

Magic Numbers, Planetary Tones and the Body: The Evolution of Daoist Inner Alchemy into Modern Sacred Science

by Michael Winn¹

Prefatory Note added to the original paper given at the International Daoism Conference at Boston University in 2003:

This paper was inspired by personal practice of the Daoist hermit One Cloud's *Seven Inner Alchemy Formulas for Immortality*. In the first three formulas, an energy body is developed and within it the lesser and greater elixir (*dan*) is cultivated, Sound is an essential tool in this process, beginning with the Six Healing Sounds which are gradually interiorized in Fusion of the Five Elements. A loud thunderbolt is sometimes heard at the first moment of seeding of the cauldron with inner male and female body spirits.

One Cloud's fourth formula, the Greatest Enlightenment of Water and Fire (*kan & li*), focuses on the relationship between the adept's inner heart, the five planets, and the sun. Its purpose is to "educate" the immortal child growing within the adept that the soul and its astrological influences is not fixed by the natal chart, but is rather a changing cosmic symphony. In 1997 I had the meditative experience of hearing the planets "sing" to me in very distinct, silently heard tones. I later found these tones to be repeatable and transmittable to students. They also proved very useful in qigong therapy for dissolving clients' deep soul issues and their various diseases.

In One Cloud's fifth and sixth formulas the adept learns to listen to and communicate with the stellar and Later Heaven-Early Heaven symphony of form and formless consciousness. All seven formulas are octaves of a single theme – that your destiny is not fixed, but can be alchemically shaped. The planetary tones guide one's worldly destiny; the star tones determine spiritual destiny.

On the continuous roundtrip journey between Creation and Origin an adept cannot "see" in the darkness of the primordial Origin (*hundun*). Vision must be abandoned when returning to the Dao; any light seen is from the lower astral planes. The adept can only navigate this dark primal ocean with the faculty of inner hearing, using the Spirit of the Kidneys, the guardian of Primal Water that generates the fundamental tone within the body.

I eventually came to experience all seven of One Cloud's formulas as a progressive, ascending-descending harmonic scale of inner liquid-light-sound-silence spiraling around this fundamental tone. It transforms jing as blood, sexual fluids, and bone marrow into *qi* as meridians, filled with flowing light and dark colored vapors. This *qi* is transmuted into *shen* as spiritual qualities heard as celestial tonal harmonies, and thence into *wu* as silence. It then returns down the harmonic ladder again into matter-as-flowing-music, or as molecules dancing to Cosmic Number-tones.

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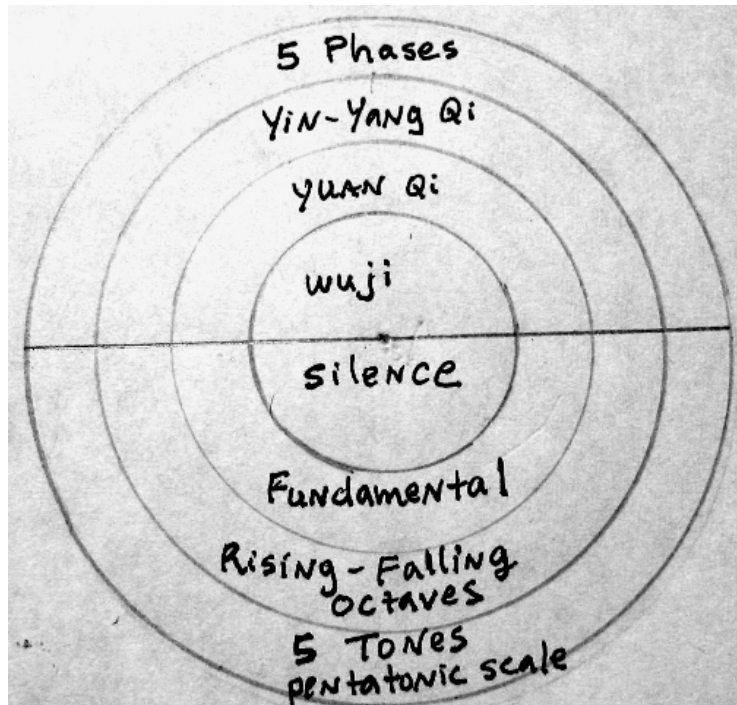


Table 1. Daoist musical cosmology. Dynamics of qi flow correlated with concentric musical patterns that unfold ‘the ten thousand things’ as combinations of soul tones, each singing its unique destiny, which then return to the Origin as silence.

This underlying musical structure of the inner alchemy formulas led me to re-examine traditional expressions of Daoist cosmology, where I found abundant evidence for a Daoist musical theory of the cosmos proposed in my paper. I also discovered that deeply embedded within One Cloud’s formulas are the ancient Chinese Cosmic Number diagrams of the *hetu* Dragon Chart and *luoshu* Turtle Writing, the basis of the *Yijing* (I Ching).

These led to my conclusion that the Dragon and Turtle Number diagrams are systems of musical ratio notations, developed by shaman-inner alchemists in pre-historical times who could still naturally hear this “music of the spheres”. The bare bones of that musical cosmology and the number ratios may help the reader navigate the paper. The musical progressions below are best visualized as concentric circles within the human body, the center being silence, radiating out to the fundamental tone, yin-yang and five phase tones in the outer circles.

Wuji Supreme Unknown = 0:0 Original Silence (no zero in China, left as open space)

Yuan jing-qi-shen

Number 1 as Original substance-breath-spirit, *hundun* chaos inside Cosmic Egg or Gourd. = 1:1 Fundamental Tone of unity, unexpressed tri-chord

Taiji Yin-Yang 1st moves

Crack of Thunder as Egg-Gourd splits open,
fundamental tone begins Creation. = 1:2 Primal rising-falling octaves of Heaven & Earth

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Number 2

Divides twice more into Number 8: eight
tones, eight trigram-chords shaping all Space. = 2 as 1st Female Number-tone

In human body these become Eight
Extraordinary Vessels.

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Number 3

Multiplies itself into Number 9: nine tones, a
triple trichord radiating its formless spiritual
essence into heaven, man, and earth. Stable = 3 as 1st Male Number-tone
constant at center of 8 tones.

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Wuxing Five Phases/Agents

= 2:3 Pentatonic scale of perfect fifths; notes are Intervals
of five whole beats regulating all Time.

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Five Agents as Planet-Tones .

= Astrological functions (pentatonic solar and stellar tone-
frequencies) stepped down into visible planetary bodies
and music of the spheres. Stepped down into human body
as *wujingshen*, five vital organ spirits

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Wanwu Ten thousand things

= 2:3 male:female tones of pentatonic scale births infinite
souls, each with its own tonal signature. As Creation
enters physical density, macrocosmic forces become
undertones, microcosmic personal awareness overtones.

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Zhenren Authentic Self

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Wuwei Effortless Action

= spontaneous state of grace defined by human experience
of qi flow as pulsing harmony between individual will
and cosmic will; the adept's energy body as cosmic
musical instrument. Principle tones are 1-*yuan qi*, 2-*yin*
qi, 3-*yang qi*.

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Introduction

Dao births One,
One births Two,
Two births Three,
Three births the ten thousand things.
The ten thousand beings carry yin on their backs,
Embrace yang to their chest,
And by mixing the two qi achieve harmony.

Daodejing, v. 42

Verse 42 of the Laozi (Lao Tzu) is the most famous and direct statement that Numbers are cosmic sexual powers with the ability to birth or generate reality. This verse is widely viewed as the cosmological basis that unifies the hundred flowerings of Daoist expression for the following 2500 years.

Yet the esoteric roots and profound implications of verse 42 as a Numbers-as-Cosmic Sexual Powers theory have been inadequately understood. I shall explore the relation between Daoist internal alchemy, the musical basis of the cosmic number diagrams known as the Dragon Chart (*hetu*), Turtle Writing (*luoshu*), and their derivative *Yijing* trigrams, and one alchemical method of listening to planetary tones known in the West as “music of the spheres”.

Most Western scholarship on alchemical numerology has focused solely on Celestial Master sect ritual alchemy performed for an external community (Saso 1978, Schipper 1985, 1993). Other discussions treat Daoist alchemical numerology and its formative role in *Yijing* (I Ching) science as an interesting but primitive system of mathematics that ultimately failed as a pseudo-science (Cammann 1960, 1985, Needham 1983).

This lack of scholarship on other systems of Daoist internal alchemy is due mostly to the extreme secrecy with which alchemical science is traditionally transmitted. Modern arrogance arising from the global success of Western science has also been a barrier to modern recognition of inner alchemy as a valid human centered science, based on different principles, that is still practiced in China and for the last twenty years in the West.

The historian of alchemy Mircea Eliade notes the oddity that alchemy is mankind’s first science, but is widely regarded as a form of mysticism. Modern man has an aesthetic appreciation of nature, but his awareness is so greatly narrowed by materialist views that he is today incapable of understanding the science of ancient alchemists. It is only “with the appropriate psycho-somatic and spiritual training that (modern) man can have the (ancient) revelation of the primordial mode of nature”. (Eliade, 1978).

Daoist internal alchemy (*neidangong*, lit. “inner elixir skill”) is an ancient science for regulating the rate of change, or Time. Time is a measurement of rhythm that can be expressed by Number. This study requires viewing Number in a different context from the number-as-abstract quantity or self-referring integer systems used in Western math. The Cosmic Number diagrams were used

by Daoist alchemists as a guide to magical living forces expressing spiritual qualities of consciousness, sexuality, and musical tonal patterns with their own will and special relation to human soul function.

Inner alchemy is focused on the human body and psyche, and is not to be confused with external laboratory alchemy (*waidan*) and its use of minerals and herbs. Both involve the re-sexualization of Nature as part of recovering, refining, and rebirthing the original substance (*yuan jing*) of Nature. The sexed Numbers used in internal alchemy are the living subtle frequencies of qi flow, which in humans take the form of bodily energy channels and spheres of intelligence (*shen*) that define the soul's interaction with its biological and psychological process. These Numbers, when experienced in deep meditation as pairs of planetary or other subtle cosmic tones, form the substance of the human soul.

When the sexual substance (*jing*) within the human Number-soul is properly attuned, it becomes immortal by virtue of its freedom from ordinary Time cycles. Immortality here does not mean to live forever in the physical plane. Longevity is a side benefit. It means giving body to a profound state of spiritual realization from a human merging with the cosmic Number-forces of Nature.

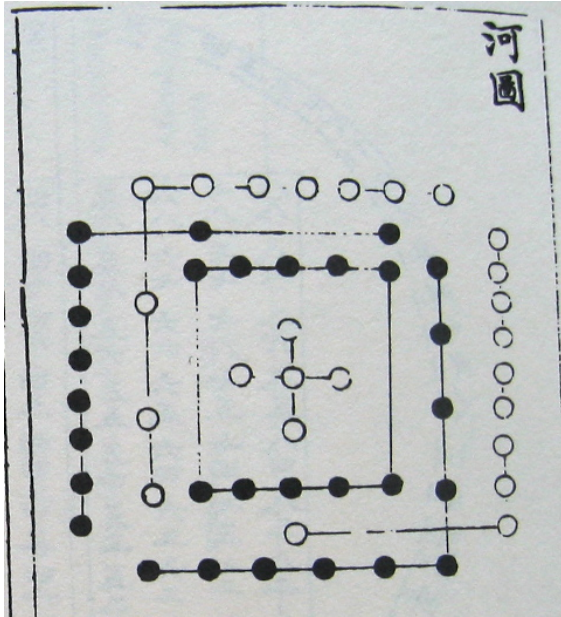
I have previously described the Daoist hermit One Cloud's *Seven Alchemy Formulas for Immortality* as the deep grammar of a silent language for communicating with Nature. Each formula represents a progressive interiorization of the macrocosm within the adept. (Winn, 2001) I have chosen One Cloud's fourth formula, the Greatest Enlightenment of Water and Fire (*Kan & Li*), to illustrate the practical method of how an alchemical adept is able to "listen" to and interact with Cosmic Numbers as planetary tones that are "heard" as inner sound frequencies flowing and vibrating within the adepts' body. I chose this formula because planets offer objective reference points in a very subtle process.

One Cloud's formulas were first transmitted to the West and popularized through the writings of Mantak Chia beginning in the early 1980's. (Chia 1983, Winn, 1984). I will briefly examine the potential interface between this form of Daoist inner alchemy, modern chrono-biology, and other Western esoteric systems of musical-soul development as part of an attempt to create a new global sacred science.

