four coins are removed at the outset and never contribute to the outcome. To summarize, 32 coins are divided by tossing them one at a time. The heads and tails are each counted off until 1, 2, or 3 coins are left. The sum of the two remainders will be 2 or 5; they, plus one more, are removed from the total.

The coins that are left, which number either 26 or 29, are once more divided by tossing, then counted off as they were above. The remainders (again 2 or 5) are removed, leaving either 21, 24, or 27

coins left. Divide the total by 3 to indicate solid (7), once-broken (8), and twice-broken (9) lines, respectively.

What are the odds? The possible results of the divisions are displayed in the table to the right. Since the second division of 26 has double the chance of happening as that of 29, the list of final outcomes is 27, 24, 24; 24, 21, 21; 24, 21, 21. The odds are thus 4:4:1, the same as for the four-coin method above.

This method uses so many coins, it looks like it ought to use yarrow stalks instead. One problem might be that 32 stalks is too small a starting number to make two good random divisions.

I am guessing that 32 coins are used because the outcome is intended to be one of the numbers (7×3 , 8×3 , or 9×3) above, and that tossing coins one at a time is preferred for a better random division of a relatively small number.

According to Nylan, the Appraisals are read according to the time of day when the divination is carried out: 1, 5, and 7 for morning; 3, 4, and 8 for evening; and 2, 6, and 9 for the "median" times.

Roger Clough Website

Line Appraisals

My view of the tetragram line appraisals is that of a person (I think of him as a man) who is moving somewhere-- taking a journey, trying to get somewhere, trying to move up, etc. In the course of doing so there are various distractions, and he is always trying to maintain his balance, always trying to align himself to the "center" of tetragram no. 1.

You are looking over his shoulder while he does this. In the THC the advice is implied rather than given directly. And to me, it seems to always point to maintaining your balance, aligning yourself with the "center". The appraisals follow a trajectory that is upward, then falters at line 7 or 8, there is a crisis or calamity at line 8, and a line 9 there can be a downward turn due to failure, or a push forward with resolution, or even a slight upturn on a note of hope.

I've noticed that there is quite a difference in the style of line appraisals in the I Ching and the T'ai Hsuan Ching. In the I Ching, with each step, advice is given, usually with a sunny bit of advice. The THC is written in the third person, more like a novel, and usually does not give advice directly, but by example. You have to infer it from the context of the other lines.

Moreover, it seems to me that there is really only one piece of advice in the THC, namely to try and maintain your balance and align yourself to the "center" referred to in tetragram 1. The "center" I believe is the Tao, i.e. nature. This identification seems to be what I was missing before in the THC, and verifies at least to me that the THC is essentially a Taoist document.

For a Daoist, the only advice one needs is to follow nature. On the other hand a Confucian outlook such as in the I Ching gives more cut-and-dried advice, "rules", moral advice. There are several theories of the method that Yang Hsiung used to get his line appraisals. Michael Nylan believes that these were obtained from the Analects of Confucius.

Thomas Hood has found intuitively that the line appraisals of the T'ai Hsuan Ching can be generated using this sequence of trigrams:

1. K'un (earth)
2. Human (Nylan often prefers Human to Man.)
3. Li (fire)
4. Sun (wind)
5. Tui (lake)
6. Ch'ien (Heaven)
7. K'an (water)
8. Chen (thunder)
9. Ken (mountain)

Roger Clough believes that they were gotten from the context tetragrams, as follows.

THE LINE APPRAISALS FOR THC1 FROM ITS LINE CHANGE CONTEXT TETRAGRAMS
Yang would have started at the top line, since he read from top down.

For example, THC1 starts with all lines unbroken. To get the line appraisals, we start changing line types, moving downward. (an easy way to do this without making mistakes is to turn the bottom diagrams of THC1-9. Then using my notation that u=unbroken line, b=broken line, t=twice broken line and putting the top line first, we have, moving down a line at a time and keeping what's been changed,

symbol -context tetragram (meaning) - meaning of line appraisals and fathomings in

uuuu THC1 (Center), --the meaning of appraisal 1- primal oneness encompasses all.

buuu THC28 (Change, having evolved in darkness, it is not right) -- appraisal 2 - good and evil are juxtaposed.

tuuu THC55 (Diminishment, good at diminishment, so undiminished) - appraisal 3- the dragon emerges at the center

ubuu THC10 (Defectiveness, starting off wrong)- appraisal 4 - blocked

bboo THC37 (Purity, pure within, without a stain) - appraisal 5 -sun
is centered in the sky- noble man merits his place

tboo THC64 (Sinking, he loses virtue) - appraisal 6 - moon losing its
fullness, ignoble men retreat

uboo THC19 (Following, things are ready, poised to follow) -
appraisal 7 - embracing the fully ripe

bbuo THC46 (Enlargement, but the base was not built straight)
-appraisal 8 - he lacks virtue at the center

ttuo THC73 (Completion) -appraisal 9 - the endpoint.

For the numbered tetragrams I found that the simple title was not
enough to understand the meaning, so included meaning from the first
lines of the context. The meanings are reasonably close but not
exactly perfect. The degree of fit above is typical of those you get
with the I Ching.

The context evaluations above are a very severe test. The "misfit"
occurs because everything has to fit everything else and it's really
somewhat of an art, not a perfect science, a product of man's right
mind as much as his left.

T' ai Hsuan Ching Phase Sequence.

The trigram correspondences to Yang's phase sequence can be obtained by assigning the usual phase correspondences and using the transitional earth-phase trigrams of mountain - water and earth for - fire.

agram	Phase	Trigram	Diagram Meaning*	Nine Star Ki	Trigram
1	+ water	water	Center (1)	water	
2	- fire	earth	Divergence (11)	earth	
3	+ wood	thunder	Release (21)	thunder	
4	- metal	lake	Bustling (31)	wind	
5	+ earth	earth	Response (41)	earth or mountain	
6	- water	mountain	Constancy (51)	heaven	
7	+ fire	fire	Embellishment (61)	lake	
8	- wood	wind	Stopping (71)	mountain	
9	+ metal	heaven	Fostering (81)	fire	

*The number in parentheses is the tetragram number, corresponding to the given digram doubled.

Nine Star Ki is the feng shui number or enneagram type. Note that the personality types are not ordered in the same sequence as the phases, so that if one wants to do the "wheel of fortune" projection by overlaying the enneagram circle on the yearly tetragram circle (1-81), one has to make two changes to the enneagram.

First, renumber the enneagram type positions on the phases, so that if one wants to do the "wheel of fortune" projection by overlaying the enneagram circle on the yearly tetragram circle (1-81), one has to make two changes to the enneagram.

Second, renumber the enneagram type positions on the circle.
Secondly, the arrows still work as before, but will have to be redrawn. The arrows should be drawn so that 1 → 4 → 2 → 8 → 5 → 7 → 1. Also 3 → 6 → 9 → 3 is the ordering for the inner triangle.

This gives a curious type of test of the correspondences. If I replace the numbers with the trigrams, I have water (cloud) → lake → earth → thunder → earth → wind → water (cloud) which is roughly rain or water cycle, a progression that roughly follows the natural order of things.

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Nylan translation

Contact

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Let us dedicate ourselves to what the Greeks wrote so many years ago:

to tame the savageness of man and make gentle the life of this world.

There are those who look at things the way they are, and ask why... I dream of things that never were, and ask why not?

Robert Francis Kennedy