

# Frontier science promotes exploration of principles and methodologies of acupuncture in traditional Chinese medicine

## 前沿科学促进中医针灸理论及思维方法论的探析

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### Abstract

Traditional Chinese Medicine (TCM), a theoretical medical system founded about three thousand years ago, originated from the richness of Chinese culture with the support and development of ancient astronomy and the Taoist philosophy of heaven and man. It has revealed many mysteries and illuminated interactions between nature and human beings. Those mysteries have not been easily understood by the public because TCM's conceptual system differs in form and essence from modern sciences. In modern times, some of the mysterious processes have been gradually discovered or confirmed by an advanced science: quantum physics. Quantum science is considered to break through basic concepts of mechanistic science, thus providing an entry to understanding of Chinese culture and TCM theories. Some experimental results of contemporary quantum physics shake the foundations of conventional scientific concepts. For example, quantum mechanics theory helps expand the limits of three-dimensional observations. It helps explain the phenomena that the consciousness with certain human functions interfere some experimental results. Viewing new things in a high-dimensional time-space framework helps people understand the real and virtual characteristics and their interaction; this leads to understanding the function of advanced human wisdom and intelligence in dealing with more complex objects (systems) such as the universe, the human body, life itself and consciousness. It may help people in developing simple models of the complex world and is believed more conducive to grasping the essence of human life and gradually removing the veil over many wonderful phenomena of Chinese culture and TCM. For example, TCM's 'Imagery Analogism' is attained in the quiet state of well-trained meditation practitioners. Their intuition and inspiration have significant advantages in understanding complexity of objects such as the universe, human body, life, and consciousness. The methodology of thinking helps to derive simple models so as to better grasp the essence of complex objects. Many phenomena of Chinese culture and TCM acupuncture remain incompletely understood. This paper selects a few examples to discuss, including human consciousness and sub-consciousness, human body's energy system, invisible qi, functional phenomena as well as special functions of the heart and Triple Energizer (Three Jiao) in six Fu organs. The 'new finding of an unrecognized interstitium in human tissues' as declared by a group of Western scholars is actually referring to Triple Energizer that had already been revealed and written in *Huang Di Nei Jing (Yellow Emperor's Classic of Internal Medicine)* three thousand years ago. Both the concept and functions of Triple Energizer have been utilized throughout TCM clinical practices. Through the discussion, the authors attempt to explain the superiority of TCM theories, to strengthen the confidence for TCM innovation and Chinese culture because they believe that offering an integration of TCM practice into the public health and life science would advance human wellbeing and pave a right path for TCM mission and development.

**Keywords:** Traditional Chinese Medicine; Western Medicine; Qi; Qi Field; Spirit; Consciousness; View of Life and View of Body; Quantum Theory

**【摘要】**传统中医学是创建于约三千年前的理论医学，起源于中国早期文化的繁荣时期，得益于古天文学及天人合一的道哲学的支持与发展。她深刻地预见和揭示了自然界和人相互影响的许多奥秘，但因其概念体系与近代科学在形式上有所不同，还不易为大众所理解。在数千年后的今天，随着对当代量子物理现象和理论认识的加深，人们正在从根本上突破机械论科学的某些基础观念，并开始理解和接受中国文化及中医理论。例如，量子力学理论突破常人三维空间视角的局限，有助于人们观察、感知到虚实互动的高维时空的全新生命事物，帮助解释意识

以及人体功能会改变某些科学实验结果的现象, 帮助理解人所拥有的, 来自直觉、灵感等用于处理宇宙、人体、生命、意识等复杂对象(系统)的高级智慧功能。如果深刻认识其规律, 可能会协助人们针对生命等复杂现象抽象出简单的模型, 从而有利于抓住生命等复杂事物的本质, 逐步揭开中国文化和中医的很多奇妙现象的面纱。本文选取几个例子展开讨论, 包括人类意识和潜意识等功能现象、人体的能量系统、无形的气、功能现象、心脏的多种特殊功能、脏腑之一的“三焦”腑。三千年前中医就将“三焦”写入《黄帝内经》, 并详细记载了其各种功能及病理学上的具体应用, 一直指导临床至今。直至今日这个腑器才被西方科学所认知和定义。中医理论的前瞻性及其蕴藏的深邃智慧, 必将在未来医学中发挥重要作用, 也是健康科学和生命科学的核心支柱之一。通过这些讨论, 作者试图阐明传统中医思维模式的某些优越性, 进一步确立其人类文化瑰宝的地位, 加强自身的理论自信和文化自信, 为今后正确地弘扬中医事业开路。

**【关键词】** 中医学; 西医学; 气; 气场; 精神; 意识; 生命观与身体观; 量子论

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Traditional Chinese medicine (TCM) theories have been successfully used in medical diagnosis and treatment in China and other Asian countries for several thousands of years. TCM theories are rather conclusive and technical, in their simplest form. TCM has many critical mysteries not yet explained by conventional sciences. However, through the past three-thousand years, TCM has made substantial contributions to the prosperity of China. Yet, in the last one hundred years, skeptics and critics have risen up against TCM. They attempt to teach, learn, and practice TCM within the framework of conventional Western medicine (CWM). This trend cross-bred TCM and CWM theories but ignored the essence of TCM. Although often ostracized by the CWM and big pharmaceutical industries, TCM herbal prescriptions help correct unhealthy or abnormal human conditions (imbalance of yin-yang, or stagnated circulation) with herbal function (four natures and five tastes) and herbal energy information. TCM's ancient achievements offer a history of useful remedies, sometimes to problems unresolved by modern science, and at a significantly less financial, physical and emotional cost in most of the time.