Turtle and Dragon Cosmic Number Diagrams

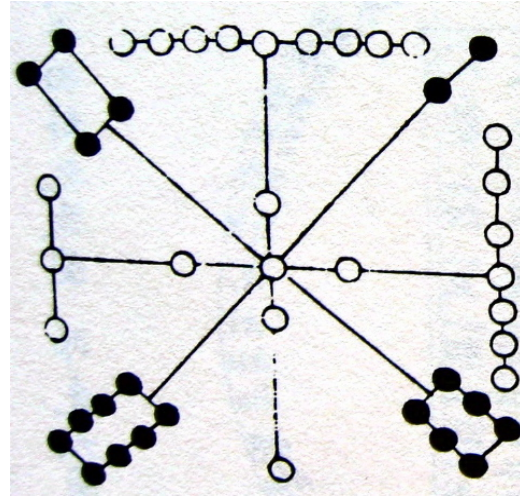
Laozi's famous verse 42, dated to about 360 b.c., is likely referring to a much older Chinese cosmic number diagram known as the *Hetu* (Ho Tu), the "Dragon Writing" that according to legend first appeared in 2200 b.c. on the back of a Dragon-horse. This diagram maps out the unfolding pattern of the first ten celestial Numbers as a series of white (odd) and black (even) dots.

Table 2. Hetu Dragon shows Numbers as even-black 2-4-6-8 dots or odd-white



Dots 1-3-7-9 spiraling from the central 5. Lines connect five sets of dots at right angles always add to 10, number of completion.

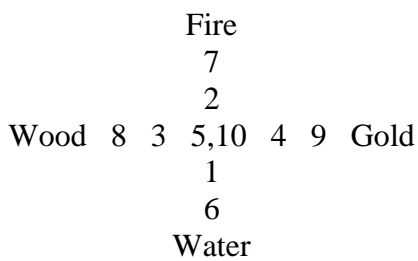
Table 3. Luoshu Turtle or Magic Square.



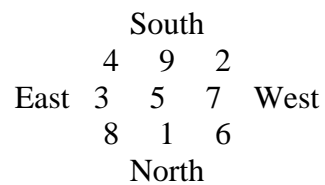
Outer pairs of Numbers add to 10. Any 3 Numbers in a row add to 15. The oldest known magic square in written history.

(both 11th century Song Dynasty diagrams from Birdwhistle, 1989)

**Table 2a: Hetu Dragon Writing
Round heaven shape
5, 10 in center = Earth**



**Table 3a. Luoshu Turtle Writing
(Lo River Chart)
Square earth shape**



(Dots replaced with Arabic numerals in both diagrams. The original dots used suggest an ancient system of counting with knotted string or colored pebbles.)

On the Dragon chart, the odd numbers were considered male, and the even numbers female. They were arranged in opposing pairs where they could “copulate” and generate a spiral both inward and outward from the central number five. Five represented the human adept and the all pervading power of the Five Phases (*wuxing*). In the oral tradition of inner alchemy, the numbers 1 through 5 represent the formless stage of primal energy generation known as Early Heaven, the numbers 5 through 9 the cycle of qi manifesting in the physical plane or Later Heaven. The number 10 (sharing the center with number 5) is the number of completion. It may also refer to the ten lunar months spent by the human soul gestating in the mother’s womb.

The Dragon diagram had a terrestrial companion, the *Luoshu* (Lo Shu), known as the “Turtle Writing”, according to legend found atop the back of a turtle in the Luo River by the ruler Yu the Great. It is famous as the oldest “magic square” diagram known to man, with nine numbers shown as similar dots, in which the three numbers of any line add up to fifteen. This chart was used to generate many calendrical calculations for daily, seasonal and annual cycles. It was also used to lay out the architectural plan of the Emperor’s private temple, known in the Han Dynasty (3rd cen. b.c.) as the Ming Tang or 9 Halls Palace plan (*jiugong*). (Cammann, 1960).

Possession of these diagrams was for many centuries a secret royal prerogative. The Dragon Chart (*hetu*) was considered symbolic proof of the Emperor’s divine mandate to rule the Nine Terrestrial regions of Earth on behalf of Heaven. (Saso, 1978, p.399) This may account why the actual diagrams with the dots were not published until about 1000 c.e. But the diagrams were certainly created by and held in the possession of Chinese esoteric adepts and shamans before their publication, possibly for many millennia.

Both diagrams are mentioned in the *Yijing* commentaries of fifth century b.c. and the magic square is referenced by *Zhuangzi* (Chuang Tzu). The *luoshu* number sequences are first described in the *Dadai Liji* scripture in 1st century a.d. (Cammann, 1985)

The interaction of these two Number-mandalas was preserved in popular culture by the image of a snake coiled atop a turtle’s back. The coiled snake may have been the spiraling number sequences of the Dragon Writing imposed on the geometric patterns of the Turtle Chart’s shell. Reference to the diagrams may also be found in the multiple meanings of terms like “gongfu”, which originally meant “to accomplish the completion of one’s allotted time cycle”. But the focus here is not the varied historical use of the Number Diagrams, but their possible origin and application in internal alchemy.

These cosmic number diagrams were later converted into the Early Heaven (*xiantian*) and Later Heaven (*houtian*) sets of eight trigrams of the *Yijing* (I Ching). The two Cosmic Number diagrams and their two trigram successors (Fu Xi and King Wen arrangements) are the cornerstones of Chinese spiritual culture. These number patterns have offered a common foundation to areas as diverse as philosophy, divination, astrology, *feng shui*, medicine, calendrical calculation, political rulership, military strategy, martial arts, and alchemical meditation.

East to West Transfer of Spiritual Technology

It appears in the beginning of the 21st century that we are in the midst of a “spiritual technology transfer” from East to West, with an accelerated focus on Chinese traditional knowledge. Modern Westerners are fascinated by the glimmerings of an esoteric Daoist science that in recent

decades have been appearing in tantalizing bits and pieces. The magic square of *Luoshu* has been widely, if superficially, publicized through the mass popularity of *feng shui* and its use of the “King Wen” trigrams from the *Yijing*. Elsewhere the spread of Chinese medicine and martial arts into the West and teaching of Daoist philosophy, *qigong*, meditation (*neigong*) and internal alchemy as a modern spiritual path have reached a larger and more sophisticated audience.

Few Westerners appear to be seeking to import Chinese “Temple” Daoism to the West. It is not common for them to seek initiation into the two largest and thus most accessible religious sects remaining in China, the Complete Perfection (*Quanzhen*) or Celestial Master (*Tianshi*) sects. Few attempt to adapt or imitate its complex of liturgies, alchemical rituals, stylized clothing or topknot hairstyle.

But, as a teacher and observer in this field for more than two decades, I can report that many Westerners, raised in a science driven culture, are very interested in appropriating what they perceive to be the esoteric secrets of Daoist “spiritual science”. There seems to be strongest interest in Daoist body mysticism, especially if it leads to an intensification of one’s ability to experience life energy or “*qi*”. They are seeking a systematic approach to life that is not governed by outside authorities or institutions, but by internal spiritual laws. But the correlation between the Cosmic Number diagrams, the *Yi jing* symbols and the energetic forces they represent are poorly understood by Westerners and Chinese alike.

Modern empirical science, perhaps inspired by the wave of popular interest in eastern mysticism, is beginning to shift its focus towards the science of consciousness. This realm previously was regarded as off limits, perhaps as the domain of religion, or simply looked down upon as lacking the “numbers” needed to measure and back up the more hard sciences of physics, chemistry, and biology.

But as Mircea Eliade, the noted historian of myth and religion has noted, the progress of western science is basically the recent continuation of the ancient dream of alchemists – to control the flow of Time. The foundations of modern science were laid by alchemists like Isaac Newton, who considered his gravitational discoveries a secondary mechanical aspect of deeper alchemical forces at work. Likewise, the father of modern chemistry, Robert Boyle, considered all his discoveries to be a small part of a vaster alchemical science that awaited unfolding. Carl Jung likewise spent the last fifteen years of his life exploring and resurrecting the principles of medieval western alchemy, which inspired his final understanding of the functioning forces of the unconscious. All this suggests that the seeds of ancient alchemy are still present within modern empirical science, and may flower again in the modern scientific study of consciousness.

A key aspect of the Western fascination with Daoist spiritual science is that it is somehow backed up by cosmic Numbers or complex symbolic languages like *Yijing* trigrams. Numbers imply a knowledge that is systematic and thus reliable. The study of consciousness is notoriously subjective and difficult to measure. Numbers promise to reveal universal laws governing time-space-intelligence that can be known, experienced, and manipulated for the personal and collective good.

Daoist Cosmic Number science overlaps yet is quite different from the Greek Pythagorean tradition of number mysticism. In the Daoist tradition the focus is on a “mystical physiology” that emphasizes the ability of humans to experience and alchemically interact with these Numbers as intelligent forces inside the adept’s physical body. The Pythagoreans saw Numbers

as beings from a different and more real divine dimension of Ideas; humans with bodies are seen as living in Plato's shadowy and illusory cave reality.

In Daoist cosmology and thus in internal alchemy practice, there is a single continuum of reality, from physical substance (*jing*) through the subtle range of material energy (*qi*) to the realm of spirit (*shen*). Yet even the most rarefied spiritual qualities have an essence that makes them knowable and part of the organic material fabric of the Dao. The boundary between human (*ren*) and non-human (*feiren*) is very thin to Daoists. It also means that little gap is seen between human beings, planetary beings, and Numbers as primal beings. A Dao inner alchemist cultivates an *immediate, embodied experience* of Cosmic Numbers that is founded on a different understanding of Time flow from linear western notions:

The Judeo-Christian God or Plato's Forms impose a preassigned design on the chaos of a recalcitrant world. Natural change is instrumentalized, driven as it is by a linear teleology which takes us from creation to the realization of the given design. There is a plan, a beginning, a more or less straight line, and an end.

...Within the Daoist search for an explanation of origins, there is the assumption that the world is "self-so-ing" (*ziran*) and auto-regenerative, with the energy of transformation residing within the process itself. There is no external efficient cause. (Ames, 1998, p. 14)

The very lack of an external creator God in Daoism is what makes it closer to the feel of a Western natural science, albeit with a religious attitude. Dao accepts the many-ness of historicity (Laozi's ten thousand things as infinite number manifest) and the one-ness of all being (original unified *qi* field as source of Number) as co-existing simultaneously.

This in-the-moment process allows for Number forces to flow backward or forward as the musical rhythm of Time. This reversible flow of Time does not reverse the stream of unique events; it means the adept can flow back to the center of Time, or Non-Time, and experience his soul flowing back out as renewed Number-tones from the Supreme Unknown (*wuji*).

The alchemist who understands the musical nature of the Cosmic Numbers can thus embody a high level of freedom in their physical and spiritual *qi* flow. This is physically demonstrated in the accomplished *taijiquan* (tai chi chuan) master whose solid body softens and ripples like water. The physical body appears to have surrendered to a larger wave of energy moving through him or her, even though there is a very sustained application of individual will. In this case Number as Time flow is converted into rhythm as body flow.

The internal alchemist does the same thing through a dynamic meditation process that attunes to many different "wave frequencies" or octaves in Nature. The principle Daoist alchemical process of gaining internal knowledge is by resonance (*ganying*) between two paired frequencies of *qi*. Some of those frequencies are the musical waves emanating from the orbital movements of the planets, sun and moon. These planetary *qi* frequencies are experienced within the adepts body and are concentrated into a standing wave that resembles a note of music. I will first use Laozi's verse 42 to illustrate how sacred number perception might have been part of a simple alchemical practice in ancient China.

Verse 42: Numbers as Qi Rhythms Within the Body

Scholars have shown that Lao Tzu's *Daodejing* was most likely a meditation manual with large fragments of it appearing in earlier meditation texts such as the *Neiye* ("Inner Training") scripture. (Roth, 2000). It is difficult for modern people to comprehend the depth to which the ancients were able to experience, in a visceral way, these "sexual Numbers" as a systematic way of relating to the cosmos. What may appear to be pure abstract philosophy to a modern intellectual was likely practical body-centered advice to a meditation student 2500 years ago.

Let's reexamine verse 42 of the *Daodejing*, open to the possibility there is a meditation technique hidden within its Numbers.

After giving the Dao-One-Two-Three birthing sequence, it immediately informs us that the ten thousand beings are carrying yin on their back and embracing yang, and thus are able to mix the qi of the two. How are they able to mix this qi? A number of practical explanations leap to the attention of a practitioner of inner alchemy.

