

# Tao and Golden Ratio: A Scientific View of Contemporary Acupunctural Principles through Geometry

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How to cite this paper: Inchauspe, A.Á. and Arakaki, E. (2023) Tao and Golden Ratio: A Scientific View of Contemporary Acupunctural Principles through Geometry. *Chinese Medicine*, **14**, 95-154. https://doi.org/10.4236/cm.2023.143006

Received: April 4, 2023 Accepted: August 8, 2023 Published: August 11, 2023

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## Abstract

It is universally accepted that the philosophy of the Tao is the essence that animates the Chinese Cosmogony. Therefore, in last decades I have tried to consolidate its scientific background, looking for solid explanations through Exact Sciences ("*Between Heaven and Earth*" *Scientific Basis of the Action of Shao Yin: Lightning's Physical-Mathematical Analysis*"; "*Is Traditional Chinese Medicine Definitely an Exact Science*?"; "*Euclidean Geometry and Traditional Chinese Medicine. Diving into the Real Origin of the Five Elements*"; "*Solitons: A Cutting-Edge Scientific Proposal Explaining the Mechanisms of Acupuntural Action*") Currently, research on Chinese medicine leads us—with Dr. Erica Arakaki, collaborator and assistant—to verify through a profound bibliographic review the application of Fibonacci's Golden Ratio in the constitution of T'ai Ji Tu, adding yet more substance to the hypothesis of Acupuncture and demonstrating how said Chinese Ancient Science is not only an empirical knowledge but a wisdom derived from the most ancient exact science: Geometry.

# **Keywords**

Five Elements, Soliton, Golden Ratio, Tao Diagram

# **1. Introduction**

While carrying out further research on Chinese Traditional Medicine during the

past decade, I came across an interesting relationship with the most ancient formal science known to us: Geometry. The apparent mere coincidence between **the Five Elements** was stated by Euclid and Zou Yan (both born around 350 BC) [1]. A deeper analysis led me to discard an apparent chance coincidence to start searching for coincidences. When doing so, I started to find data within TCM which sustains the notion of concurrence. These constitute the main contribution of this work, in which my assistant and disciple, Dr. Erica Arakaki, have collaborated. The findings so far add to the hypothesis that Acupuncture derives from the most ancient exact science we know: Geometry.

#### 2. Background

During the Second World Congress of Traditional and Alternative Medicines held in 2014 in Beijing, I presented the paper "*Is Traditional Chinese Medicine an Exact Science*?" [1], which earned me an invitation to the Beijing International Acupuncture Training Center to speak about the first findings on the subject. In 2016, I returned as foreign visiting professor to the National Academy of Chinese Medical Sciences to present the contribution "*Reconciliation vessel, a pathway to increase survival rates and its energetic integration with shao yin level*" [2], a new Extraordinary Vessel discovered after millennia in the very heart of TCM, which was published in the *Journal of Acute Disease* (Haikou, Hainan, China).

The wise Greek had already crossed my research path to provide support to Therapeutic Acupunctural Resonance [3] [4], a new therapeutic modality that adds the production of solitons by means of sounds in order to stimulate the needles during acupuncture sessions. Not only did I describe it in great detail (cf. *"Solitons: A Cutting Edge Scientifical Proposal explaining the Mechanisms of Acupunctural Action"* [5]) but my quest still stands against those who consider this wonderful ancient "healing art" to be mere empirical knowledge, filled with foolish metaphors and allegories, far away from its scientific precision.

A brief review of my previous research shall lead us to the conclusion that there exists a close relationship between the Golden Ratio and the genesis of the ancient Tao diagram—a universal graphical referrer summing up all the Chinese cosmogony laws—which we will demonstrate in the following work.

#### 3. Materials

#### 3.1. Materials (a): Chinese Background about the Tao

For more than forty-eight centuries the Chinese have unquestionably defined what, for them, is the "*Principle of Principles*", namely,

"All that exists is an expression of T'ai Chi. Each small particle is T'ai Chi. The vast universe is T'ai Chi. A unique event is T'ai Chi. The gathering of small events is T'ai Chi. The dispersion of the vast universe is T'ai Chi. Nothing exists beyond T'ai Chi, nor excluded from it. Consequently, the individual body is also T'ai Chi. T'ai Chi is the comprehensive truth of the Universe... There exists a natural order of things which cannot be infringed or discarded' [6].

According to the Taoist version of the Universe, all that exists originates in Tao and returns to Tao. This process of **change and inter-transformation** is the one responsible for the movement of things and the resulting prediction is one way of predicting the future thanks to the rules governing such changes.

Following the ideas presented by Xi-Tan Li and Jiao Zhao in "*Recent Advances in Theories and Practice in Chinese Medicine*" [7], the "vitalism" extending from the human microcosm to the Universe macrocosm finds its bases in the notion of **Chi**. The resulting cosmic energy comes from the existing interaction between Heaven and Earth, which emerges from a principle of Void or *absolute Yin*, and starts to become manifest through the creation of the **Elements** generated from it, in other words, as a *kinetic revelation*.

Right from the very moment of Creation—a concept that is identical for most religious dogmas—a Big Bang expressed the genesis of all that lives by means *light and sound* (photons and phonons). That was possible because of a first movement: a property that is characteristic of the radiant Yang, thus originating the **Five Movements** (**Figure 1**) [8] such polarity generates. From then on, all that is created—be it constellations and stars, their radiations towards the planets and their animated content—all started moving in an exquisite balance between both Essential Forces (**Figure 2**) [9].



Figure 1. Geometric generation of the basic polygons [8].



**Figure 2.** Platonic solids and their relation with the 24 reduced Fibonacci numbers [9].

The development of Life was made possible in this way, following the **Qi flux kinesics**, which provides an essential sense to all that is animated: from planet orbits to seasonal periods, from human energetic circuits (activated in the acupuncture meridians) to neuroendocrine cycles, biochemical cell reactions in cascade or atomical and sub-atomical orbitals [10].

# **3.2. Materials (b) Energetic Background: Qi Manifestation** through Yin and Yang

"Tao does not exist at a certain time or in a specific place but it is everywhere, at all moments, now. From the perception of the vision developed by All, the the first manifestations of The Subtle were called Yin and Yang" Hua-Ching Ni: "Hua Hu Ching: las últimas enseñanzas de Lao Tse" [6].

Chinese philosophy developed using general cosmogonic notions, always ruled by two basic rules, namely, the **Yin/Yang** theory and the Theory of the **Five Elements**. Right from the beginning of Chinese history, the mythical wise man, Fu Hsi, stated: "*Every movement generated in the Universe derives from the union between Ying and Yang*" [11]. Those two fundamental energies shall produce the characters identifying the *Eight Paths* or *Trigrams* which symbolize the *Extraordinary Vessels of Chinese Medicine*. Thus, the sequential alternation for the processes of all living beings is determined. From this derives another famous quote by Fu Hsi, recalled by the Yellow Emperor: "*The secrets and mysteries of existence are to be found in the movement of trigrams*" [11]. According to Prof. Pablo Taubin—founder of the Argentine Acupuncture Society (*Sociedad Argentina de Acupuntura*) in 1955—following this ancient Oriental philosophy,

"... man—the energetic compendium of the Universe—is a microcosm subjected to the laws of the macrocosm which depend of the action of two complementary and opposing essential forces that determine the quality of things and facts. These, in themselves constitute an All, they possess confirmatory properties and, together, they constitute the bipolar condition of a cosmic primary energy called Qi<sup>\*</sup> [10].

In fact, Prof. Taubin was providing the conceptual basis for the inescapable reciprocal need of this pair of opposites and their extremely intricate complementary nature. These opposites, universally known as *Yin* ("*the foggy*"; "*the dark*"; "*the flexible*") and **Yang** ("*the shiny*"; "*the firm*" or "*banners waving Under the sun*") first appear in the "*Great Commentary*" of **I-Ching** and provoked a revolution in Chinese thought, especially in the transition between Tsin and Han dynasties [12].

That is why, in Chapter Five of **Su Wen** ("*Great Treatise on the Yin-Yang Classification of Natural Phenomena*"), the Yellow Emperor presents these polarities as "*the great scheme of all things* [13]... *the principle for birth and de-struction*" resulting from the **interaction between the energies of Heaven and Earth**, thus putting in hierarchy their powerful influence on the health of human beings:

"Consequently, disease is caused by the inversion of **Yin** and **Yang**... That is why, the clear Yang is the heavens and the dark Yin is the Earth... the clear Yang begins through the pores, and the dark Yin flows to the Five Viscerae, the clear Yang provides strength to the four limbs, the dark Yin returns to the Six Entrails" [13].

We find another parallelism in Quantum Physics, when, right after World War II, the first particle accelerators were given impulse. Said particles—as referred to above when dealing with the **Five Elements**—represent the basic constituents of all living things. The violent collisions generated in powerful magnetic fields confirmed the resulting transformations. Those changes originated in collisions provided new elementary components for matter, combining their charges. Alan Guth, while trying to find a way for understanding the expansive stage of the Universe, proposed the **Theory of Inflation**: a way of predicting the previous existence of magnetic monopoles; that is to say, negative and positive charges (very much like **Yin** and **Yang**) making up those **Elements** which must have been abundant in stable form, leaving available energy so as to provoke a speedy universal expansion afterward with the "*Big Bang*" [14].

The invariability of the latter reaction is proved by reversing the electrical charge of the particles participating in the experiment so as to verify that the resulting reaction exists in nature. Such invariability takes place and is repeated in every elementary particle transformation. It is precisely their experimental rupture that proves the existence of antimatter in the Universe [15]. The Yellow Emperor, on trying to find a solution for this cosmological, relocates the figures

within the T'ai Ji Tu (Tao Diagram), asks his physician:

"How do the superior and the inferior mutually correspond to one another?" Kwei-Yee-Chu replied: "The heavens have Yin and Yang, the Earth has them as well... that is why there is Yin within Yang y Yang within Yin... the active and the unmovable mutually correspond one another, the superior and the inferior find themselves facing each other, Yin and Yang are interactive, they generate the mutation that enables birth" [16].