Three ancient books have influenced Chinese culture, philosophy, and thoughts, which have been spread to many other countries. *Huang Di Nei Jing (Yellow Emperor's Classic of Internal Medicine)*<sup>[1]</sup>, *Yi Jing (The Book of Changes)*<sup>[2]</sup>, and *Dao De Jing (Tao Te Ching)*<sup>[3]</sup> reflect fundamentals of the universe and life. TCM, as presented in the three books, includes concepts of the ever-changing universe: appearance/disappearance, seen/unseen, and matter/energy/information<sup>[2]</sup>. They hold that there is a unity of the mental and the physical<sup>[2,4]</sup>. The universe, a connected unity, has holographic characteristics. Because of the breadth of its approach, it is critical to clarify TCM's principles, maintain TCM's proper methodologies, and preserve TCM's integrity. Actually, TCM represents the interface of Chinese culture and Chinese philosophical wisdom. It is the key to opening the treasure house of Chinese civilization and the key to promoting Chinese culture.

## 1 New Findings About the Heart and Its Functions with Consciousness

TCM's concept of 'heart' connects with brain functions. In TCM, 'heart' is the most important organ because it represents the 'whole will' that dominates the life activities. *Huang Di Nei Jing (Yellow Emperor's Classic of Internal Medicine)* describes the heart as 'the emperor of the whole body' and states that 'the heart is in charge of all conscious and subconscious mental activities and mind power'. Here, the heart refers to the functions of the heart-mind<sup>[5]</sup>, which controls consciousness and life in general. Most people do not conceive of the heart in TCM sense. Laymen often see the heart as an independent blood pump, based on their CWM education.

Recently, some heart transplant CWM physicians have reported that, following the heart transplant, the organ recipient seems to take on the personality of the donor. Numerous medical researchers have also observed and reported this phenomenon. This has stimulated medical scientists' interest in the TCM point of view. Some researchers suggest that information-processing in human beings is a mystery and that the heart organ may play an intangible role, possibly storing information<sup>[5]</sup>.

Existing scientific experiments and studies suggest that the creation of consciousness might be influenced by the pulsation of the heart<sup>[6-7]</sup>. This implies that the brain processes competing information by using some balance to reflect the 'whole will'. To be more precise, the information contained in the free hydrogen protons can chemically combine with the oxygen in the blood and determine prioritized paths in the blood supply<sup>[8]</sup>. With the energy support of the 'whole will', information bearing dominant and free hydrogen protons would become more vibrant and force other information to vibrate synchronously<sup>[9]</sup>. Therefore, the consciousness would reflect the substantial activity of the 'whole will', and would be guided predominantly by the more vibrant information<sup>[9]</sup>. TCM physicians and philosophers

believe that the ‘heart’ is the organ bearing consciousness because the asymmetrical distribution of blood vibrancies embodies the ‘whole will’<sup>[8,10]</sup>.

Science of the Heart, a HeartMath Institute (HMI) paper, explains that the heart performing like a brain has actually a small brain in a normal sense, with an intricate network of several types of neurons, neurotransmitters, proteins and supporting cells. It can act independently to learn, remember, feel and sense things. Dr. Andrew Armour introduced the concept that the heart’s complex nervous system qualifies it as a ‘little brain’<sup>[7]</sup> (Figure 1-Figure 2).



Figure 1. Intrinsic cardiac afferent neurons (from HeartMath Institute)<sup>[7]</sup>

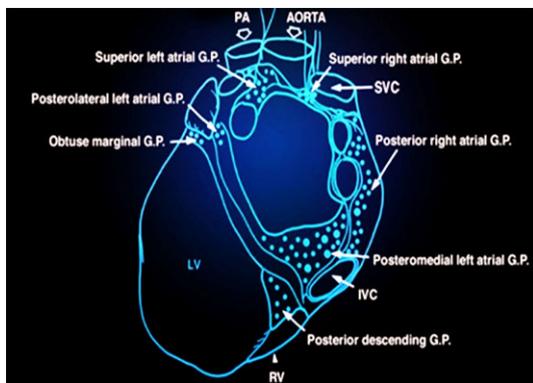


Figure 2. Location and distribution of intrinsic cardiac ganglia (from HeartMath Institute)<sup>[7]</sup>

One of the key discoveries that HMI researchers have made about the heart-brain, or the intelligent heart, is that it can experience emotions and change the information that the heart sends to the brain. HeartMath Institute studies also show that the empathy and positive attitude benefit humans in some relevance.