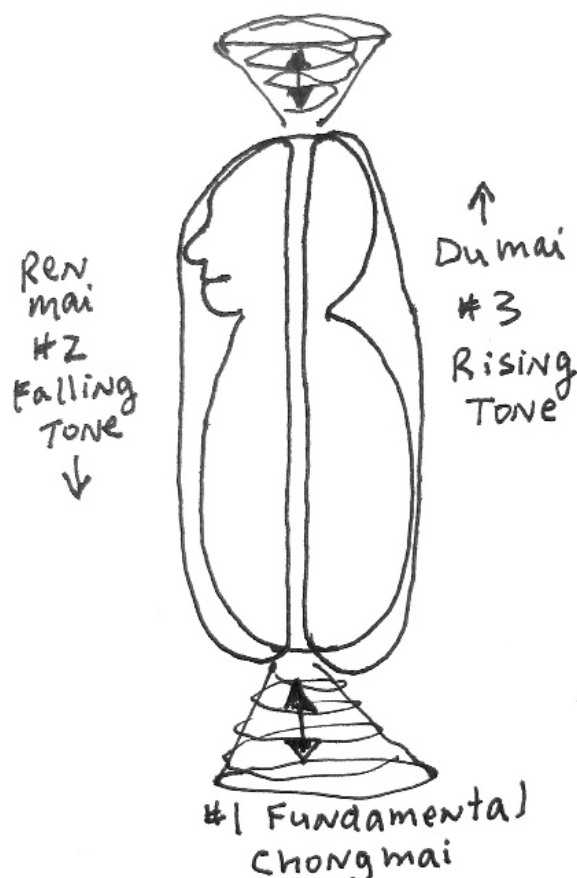
First, from study of the Dragon diagram *hetu*, the student from 500 b.c. knows that One is undivided primordial water, and thus is asexual. Two is the first (even) female number, suggesting two breasts or the two spread legs opening into the female vagina. Two is also in the south position on the *hetu*, indicating a dynamic Fire phase within the female. Three is the first (odd) male number, suggesting the penis and two testicles. On the *hetu* Three is in the east or Wood position. Wood is the rebirthing or growing qi, and suggests rising sun in the East. It is rising here to support the rebirth of the yin or female fire.

So yin-Two mixed with yang-Three are combined to birth Five, considered an androgynous Number. Five is the center-Earth position on the *hetu*, and the felt quality of number Five is human harmony and balance. The Chinese pentatonic musical scale has five major notes that result from the 2:3 ratio, so a musical quality or perhaps even a specific tonal ratio is also implied between the Two and the Three, the position taken in the final sections of this paper.

Physiologically, the passage alludes to yin on the back and yang in the front. In early texts such as the Classic of Internal Medicine (*Neijing*), the back is the yang channel and the front is the yin channel. Each polarity attracts its opposite; thus we prefer to face the sun to warm our yin chest, and keep our hot spine/back towards the cooler shadow/moon. This Daoist alchemical notion of gathering the appropriate qi polarities to maintain body harmony is thus well expressed in the verse.

This front-back polarity may also be an allusion to the "small heavenly round" or "microcosmic orbit" meditation that circulates qi between the Governor Vessel (*dumai*) along the spine in back and the Conception Vessel (*renmai*) along the chest in front. The two channels are used to mix the ascending yang and descending yin qi. When the *yin* breath and the *yang* breath are mixed properly and stabilized by the One Original Breath (*yanqi*) in the center of the body, these two channels overflow and nourish the birth and growth of all the other body meridians. The earlier *Neiye* Inner Training scripture refers to "revolving the vital breath" as possibly the first written reference to the "orbit" meditation. (Roth, 2000, p.92).

Table 4. Cosmic sexed Numbers



1 (yuan qi), 2 (yin qi), 3 (yang qi) in verse 42 may refer to tonal flow of qi as rising and falling sound emanating from core channel-fundamental tone. Possibly later codified as the “microcosmic orbit”.

Verse 42 mirrors the first of One Cloud’s seven formulas, which involves harmonizing the front and back channel. This first formula is the stage preparing a stable interior body space for the spiritual embryo of the adept to grow. In this protected center, the yin and yang qi are mixed. This is consonant with the implied addition of the Two and the Three in Verse 42, a Number addition that may have been assumed by adepts at that time, but which is also suggested by the mixing of the yang and yin qi in the following lines. In One Cloud’s formulas, the Number Five always guards the center of the body.

Another alchemical interpretation of verse 42 is that the Numbers One, Two, and Three refer to the *yuan jing*, *yuan qi*, and *yuan shen* of the primal cosmogony. They sexually couple within a primordial heaven or gourd as Cosmic Numbers to birth all other numbers, including the Five Phases and Eight Forces embodied in the *hetu* and *luoshu* diagrams. This may be a later alchemical interpretation, as we have no evidence of this *jing-qi-shen* trinity in the *Daodejing*.

This may point us to the more ancient *hetu Dragon* Number diagram as the most likely source for verse 42, and its use of musical ratios.

Did Internal Alchemy precede External Alchemy?

The assumption of many scholars of Chinese alchemy is that external laboratory alchemy (*waidan*) explorations preceded the later development of internal alchemy, presumably due to the failure of the laboratory experiments to produce the elixir or gold. It seems more likely that internal alchemy meditation practices, perhaps in a simpler form, preceded more complex external laboratory experiments popular in the Han dynasty. We should recall Mircea Eliade's caution *not* to date a proto-historical science like alchemy from written texts.

The internal awareness of qi channels and inner body spirits needed for *neidan* practice in the Jou or possibly Shang periods is well described in early texts such as the Yellow Emperor's Classic on Internal Medicine (*Neijing*) and the later Treatise on Difficult Issues (*Nanjing*). These extremely sophisticated texts make the reasonable claim of passing down a much more ancient knowledge. They should be viewed as spiritual rather than medical texts because of their heavy emphasis on cosmology, linking the body meridians and body spirits to the movements of sun, moon, planets and stars.

The older dating of the Cosmic Number diagrams, and the sophistication these diagrams display in relation to Time and as we shall see, to music, supports the speculation that the Number diagrams arose from or were accompanied by internal alchemical practices. Certainly the very awareness of a qi field permeating all of Nature, and organized in any Number pattern (whether yin-yang or Five Phase) begs for a conclusion that someone is having an experience of that qi field within their body. They then decide to experiment with those Number patterns. That experiment could have begun with just feeling the shift in body vibrations from different tones of voice, and noticing the altered states that produced. That moment, lost in unknowable pre-history, would have marked the beginning of internal alchemical science.

Astronomy, Music, and Number Diagrams in Prehistory

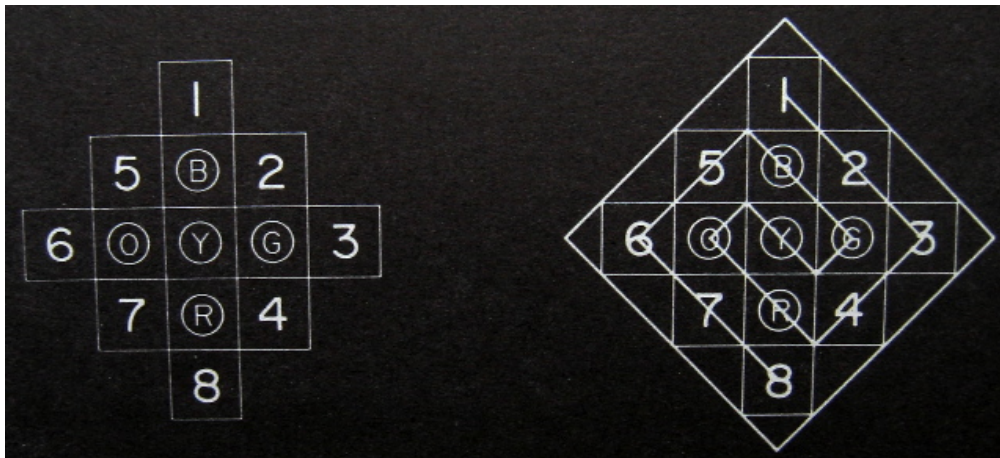
It stretches the credulity of modern people to consider that the Numbers of the Chinese ancients may be connected to planetary tones or sub-audible musical frequencies that accurately reflect the synodic (orbital) periods of the physical planets in their revolution about the sun. The common practice, well documented in the school of Zou Yan by 350 bc., linking Numbers to musical tones to directions and colors and planets, in effect relies on an ancient theory of chronobiology. This theory in China linked human biological circadian rhythms with planetary rhythms in the guise of Five Phase theory and yin –yang theory.

Let's briefly put this discussion in a larger context. Modern astro-archeological investigation has demonstrated a consistently high awareness of astronomical phenomena in ancient Druidic, Mayan, Vedic, Greek, and Egyptian cultures that includes not just solar, lunar, and eclipse cycles, the timing of solstice and equinox alignments, but in many cases the longer twenty-six thousand year cycle of the precession of the equinoxes. (Jenkins, 2002)

This awareness is not limited to the major "high" cultures and sites like Stonehenge and Newgrange or speculations about the Great Pyramid. It appears in Ice Age Paleolithic art dating

back 35,000 years in Siberian geometric carvings. It shows up in Neanderthal cave paintings in France where the ribs of horses marked lunar cycles. This Paleolithic art is increasingly viewed as expressing the ability to count the cycles of the sun, moon, and the synodic periods of certain highly visible planets like Venus. The ability was nearly universal in early human cultures around the globe, suggesting an innate capacity in humans to observe and codify the cycles of nature. (Jordan, 1978)

Table 5. “Meander” diagram

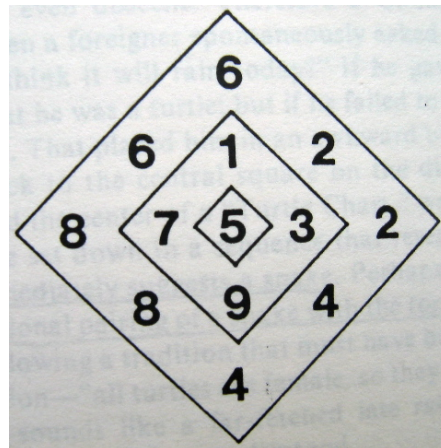


The “Meander Diagram”(top) found in many different Ice Age European and Siberian paleolithic cultures, carbon-dated as early as 33,000 b.c. Musician-scholar Bart Jordan claims such complex geometrical figures required mathematical abilities to construct. He posits five colors (red-green-blue-orange or white-yellow for five planets) and eight numbers in pairs that add to 9 were maps of planetary-musical relationships (center and right). These diagrams may have been the first human calendars. (Diagrams: Jordan, 1978)

Schuyler Cammann, the Western scholar who did the most extensive research into the origins of the *hetu and luoshu*, came to accept the probability that at an earlier date the Dragon Writing and Turtle Charts were a single Thirteen Number diagram in a diamond shape that may have been imported from Babylonia. In this diamond chart the five central numbers, also related to five colors and the five planets that were counted on five fingers, were surrounded by 8 outer numbers.

But this 13 Number diamond chart, first posited by the private scholar-musician Bart Jordan, went further in claiming these Babylonian numbers were based on musical scales that defined early human perception of cosmic rhythms. Jordan also believed the Shang people in China used trigrams in circles (found on oracle turtle shells) to represent planetary motions. He claims they are based on a musical scale derived from older west Asian peoples. (Jordan, 1972, Cammann 1985 pg. 236)

Table 6. Thirteen Number diamond diagram



Thirteen Number diamond diagram evolved from Paleolithic meander symbol for calendrical use in Babylonia (Jordan's speculation). To convert its core nine numbers to a Chinese luoshu magic square only requires flipping the Numbers 2 and 8. (Diagram: Cammann, 1985)

Cammann did not pursue this musical aspect of Jordan's theory in his writings, and I shall not debate its historical merits here. Certainly there is evidence of exchange between Babylonia and the Shang people, although Needham's well supported conclusion is that China did not borrow its zodiac or astronomical knowledge from Babylonia or Greece. (Needham 1983). Other research suggests China's five phase theory and early cosmology may have arisen from Pacific or pan-Asian roots. (Girardot, 1988, p.306, 376)

The question of whether there was musical exchange of Numbers remains to be explored. A recent archaeological find supports Jordan's position of the existence of musical astro-

mathematical skills in prehistoric China. A set of eight turtle shells (suspiciously similar to the eight outer numbers of the *luoshu* Turtle diagram) were found placed above the grave of a neolithic man. His skeleton had no head, suggesting a special burial ritual. The shells had written characters on them similar to Shang script, including the numerals 8 and 20, and nearby were small pebbles possibly for counting, as well as bone flutes. They were radiocarbon dated to 8,600 years ago, five thousand years older than the Shang dynasty (1700-1100 bc). The flutes and the writing constitute the oldest known written language and musical instruments in the world. (BBC, 2003)

Regardless of the anthropological data, from the perspective of One Cloud's *Seven Alchemical Formulas*, Jordan's proposal that the *hetu* and *luoshu* were planetary and musical Number diagrams resonates as true due to the deep embeddedness of those diagrams with those functions. There are three topics that need to be separated here.

One is the outer physical arrangement of planets and their correspondence to the Numbers of the *luoshu* –Turtle magic square, which was the main diagram for calendrical calculations. Two is the relation of the *hetu* -Dragon Numbers to musical scales, as this chart defines cosmological unfolding and enfolding of the Numbers harmonically. This musical scale is carried over into its trigram form as the Fu Xi arrangement. Three is the actual method by which Daoist alchemists are able to listen to planetary Number-tones and internalize them.

Magic Square of Saturn and Rulership of the Soul

In pre-Han times the Five Agents (*wuxing*) were often identified with the five visible planets, which were called “wandering stars”. Saturn was the “Earth Star”, Jupiter the “Wood Star”, Venus the “Gold (Metal) Star”, Mars the “Fire Star”, and Mercury the “Water Star”. The sun and moon were called Great Yang (*taiyang*) and Great Yin (*taiyin*). (Cammann, 1960, pg.56) That these agents are closely tied to human destiny is also seen in Chinese language. The term *wen* is used to describe both human culture (*wenhua*) and astronomy or astrology as the pattern of the skies (*tianwen*). (Ames, 1998)

Table 7. Luoshu Turtle with planetary associations to cardinal yang numbers. The clockwise sequence from center 5-3-9-7-1 spirals in orbital order of planetary distance from the sun, Saturn to Mercury.