Nowadays we know that such energy—still undetermined if of electromagnetic, electrostatic and/or sonic nature [17]—is still quite difficult to measure by modern technology [18] (though, apparently, not impossible, according to the French doctors who were able to recently record it (**Figure 3**) [19].

Kwei-Yee-Chu's claim coincides to some extent with the clever point of view of the Chilean philosophers and anthropologists Maturana and Varela:

"If the structures that make a certain behavior possible... develop only if there is a **particular history of interactions**... what we have said points to understanding learning as an expression of the **structural coupling** that is going to maintain a compatibility between the functioning of the organism and the environment in which it occurs" [20].

Life, then, by means of a successful verification over millions of years, profited from *kinesis* in order to provide support to this particular form of evolution in the collective memory. That is why I also claim—like Shinagawa—that Qi provides **information patterns for all creation**, strangely enough by means of so-litonic frequencies, **enabling self-perpetuation over time** [21].

## 3.3 Materials (c): Quantic Background, a Notion about Chaos

For David Bohm, **cosmos** means "complete order" while **chaos** means exactly the opposite, identified with "complete disorder" and a state of utter confusion. The biblical allusion in the book of Genesis "*In the beginning, everything was* 



# VISUALIZACIÓN DE MERIDIANOS POR MEDICINA NUCLEAR

Figure 3. Acupuncture meridians visualized by MNR scanner [19].

*chaos and confusion*...". Oddly enough, the term in fact implies a "*fusion of elements*". For Leucippus—a teacher of Democritus—chaos is the "vacuum" where spirit and matter lie. He did not believe it constituted a void space but a "*Peripatetical principle providing shelter to the fundamental elements that make up the All*". However, for Anaxagoras, the pre-Socratic philosopher, it was much more like..." *an amorphous, balanced entity out of which an ordered Universe emerged*" [22].

Nowadays, Sagan and Schneider claim that **chaos**... "is a sub-discipline derived from system dynamics and complexity theory" [23] in accordance with the current ideas of "*emerging self-organizing systems*". By the end of last century, statements by Steven Johnson, Ilya Prigogyne and Paul Davies explained—in the fields of Physics, Chemistry and Biology—the way in which **chaos may emerge to re-establish order** when considering dissipative structures. Such structures behave as "open systems" whose property is to restore balance and become "*evolutionary models*" applicable at different levels.

Let us sum up by saying that chaos can be understood as an "order of extreme complexity" where usually while order decreases, organization increases or vice versa, this leading in turn to universal systems towards a "quasi-equilibrium", which, surprisingly enough, they end up rejecting. This is how the impossibility of prediction can be understood, except by **non-linear mathematical systems** (not rigid and emerging) which adapt to change in order to keep their stability. Such organizational "flexibility" enables—whethey physical, chemical or biological processes—adaptability by means of "**selfcompensation**" fed by positive retrofeeding. Hua Hu Ching provides clarification in this:

"The uncreated can **create** and **recreate**, and the untransformed may transform and transform again. What is created cannot help but produce itself and what is transformed **cannot prevent transforming itself**. This means that there is no time or space without the production or transformation of things themselves" [6].

There follow examples of **Element inter-transformation among themselves** and within themselves [Figure 4, Figure 5]:



Figure 4. Sequential elements inter-transformation [24].



**Figure 5.** Inter-transformations within a single polyhedron [24].

#### 3.4 Materials (d): Chinese Background—A Brief Review of Tao

In a few words, Tao can be said to be the origin of all that universally exists. The **Tao Te Ching** (a "short" work as well, for—according Estanislao Julien—its original version consists of 5000 ideograms) is, without doubt, the core of Taoist doctrine. From its first chapter, Lao Tse starts to weave the enigmatic plot about the origin of Existence: "*Tao is the most mysterious of mysteries and the* (*origin*) *doorway of all wonderful things*". His initial explanation is not without mystery, providing in a few lines the close connection with **Essential Void** from which it proceeds, from the obscure beginning of the Universe [25]:

"Even before Heaven and Earth, maybe the Mother of the Universe There already existed an inexpressible being. I know not its name, A void and silent, free being. I called it Tao. Immutable and self-sufficient, it is found everywhere And it is inexhaustible" [26].

A more modern version of Sun Junqing considers Tao "...as the vital energy that constitutes the origin of all beings in the world" [27]. In trying to communicate it as a path to discover such **Absolute Truth**, Lao Tse expressed his definitive statement: "...from Nothing, Tao transforms into something... and from something, it becomes Nothing" [28].

It seems clear the main notion that is conveyed for, though we shall see that **Wu Chi** derives in both essential polarities (Yin/Yang), such variations may occur in both alternative directions simultaneously converging and then again converging towards the **original Wu Chi**, let us call it the "*Chinese brother*" of the Void but at the same time, the sole responsible for Creation. Carl Jung offers orientation, from his analysis of dreams, on the cyclical character of the confus-

ing environment if that Path is deprived of the moral virtual the cultivation of which is recommended by the Oriental sage:

"From the beginning, **the way to the finishing line is chaotic and unpredictable**, only gradually do clues increase, towards the finishing line. This way does not follow a straight line but a **cyclical** one, apparently. A more accurate knowledge of it has proved that it has a spiral development: alter certain intervals... it always tends to adopt determined forms. These forms, according to their nature, point towards a center" [29].

This also means, to some extent, that understanding **Tao** leads us to position ourselves in consonance with natural rhythms, even transcending it until returning to the **Essential Void of the Universe** [27]. Let us consider the following example, Lorenz Attractor, a concept introduced by Edward Lorenz in 1963 (**Figure 6**). Within the Mathematical field of dynamic systems, an **attractor** is a set of status towards which a system *tends to evolve* [30]. It is a dynamic deterministic nonlinear tridimensional system deriving from simplified equations produced in dynamic equations of the terrestrial atmosphere (**Figure 7**) [31].



Figure 6. Chaos and solitons (Lorenz Attractor) [30].



Figure 7. Chaos and golden ratio [31].

That is how a "butterfly effect" is clearly designed in the chaos theory. The system appears in lasers, electrical generators and specific water wheels [32]. A general definition for attractor would be the *behavior a system tends to alter a time of evolution, regardless of its initial conditions*. In other words, it constitutes the system's own routine, the behavior it finally has. It seems that the system is attracted to such routine, consequently its name [31]. It is then possible for us to understand how invariability of each of the Transformations results in the *previsibility* of the Mutations framed by I-Ching hexagrams. Such "*regular anticipation*" enabled a **predictability criterion** that motivated a compulsory consultation as an oracle capable of foreseeing the future [22].

Thus, for several languages the words "**Tao**" and "**Chaos**" constitute homophones, and I assume this cannot be merely a chance.

#### 3.5. Materials (e): Greek Background—Deeper into the Origins of Geometry

#### 3.5.1. Euclid's Polyhedra

By 2014 I stated it was made quite clear that the **Five Elements** of Chinese Medicine were not just by mere chance homonymous to Euclid's Regular Polyhedra. Euclid (330-275 BC), a Greek mathematical genius, left transcendental contributions for the Exact Sciences. His posthumous book, "**Elements**", had a worldwide circulation, comparable to that of the Bible or the Quixote, the most read books in universal literature [1]. It may be possible that Euclid collected from his mentors **two key mathematical concepts** for the development and subsequent estimation of his regular polyhedra, namely:

- The theory of proportion, is necessary to deduce theorems about lines and surfaces;
- The theory of exhaustion, *i.e.*, the theoretical basis to estimate areas and volumes of geometrical solids [33].

According to Proclus, Euclid was fascinated with the development of the Five Regular Polyhedra (**Figure 8**) and deduced their definitive conformation in the Book XIII of his work, thus establishing a formidable example of the deductive-axiomatic system par excellence (**Figure 9**) [1].



Dunham established then that "*Euclid has shown that no logical argument can produce more of these remarkable figures, leaving a document mathematically unbeaten for* 2300 *years*" [1] [34] [35] [36].

# 3.5.2. The Theory of Conformation of Dimensional Solids: Plato's *Timaeus*

Plato's *Timaeus* (Figure 10) is, in fact, a work comparable to the Biblical Genesis, where **another version of the creative chaos** is offered, analogous to the archaic Chinese vision of the origin of Creation.

Centuries before Euclid established the formation of the Regular Polyhedra, the theory about Dimensional Solids had been written by Plato stating a valuable *sequence in the order of Creation* [36], thus giving origin to the Fundamental Classification Theorem:

"The solid figure of the pyramid (**tetrahedron**) is element and germ of Fire, the second one in the order of creation (**octahedron**) represents Air, and the third one (**icosahedron**) is Water, Finally, a **cubic form** was given to Earth, for this element is the most difficult one to move about, the most tenacious one and its bases are the most solid ones [...] Therefore, we had to strive in order to compose those four types of bodies of extraordinary beauty and state that we have captured Nature" [36].

However, a Catalonian Mathematics historian, Prof. Joseph Plái Carrera, stated that Euclid himself had resorted to the Chinese tangram (*Qi qiao ban* or "*The Seven Tablets of Wisdom*") in order to solve several of the propositions written in his book. In fact, it is a kind of elementary "puzzle", capable of creating a variety of images (approximately 900); however, the rule is that they should not overlap one another [37]. The deductive reasoning this game poses is the same as the one offered by Plato in his *Menon*—in which Socrates applies a similar reasoning using isosceles triangles to estimate the diagonal of the base square (Figure 11) [38]. Archimedes had also described it as *Stomachion* ("*bone fight*") or *Loculus Archimedes*, another kind of puzzle with 14 pieces for making figures inside the square(third century BC) [33].



Figure 10. Plato's Timaeus [41].

"Before the Creation, there were no measures or proportions. When God started to put order into the Universe, He first created Fire, Water, Earth and Air..."

"First, I believe-and this is beyond any possible doubt-that Fire, Earth, Air and water are bodies..."

"However, every physical form is also provided with depth..."; "And it is necessary that there is an area surrounding such depth".

"Each side (limited by itsarea) consists of triangles..."; "Each triangle is developed, each with its right angle and the others, acute ones".



Figure 11. Chinese tangram [38].

Here is the full quotation of the Catalan Mathematician: "One of the most remarkable achievements of Chinese Geometry has been the use of the tangram in order to generate different figures of the same surface. More concretely, it allowed Euclid to demonstrate one of the most paradigmatical theorems in Greek Geometry, the famous Theorem by Pythagoras, as well as solving millenial questions inherited by the people from the Mesopotamia" [33] [38].

# 3.6. Materials (f): Historical Background—Pythagoras: Vibrations and Musical Notes

"...the Chinese physical World was a perfectly continuous All. Chi, condensed in tangible matter deprived of specific particulars; yet, individual objects acted and reacted as with every other object in the world... in **waves or vibrations**, the latter depending on the rhythmic alternance at every level of the two essential forces: **Yin** and **Yang**. Consequently, individual objects possess their intrinsic rhythms. These were integrated... into the general model of world harmony" Joseph Needham: "Science and Civilization in China" [39].

In fact, every knowledge codified by the Greeks represented the "*hidden order*" relating mankind to the **Absolute Truth**. The deduction of forms and sacred numbers derived from an essential wisdom used to try and explain the Universe and the physical reality of Creation. The abstract subtleties of Geometry and the sacred numbers codified the structure hidden to the senses; consequently, mathematical instruments such as fractions and proportion enabled them to understand the eternal rules of *Divine Harmony* [40]. That is why it should not come as a surprise that they considered Geometry the most ancient formal science in human history as archetypically presenting divine patterns to human reason (**Figure 12**); hence, their consideration of Geometry as sacred knowledge (**Figure 13**) [41] [42].

The Greek term mathemata, of Pythagorean origin, can be roughly translated as "*that which can be learned*". Within the classical Greek notion of knowledge there was, in fact, a constellation of different things that made up Plato's "*Seven Liberal Arts*" [40] (Table 1) at the Academy (387 BC) in Athens, namely:

According to Archytas of Taranto, a noted Pythagorean mathematician, the sciences included in the **Quadrivium (***Geometry-Arithmetic-Astronomy-Music***)** provided the power of explaining the student "*the order and harmony of the Universe*" [43] [44].



Figure 12. Energetic frequencies in acupuncture [42].



**Figure 13.** Antique master of the heart meridian [42].

**Table 1.** Seven liberal arts [40] [43].

The 7 liberal Arts										
Quatrivium	Geometry	Arithmetics	Music	Astronomy						
Exact										
Knowledge										
Trivium	Grammar	Dialectics	Rhetoric							
Human				_						
Knowledge										

Up to Boethius' account, Pythagoras was mathematically obsessed with explaining the fixed intervals of a sound scale. When passing by a blacksmith, he heard his hammer musicality while striking the anvil. After that, he eventually made an experiment with five hammers (**Figure 14**) [45]. By usi*ng strings with lengths of different proportions*, he determined the *harmonic means* and the *arithmetic means* ratios, verifying that these notes vibrated according to such *harmonious sounds* (Figure 15).

The weight of four of them was in a proportion of 12, 9, 8 and 6 (the smallest one—that spoiled the perfection of ringing—was immediately withdrawn). The biggest of them weighted twice that the smallest one, which sounded an octave lower. As the weight of hammers 9 and 8 corresponded to the arithmetic means and harmony respectively, from the 12 and 6 weights, Pythagoras (Figure 16) [48] though that those two would provide the fixed notes of the scale. His mathematical genius provided us with knowledge to deduce the first five notes ("Cycle of Fifth"—Figure 17), coincidentally the same five notes that make up the Chinese Pentatonic scale [49].



Figure 14. Pythagoras experimented with five hammers [46].



Figure 15. Arithmetic media by pythagoras [46] [47].



Figure 16. Pythagoras sculpture [48].



Figure 17. Pythagoras "cycle of fifth" [47] [49].

In this way, Pythagoras established that: "*The properties and relationships in musical harmony are determined by numbers*" [49].

Ethnomusicology classifies pentatonic scales into Hemitonic or Anhemitonic ones as follows:

**Major Pentatonic Scale**: it can be formed by a scheme of intervals starting from a concrete note, by eliminating degrees VI and VII (withdrawing the sequence from Fa to Si), following the "circle of fifths" (*i.e.* **Do-Re-Mi-Sol-La**).

**Minor Pentatonic Scale**: counting from a prefixed "*just fifths*" also determined that Chinese music derives from a *pentatonic-anhemitonic major scale*. Its sequence, established by the passing of the Generative Cycle or Cheng is:

#### Do-La-Mi-Re-Sol [49].

We can notice—as *Euclid* did to justify the exact scientific mathematical bases for the **Five Elements in Chinese Medicine**—that the selection of musical notes also has a precise and exact foundation in the development of Music, as *Pythagoras* explained, and also in the creation of the **Therapeutic Acupunctural Resonance** [49].

The Golden Ratio enabled us to identify—from a Physics solid state context—excitations of a quasi-particles collective derived from sound called *phonons* [50] [51], originally derived from the musical notes (Figure 18, Figure 19). Today we positively know that human tissue can respond to certain sound frequencies, changing body structural properties [52].

![](_page_15_Figure_4.jpeg)

Figure 18. Fibonacci's continuous functions [52].

![](_page_15_Figure_6.jpeg)

![](_page_15_Figure_7.jpeg)

#### 3.7. Materials (g): Geometry, Vibrations and Tensegrity

Following Stephen Skinner [53], only the whole number rations are those producing harmonious results (**Figure 20**) [54]. Should vibratory ration of musical octave be diverse, dissonant results would be obtained. This is the basis for the Pythagorean belief that there exists a "*sacred ratio*" in musical scales (**Figure 21**) [55], so much so that Skinner refers that changes in "cadence" were considered "sinister" in previous ages. Pythagoras arithmetically confirmed that in whole numbers and their fractions—even in Chinese pentatonic scales—there exists a principle of musical harmony which is always accomplished in its ratio: from the planetary orbits to Chladni cymatic plates [56] (**Figure 22**).

![](_page_16_Figure_3.jpeg)

Figure 20. Holofractografic pattern about Phidias harmony [56].

![](_page_16_Figure_5.jpeg)

Figure 21. Whitney digital harmony [55].

![](_page_17_Figure_1.jpeg)

Figure 22. Chladnicymatic "geometry" [56].

Considering the effects of vibrations over "*structure and its function*", Richard B. Fuller [57], defined *Tensegrity* as the property of "...*some structures of iso-lated components have which are related through a tensional continuous network*." [59]. However, it was Kenneth Snelson [58], who adapted this concept to that of *Integrated Tension* in biological systems, thus redefining them as "*those systems capable of absorbing compression and distension in order to resume their original structural pattern*" [59].

In this way it is possible to interpret the relationship between musical or environmental vibrations and the notion of *Integrated Tension* in biological models, where the connective tissue "*interconnects*" the whole body through a fundamental "*collagen wiring*", consisting of coalescence fascia and the interstitial matrix and conforming our bodies as a "*computing web*" [58] [59].

Thus, the notion of membrane as a fascial network enables us to adapt the concept of *muscular tone* from Thomas to that of *cellular tone*, which in turn permits the introduction to the definition of Mechanical Transduction as a "property derived from kinetics that cells possess when bearing constant tensions on the filament of their cytoskeleton" (Figure 23) [1] [3].

Such knowledge-which can be made evident in physiopathology and through the Tendino-muscular channels shows the property the parenchyma has of "*encoding*" within its cellular DNA the therapeutics heightened or diminished vibrations transmitted from the stroma nets as a "*sensation of arrival and propagation of energy*" (*T*'chi phenomenon) [1] [3] [59] [60].

![](_page_18_Figure_1.jpeg)

**Figure 23.** Intracellular mechanical transduction reproduced from: <u>http://chienlab.ucsd.edu/about</u> [1].

This situation, known as *Kinematic Cellular Indetermination* (Figure 24) [60] is also a concept that derives from kinetics and allows for interpretation of the role of (sound-light) stimuli which—through the connective fascia—reach and influence the expression of nuclear genome [4]. To studies published by Dr. Antonio Gómez Yepes in Coatepec, Mexico, it is considered that the etiology of certain diseases begins in various cellular anomalies: some due to complex mechanisms that form "*cascading*" cytological phenomena (see Figure 25) [61] [62].

In his study, Gómez Yepes makes reference to some research entitled: *Search for Quantum and Classical Modes of Information Processing in Microtubules*. *Implications for "The Living State*" [59] [63] where he convincingly demonstrates that the performance of *Cellular Mechanic Transduction* through the cytoplasmic microtubules linked to the cytoskeleton allows to register amplified or attenuated vibrations that reach the cellular nucleus to influence the expression of its nuclear genome [62] [63]. Said concepts are similar to the ones expressed by me in Birmingham in 2015 [3] [4].

**Cellular Transduction** consists in the transmission of data through signals from external vibrations captured by the cytoskeleton responsible for the changes in the transcription of messenger RNA regarding the sequence of its purines and pyrimidines bases. During this process, about 15 to 20 pairs are open making up a "*transcription bubble*" that is propagated as a "*solitary wave*" as represented by the nonlinear Klein-Gordon equations and Nash Game Theory [4] [63]. In this respect, Lyall Watson states in the chapter: "*La biología del Ser*" from *El Espíritu de la Ciencia*: "I believe that **substances carry information**, that they record impressions very much like the grooves of a record. Life is not exclusively organic proteins and is not contained therein but in the '**music**' written on such proteins" [64].