		Mars		
		Fire		
		South		
	4	9	2	
Jupiter Wood East	3	5	7	West Gold Venus
	8	1	6	
		North		
		Water		(5=Saturn, Center, Earth)
		Mercury		

We can immediately observe a correlation with the actual orbital distances of the planets to the sun in this sequence. If we count out from the center, in the manner of all Daoist cosmology, and proceed clockwise in the manifesting Time cycle, we find a sequence of Numbers representing Saturn-5 , Jupiter-3, Mars-9, Venus-7, and Mercury-1. It is highly unlikely that this correlation of Number with planetary distance from the sun is a coincidence. More likely it resulted from close astronomical observation of the length of the orbital periods of each planet.

The Earth itself was the planet “experiencing” or observing these five planetary cycles, so it was also associated with the center and the Number 5. The use of Earth as the “quintessence” or fifth element, is what distinguishes Daoist alchemy as having a different origin from the Egyptian, Arabic, Greek, and Indian forms of alchemy. These latter have Ether as their quintessence, with only four named elements instead of the Chinese five. Putting Ether in the center suggests a reality grounded in another dimension. Yet it is significant is that in both China and these Western cultures the central position of rulership are linked to the Planet Saturn and the Number 5. In China, the Number 5 applied to both planet Earth and Saturn, as if Saturn was a higher octave of the fifth element.

The position of Saturn as the planetary ruler of the Turtle Chart has other possible associations. It raises the possibility that China’s legendary Yellow Emperor originated as a mythic expression of the yellow planet Saturn, with its key physical and spiritual position of rulership over all solid bodies –planetary and human- in the solar system. Although yellow was not made the Imperial color until the Han Dynasty, when it displaced the tradition begun in the Shang dynasty of red as the imperial color, the association of yellow with Earth-Saturn, Center, and Number 5 likely existed in esoteric circles from much earlier dates.

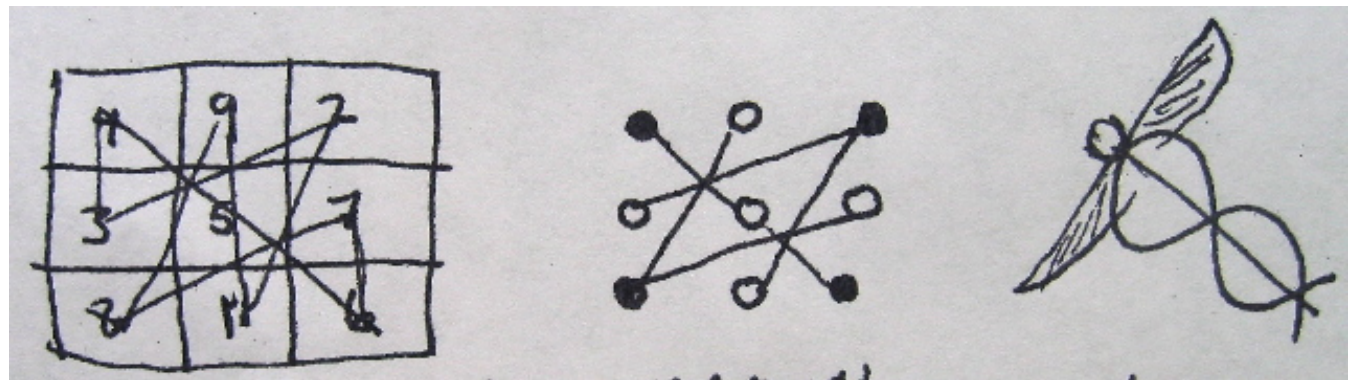
The Chinese mapped Saturn’s twenty-nine year cycles (of return to its original, or natal position) as the slowest of all the planets and thus the one vibrating most closely with deep earth and human physical changes. Two “octaves” of this twenty-nine year cycle may have been seen as

the average intersection with five twelve-year cycles of Jupiter to affirm the key 60 year cycle of the Chinese calendar. It may also be significant that in both the hetu and luoshu diagrams the only three numbers in the same positions are 1,3, and 5, traditional symbols of Mercury, Jupiter, and Saturn.

Even more interesting is the appearance of the magic square (the Turtle Chart) in western alchemical and cabalistic contexts, where the same 9 Numbers are linked in an esoteric magic pattern to form the “Sigil of Saturn”. The ancient Greeks and Romans ascribed Saturn-Kronos as having the ruler ship over Time and the power to shape body-matter, both a key focus of Daoist internal alchemy. The Hebrews are said to have this magic square around the time of China’s Shang dynasty (1700 b.c.), although exact dates are difficult to confirm. By 1000 c.e. the Sigil of Saturn was found in medieval European magic texts, and attributed to much older times. It seems unlikely they obtained the magic square and the Saturn association from the Chinese.

The shape of this western Sigil of Saturn is virtually identical with the “9 Paces of Yu” pattern that Daoist alchemical adepts danced over the *luoshu* magic square as a secret ritual enactment of transcending Time. (Schipper 1985) The Western sigil of Saturn is formed by linking the 4-5-6 numbers as a diagonal axis, with two open-ended triangles of 1-2-3 and 9-8-7 numbers intersecting the median 4-5-6 axis. The result looks like a double zigzag along the diagonal axis. If the ends of the triangles are closed, nine smaller triangles are formed.

Table 8. Luoshu magic square contains a secret sequence called the “9 Paces of (legendary Emperor) Yu” (left).



Daoist adepts literally danced back through the numbers (as agents of Time cycles) to open the central axis of eternal time, ruled by Saturn-5 in the center. The same pattern was called the “Sigil of Saturn” by medieval Qabbalists as to ritually open the doorway to the stars and timeless Ain soph.

Pattern shown (center) as even-odd numbers, which convert into two fire trigrams (yang-yin-yang) surrounding an axial water trigram (yin-yang-yin). This axis surrounded by two spiraling forces resembles the alchemical staff or caduceus of Hermes used by the Greeks and Egyptians.

If this pattern is turned upright (vertical), it becomes strikingly similar to the Greek staff of Hermes, the caduceus with two spiraling snakes around a central axis, and the Hindu symbol of the kundalini serpent of *ida-pingala* (sun-moon) criss-crossing along the central *sushumna* channel. All of these symbols are associated with the alchemical process, offering strong circumstantial evidence that the *hetu-luoshu* Cosmic Number diagrams were originally created by alchemical adepts at a much earlier date than Chinese written texts reveal, and that they are closely connected to the adept balancing planetary forces with Saturn at the center.

Magic Square as Domed Turtle Shape

When placed on the Turtle Chart-magic square, Saturn was the ruling planet in the center. We must remember that this diagram was not seen as Numbers resting on a flat plane, but a turtle shell with the domed top of the turtle back representing heaven. (Huang, 2000) The turtle's four limbs, head and tail represented man, and the square bottom of the turtle's carapace was earth. The vertical axis connecting these three realms was shared by three Numbers: 9, 5, and 1, the central column of the *luoshu*.

The highest point of the Turtle's shell, representing heaven and the element Fire, was the Number 9. In the middle of the Turtle, as Saturn ruling Earth element and the Human soul, was the Number 5. At the base of the Turtle, where an imaginary umbilicus or womb would be found, was the Number 1, suggesting the deep watery origins in which the Turtle as the symbol of the cosmos had first arisen.

This domed turtle-magic square allows us to visualize easily the Daoist map of the heavens. The Center axis touching the top of the Turtle's back was occupied by the current Pole Star. The Chinese were aware of the Pole Star's shifting progression due to precession as early as 3000 bc., and it is possible to map the arc of different Pole Stars used by the Chinese over time. (Needham) The Turtle Chart or magic square's use over this same period of time meant the Chinese understood that the Numbers held their tone or frequency value, even though the physical planetary-stellar bodies might change. So although the Numbers were correlated with the planetary cycles, it was understood that the Numbers in the Turtle Chart came from a deeper unchanging rhythm at the center of Time within the Dao.

This Turtle Chart was thus a map of the macrocosm, but its nine Numbers were simultaneously placed within the microcosm of the human body. This interiorization of macrocosm inside the microcosm is a central Daoist alchemical practice. The adept's consciousness slides up and down the vertical axis pole of the Turtle-cosmos as necessary during his alchemical work of gathering and balancing the horizontal forces of the other Numbers.

The earliest written record of the complete 9 Numbers of the Turtle chart being placed inside the body dates to the sixth century, where the Daoist Chen Luan, quotes the *Classic of 9 Halls Calculation of the Yellow Emperor*:

2 plus 4 make the shoulders,
6 plus 8 make the feet.
3 is at the left, 7 is at the right,
9 is worn in the head.

1 is underfoot,
5 dwells in the center. (Camman, 1960)

This interiorized vertical Number axis of 9-5-1 in the central axis of the Turtle Chart allowed adepts to link the three Numbers to earth, humanity, and heaven with the three “elixir fields” (*dantian*) in the belly, heart, and head. The traditional three Daoist *dantian* become three “resonance chambers” where the Number tones could be sounded and the human soul could complete itself by balancing itself harmonically with all of the other Numbers. When all 9 numbers are stabilized in the center, the Number 10 of completion arises as a rebirth of the cycle at a higher octave of Number 1-Origin.

This placing the Cosmic diagram inside the adept’s body finds close parallel in One Cloud’s alchemical formulas. This vertical axis in the Center is experienced by the Pole Star as the door to the unknown in the head. The middle is ruled by Saturn and Sun as the rulers at the heart, Earth in solar plexus and Moon-human as the ruler of the navel. All three centers are considered vertical “octaves” of a mandala of five spheres (Number 5). All three are different levels of the Earth phase of qi flowing along the *chongmai*, the core thrusting channel in the center of the body.

As the adept shifts his consciousness between centers, the number 5 is held stable by the human five vital organ gods (*jingshen*). These fuse together in the center channel, but travel up or down to communicate with the Earth-moon below, Saturn-Sun and the four other planets in the middle, and above to the Pole Star.

Dragon and Turtle Charts as Musical Scales

The rhythm of the spirit has the property of grasping the essence of music; it gives presentiments and the inspiration of celestial science. -
Beethoven, 1810 letter

Geometry is “number in space”, music is “number in time”. The basic set of musical intervals is the elementary set of simple ratios, 1:1 (unison), 2:1 (the octave), 3:2 (the fifth), 4:3 (the fourth), 5:4 (the major 3rd), and so on. The difference between the fourth and the fifth, which works out at 9:8, is the value of one whole tone. Musical intervals, like geometrical proportions, always involve two elements in a certain ratio: two string lengths, two periods (lengths of time), or two frequencies (beats per length of time).
- Robin Heath, Sun, Moon, and Earth

Table 10. *Hetu* Dragon Chart as musical ratios

		7		
		2		
8	3	5	4	9
		1		
		6		

(#10 in center not shown).

In music theory, it is an accepted tenet that all important tonal ratios are expressed by a sequence of even and odd numbers. (Berendt 1988) The tone ratios are formed by dividing a single guitar string (the fundamental) or dividing the length of a flute’s hollow tube by holes at different distances. This is also the defining principle of the *hetu* Dragon Chart, where every odd number is paired with its opposite “sex” of an even number, thereby creating a progressive ratio of most of major musical relationships. It can be constructed by starting with

Table 10. *Hetu* Numbers as musical ratios.

1 below:	2 above	Octave
2 :	3	fifth
3 left:	4 right	fourth
4 right :	5 left	major third
5 above:	6 below	minor third
6 below:	7 above	semitone
8 left:	9 right	whole tone
5 center :	10 center	repeats octave (if reduced to 1:2 ratio)

The 3:2 ratio of the “fifth” is missing as a geometrically paired opposite in the *hetu* diagram. But the fifth is a given of the Chinese pentatonic scale (possibly symbolized by five dots in the center) and is omnipresent in Daoist cosmology as the first female (2) and first male (3) number, as cited previously in verse 42 of the Daodejing.

The *hetu* can also be constructed as a regressive or declining scale of tonal ratios. Western scales start low and rise up (singing do-re-mi-fa-so etc.). In China, the descending cadence

predominates, suggesting a return to origin as the dominant impulse (#10 descending to #1). In reality, the original Numbers-as-dots of the *hetu* suggest that there are really only the five primal numbers here (1-5). The other numbers are created by adding $5+1=6$, $5+2=7$, and so on, representing the cosmogonic process of generation from those five Numbers as a cosmic music scale.

The notion of music scale as cosmology is very familiar to westerners who know the Latin translation of the “Do-re-me” octave scale that was created around 1000 c.e. Starting with Do from “DOminus” as Creator, it progresses through Moon (Regina coeli) Earth (MICROCOSMOS), Planets-fate (FATA), Sun (SOL), Milky Way galaxy (LACTEA), all stars (SIDER), and back to Creator (DO). (Schneider, 1995)

The Chinese pentatonic scale is essentially five pure numbers in a circle, with no fixed starting or ending point. In music terminology, there is no fixed “tonic” or low note to start the scale. This gives a floating quality and musical fluidity typical of Daoist meditative and body movement arts. Western musical scales are more hierarchical, and since 1600 c.e. use tempered or altered tones to make them sound more pretty. Because the Chinese pentatonic scale is non-tempered, some of the tonal ratios may sound slightly disharmonic to western ears.

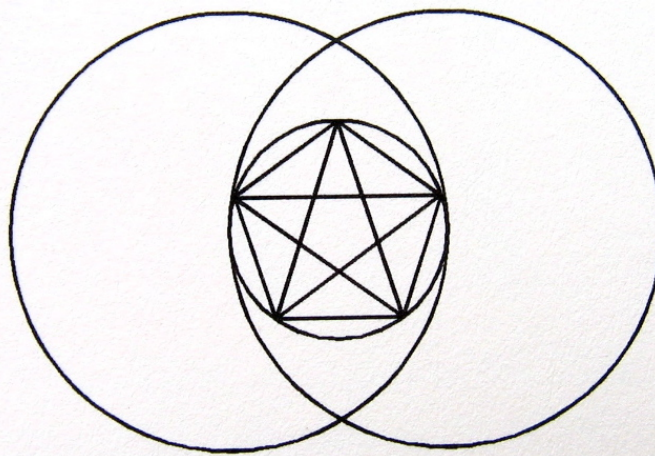
The non-tempered scale causes the listener to be musically more alive and alert to the shifting and sometimes disharmonious tonal force-reality about him. The listener must reconcile the dissonance internally, as if forced to bring the slight dissonance between the left brain and right brain tones (that might be half a note off from each other) into balance in the center of their brain. That musical process is inherently alchemical in nature, in the sense of transmuting two disharmonious forces into a third tone-entity by internal centering.

That the pentatonic scale is at the core of the Cosmic Numbers is suggested by the five spheres in cross form at the center of both the Dragon and Turtle charts. All tones emanate from this scale, meaning that the Number diagram does not really begin with 1 and count up to 10. The 5 Number-spheres in the center (as a “+” shape) forms a kind of cosmic musical entity that generates all the tonal ratios radiating out from the center as Number-tones, which ultimately return to the silence at the center of the five dots in the center.

In effect, once primal creation unfolds the first 5 Numbers, it is the stability of the Number 5 entity in the center that sustains the harmonious tonal *qi* flow moving between primal origin (as 1 or rebirth as 10) and fullness of creation (as 9). When you view the Dragon and Turtle charts as dots, it is easier to see that each dot is a musical tone arising from the pentatonic Number 5, by adding or subtracting: $5-1=4$ dots, $5-2=3$ dots, etc.

Alchemically, the 5 Number in the Dragon and Turtle charts functions as the cauldron. It is the self-balancing constant and neutral median point of all forces. Number 5 is Earth, the center where all yin-yang forces transmute and complete themselves. symbolized by 2:3 tonal ratio (fifth harmonic), the primal female-male or primal water-fire relationship. The expansion and contraction movement is around an androgynous silent center. From this cauldron the Fundamental, the primal sound of creation is emitted, and radiates through the 5 center to sustain the rising and falling Numbers that define Time and the life cycles of the Ten Thousand Things.

Table 11. Number 5 as five pure tones birthing from primordial center-Number 1



The sexual coupling of two primal male-female spheres (Numbers 2 & 3) geometrically creates the pentagonal star and pentagon shapes widely used to symbolize the Five Phases in Chinese culture. (Diagram: Schneider)

In the alchemical process, jing is refined into qi, qi into shen. In One Cloud's progression, these shifts are more or less defined by jing as blood or sexual fluids, qi as image of light and dark and movement of breath, and shen as sound. The adept is led towards more and more subtle levels of shen, whose essence can only be grasped as "inner music":

When qi returns,
The Elixir spontaneously crystallizes
In the cauldron pairing water and fire.
Yin and yang arise, alternating endlessly,
The sound of thunder everywhere....
You sit and listen to the stringless tune,
You clearly grasp the mechanism of creation.

-Hundred Character Tablet of Ancestor Lu Dongbin (Cleary, 1991)

One question is whether yin-yang theory arose out of a musical awareness of rising and sinking musical tones. Another open question is whether Five Phase theory arose out of human voice(s) singing in a pentatonic scale. The Chinese language itself could be seen as pentatonic in this respect, with four tones (rising, falling, rising then falling, and even) emanating from the silent fifth tonal center of the speaker's throat shaping the whole sound. The mouth itself is associated with Earth and Number 5 in Chinese medicine and inner alchemy. The five tone scale may have evolved around the sound of the first pronounced numbers for counting on the five fingers of the hand. We know the Shang had a quinary (5-based) counting method.

In the *Huai Nan Zi* classic from the second century c.e.. the urgency of establishing the earth element's (cosmic Number 5) central "gong" tone is put succinctly:

The number of notes is no more than five, yet the variations on these five notes are more than one's ear can ever listen to... Thus in music, once the gong note is established, the five notes become manifest... Similarly with dao, once the "one" is established the myriad things come to be. (Ames, 1998, p. 109)

Yijing Trigrams as Cosmic Number Chords

The tonal ratios became musically perhaps more clear (for those with the ears to listen) when the Dragon chart, the diagram of generating primal numbers, was converted to the trigram form of the Fu Xi arrangement. The number five in the center was eliminated, as it represented a fixed constant. The eight trigrams were arranged like ascending and descending trichords around a ninth central space of silence. The number associations of this transfer maps out as forming a figure 8 double loop typical of the famous "tai chi tu" symbol. (Cammann 1985) It starts at the bottom with 1, climbs counter-clockwise up the right as 2,3,4, then crosses diagonally to bottom left, from where it climbs clockwise up as 5,6,7,8.

Table 12. *Hetu* Dragon Chart converted to Fu Xi Early Heaven Trigram Numbers.

		Heaven		
		8		
	Lake 7		4 Wind	
Fire 6		Dao 9		3 Water
	Thunder 5		2 Mountain	
		1		
		Earth		

What is musically significant about this conversion is again the relationship between all the opposing numbers. They form a series of ratios 1:8, 2:7, 3:6, and 4:5 that musically are all essentially the same "9" chord emanating from the center. Every pair of numbers is even—odd, keeping female-male tonal ratio in balance. The ninth center of the bagua, as an open space, represents both unity and the zero point of chaos. The hidden numbers behind the *Yijing* thus match exactly a well accepted concept in music theory: "All (of the ratios adding up to 9) cross the same zero point. Unity 1:1 is nothing but a metaphorical Zero 0:0 affirmed. The word (1:1) is silence (0:0) expressed."(Godwin) The trigram symbols themselves form mirror images of their opposing trigram, creating the image of perfect equilibrium and harmony - both spatially and tonally - between the diversity of individually sexed even-odd Numbers.

To the adept of alchemy, the visual trigram image can be a useful aid in stimulating a sense of the rhythm of the qi field. But it is ultimately the *felt* and *heard* impulse of the beats of the trigrams that is important alchemically. The yin broken lines ("--") may have been intended to

evoke a musical experience of either a silent, receptive pause, a double beat, or as a note shortened by pressing a finger down on it. The yang solid lines (“—“) would have symbolized a longer or louder beat. Some Daoists today “play” the *Yijing* by tapping out this yin-yang rhythm of the trigrams and hexagrams. Chanting the names of the trigrams is also a traditional alchemical method of causing the primal forces to fuse in the center.

The musical ratios adding up to 9 in the Fu Xi conversion from the *hetu* diagram are preserved in the number of strokes in the trigrams themselves. Heaven (3 yang lines) and Earth (3 x 2 broken lines = 6 strokes), is a 3:6 ratio of beats. All the other 6 opposing trigrams are 4:5 beat ratios based on numbers of strokes. Thus Water trigram (yin --, yang —, yin --) has 5 stroke-beats, and Fire trigram (yang --, yin --, yang --) has 4 stroke-beats, giving a 5:4 tonal ratio between the trigrams. This ratio of trigram strokes holds the Number 9 stable at the center, no matter which way the opposite symbols are read.

Table 13. Fu Xi trigram arrangement

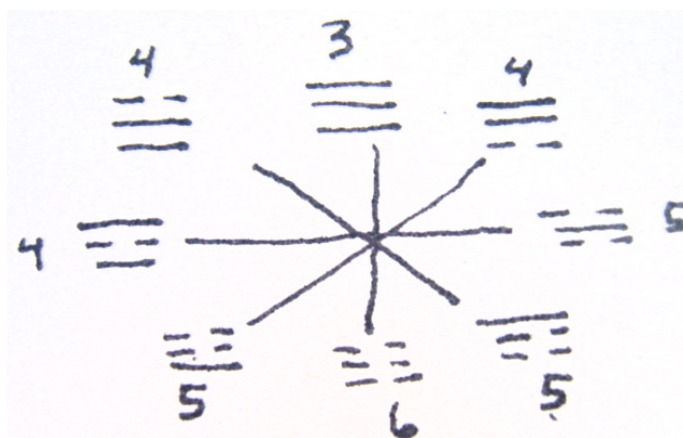


Table 13. Fu Xi trigram arrangement, converted from black and white dots of hetu Dragon diagram, suggests a 9-tone or triple-trichord musical structure radiating from an unwritten Number 9 in the center. Heaven-earth axis is 3:6 ratio, and the three other opposing trigram pairs are 4:5 beats-strokes. Yin lines (- -) count as two strokes, yang lines (—) as one stroke.

Significantly, there are a total of 45 strokes in the yin-yang lines of the eight trigrams of the *Yijing*, and a total of forty-five dots in the *luoshu* Turtle diagram. The same is true for the Dragon diagram if the center number ten is excluded. 45 is thus the addition of the first 9 prime Numbers. The Dragon diagram with the ten added has fifty-five dots. The idea that the two diagrams were once part of a single larger pattern is supported by the addition of the 45 and 55 dots to make 100 dots. They have a combined total of 55 black yin and 45 white yang dots that form two complementary triangles on a ten by ten grid. (Huang 2000). One hundred would be the Number 10 of completion and rebirth, but raised to a greater cosmic scale.

These are not just abstract games of mathematical coincidences created by some clever Chinese intellectuals in ancient times. The Cosmic numbers had sexual powers and musical-spiritual felt qualities. Were these diagrams originally abstract mathematical games onto which all these qualities were later superimposed? It seems very unlikely. As speculation, it seems far more probable that meditative adepts or shamans attuned to the power of sound created the diagrams.

These were individuals who were *listening* to the Number (and later trigram) qualities as the tone-voices of the “Interior Gods” of their body or the greater “god-tones” of planets and star beings. These Number-beats had to be maintained in balance and harmony, like any personal relationship, or one’s outer life would suffer. Even today in the West, it is more common to speak of “*hearing* the voice of God” rather than *seeing* God.

When the Turtle Chart was converted from dots to trigram strokes, it became the King Wen arrangement of trigrams. It is the expanding-contracting tonal interaction of these eight trigrams with the converted Dragon Chart that produces the sixty-four hexagrams-tones. This can be visualized as one wheel of eight Number-tones spinning counter-clockwise, inside a second wheel of the same eight Number-tones spinning clockwise. Each set of Number-tones is part of a music scale traveling towards the Origin or away from the Origin.

As the Number-tones from the two circles pass each other they briefly couple and “sound” out the sixty-four hexagram tones as recurring “time chords”, the beats of time that vibrate matter into reality. The musical importance of the *Yijing* is illustrated by an early Emperor having cast sixty-four bronze bells, one for each hexagram, tuned to the pentatonic scale. On each bell, there are nine dots, perhaps a salute to the cosmic Number diagrams.

The argument that the *Yijing* was designed as a binary counting system, with values from 0 to 7, has been shown to be impossible since the Chinese did not employ the zero as an integer until 800 c.e. (Needham, 1983). This is a case of Western perception imposing itself on Chinese culture, and one that ignores the emphasis on music in early China.

The importance the Chinese placed on sound and music as necessary to harmonizing the forces of nature is found in many ancient texts, including the Confucian classics where it was advised that musical rites be performed regularly to prevent beasts from going wild and to avert natural catastrophes. But the use of sound in establishing the trigram Eight tone harmony of the Daoist universe is perhaps most poetically expressed in a liturgical manual of a Celestial Master ritual alchemy ceremony:

Pure sound was as yet unheard, the stars were not in their place, when suddenly the (original) energies from the Three Regions gushed forth, producing the eight Notes of Harmony. (These sound energies) coagulated in the center of the Great Vacuity, as billowing clouds, constantly intermingling, wheeling and turning above the Purple Empyrean. Now floating, now sinking, in accordance with the norm (ke), being neither smoke nor dust, neither vapors nor steam, they formed characters ten thousand yards square resounding with the Eight Notes, expressing the essence of the Three (original) Energies, and the subtle manifestation of the Five Elements.