Such communication, quite surprisingly, *takes place through water molecules* surrounding biological material. It seems as if water is the means that carries and

![](_page_19_Figure_1.jpeg)

**Figure 24.** Kinematic Cellular Indetermination: vibrations that influence the expression of the nuclear genome [4].

![](_page_19_Figure_3.jpeg)

Figure 25. Signal for transduction pathways through acupuncture [60] [62].

amplifies this communication, a process comparable to the tuning of a stringed instrument. Let us be reminded that the human body is formed by water in 75% - 80% and that this manifestation is similar to the concept of *soliton* that follows [63]. Thus, we have a particular example at hand in order to explain the phenomenon of *Therapeutic Acupunctural Resonance* through Quantum Mechanics. This process could clearly explain the improvement in the making of neuro-transmitters that are released duringthe *Therapeutic Acupunctural Resonance* [3] [4], and through them, the restoration of the circadian chrono-biologicalcycle, which was observed by the Chinese thousands of years ago.

## 3.8. Materials (h) Historical Background: Soliton Theory: Hydrodynamic and Quantum Properties of Soliton

A Definition of Soliton: A soliton is a "solitary wave" that maintains its shape while traveling in a nonlinear medium. The phenomenon was first described by the Scottish engineer John Scott Russell. Towards 1834, the government ordered him to design a steamboat to sail across the channel that connects Glasgow to Edinburgh. While studying the motion of boats, a strange phenomenon occurred unexpectedly: one of them suddenly stopped, and after a moment of inertia, a mass of water rolled forward with great velocity, assuming the form of a large solitary elevation (Figure 26) [65]. Russell watched the whole phenomenon along several kilometers, preserving its original form and without weakening. When he first started a systematic experimental research of said phenomenon, he described this "propagation of solitary waves" as a constant situation within the sphere of Hydrodynamics: a balance between non-linear and dispersive effects which only by 1965 was called *soliton* (Figure 27) [66].

The term "*soliton*" is used in a generic sense to denote all examples of dynamic vibrational self-trapping motion. As stated earlier, solitons exemplify this peculiar phenomenon: a kind of pulse-like solution applicable in hydrodynamics, optics, laser, plasma physics, solid state physics, biochemistry, molecular science, elementary particle theories. It implies a balance between nonlinear and dispersive effects, actually comparable to avant-garde modern branches of Physics and Acupuncture's new physiological theories and therapeutic modalities [5] [66].

![](_page_20_Picture_5.jpeg)

**Figure 26.** Russell & colleagues looking at soliton phenomena. [65]

![](_page_21_Picture_1.jpeg)

Figure 27. Dynamic vibrational self-trapping solitary waves.

After having compared the concepts of *modern Physics* with those of *Traditional Chinese Medicine*, we are in a position to observe a great number of clear coincidences between Eastern and Western knowledge. Therefore, the comparison of the phenomenon of *Therapeutic Acupunctural Resonance* through the notion of *soliton* seems to be adequately correct. Russell's description during his observation is compatible with the nomenclature that identifies the *Old Shu points* that carry the pathway of energy (Qi) through the main meridians of Acupuncture (Figure 28) [1]. In fact, their sequence clearly illustrates the *increase of the Qi channel during its pathway* through said points: that is why they are called **Bubbling Well**, **Spring**, **Stream**, **River** and **Sea Points**, consequently causing a dramatic increase of flow due to their own stimulation, following the soliton theory [5] [67].

External physical stimuli—like the ones applied over a specific neuralgic point—can send out signals of both sound or laser therapy to other branches of the energetic system and its dynamic structure (Arndt-Schulz Law). In 1924, Ricker predicted the "memory" of the peripheral nervous system, determining that 90% of the vegetative nervous matter was found in the skin. Very much of the *T chi phenomenon* is associated with pain, distension and heaviness after puncture (probably carried by type III or IV neural fibers), such *Neuro Sensitive Transportation* [Figure 29], which derives from the *sound stimulation of that corresponding to the Five Elements*, appears in patients after the phenomenon mentioned above—like *SP*—regardless of age, sex, race or occupation in a painless way, and *it is highlighted by patients when the direction traced by the meridians involved continues to be drawn*, or is deviated from the original channel in order to reach the area affected [3] [4].

During *neuro-sensitive transportation*, patients perceive sensations similar to Russell's description of the "*solitary wave*" [Figure 30]. Dr. Edward Lim Chai-si referred to that sensation as "... *something that is running*" along the meridian being treated: an impulse that is not diminished while passing through important joints or other high-density body structures. Dr. Lim Chai-si attributed said phenomenon to the activation of neuro-peptidergic type of fibers [4].

![](_page_22_Figure_1.jpeg)

Figure 28. Five Shu antique points of the forearm [1].

![](_page_22_Figure_3.jpeg)

![](_page_22_Figure_4.jpeg)

![](_page_23_Figure_1.jpeg)

Figure 30. Neuro-peptidergic fibers: responsible for solitons' transportation [4] [45].

#### 3.9. Materials (i) Background: History of the Golden Ratio

Kwei-Yee-Chu: "Therefore, the birth of a thing is called Transformation; the extreme level of something, Mutation; the unpredictable phenomenon of Yin and the Yang is called, the Divine, and the unlimited application of the divine is called Wisdom.

"Thus, the application of mutation implies the existence of infinity in Heavens and the way of man, called transformation on Earth, and that transformation generates five types of knowledge, that path generates wisdom and infinity generates the divine...

"Yet, Heaven and Earth are the extreme and the depth of all things..." Hoang Ti [67].

**Fibonacci** also known as **Leonardo Bonacci**, **Leonardo of Pisa**, or **Leonardo Bigollo Pisano** ("Leonardo the Traveler from Pisa"), was an Italian mathematician from the Republic of Pisa (Tuscan region, Italy) considered to be "*the most talented Western mathematician of the Middle Ages*" [68]. The Fibonacci sequence describes an amazing variety of phenomena, in mathematics and science, art and nature. The mathematical ideas the Fibonacci sequence leads to, such as the **Golden Ratio**, spirals and self-similar curves, are so clearly appreciated in the world of art and nature [69].

Very much as it happened with the zero (the dissemination of which was punished by Pythagoras by drowning his disciple) and with Euclid's propositions, the sequence was well known before being published in the West. What we know today as "**Fibonacci sequence**" had already been described in Indian Mathematics deeply connected with Sanskrit prosody [69] [70]. Susantha Goonatilake notes that the development of the sequence is "partly attributed to *Pingala* (200 BC) and later it is associated to the work of *Virahanka* (towards 700 AD), then to *Gopāla* (around 1135) and *Hemachandra* (about 1150). Parmanand Singh refers to Pingala (around 450) as the precursor of the discovery of the famous sequence [71]. Other authors suggest that the golden ratio refers to the proportion of several steles from Babilón and Asiria towards 2000 BC. However, there is no historical documentation pointing to the golden ratio having been consciously used in the manufacture of steles. That is why Mario Livio concludes that it is highly improbable that the people of Babylon had discovered the golden number [72].

In fact, in about 1202, Leonardo was a young man in his twenties, a member of an important trading family of Pisa. In his travels throughout the Middle East, he was captivated by the mathematical ideas that had come from India through the Arabic countries. Specifically talking, he brought all his attention to the Indian system of writing numbers. European scholars were still clinging to the use of the old Roman numerals (which we call now Arabic notation, since it came west from there). When he returned to Pisa, he published these ideas in his book called *Liber Abaci*, which became a landmark in Europe. Then Leonardo came to be then known as *Fibonacci* (see **Figure 31** below this paragraph) [73].

The golden ratio (also known as the golden number, God's number, Golden measure or ratio and divine ratio) (Figure 32) is represented by the Greek letter  $\varphi$  (phi). This modern denomination as  $\varphi$  was made in 1900 by mathematician Mark Barr to honor Greek sculptor Phidias (Figure 33). In Mathematics, Fibonacci's succession or series is the following infinite succession of natural numbers [73] [74].

![](_page_24_Figure_4.jpeg)

**Figure 31.** Fibonacci's *LiberAbaci* at the National Central Library in Florence, Italy, showing (in a text box to the right) Fibonacci's succession with Roman numbers and Latin indicating the positions and the value of the numbers in Arabic numbers [73].

![](_page_24_Figure_6.jpeg)

Figure 32. Fibonacci's proportion [73].

$$f_{(0)}: \varphi^{1} - 1\varphi = 0 \qquad 1$$

$$f_{(1)}: \varphi^{2} - 1\varphi = 1 \qquad 1$$

$$f_{(2)}: \varphi^{3} - 2\varphi = 1 \qquad 2$$

$$f_{(3)}: \varphi^{4} - 3\varphi = 2 \qquad 3$$

$$f_{(4)}: \varphi^{5} - 5\varphi = 3 \qquad 5$$

$$f_{(5)}: \varphi^{6} - 8\varphi = 5 \qquad 8$$

$$f_{(6)}: \varphi^{7} - 13\varphi = 8 \qquad 13$$

$$f_{(7)}: \varphi^{8} - 21\varphi = 13 \qquad 21$$

Figure 33. Phi expression in Fibonacci's sequence [74].

The golden number results from the division into two a segment in keeping with the proportions that follow: total longitude a + b is to the longer segment a, as a is to the shorter segment b (*disambiguation*) [73]. Euclid was the first one to formally study the golden number; he defined it as follows (Figure 34): A straight line is said to have been cut in extreme and half ratio when the whole line is to the bigger element as the bigger element is to the smaller element. Elements Definition 3 Book Six [73].

It constitutes an *irrational algebraic number* (of infinite decimal representation decimal and no period), with several interesting properties. It was discovered in Ancient times, not as an algebraic expression but as a relation between two segments of a straight line, that is a geometrical construction (**Figure 35**) [73].