(Schipper 1985, p. 193)

The *Yijing* is the product of these primal Eight Tones forming musical chord ratios with each other. The *Yijing* is considered by one modern music scholar to be a masterpiece of overtones, with infinite possible meaningful combinations made possible by a single listener at the position in the center. Because in its underlying pentatonic Five Phase scale there is no fixed relationship between the fundamental and the notes, “every single note contains the vibration of all the rest, yet has an individual participatory consciousness.” (Berendt, 1988, p. 164) This musical

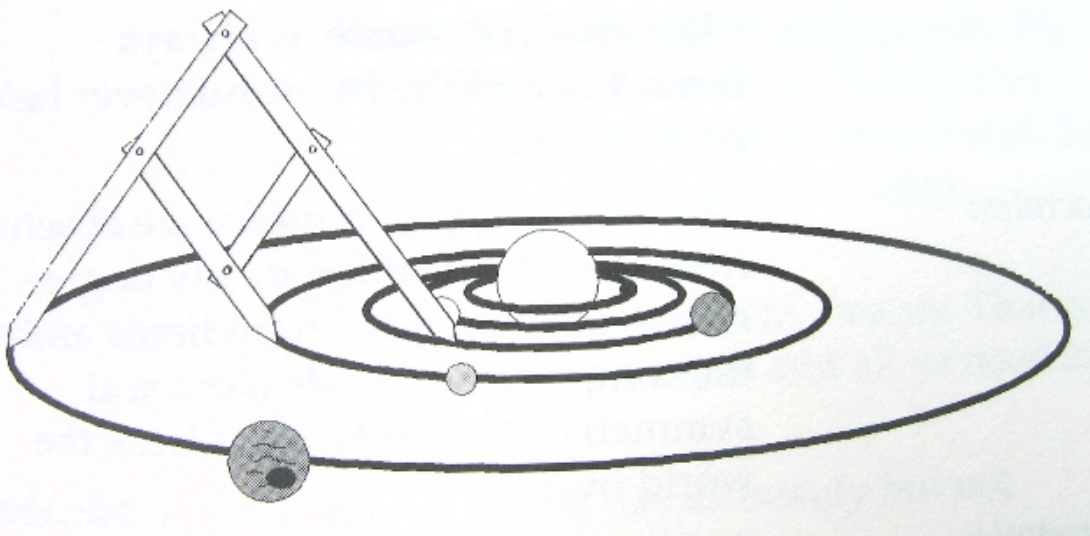
perception of ever changing overtones generated from a stable spiraling axis of Number-tones is a succinct summary of Daoist cosmology.

Planetary Orbits as Musical Scales in the West

We have established that the underlying grammar in the Dragon and Turtle Cosmic Number Diagrams and the subsequent *Yijing* formation is musical, and have Number-tone associations with the planets as the Five agents of cosmic action, led by Saturn in the center. How do we actually connect to these planets, to hear their music?

Western music theorists have connected the musical scale to the planetary orbits in a variety of ways, the most notable and successful being Johannes Kepler. In 1596 he placed the five platonic solids – the equivalent of a Pythagorean Five Elements in geometric form – in the intervals or spaces between the first six planets’ orbits. From this he obtained ratios that gave him Numbers and a musical note for each planet’s orbit. His mathematics was precise and predicted physical orbital distances between the planets that were later proved to be ninety-nine percent accurate against modern scientific measurements.

Table 14. The distances between the first six planets



The distances between the first six planets follow the pattern of a golden mean spiral, geometrically mapped as the spiral within a pentagonal (five pointed star) shape. This spiral is a universal ratio in nature: the human bone structure, leaves of many plants, and seashells all unfold in this same proportion. The golden mean is the square root of $(1 + \text{square root of } 1 + \text{square root of } 1 \text{ continued into infinity})$. As musical ratio, the Golden Mean expresses Daoist cosmology: the 1:1 fundamental tone emanates from an undefinable center and spirals out in pentatonic scales towards infinity. (Diagram: Schneider, 1994).

The tendency of modern esoteric musicologists has been to make these inaudible planetary tones audible by “octavising” them, i.e. keeping the tone ratios but compressing them down to scales suitable for the human ear. Apart from establishing reciprocal values and ability to multiply by

two, no kind of mathematical knowledge is needed for calculation of a meter, a note, or a color frequency analogous to an astronomical period:

Planetary frequencies are based on orbiting times: 24 hours for the earth, 224 days for Venus, 4332 days for Jupiter, etc. Rotations entail vibrations. In order to move from planetary vibrations to earthly music one must “octavise” between 26 and 50 times, depending on the planet’s distance from the sun. Our solar system covers a range of exactly ten octaves, exactly paralleling the range of hearing that our human ear is capable. Is this so that our inner ear can “hear” the planets? (Berendt 1988, p.88)

The Daoist alchemical adept has a somewhat different approach to planetary tones than most western esotericists. The goal of the Daoist in the One Cloud tradition is to first “feel” the five planetary tones directly inside an energy body mandala of five pearls, the same image as appears in the center of the *hetu* and *luoshu* diagrams. These tones are heard by the Five vital organ spirits inside the body, who focus their listening with eight-sided baguas of different colors radiating out as antennae in all six directions from the heart. Saturn is seen as a fusion point in the center, sun is above, earth and moon are below, and Jupiter, Mars, Venus, and Mercury occupy the four cardinal directions.

The adept in effect tunes his physical body to the music of the planetary spheres. The planets become the adept’s vital organs in the first stage of cosmic interiorization. The second phase involves fusing the essence of the planetary beings in an interior cauldron space, and using that essence to communicate with higher solar and stellar powers beyond the planets.

There have been a number of Western esoteric attempts at uniting body and Number, but they lack the sophisticated Daoist energy map of meridians, vital organ spheres, and deep qi channels inside the body. Gurdjieff insisted that his students dance the nine Numbers of the Enneagram. The Enneagram may be linked in prehistory with the nine numbers of the Turtle, which was also “danced” ritually by certain Daoist sects. The anthroposophy founder Rudolf Steiner created Eurythmy, a system of simultaneous body movement and tonal expression designed to harmonize the physical body with the soul frequencies of music.

Steiner mapped the lengths of body limbs as musical ratios and tried to lay a foundation for a new alchemical science that he predicted would arise to take modern material science in a spiritual direction. He saw the inner musical tones as originating from the zodiacal stars, historically descending to the planetary level where they became the soul stuff of modern man, who had to consciously connect them to his body and Earthly life before re-ascending with them to the stars. (Godwin, 1989) Steiner’s vision was long ago realized by the highest Daoist adepts of inner alchemy using the Cosmic Number-tone diagrams. This brings us to our final discussion.

Alchemy as Inner Listening to Planetary Music

We associate music directly with our soul, but not with our body. Indeed, we know basically nothing of the relationships that might exist between music and the inner constitution of our body. We do know and feel that our soul life is linked with, even dependent on the body. How this relation is actually formed is a mystery. During the modern era psychological and physiological research has put forward a vast number

of theories, yet none has been able to explain these relationships satisfactorily. For science, the body-soul problem has remained an unsolved riddle to this day.

-Hans Erhard Lauer, in *Cosmic Music* (Godwin 1989)

The Chinese word for musical harmony is *he*, but is used for many things, such as describing a delicious meal. *He* implies that the musical rhythm of all life is central. The physical process underlying all musical harmony is founded on the faculty of hearing, the ear, and our power of listening. It is so primal that we often forget hearing is involved in much of our feeling and tasting in life.

Tai chi chuan (*taijiquan*) players at an advanced level learn to “listen” to their opponents qi in order to anticipate their next move. The practice undoubtedly arose from the much older inner alchemy, which trains the adept to “listen” to the entire range of Nature’s Number-tones. The inner alchemist listens so deeply that the adept’s body actually becomes a musical instrument through which the Dao plays its natural melodies. The adept listens to this natural concert and joyfully plays back his individual signature tones by changing the shape of his energy body, which functions much like an etheric musical instrument.

Before one can listen to subtle qi tones, one has to clear out the “noise pollution” from one’s body-mind. This noise pollution takes the form of distracting inner voices, the proverbial “monkey mind”. One of the oldest longevity practices in China are the Six Healing Sounds, used to clean out the five vital organs and triple warmer meridian. Many scholars miss references to these healing sounds in ancient texts and translate the sounds as if they were just strange irrational noises arising from the chaos of the Dao.

The healing sounds are recorded in the Mawandui silks of qigong exercises dating to 216 b.c. (Leung, 2001), as well as in the third century b.c. *Zhuangzi*. They are advocated by the alchemist Ge Hong in the third century c.e.. They are in One Cloud’s first alchemy formula, still being practiced in the 20th century. They are currently enjoying widespread popularity in the 21st century amongst western practitioners. Were these healing sound practices originally linked to Cosmic Number diagrams?

Most likely they were. One argument is that the lung healing sound, *si*, is also the Chinese word for West and the number Four. In the Dragon Chart the Number four is in the West position and is linked with the element of Gold-Metal, ruler of the lungs. Traditionally, each of the sounds was associated with the specific color, vital organ, and direction associated with the cosmic Number diagrams. This offers further evidence for a connection between the origin of the Number diagrams and alchemical practice.

One Cloud’s alchemical formulas and the hetu/luoshu diagrams offer a perfect example of the link between alchemical practice and the Cosmic Numbers. One Cloud’s teachings as transmitted by Mantak Chia do not explicitly mention the cosmic diagrams by name. But One Cloud’s seven formulas are so deeply embedded in the same Numbers, in the same way that Verse 42 of the Daodejing is, that their foundation in the Cosmic Diagrams is clear.

This is especially clear with the central number 5, depicted graphically in both diagrams as five circles connected by lines to form a cross. It is exactly this simple mandala that One Cloud placed inside his body, as five “pearls” or spheres of influence, one for each of one of the five

“interior gods” or five vital organ spirits (*wu jingshen*) of the heart, spleen, lungs, kidneys, and liver, and linked to the colors and directions of the diagrams. This connection is not spatially apparent if the Cosmic Number 5 is viewed as the Arabic numeral 5. It must be seen as the five dots in the center of the cosmic diagrams.

These five spheres in a cross pattern (+) appear throughout the progression of One Cloud’s seven formulas. Each “pearl” has a different color and tone which express its personality. With each formula these five “body gods” resonate or “sing” to a different set of natural forces or energy pathways, ranging from biological functions and emotional qualities in the first formula, sexual polarities in the second, directional earth and sun-moon forces in the third, planetary forces in the fourth, stellar forces in the fifth, and dimensional heaven-earth forces in the sixth.

The structure of these harmonic “fifths” moving up the scale of human experience from body to stars is inherently musical, and a clear reflection of the Chinese use of the pentatonic scale. Each pearl within the Number 5 is associated with a column of *qi* that rising or falling in a spiral that the adept “listens” to:

Table 15: Top View of Cosmic Number 5 in center of Turtle and Dragon diagrams. Each sphere represents a front-back, left-right polarity of core channels of five circles/spheres placed inside the body of the alchemical adept.

	Falling-yin tone	
	Chest	
	○	
Left torso	○----○----○	Right torso
Rising-yang tone		Falling-yin tone
	○	
	Spine	
	Rising-yang tone	

The vertical cross “+” is also the Chinese character for the number 10, the number of completion. In the original *hetu* diagram this “+” was apparently first put as an “x”, the character for five, but later changed. (Cammann, 1985) This “x” shape is identical to that of a double vortex shape within the body, which is commonly used as One Cloud’s formula in the form of intersecting vortex shapes interiorized within the body. Each vortex is created by energetically forming a three dimensional eight-sided bagua (like an eight-sided cut diamond) pointing at the center of the *dantian*. These opposing vortices are used to gather in and radiate out the flowing *qi* frequencies of all the directions. They are ultimately all fused into a single point within the lower *dantian*.

Table 16. Side View of Cosmic Number 5 as vortex of alchemical forces.

Yin vortex (negative-contracting)

0 0

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Yuan force 0 (neutral-stabilizing)

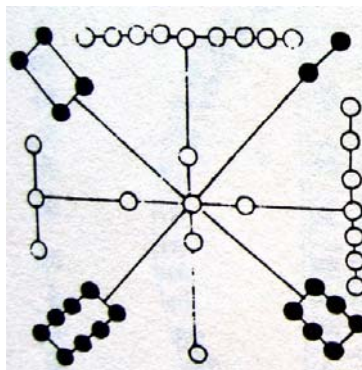
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0 0

Yang vortex (positive-expanding)

If you overlay or combine the “+” and the “x” (the 10 and the 5 dots), you get an eight pointed star in the center of the Dragon Chart, perhaps an intimation of its later conversion into the Yijing eight trigrams.

Table 17. Hetu Turtle chart.



Cosmic Numbers 5 (“x”) and 10 (“+”) as Chinese characters superimposed atop each other to form bagua shape with eight spokes that later became the 8 trigram forces-tones. The 5-odd in center (written as a “x”) controls the even Numbers 2,4,6,8, and the 10-even (written as “+”) controls the odd Numbers 1,3,5,7.

Importantly, in One Cloud’s formulas the five circles or spheres become five core channels running vertically from head to foot, and extending infinitely below into Earth and above into Heaven. These five channels are counted as two trinities sharing the central core channel as a common fusion point. One is the front-middle-back channel trinity (familiar as *renmai-chongmai-dumai* in acupuncture, but with the *chongmai* as deeper in the body and thus inaccessible to needles). The other is the left-center-right trinity of core channels that run vertically through the left, center and right sides of the arms, legs, and center of torso.

My speculation is that these core channels were based on Cosmic Number diagrams, and were part of an older system of internal alchemical meditation and self-healing that existed before the 12 later surface meridians were added with their many points. These deep channels run through

the center of the bones where the “soul substance” of the body, *jing*, is stored, and cannot be reached by acupuncture needles. These five deep core channels are still used by some esoteric qigong and internal martial arts teachers, and can be activated by rhythmically shifting the weight of the body and simultaneously concentrating the mind and “listening” to the rising or falling flow of qi tone-frequencies.

Vital Organ Spirits as Mediators of Planetary Tones

The link with One Cloud’s alchemical process of “inner listening” to the qi tones of Nature is even more clear in the Turtle chart. The odd or yang Numbers (1-3-5-7-9) from the cardinal directions of the Turtle diagram define the number-frequency of the body spirits (*wu jingshen*) in the adept, each with their own virtues or powers. In One Cloud’s fourth formula, each “soul group” listens to the planetary being in its direction, and mediates those planetary qi-tones into the central Yi shen of the spleen-pancreas and Earth agent Number 5. The line of resonance extends beyond the planet to the quadrant of fixed stars beyond, but the planets, being closer in vibrational frequency to the earth, are what control human destiny through their influence on the body spirits.

Table 18, Luoshu Turtle with Number-as-body spirits associated with direction.

	Heart (<i>xin</i>) Fire South 9 as fullness of essence (<i>xing</i>) 9 sensory openings 9	
Liver, Wood 3 3 celestial spirits (<i>hun</i>)	5 collective mind will “Yi” Spleen Earth	7 West Gold Lung 7 earthly spirits (<i>po</i>)
	1 North Water 1 regulates destiny (<i>ming</i>) Kidney “Zhi” (will to embody)	

Only cardinal yang numbers are shown.

A complete explanation of these body spirits and the Daoist view of the human soul as a collective rather than a single entity is beyond the scope of this paper. Their influence in Chinese

culture is so deeply embedded that volumes could be written on the biological-medical, psychological, and spiritual functions of these five body soul groups linked to the 5 major vital organ-spheres. The human psychic structure would always be defined by the Cosmic Numbers and the necessity for them to maintain musical qi-tone harmony.

Suffice it to say that the energetically polar opposite “teams” of 3 Hun Liver celestial spirits and 7 Po Lung earth spirits are often at odds within themselves and between each other as to the major decisions in life to be made by the human soul collective. Life situations – or internal alchemical operations – give them an opportunity to learn to live in harmony. The 3 and 7 numbers are also linked with the rising sun and setting sun and thus regulate the horizontal axis of life’s transitions.

The Number-Time flow or vibrational frequencies available to each person from the macrocosm are defined by many different forces in Nature, but the role of these internal soul teams is paramount as to what is received and what is expressed. The 3 Hun and 7 Po must eventually integrate themselves into a single 10 Number if the adept is to achieve enlightenment and eventually immortality. Alchemically the adept speeds up this process by merging the planetary influences into his central cauldron, stabilized by earth Number 5.

Likewise another pair of body spirits are the Number 9 Shen of the heart that regulates the soul essence (*xing*) and the 1 Zhi spirit of the Kidney regulating destiny (*ming*). They represent the classic Water and Fire relationship, and must integrate into a 10 tonal frequency to rebirth a new harmony between vertical axis of Heaven and Earth, as they are linked to high noon and midnight.

The 10 Number is calendrically embodied; the Five Phase planets (counted as five fingers) multiplied by Yin-Yang (sun as left and moon as right hand) to give the ten celestial stems. The alchemical adept must harmonize with the larger flow of outer Time at the same time he/she is resolving personal qi-flow issues in inner Time. This is why these outer Number forces of Nature are interiorized; once inside the “energy body” of the adept, they can be shaped and harmonized. This is where the planetary Number-tones are so influential, especially Saturn, as the ruler of Time and human destiny in the center of the Turtle chart.

Modern Daoists in the Quanzhen alchemical tradition largely ignore the Numbers themselves in the Turtle Chart. (Wong, 2000). But in my conversations with modern adepts, these ancient Number relationships have simply been reduced to *hun-po* and *xing-ming* pairs of forces to be harmonized. The Numbers of the Cosmic diagrams have also been replaced by trigram symbology for many adepts, and their origin is simply forgotten, although the number associations with the body spirits remains well known.

The primary method of alchemical communication between the adept and the planetary Number tones is by resonance (*ganying*). On a physical level, resonance is made obvious if you place two tuning forks at a distance from each other. Strike one fork, and the other will begin to tone audibly if it is in tune with the first. On a human level it is easy to recognize if you resonate with someone; you feel comfortable or not in their presence. The adept must learn to internally buildup the frequency of qi flow in his body in order to create an open line of communication that is able to entrain with the frequency of the planets.

Primacy of Kidney Spirit in Listening to Planets

The Water Zhi spirit kidney is ultimately the most important of all the five “interior gods”. As the Number 1, Water is the guardian of the Origin, the oneness of all Numbers-tones. In the body the portal opening to the Origin is the ming-men, often called the “moving *qi* between the kidneys” and the “door of destiny”. This is the energetic doorway between the formless and form worlds, where the body’s *yuan qi* is converted into yin and yang *qi* for the deep and surface meridians to deliver energy for the outer functions in life.

The Water Number-tone of the kidneys also rules the “shape” of the body’s substance (*jing*), which it stores deep inside the bones as our sense of deep self, and which is in constant resonance with the bones of our ancestors. The shape of the *jing* is ultimately a vibrational frequency that carries ancestral (genetic) information that imprints our blood, which is manufactured in the bones. The blood thus transmits our deepest desires in life, notably our sexual and survival drives. In short, the Kidney spirit has the deepest control over our destiny in life.

Certainly all the vital organ intelligences and their sensory functions shape the unfolding of our destiny, but the Water spirit is the first amongst equals. Hence Daoism is known as the “watercourse way”. Much of what we call “feeling” is actually inner hearing transposed into internal body vibration. The substance of feeling may then be further amplified or shaped by the reactive energies of other vital organ intelligences. We call this amplification of feeling “emotion” in the West. The Daoist explanation for its inner functioning seems as reasonable as any offered by western psychologists, but here is integrated into a tested energetic paradigm.

Most importantly, the Water spirit of the kidneys controls our inner and outer ear and our power of listening. The Daoist perspective is the ears are the “upper kidneys”, and the opening of the kidney spirit Number 1 into the world. The kidney spirit can turn its hearing power to the outside or to the inside. When inner hearing is focused, the ability to “hear” the resonance between similar or dissimilar types of *qi* flow is a faculty that can be trained. I had a Chinese friend who was trained from a young age in China using *qigong* to sing operatic notes from different parts of his body. He could produce the most amazing and unearthly sounds, and unlike most opera singers, needed very little time to warmup his vocal chords.

There are numerous methods of Hindu meditation that focus on inner listening to the “shabd” or sound current, sometimes called Nada Brahma, the sound of the creator. One major difference between Daoist inner alchemy and these practices is that Daoists train to listen from the whole body, and especially from the low resonance centers of the belly or lower dantian. In the Daoist view, starting meditation from the upper dantian or third eye, as most Indian methods do, produces a kind of enlightenment but not immortality. For that, the listening must also occur at the mingmen, between the kidneys, where prime matter (*yuan jing*) is converted into the breath of life, *qi* and thence into spirit, *shen*.

It is the inner ear that can internally “octavise” or “compress down to human octave size” the subtle tones of distant vibrating planets and especially the sun. This is not theoretical. I have described elsewhere my own experience of feeling an inflamed liver as the effects of Jupiter being hit by bits of a comet in 1994, and the influence of sunspot activity on heart rate. (Winn, 2001).

On the physical level this is not so different from dolphins echolocating or elephants listening to infrasonic tones sent through the earth from miles away that are inaudible to humans. More to the point, NASA space agency is selling music CD's of solar winds hitting the earth's magnetic field and has transposed the Number- tone frequencies of all the planets into audible music.

Closer to the subject of measuring human qi flow as sound frequencies are tests on qigong masters in China using modern scientific equipment. When asked to emit qi, the ultrasonic and infrasonic sound frequencies emitted from their body was the most dramatic of seven different factors that were measured, ranging from photonic emission to galvanic skin shifts. Qigong masters were found to emit one hundred times higher decibel rate of infrasonic tones. As a result the Chinese now market a "qi machine" that emits artificially raised infrasonic frequencies for use in healing. (Johnson, 2000, p.917)

Modern scientific research has shown that hearing is the most "scientific" of all our senses in its ability to accurately measure a wide range of frequencies and can easily pick out a discordant note from a vast range of sounds. It can accurately and instantly measure up to ten octaves of sound compared to vision's limited ability to distinguish two octaves of light. (Berendt 1988)

But these scientific correlations are not really important to modern Daoist alchemists, who are not interested in fitting themselves into reductionist explanations of modern scientists. The faculty of Number 1 Primal Water spirit is focused on hearing the music of the spheres as a dialogue with the living planetary beings that are brothers and sisters to the planet earth in their harmonic orbits around the sun. In this sense, all the planets are mediating solar tones radiating from the center of the solar system as co-players in a vast cosmic orchestra. Coincidentally, modern science confirms that over ten million sound frequencies are being emitted by the sun, but have no explanation as to what function they might serve in nature. (New York Times, 1988)

Adept's Personal Relation to Planetary Spheres

The purpose of the Daoist alchemist in attuning to the planetary and solar music is simple. The planetary bodies are the messengers of Time, the modulators of the solar tonal frequencies that control the rhythms of human and all earthly destiny. The alchemist has a single destiny in mind, returning his bodily essence in transmuted form back to the Origin, in order to reemerge renewed. He must pass through the lunar, solar, and stellar phases of evolution on this journey. Failure to listen to the music of these planetary spheres creates a separation between the body of the adept and the body of Nature. If the planets go unheard, one's worldly destiny is unconsciously controlled by their forces.

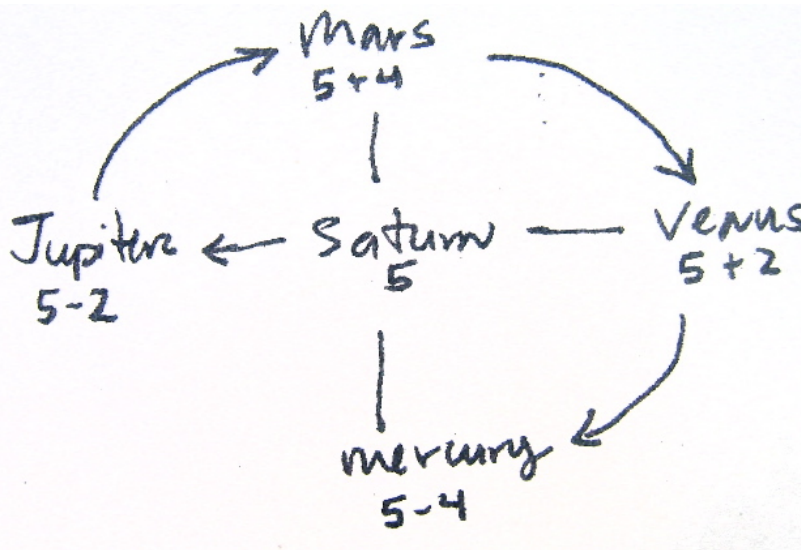
In alchemy, listening to the music of the planetary spheres is not a passive state, it is a dynamic act of participation in a higher frequency of transmutation. To boost their personal tonal frequency to a level of subtlety that can communicate with the planets, there are two steps in One Cloud's fourth formula, the Greatest Enlightenment of Water and Fire. One is receiving an oral transmission from someone who has attuned to the music of the spheres. Oral transmission just means the student's untrained inner hearing faculty, effectively the kidney spirit, enters into resonance with the teacher's frequency of intentional listening. It is more about the student learning how to listen than it is about the teacher sending anything. The sun and planets are doing most of the tonal "sending", the teacher just helps the student to internally "octavise" the planetary frequencies so they can be internally digested.

Birthing Tones in the Mysterious Female of the Vesica Piscis

Second is a method of “grasping” and holding stable the elusive high frequencies of a planetary being such as Saturn. This is done by listening to two polar opposite tonal frequencies in the adept’s cauldron until a third tone arises. Here the Turtle diagram is the guide. The Po souls Number 7 will have a natural affinity for communicating with Venus, as both are metal/gold frequencies. The Hun soul Number 3 will be able to contact Jupiter most easily, the heart shen is linked to Mars, the kidneys spirit to Mercury.