Fibonacci's spiral is an approximation to the golden spiral which is generated by drawing circular acts connecting opposite corners of the squares adjusted to the values of the succession; progressively squares are added to the side 0, 1, 1, 2, 3, 5, 8, 13, 21 y 34. Such succession starts with 0 and 1, each element of said sequence is the **result of the sum of the two previous numbers**, so that the sum of two consecutive numbers produces the one immediately following. In this way, we understand the way it is defined by [73].

As shall be later analyzed, Fibonacci's sequence can be found not only in some geometrical figures as in nature (such as nervation in leaves, the thickness of branches, the shell of molluscs—e.g. nautilus (see Figure 36, Figure 37 and Figure 38) [67] [74] [75] [76] [79], in sunflower florets, branch distribution in trees, leaf distribution around a stem, the flowers of the artichoke, the form of pine cones, etc. It also appears in the "genealogical tree" of amoebas and honey-producing bees, which follow this wonderful "*continuous successive numerical chain*" (sic) [77]. One of its strangest properties is that its square ( $\Phi 2 = 2.61803398874988...$ ) as well as its reciprocal ( $1/\Phi = 0.61803398874988...$ ) have the same infinite decimal figures [71] [76].

The first known use of the adjective "golden" referring to this number is made by German mathematician MartinOhm, brother of the famous Physicist Georg-SimonOhm, in the second edition (1835) of his book *Die ReineElementarMatematik*. The fact that he did not include the term in the first edition may point to the fact that the term was gaining popularity around 1830 [73].

![](_page_26_Figure_1.jpeg)

Figure 34. Phi—An irrational algebraic number [74].

3		4	2					
		1	1					
					ç	2		
						,		
	5							

Figure 35. Euclid's golden rectangle (adjusted to squares) [79].

![](_page_26_Figure_5.jpeg)

Figure 36. Golden ratio in arabia [74].

![](_page_26_Figure_7.jpeg)

Figure 37. Fibonacci's spiral [75].

![](_page_27_Figure_1.jpeg)

Figure 38. Different representations for sectio aurea [73] [79].

# 4. Methodological Analysis

"I have consulted the Ancient Classics on the Circulation of Celestial Energies which includes the following statements: the Heavens are the originated infinity that provides space to every single thing"; "so that the generation and the transformation continue indefinitely, in turn providing life to everything" Hoang Ti [77].

## 4.1. Mathematical Analysis of Fibonacci numbers (Dan Reich—Department of Mathematics, Temple University)

During our bibliographic revision of current outstanding mathematicians, we found this clear and understandable explanation of Prof. Dan Reich [77]. In quoted research about Fibonacci numbers, he explains that said succession starts with the number 0 and, then "*each term is the sum of the two previous ones*", the recurrent relation which defines it. For the Greeks, the most natural and well-proportioned way to divide a line into two pieces is a section; a fixed limiting value of 1.618034... quite a famous ratio: the Golden Mean of Euclid and Aristotle, the divine proportion of Lucca Pacioli, Leonardo da Vinci, Alberto Dürer and Johannes Kepler considered the most beautiful and important of quantities [78]. Consequently, we consider **Fibonacci's spiral** as an infinite linear sequence where a hypothetical value of 1 is doubled and the second value becomes 2, and so on... the sequence follows, as previously stated, by *adding the last value to the former*, that is:

- 2 + 1 = 3;
- 3 + 2 = 5;
- 5 + 3 = 8 and from then on successively.

Prof. Reich begins with Fibonacci's question about the exponential fertility reproduction of his rabbits (see **Figure 39**). Regarding said situation, we are assuming a gestation/maturity time of one month after a sequential row of rabbit reproduction:

![](_page_28_Figure_1.jpeg)

Figure 39. Fibonacci rabbit family [75] [77].

Consequent number of pairs in each generation: 1, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89, 144, ... In this pattern, each generation remains as part of the next, summing up another baby pair. The total number of pairs in the previous generation can be estimated like this:

 $f_n$  = number of pairs during month  $n = f_n = f_{n-1} + f_{n-2}$ 

Fibonacci's sequence represents a mysterious pattern for controlling growth in a large variety of natural dynamical systems. Its *recursive formula*—where each generation is defined in terms of the previous two cohorts—rules many natural growth patterns where the presence of spirals is intricately connected with the Fibonacci sequence [78].

Formula for Fibonacci numbers: 
$$f_n = \frac{1}{\sqrt{5}} \left[ \phi^n \pm \frac{1}{\phi^n} \right]$$
 [78].

#### 4.2. Regular Polihedra Determined by the Golden Ratio

More than 25 millennia ago, both *Fu Hsi*, pre-Socratic *Greek sages* and Euclid fully understood how the **Elements** made up the Universe around us.

The Theory of the Five Elements—together with the Yin/Yang theory—provided enough validation to consider in both "*corps of knowledge*" a definable General Principle in which truths could be repeatedly validated so that they could reach and justify their condition of **law**, that is, of something "...enabling predictions, for determined properties of the whole or of a class of objects or processes, on their state" [78].

In 1509, the Italian mathematician and theologian Luca Pacioli published *De Divina Proportione*, in which hestated five reasons why he considered it appropriate to deem the **golden number** as divine. Pacioli pointed out they cannot be built without the help of the divine proportion. One of their characteristics these bodies have is that they establish intimate structural relationships among themselves [80].

# Mathematical Relationship between the Golden Ratio and Plato's Dimensional Solids.

The golden number and the golden section are present in every object in

which pentagonal symmetry or the square root of 5 appear. Below, we can appreciate the relationships among the parts of the pentagon, the decagon, the dodecahedron and the parts of the icosahedron.

As may be observed in **Figure 40**, the golden number can be estimated in a regular pentagon by using **Ptolomy's theorem**. The symmetry expressed in a regular five-sided polygon enables the inscription of a star of infinite recursivity.

The **Golden number** is related to the Platonic solids—especially the icosahedron and the dodecahedron—due to their dimensions, which are provided in terms of the golden number [73]. Both figures can be analyzed as follows:

The 12 apexes of an icosahedron with 2 longitude edges can be expressed in the *Cartesian coordinate system* by the following points:  $(0, \pm 1, \pm \varphi)$ ,  $(\pm 1, \pm \varphi, 0)$ ,  $(\pm \varphi, 0, \pm 1)$  [73]. The 20 apexes of a dodecahedron with  $2/\varphi = \sqrt{5} - 1$  longitude edges can similarly be expressed:  $(\pm 1, \pm 1, \pm 1)$ ,  $(0, \pm 1/\varphi, \pm \varphi)$ ,  $(\pm 1/\varphi, \pm \varphi, 0)$ ,  $(\pm \varphi, 0, \pm 1/\varphi)$  [73]. For a dodecahedron, volume as well as total area can also be expressed in terms of the golden number (**Figure 41**):

There are different forms of either directly or indirectly passing from one of the **Five Polihedra** to any of the others (as presented in previous publications [1] [3]). For example, the 12 apexes of an **icosahedron** are present on the surface of a cube and the ratio between the cube and that of the inscribed icosahedron is  $\Phi$  (**Figure 42**). The same situation applies to the **dodecahedron** (**Figure 43**) [80] [81] [82] [83]. Below, some examples of the **Five Regular Polyhedra** are shown together

![](_page_29_Figure_6.jpeg)

**Figure 40.** Ptolomy's theorem and the regular pentagon [73].

![](_page_29_Picture_8.jpeg)

**Figure 41.** The 12 apexes of the three golden rectangles coincide with the centers in the faces of a dodecahedron.

![](_page_30_Figure_1.jpeg)

Figure 42. Icosahedron determined by the golden ratio [81].

![](_page_30_Figure_3.jpeg)

Figure 43. Dodecahedron determined by the golden ratio [82].

with their confirmation through the golden ratio. This provides the direct relationship of the concept to the **Five Elements** that support acupunctural principles. Let me state again that there are no coincidences in Traditional Chinese Medicine for Euclyd ratifying the **Golden Ratio** which is historically supported by the geometry of the **Chinese tangram**. We can infer—by means of transitivity—that the Chinese already had a profound knowledge of such transcendental mathematical discoveries.

#### 4.3. The Golden Ratio and Morphic Fields

In 1990, Rupert Sheldrake postulated the Hypothesis of Formative Causation following the theory of Morphic Fields: those that organize and influence over shapes and behavior of natural systems. Based upon **Existential Inter-Dependence Theory**, explained coevolution by collective information fields nurtured by thoughts or habits that are informing the spice's memory, determining its development and progression. Said Morphic Fields describe the connection between the biological information encoded in cells and the Geometry that results from the development of that organism [83] (see Figure 44) [1].

The general aim of a morphogenetic field—determined by the behavior in the development of a cell—shall depend on the instructional signals from its surrounding space: they presuppose the modular nature of embryo cells because of their genotype/phenotype relationship [84]. Morphogenetic structures conceptually summon Ancient Oriental wisdom—to be based on its perennial principles—Euclid's Geometry and Fibonacci's mathematical support of its own reality

![](_page_31_Picture_5.jpeg)

Figure 44. Some morphogenetic structures are found in nature [84].

[33]. In some way, both knowledge can relate as they constitute—in the words of Rupert Sheldrake: Causative agents in the development and maintenance of biological forms. It has numerous applications in the fields of computer sciences, Mathematics and Game Theory [1].

The fact that the Elements or "Phases" the sage Zou Yan included in Chinese Medicine should only be "*coincidentally homologous*" to those introduced by Euclid is inconceivable. One may suspect that there is a kind of relationship, not mentioned or known up to now, that may link both of them, which are utterly important in their own subjects [33].

"The subject of the phases of matter sets precedent: it is the proof that at least some of the marvels in the world -perhaps all of them—depend on organization" [85].