After the planetary tones resonate with the respective body spirits, their frequency is converted into internally heard and felt tones by the kidney spirit. The planets are listened to in pairs that sexually couple halfway. Mars 9 (Number 5 +4) and Mercury 1 (Number 5-4) will find a common midpoint in Saturn 5, Jupiter 3 (Number 5-2) and Venus 7 (Number 5+2) will likewise find a midpoint in Saturn. The adept is not doing “mystical math” in his head during meditation; he is simply listening in two directions at once, until a central harmonizing tone appears.

Table 19. Planets as paired tones, fused into Saturn-5 as central earth cauldron.



Arrows show orbital path of most distant to closest to sun.

When these four planetary tones are fused into the center of the adept’s cauldron, the spirit or essence of Saturn appears as a balanced tonal form. By this fusion of the five cardinal Numbers the adept energetically “completes” Saturn so that it is no longer a source of resistance and struggle with body/matter. Saturn instead becomes a tone-essence in the adept’s core channel that is one octave higher than Earth’s essence, which was cultivated in One Cloud’s third formula, the coupling of the sun and moon. This Saturn essence now serves as a gateway to even higher octaves of the quintessential earth element within the sun and pole star along the vertical axis of the cosmic Turtle. Thus the adept’s earth (Number 5) gradually moves up the harmonic scale of his core channel, giving substance to increasingly subtle cosmic forces.

This “horizontal” coupling of the planets to the center of the terrestrial Turtle diagram is thus followed by a second “vertical” alchemical coupling of the inner circle of Number-tones on the celestial Dragon diagram. This practice is called “gathering the three fives” and is essentially a method for reducing the Five Phases down to their original essence as a primal yin-yang-yuan trinity. Primal Fire is gathered by adding the *hetu* Number-tones of 2- Fire and 3-Wood to form one 5 with affinity to the hidden yin fire in the Earth below.

Primal Water is gathered by adding the *hetu* Number-tones of 1-Water and 4-Gold to form a 5 with affinity to the yang water hidden in Sun above. The third 5 of Saturn created in the first step serves as the cauldron space for this second coupling. The second step couples the “yang within the yin” – the fire within the Earth and the “yin within the yang” – the water within the Sun. This practice is very powerful, and dissolves all past ancestral patterns and balances any future astrological influences before they arise.

This coupling of planetary tone-spheres occurs in the geometric shape of the vesica piscis. The oval opening formed inside two coupled spheres is called the “mysterious female”, an obvious reference to the female vagina in its cosmic and pure energetic form. It is the silent inner space of the adept’s cauldron where a new tone-energy can be felt and birthed.

Table 20. Vesica Piscis is used as the central internal image in One Cloud’s system of alchemy.

QuickTime™ and a TIFF (LZW) decompressor are needed to see this picture.

The “inner eye” is the Mysterious Female where the essence of water-fire, moon-sun or any polar pair of planets couples and crystallizes into yuan qi, the 1:1 fundamental tone. Here the trigram Fire is below, trigram Water is above, forming #63 hexagram of Yijing, “Before Completion”. Completion is achieved only by returning to fundamental tone in the center-womb.

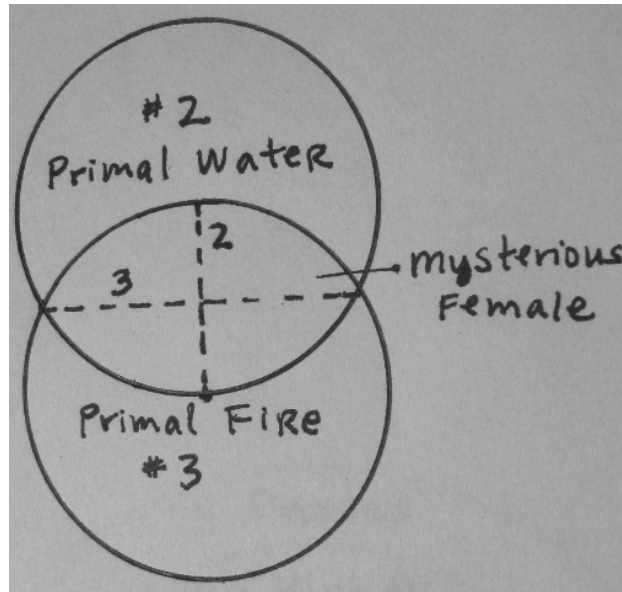
This newly birthed third essence is shaped from a confluence of outer *yin-yang* planetary tone-forces together with the fundamental tone flowing in the axial core channel as *yuan qi*. This third

tone binds together any two polar tones (such as male-female, yin planet- yang planet, or planet-sun) into a new frequency. This has been well described in esoteric musical theory:

Whenever the two forces of contraction and expansion meet and are held in some proportional balance, a being arises – and a tone is sounded. Every being is both a number and a tone, both quality and quantity, both existence and value. All have the same root: the originating 1:1 (fundamental) tone that represents ...the Creator. (Godwin, 1987 p. 191)

The geometric shape of the vesica piscis, when transposed into musical ratios, creates a tonal ratio of 2:3, the width : height ratio of the oval of the mysterious female. This is again the ratio of the harmonic fifth used in China's pentatonic scale. 2:3 is also the ratio used by Pythagoras to create a tonal zodiac of 12 notes spread out over seven octaves of "fifths", and 2/3 is the only fraction for which the Egyptians had a glyph. (Schneider) The alchemical vesica piscis also embodies the holy Daoist trinity of Numbers, cited in verse 42 of the Daodejing, The One (fundamental tone 1:1) generates the original Two female and Three male, that collectively birth the ten thousand things from the tonal womb of the mysterious female.

Table 21. Vesica Piscis

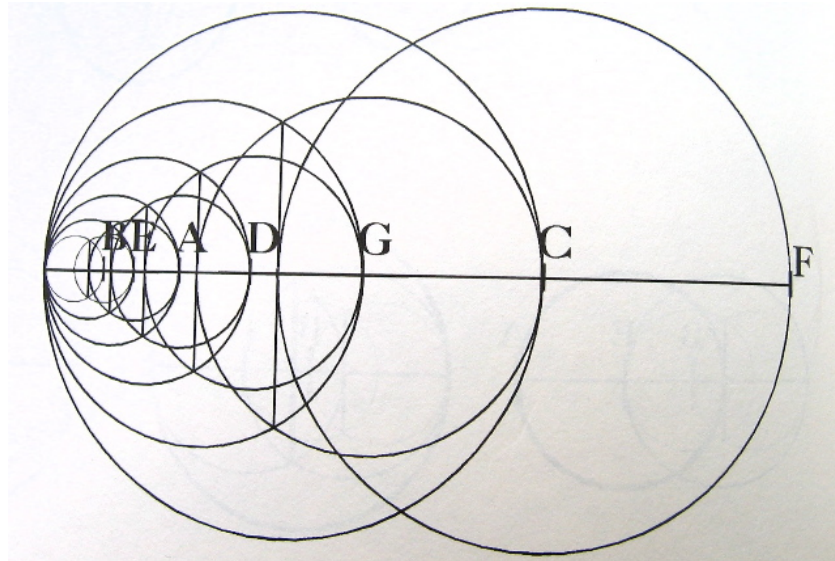


2:3 tonal ratios of pentatonic scale radiating from the 1:1 fundamental tone, the center crossing point of mysterious female, is expressed in geometry as a spatial ratio.

In One Cloud's *Seven Alchemy Formulas for Immortality*, there are multiple vesica piscis shapes layered into the same time and space within the adept's inner body cauldron. The vesica piscis geometrically can generate a series of larger vesica pisces, within which can be drawn an infinite series of pentagrams and steady harmonic octaves. The Number 5, at the center of the hetu and luoshu diagrams and the Daoist adept's alchemical cauldron, is the only Number-tone that has

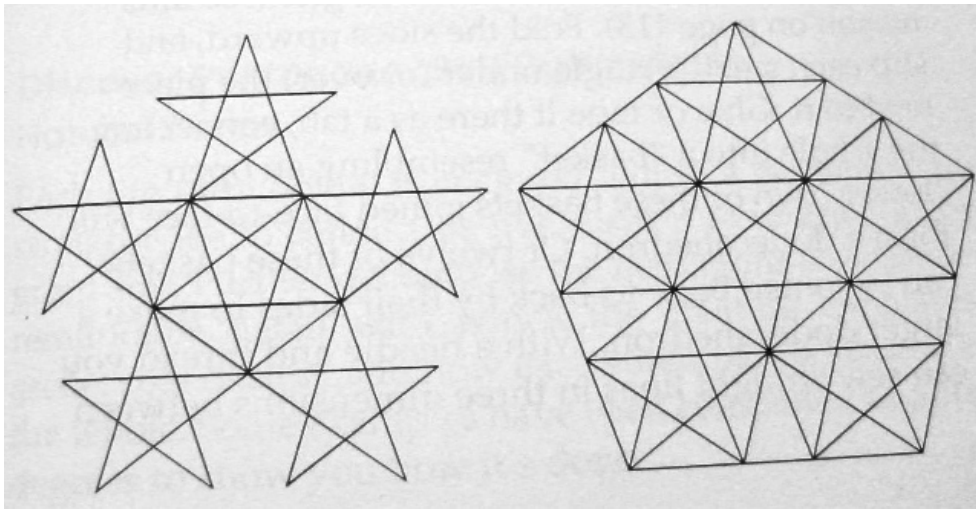
the magical geometrical and musical ability to infinitely reproduce itself in both Space (geometry) and Time (music).

Table 22. Number 5 as Time-music.



Multiple nested vesica piscis as series of 2:3 expanding harmonic ratios of pentatonic fifths. These fifths emanate from the 1:1 fundamental tone, creating an infinite number of possible other musical ratios. For example, a scale of rising perfect fifths can be notated by a mirror image scale of descending perfect fourths – the same notes, but placed on different rhythmic scales. (Source: Schneider, 1994)

Table 23. Number 5 as Space-geometry.



The pentagon or pentagonal star is the only shape that has the power to infinitely “regenerate” itself equally in all directions. The pentagons can shrink infinitely “in” to the microcosmos or expand infinitely “out” to the macrocosmos. This power of 5 is expressed in the Golden Mean as a spiralling universal constant, and in the human orientation of four directions originating from a fifth center. (Source: Schneider, 1994)

The Five Phase and Yin-Yang musical principles (which divides out into eight tone trigrams) built into the cosmic Number diagrams, thus appear to be universal principles. What the Daoist alchemists have added are practical energetic channels in the body and soul frequencies of the vital organs that qualitatively link by harmonic resonance biological, psychological, and spiritual functions. Each layer is a higher octave of yin-yang tonal forces of shen and jing, spirit and substance, which successively birth a third tone, the immortal child or inner sage of the Daoist adept. Eventually this immortal child-tone, cultivated within the adept, presences itself by “singing” the song of the true self, the authentic human voice of the Dao (*zhenren*).

Conclusion: What is the future of Inner Alchemy?

The Daoist science of internal alchemy formulas of One Cloud, spread by modern media and a large global network of a thousand Healing Tao instructors, are today being studied by tens of thousands of Westerners. It is likely more Westerners are practicing some form of Daoist *neidangong* than Chinese. It is new and still mutating in the West, and may likely combine with other disciplines.

Inner alchemy’s focus on deep exploration of the flow of consciousness in the human body may offer an elegant and grounded model for the integration of science and religion through its methods of opening communication between body and soul. It has a potentially valuable role to

play in what can be loosely described as an evolving, human-centered, modern global sacred science that is absorbing influences ranging from ancient alchemy to modern physics.

The time is ripe for a new alchemical science to emerge centered on humans rather than external technology. Popular science writers like Fred Alan Wolf have titled their latest books “the New Alchemy” and mix cabala with quantum physics. Mircea Eliade noted that historically, all secret initiatory guilds eventually become public. Greek medicine was once taught only to initiates, but today is an open science.

In the past, inner alchemy was kept secret lest it be abused by persons of low character; the fear was that heaven might be harmed. The issue of keeping inner alchemy “secret” is irrelevant today. Modern science has already discovered the secrets of external alchemy, It can create artificial gold in the laboratory. It learned to split the heavy metals of uranium and plutonium in their spiritually un-evolved state, thus producing nuclear weapons of destruction and “dirty” radiation. What worse could happen if the peace and joy arising from inner alchemy were unleashed on the public?

Modern science-educated westerners would do well to remember that internal alchemists have not been proven wrong in their notion of refining the substance of the soul by accelerating the forces of Time. By contrast, modern science has failed in its quest to find “prime matter” in a roiling mass of subatomic particles, and is still groping for the center of Time in an Intergalactic Ocean of Dark Energy. But there is hope, as scientists “listen” for the overtones of the Big Bang—they may accidentally hear the inner music of the spheres.

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