Functional analogies represent the similarities that enable the ordering of concepts under a determined given condition. Even though an isolated similarity is not enough to consider a cause, it could be considered a "*Field of Similarities*" for any type of knowledge apt to be subjected to comparisons leading to convergent o divergent results. Such "similarities" structure the model towards defined subgroups which provide the practical application of this categorization. This explanation might enlighten the practical sense the Eastern civilizations had to categorize their experiences by following a "*classification order*" rather than a "set of speculations," improbable arguments or expectations. A kind of knowledge ruled by its Laws under valid contents that perpetuated such knowledge over millennia [86].

The ancient Chinese have, in my opinion, perpetuated in this way their millennial knowledge. When essential similarities appear, such knowledge is termed "**homology**", that is, a series of characteristics restricted to a determined *model*, their inter-dependence providing it a specific *hierarchy*. When it is understood that any specific hierarchy of concepts is generated from a guiding principle, then one can understand that: "…a *system of principles make up a hierarchy of hypothesis which reciprocally control one another; within, they carry more possibilities—almost certainties—of possible predictions*" [85].

This is, consequently, how **I-Ching mutations** reflect those being produced in the adequate fundamental elements upon which natural selection may act by "*getting rid of that which is not apt and allowing the survival of the best variants*" [86].

According to Gilbert (1996), morphogenetic fields—not genes or cells—generate variations leading to changes in biological evolution. Morphogenetic fields theoretically describe the intrinsic relationship existing between the biological information encoded in cells and the realization of the geometric form in the development of any organism [87].

"(*If*) you are still within the transmutations of Yin and Yang, you have been able to enter "the Undefined" [89].

Number Phi with respect to the circumference of a circle enables a mathematical relationship between Wei Bo Yang's Taiji Tu (Yin/Yang drawing) and the Golden Ratio (see **Figure 45** and **Figure 46**). According to Miguel Ángel Morales Molina, a Mathematics graduate of solid knowledge [90] [91] [92].

![](_page_33_Figure_2.jpeg)

Figure 45. Sacred geometry: numerology of metaphysics [90].

![](_page_33_Figure_4.jpeg)

![](_page_33_Figure_5.jpeg)

"...If we represent the Yin/Yang symbol with a circle of radius 1, then draw a horizontal radius on the major circumference which divides in at the point A, and from that point we draw two segments passing through the centers of the small circumferences of Tai jiTu and afterwards mark the cutting point of said segments with the median circumferences. If point B is the one farthest from A and point C is the one closest to A, then the segment AB measures  $\phi$  and AC measures  $\frac{1}{\phi}$ " (see Figure 47).

Since the segment OA is worth 1, the other OE measures  $\frac{1}{2}$ , by the Pythagorean theorem we understand that segment AE values  $\frac{\sqrt{5}}{2}$  (for the same reason, AD measures the same as AE). Besides, we also know that as much as CD and EB measure  $\frac{1}{2}$  (like radii of median circumferences), they will also have the same length as segments CD and EB [92] (see Figure 48 and Figure 49):

"*If Wu Chi is silence and stillness*, (*therefore*) *T'ai Chi is change*" states Eva Wong, contributing thus to go back in time to more ancient and archetypal images of T'ai Ji Tu [94] [95] (see **Figure 50**).

![](_page_34_Figure_4.jpeg)

Figure 47. The golden ratio and T'ai Ji tu measures (1) [92].

![](_page_34_Figure_6.jpeg)

Figure 48. The golden ratio and T'ai Ji tu measures (2) [92].

![](_page_35_Figure_1.jpeg)

Figure 49. Golden ratio en el Yin/Yang del Tao [93].

![](_page_35_Figure_3.jpeg)

Figure 50. Yin/Yang and sacred geometry [94].

Schemes using concentric circles and semicircles do not only justify the theory of Yin/Yang and the Law deriving from it the Five Elements; it also faces us to the intricate nature of **inter-transformation phenomena**, which manifest universally through *vibratory sequences*. This is the way in which it tries to make us understand an amplified view of this millennial scheme, with the wit from the genius of Walter Russell:

"Wave lines are a record of the amount of energy borrowed from a static equator in order to express any mechanical process, as the vibration of a harp, the beats of an engine, the cardiogram of heartbeats or the patterns of an earthquake" [94].

Below some examples used by the Chinese as regards the lunar celestial dynamics supporting astrological as well as prophetic cycles in Chinese Cosmogony are shown (see **Figure 51** and **Figure 52**) [89] [96] [97]:

![](_page_36_Figure_1.jpeg)

The Lesser Circuit of the Sky - The moon cycle

Figure 51. Moon cycle in the sky [96].

![](_page_36_Figure_4.jpeg)

Figure 1. Disposicão cincular dos 12 hexagramas do calendário, uma represenlocão sinlética da alfernancia yin-yang no ciclo do ano e da vido humana, segundo a cosmologia do Yijing. As linhas contínuas e brancas são yang, As parltidas e negras são yin. 0 dio-grama deve ser lido de denlro do circulo para fora, ou sejo, a linha de dentro é a linha mais inferior do hexagramo.

Figure 52. Moon position for the 12 hexagrams in the Chinese calendar [97].

One way of visualizing chaotic movement—or any kind of movement—is to draw a **Movements phase diagram**. In it time is implicit and each axis represents a dimension of state. For example, a system in rest position shall be drawn as a dot and a system in periodical movement shall be represented by a circle.

The most famous and beautiful examples of the occurrence of the Fibonacci sequence in nature are found in a variety of trees and flowers with some kind of spiral structure [98]. For instance, flowers often grow in a helical pattern, spiraling around the branch as new leaves form further out. If you start counting the leaves, and the number of turns further along the branch, said numbers will be Fibonacci numbers. Spirals arise from a property of growth called *self-similarity* or scaling—the tendency to grow in size but to maintain the same shape. Here we can see the Fibonacci's Spiral running through the centers of the squares in some Nature structures as a myriad of examples regarding morphogenetic structures (**Figure 53**).

This is a special spiral, a curve that keeps its shape at all scales indefinitely (Figure 54). This curve was known to Archimedes of ancient Greece, the greatest geometer of ancient times [98] [99] (see Figure 55). We should really think of this curve as spiraling inward forever as well as outward. It is called equiangular because a radial line from the center always makes the same angle to the curve (Figure 56). The pictures below show the story of the hungry bugs looking for food. As they crawl towards each other they spiral into the center, always forming an ever smaller square, turning around and around forever, tracing out the same equiangular spiral (Figure 57).

![](_page_37_Picture_4.jpeg)

Figure 53. Fibonacci spiral in nature [98].

![](_page_38_Figure_1.jpeg)

Figure 54. Fibonacci's polkar graph [99].

![](_page_38_Figure_3.jpeg)

Figure 55. Archimedes' drae spiral [100].

![](_page_38_Figure_5.jpeg)

Figure 56. Fibonacci trefoil [101].

![](_page_39_Figure_1.jpeg)

Figure 57. Hungry bugs spiral [102].

Each new result is located in the graphic representation sequentially alternating the sides of the squares, charged in one direction only. The resulting spiral is perfect, formed by the square and made evident by the curve trace intersecting the opposite corners according to the variation in their direction. Because all these spirals are similar in themselves they look the alike at every scale, what matters is the fixed proportion determining their shape, in turn, the same as those generated by successive entries in the Fibonacci sequence: 5:3, 8:5, 13:8, and so on [76] [98].

Again, we can see well designed the origin of the parts that **make up the Tao** from a mathematical perspective. The *Golden ratio* appears forming the fundamental angles that complete its symmetry, making us understand once again that the ancient Chinese sages used this knowledge to define this famous diagram (Figure 58) [105].

In summary, Lao Tse wanted to tell us that: "...from Nothing the Tao transforms into something... and from something it transforms into Nothing" [6], showing us the True Path: that "philosophical route" through which one travels towards the Absolute Truth. This "return" is what allows us to recycle ourselves to restart each cycle, returning to the Origin to start over:

"The uncreated can create and re-create, and the untransformed can transform and transform again. What is created cannot prevent itself from being produced; and the transformed cannot avoid transforming itself either (Figure 59). This means that there is no time or space without the production or transformation of things of themselves. This is (in fact) the demonstration of Yin and Yang" (Figure 60) [104] [105] [106] [107].

For this reason we can now understand how complex it was for these sages to reconcile the design of this universal symbol (**Figure 61**), whose circles describe a "*transitional metamorphosis*"; that is to say, the very moment of the change... an eternal process of permanent changes "...*from the macroscopic to the microscopic, from the cosmological to the physiological, from the sidereal macrophysical to the infinitesimal subatomic plane*" [103].

![](_page_40_Figure_1.jpeg)

Figure 58. Golden ratio & Tao development [104] [105].

![](_page_40_Figure_3.jpeg)

Figure 59. Geometric creation of Tao [104].

![](_page_40_Figure_5.jpeg)

Figure 60. Tao (current classical image) [106].

Already in the 19th century Western visionaries such as Teillhard de Chardin already assumed in their philosophical notion the notion of universal evolution. In the 20th century [107], there appeared a theory claiming that the Universe had started with a conformation of ten dimensions—nine of them referred to space and one to time—which later on "*coiled*" into a *cosmic spiral* (Figure 62 [108], Figure 63) [109], in which hidden dimensions animating the forces now known to modern Physics lie [110].

![](_page_41_Picture_2.jpeg)

Figure 61. Antique version of the Tao [108].

![](_page_41_Figure_4.jpeg)

**Figure 62.** Fibonacci spirals to infinity from old Tao [109].

Do such theories eventually reach any concrete results or are they mere guessings from heinous minds? Well, not quite. An extraordinary genius, Walter Russell, manager to modify Mendeléyev's periodic table of elements thanks to his "*mystical spirals*" which were able to *predict the existence of elements* unknown up to that moment (*deuterium* and *tritium*) [112]. Nicola Tesla himself was quite surprised at learning about Russell's deductions (see Figure 64).

The examples provided may lead to the more precise decisions and the production of the resulting theoretical **spiral**, to a self-regulating experience of knowledge. In it (and through it), the continuous *Transformations* and *Changes* that the Chinese represented in the **I-Ching Trigram** and the subsequent transmutation due to the direct interaction of the **Five Elements in Chinese Medicine** [112].

![](_page_42_Figure_3.jpeg)

Fibonacci -> 0, 1, 1, 2, 3, 5, 8, 13, 21, 34 to infinity

Figure 63. Fibonacci spirals to infinity [109].

![](_page_42_Figure_6.jpeg)

![](_page_42_Figure_7.jpeg)

# **5. Practical Medical Applications of Yin/Yang and Five Elements Theories regarding Solitons**

#### Solitons and Acupunctural Laser Therapy

This constitutes a new, painless and efficient acupuncture technique with a wide range of indications. The acronym LASER (Light Amplification by Stimulated Emission of Radiation) indicates the nature of the power from a narrow beam of monochromatic, coherent light provided by a device that offers such electromagnetic radiation (**Figure 65**) [113].

Low-power semiconducting lasers (<2 Mw) with a Gallium arsenide diode are inexpensive, efficient and small; they allow for the modulation of the emitted radiation and are used with analgesic-anti-inflammatory purposes in Acupuncture (Figure 65) [114].

Other indications for laser therapy are stress, anxiety, tobacco addiction, food disorders and other types of addiction. In this way, solitons transmit data through the vibrations in the biological systems, as it happens with nervous impulses (*neuro solitons*); and they seem to be "*holographically*" *filed* in the neurons of the nervous central system after being transported up to their by the peripheral nervous system [22]. This theory would be viable in order to explain the effects and results achieved when integrating *Therapeutic Acupunctural Resonance* into Traditional Chinese Medicine.

#### 6. Discussion

"The property we value in both cases is order. In spite of the fact that most of us would rather not think, we trust our lives to an organization, we do that every day" [87].

According to Bohm, if the Universe results from a non-linear succession of "*implied orders and super-implied orders*", the cosmos could be an extremely complex structured program that randomly forms "*non-correlative interac-tions*" which permit evolution through time. Following Nobel prize winner Ilya Prigogine, cosmos may be described as an "order emerging from chaos", a situation that gradually approaches the Chinese notion of universal Cosmogony: maybe unpredictable systems reordering from Chaos to Order in a reversible sequence, though plagued with factors of improbable direct verification [114].

![](_page_43_Picture_9.jpeg)

Figure 65. "Laser therapy: Innovative treatments and pains" [113].

Another quote from the Chinese medical canon clarifies even more the intrinsic relationships between Yin and Yang not only on the subject but as part of the direct influence of the environment upon him; that is to say, from a cosmic model capable of stabilizing its vital biology: "*Yin rules the organs*, *Yang, the entrails. Yin absorbs the Energy of the Sky*; *Yang absorbs the energy of the Five Organs. That is why, when it dissipates, one pricks before the circulation of energy; whereas, when it tones up, one follows the path along which energy circulates. This form of pricking enables energy regularization*" [115].

Consequently, when Schneider and Sagan claim that: "In spite of not being able to categorically affirm it, the purpose of life is that of promoting Chaos... it seems to be the natural function of organized energetic systems" [116], they are not very distant from the Chinese masters who knew how to wisely relate Tao teachings that inspired them to state the **Five Elements** and their constant and perennial transformations. It is in this notion that the deductions of Western scientists can be reflected, summarizing the "going back and forth" from and towards Chaos. This further implies a perpetual cycle of generation and destruction which enables the constant evolution of all that has been created [115].

It may be worth here to suggest induction from the particular to conclude in the general and propose the semiotic paradigm in order to try to solve such "*absurd mystery*" (and we do not refer here to incongruence at all, but to the "*reproductive*" nature of the issue), what Charles Sanders Peirce called *conjecture* [117]. The risk of an extremely exhaustive abductive analysis to state the *hypothesis* lies in the possibility of going beyond particular characteristics, thus overloading the cause of the conflict. That is why, to that end, Maturana and Varela suggest: "*From such process of human interactions inevitably emerge incompatible divergences*. why do they emerge? How come they are not absorbed naturally? Still, there is no worry in trying to establish the learning process producing such fierce divergence" [117].

In the West, the conflicting nature of our mental schema leads us to corrupt the harmony in the interaction to end up in a controversy that is difficult to solve: "...the sterile rationality with which we trump up our nature and which has led us to this **titanic confrontation of forces** in which any understanding, any deep reflection, any revision of personal responsibility in the production of such abyss seems to be systematically abolished" [78].

To consider complete equality impossible or non-existent seems to be a universal philosophical principle. Both physically and biologically it is truly improbable such situation from existing; however, according to Riedl, putting limits to similarities leads to an almost unimaginable result: "*The natural objects of our perception always enclose such vast array of magnitudes that the number of limitations among those competing among themselves is immeasurable*" [78]. More than two thousand years had to go by for the Western world to accept the structure "in a hierarchical system of totalities" of reciprocal relations and conditions [107], even though the Chinese had established thousands of years before

a pattern of organization base where the "*General Classification Theorem*" offered by the categorization following the **Five Elements**. Planck, Heisemberg, Bohr and Riedl, among others, confirmed that the existence of our planet is due, precisely to the reciprocal relations established among said **Elements** [85].

Chinese Medicine seems to have been structured around those conceptual configurations (**Figure 66**) [119]. Consequently, knowledge has gradually been hierarchically ordered in a way that Riedl calls "*superstructure*", *i.e.* a natural system enabling the understanding of *harmonious transformation*, occurring within each **Element**, in the same way, it was done with taxonomic classifications that have organized Botany and Zoology, thus providing continuity to the metamorphosis that is characteristic of the "*Similarity Fields*", and consequently, an adequate integration [78]. About this, Maturana and Varela state: "*A scientific explanation can only be generated in as much as we deal with the phenomenon that we are trying to explain as resulting from how a structurally determined system works*" [118].

Along with their millennial search, the Chinese made countless transcendental inventions thanks to a positive visualization of *integrative linking coinci-dences*. According to Riedl, this kind of reasoning makes "*homogeneous*" the sense of concepts and their consequent applications [78]. Historically speaking, this was made evident in Oriental Medicine:

"If Yin predominates, Yang shall become sick; if Yang predominates, Yin shall become sick. Predominant of Yang shall result in fever (heat) and predominance of Yin shall result in coldness... This means that the physical form was damaged first and afterwards, Energy" [120].

![](_page_45_Figure_5.jpeg)

**Figure 66.** Tao diagram shows the vast complexity of its intricate relationships [119].

If we compare unequal things at general level with the infinitely diversity particular things pose, this would lead to uncertainty rather than to certainty. *The systematic grouping of several concepts while looking for real similarities* is, precisely, what the Chinese have tried in order to define a taxonomic classification such as that of the **Five Elements**, and within them, all things. As regards these "reciprocity relationships", Onsager observed that: "...*in the region near balance* [...] *forces and flows couple*" [121].

The fourth verification by Onsager was that *metastability is achieved at a certain distance from balance*. Likewise, the methodology followed by the Chinese enabled them to advantageously manage—under that criterion for thousands of years—the "eternal Mutations" described by them; all of them in turn originating in the Essential Void. The *Fundamental Classification Theorem* managed to regularize the disorder from Chaos: a universal emerging well out of which Wu Chi constantly gestates its unlimited expansion. Khi Pa concludes in the following words with his detailed explanation in order to clarify the deep knowledge of his Yellow Emperor,

"That is why it is said that the Sky and the Earth constitute the beginning and end of everything; that Yin and Yang constitute masculine-feminine distinctions of Energy and Blood (masculine Energy being masculine and Blood, feminine); right and left are the two paths for Yin and Yang (the left one for Yang and the right one, Yin); that Water and Fire are symbols for Yin and Yang (Water, being Yin and Fire, Yang), that the nature of Yin and Yang makes them responsible for the creation of all things" [121].

In this way, Tao appears as the event making way for the **Creation of Everything from Nothing** (*Wu Chi*), for later dividing it into two opposing, though complementary, aspects that are present in everything that exists within all the possible cycles suggested by the Tao [113].

"There is something indiscriminate and formalized (born) before Sky and Earth (Yang and Yin) were formed. Extremely unmovable and inscrutable, it remains alone and unmodified, it repeats with each cycle and is endless, it is capable of being Mother to the Sky and the Earth. I know not its name, that is why I call it Tao" [28] (Figure 67).

![](_page_46_Picture_6.jpeg)

**Figure 67.** Tao dynamics, according to Prof. Adrián Ángel Inchauspe.

Echoing the lines above, we add that—considered from the Lomonósov-Lavoisier statement—should anything truly be lost in such interactions, the one taking it would be the very Transformation. **Rather than dissipating itself in a destructive degradation, the energetic consequence of the Universe Path implicitly engages its future constructive development**. The Yellow Emperor had it written down to illustrate and guide future generations:

"Yin and Yang are the Path of Heaven and Earth, the great schemes of all things, the parents of change, origin and beginning of birth and destruction, the palace of the gods. The treatment of disease should be based on origins (Yin and Yang) [121].

Such Chinese form of processing data is wonderfully simple and effective. Maybe history eventually reflects the unusual delay on the part of the West to adopt those principles, a torched maturation that would be worth the attempt of a global evolution, one that Riedl imagined: "separating what is constant from what is changing; what is supposedly necessary from that which is by chance, and it should fit this vision for "setting" that which is constant and necessary is of capital importance for the movement of Life" [122], thus achieving from the beginning the separation of that which is an equal form that which is different so that they are properly complemented [113]. For some very experienced Western authors, such as Eric Marié's works [33], this qualitative distinction is applicable in two ever-present opposing aspects forever present in the same thing, the interaction of several complementary principles such as:

- The **interdependence principle** (*Yin Yang Hu Gen*): in spite of the fact of an apparent competence situation, they are interdependent, i.e. that the previous condition of one is that giving rise to the existence of the other. For example, without Yin, the Yang cannot be originated; without the Yang, Yin would be unable to transform.
- The **opposition or duality principle** (*Yin Yang Dui Li*) of every existing phenomenon, contains conflicting natures in itself; however, because of their natural antagonism, they eventually complement one another towards a cyclical mutual balance.
- The contradiction or growth/reduction principle (*Yin Yang Xiao Zhang*): the ongoing activity of Yin and Yang reveal permanent change. Such dynamic alternation between them implies growth for one and a simultaneous proportional reduction for the other.
- The **subdivision principle** (inter-divisibility and relativity): a consequence deriving from the previous principle, it shows a dramatic contrast between opposites, which becomes an extreme or an exaggerated condition. For example, "Extreme cold produces heat; extreme heat becomes cold".
- The inter-transformation or inter-compensability principle (*Yin Yang Zhuan Hua*): a consequence of the previous one as well, is understood to be the capacity of changing an aspect of the same thing in its opposite. It sums up the intrinsic balance between Yin and Yang, capable of completely mutate

to its contrary extreme. This implies, as stated in a second entry, compensation by complementarity between opposites. The loss of such capacity of oscillating adaptation is, in fact, what leads to the state of disease.

• The **principle of alternation**: an extension of the analysis of the previous phase, it implies understanding that the Universe is in constant movement; that is, nothing remains still or fixed. Thus, a reciprocal balance is created between mutual generation and control, which enables the natural regulation of opposites by means of a Dynamic Balance.

We can appreciate again, as regards the configuration of the surrounding Universe and based upon the inter-relations among the Five Principles presented above, that ancient Chinese conceived it as a theoretical abstraction relating every living thing my means of the already mentioned Dynamic Balance and its ongoing mutation: from its reciprocal generation to its mutual control (**Figure 68**) [33].

# 7. Conclusions

Curiously enough, the aforementioned coincides with a Taoist vision of the Universe: everything that exists originates in Tao and returns to Tao. For that reason, the process of change or inter-transformation is, ultimately, what sets into motion the coming and going of things; thus, the resulting divination is a way of predicting the future thanks to the guidelines of that change [33]. In that respect, we can read below what she states in Hua Hu Ching:

"The uncreated may create and re-create, and the untransformed may transform and transform again. What is created cannot prevent producing from the self, likewise, what has been transformed cannot help transforming from the self" [6].

![](_page_48_Picture_7.jpeg)

**Figure 68.** Comparison between the Oriental Five Elements Theory and Euclid's Five Regular Polyhedra postulates Presented at the 2*nd International Conference and Exhibition on Traditional & Alternative Medicines*, 2014, Beijing [1].

This means that there is no time or space without the production or transformation of things themselves [33]. These "*re-coupling cycles*" provide this knowledge with an everlasting and multidimensional renewal that enables a "**self-regulated**" **process** of optimization, similar to those cycles proposed, for example, in quality management. So, the Chinese sages may have based themselves on this "*virtuous circle*" to affirm or reject the results they got from their experiences. Schneider and Sagan further explain that "The evolution of complex and intelligent forms of life may be explained as life's efficiency as a cyclic system, devoted to the reduction of gradient" [123].

The following conclusions lead us to the conceptual analysis of the nonlinear **devices** defined by Nobel prize winner Ilya Prigogine, who established the characteristic parameters of "*emerging thought*". They require an "**open system**" exchanging matter and energy with outer space; they require a series of "**non-linear regulations**" on that system. Because they "**remain open**," systems may be able to further develop their functions over time, in an attempt to approach probabilities to certainties they may become dynamic, while optimizing the resulting algorithms in the most different branches of knowledge. This enables new hypotheses to be formulated that may guide the evolution of events. This situation is similar to that proposed by Guth, who considered it impossible for **Absolut Void** to occur simultaneously in the whole Universe; there would exist *regions in contrasting and ambivalent states*, each generating its own different physical laws. This in turn generates a universal "**rupture of the spontaneous symmetry**" [14] within which the well-known "**Pairs of opposites**" meet. The sixth Patriarch, Zen Hui Neng states:

"In the outer world of relative objects, there are five **pairs of opposites**. Sky and Earth; Sun and Moon; Light and Darkness; Water and Fire, Yin and Yang... coming and going, merging and detaching, both ways, it actively works in the inherent nature" [123].

As stated in the generative and inhibitory cycles that interrelate the Five Elements, Ilya Prigogine said such "*disturbances*" justified inter-transformation of matter from one system to a different one. Another important active principle originating in **Non-equilibrium Thermodynamics** is that in regions of energy flow, *matter describes cycles* that occur following an order determined in time [78]. According to Paul Davies, different Oriental religions debate about what can change and what remains unchanged, always under a **cyclic progressive and self-organizing appreciation** of a "*Cosmic All*" with determined and predictable goals [113]. As stated in a previous work "**Euclidean Geometry and Traditional Chinese Medicine: Diving into the Real Origin of the Five Elements**" on the comparison between Empedocles and Zou Yan Five Elements paradigm:

"Surprisingly, thousands of kilometers far away, the ancient Chinese expressed—through Zou Yan 鄒衍 (305-240 BC)—a collection of Elements almost homonymous to the Greek one (the "Air" element could also be considered "Metal" [see below]) to which Wood had been added (not included in the list of Elements of Empedocles of Agrigento—a follower of Hippocrates' teachings-even though it existed, as was the case with the tetrahedron (carbon's atomic structure in Plato's Dimensional Solids") [33] [cf. the stele from the Universal History of Ancient Medicine at Hainan Medical University, Figure 69, Figure 70].

It seems that certain contemporary Western scholars such as Riedl have managed to understand the experiences resulting from comparing similarities both in the structural as in the functional fields, which limits "*differences and coincidences within them*" searching for relationships among **Elements** that enable the solution of mysteries and diagnoses [78].

![](_page_50_Picture_3.jpeg)

Figure 69. Stele of the history of medicine (Hainan Med. Univ).

![](_page_50_Picture_5.jpeg)

Figure 70. Stele of the history of medicine—detail (Hainan Med. Univ.).

Consequently, it would be necessary to distinguish between *determinism* and *predictability*. According to Chilean authors Maturana y Varela, we "*speak about prediction every time that, after considering the present state of any system we observe, we state that there is a consequent state in it that shall result from its structural dynamics and we shall be able to observe as well,"* 

"A prediction, therefore, reveals what we as observers, expect to happen every time that after considering the present state of any system that we observe, we affirm that there would be a consistent state in it that will result from its structural dynamics and that we will also be able to observe. A prediction, therefore, reveals what we as observers expect to happen" [124] [78].

We may find a coincident sense to that which Schneider and Sagan explain as regards the predictability of complex systems:

"The aversion of Nature towards gradients implies that the latter shall spontaneously tend to disappear in an especially spectacular way because of the action of **self-organized complex systems**" [123].

It seems suitable at this point to suggest the notion of "*Field of similarity*" in accordance with the millenial Chinese suggestion of devising a *General Classification Theorem* based on the Exact Sciences that provided the **Five Elements**—ever self-generating and controlling by means of Creative and Inhibitory Cycles—and extrapolate what Riedl wrote about the notion of "*Fields of Similarities*" claiming that those:

"...contain the expectation that similar events or status enable the prediction of similar events or status sequences, this hypothesis of expectation of possibility includes a determined **Field of Similarities**. the same set of events or status also enables the prediction of a certain determined sequence of events or states" [78] (**Figure 69**, **Figure 70**).

How accurately could this take place? Again, Riedl clears the doubt for us, demonstrating with mathematical precision this way of data processing is almost equivalent to certainty: "...*the remaining insecurity appears with thirty zeros al-ter the comma, it constitutes a mere difference of quintillionth*". [78] Consequently, the consecutive succession of confirmed predictions takes us far away from randomness and closer to the "*intentional assumption*" each time as long as confirmation of the predictive diagnosis continues in time [125].

Such dynamic conception has been performed on human chrono-biology for millennia, enabling the Chinese to manage complementary antagonisms of the human body as a self-regulated system by the delicate balance of their constant mutation. If today we can mention the energetic theories providing support to Acupuncture, it could not be possible to find verifiable proof to make the incredulous scientist believe what we state (in spite of their being, and in abundance). That is why it is understandable that to date its existence is still not admitted. For, in stubbornly looking for the essence of reality, both trends find themselves facing the same dilemma: it is as impossible to anatomize Acupunctural meridians as it is impossible to find memories in anatomizing a brain or find affection in opening a heart.

The word *science* in modern Chinese is *Ko Hsueh* meaning "knowledge" or "classification" [126]. We can add that both medicines—Oriental and Western—began practically under the same paradigm and almost at the same time. We have previously considered elsewhere [1] [127] how Empedocles of Agrigento (504 - 433 BC—Figure 71) and his almost contemporaneous colleague in the East Zou Yan (350-270 BC—Figure 72) suggested almost together the Elements as essential in order to interpret Changes and Inter-transformations of the Matter taking place on a daily basis both in nature as in man (Figure 73) [1] [127] [128] Thus, in spite of being different approaches, they dictated, together with Euclid, the first essential Theorem for the Classification of Medical Knowledge. Perhaps this is the reason why the Su Wen reads: "*This constitutes the first known systematization in medical nosology.*"

![](_page_52_Picture_3.jpeg)

Figure 71. Empedocles from agrigento [1].

![](_page_52_Picture_5.jpeg)

Figure 72. Zou Yan (350-270 B.C.) [1].

![](_page_53_Figure_1.jpeg)

Figure 73. Elements theories in western and oriental medicines [1].

Thus, it may be inferred that Chinese Medical Principles recognize an exact basis—derived from the most ancient formal science there exists: Geometry—to support the dynamics of their precise relationships, linkages and inter-transformation, and their successful diagnosis and accurate therapeutics through times [1].

## **Conflicts of Interest**

The authors declare no conflicts of interest regarding the publication of this paper.

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