Research found that strong energy (magnetism) fields (not aura light) which surround the heart are one thousand times stronger than the brain’s energy field (Figure 3). The heart is the most powerful resource for self-healing and the immunity. The heart appears to be as complicated as the brain and is important in the

five-element principle<sup>[1]</sup>. This research results are consistent with TCM theory<sup>[4,11-12]</sup>.

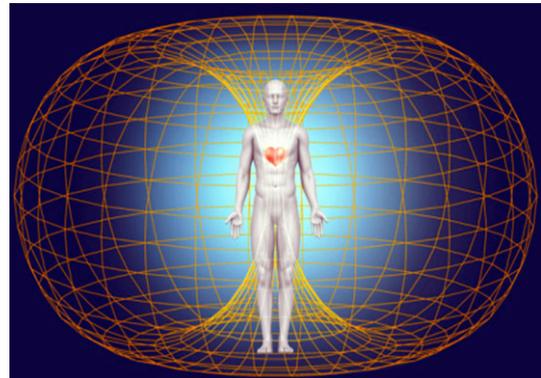


Figure 3. Illustration of the shape and relative size of the energy field that surrounds the human heart (from HeartMath Institute)<sup>[7]</sup>

## 2 Comparison of the Interstitial-tissue Organ with Triple Energizer

American scientists recently announced the discovery of an unknown organ in the human body. This finding was published as Scientific Reports on March 27, 2018<sup>[13]</sup>. Scientists suggested that the newly discovered ‘interstitial fluid-rich interstitial tissue’ be classified as a complete organ. In other words, the organ has an independent physiological role and components. This discovery was accidentally achieved by extending a micro camera into the human gastrointestinal tract during routine endoscopy. Dr. Neil Theise, a pathologist at the New York University School of Medicine in New York, speculates that every tissue in the body is surrounded by a fluid-filled interstitial network that actually forms an organ that spreads throughout the body. The mesenchyme is equivalent to a ‘flowing liquid highway’. Their location includes the fascia beneath the skin’s surface, along the digestive tract, the lungs and urinary system, around the arteries, veins, and muscles. The reason that has not been discovered in the past is due to a disadvantage of the conventional method of human tissue research. In the process of dissection, the operation unconsciously destroys the structure of the interstitial tissue, so that the liquid in the tissue is emptied. When viewed under a microscope, the operator can only see the connecting tissue, a layer of simple connection of organs. Therefore, this organ was never realized for its existence in the past. Some experts believe that, in addition to the role of ‘shock absorber’ to protect organs, the network can also help the transfer of cancer cells. The discovery of ‘interstitial tissue’ may imply that new cancer detection and diagnostic techniques are imminent. This organ may also involve other problems, including edema and inflammatory diseases<sup>[13]</sup>.

In terms of the descriptive function and location of this organ, we have carefully compared it with Triple Energizer, an organ that was discovered in a Chinese internal classic medicine book about 3 000 years ago. In TCM, Triple Energizer is known as one of the entrails or vital organs of the human body, as commonly defined in a short term 'five Zang and six Fu organs'. It has metamorphosed into the water valley, metamorphosing into subtle water, and excreting fluid and dregs. However, the function of Triple Energizer is to dredge, control, and balance the body fluids. The book *Huang Di Nei Jing (Yellow Emperor's Classic of Internal Medicine)* states, 'the upper Jiao as transpiration of qi, the middle Jiao as digestion, and the lower Jiao as the distribution and drain'<sup>[1]</sup>.

Triple Energizer, one of the six Fu organs, includes all internal organs in the chest and abdomen as a functional system (sub-intangible organ). In relation to Triple Energizer, the term Fu organ has a special meaning, unlike the definition in modern anatomy. It functions holistically or systematically with qi, rather than as an isolated structure, which includes a meridian system being named after this organ's Chinese name: Three Jiao. The water metabolism is more complicated in dealing with all organs including five Zang and six Fu organs in the big cavity<sup>[10]</sup>. TCM practitioners utilize their advantages of visualization and basic meditation, which break the limit of three-dimensional space to identify the functional system<sup>[14]</sup>. *Ling Shu (Spiritual Pivot)* says, 'The upper Jiao (chest) looks like clod of mist; the middle Jiao (between diaphragm and navel) ferments food mixing with water; the lower Jiao (abdomen) acts like an active network'<sup>[1,10]</sup>. This ancient oriental philosophy and wisdom have solved many complicated problems (tangible water with intangible)<sup>[15]</sup>. Triple Energizer also consists of a special function of all the internal organs in the chest and abdomen as a whole, as well as its own distinct functions<sup>[14]</sup>. Yet there is no tangible individual organ (not necessarily related to its component), as well as influencing intangible matter, energy and messages, such as qi that emphasizes the holistic function instead of the anatomy<sup>[16]</sup>. Triple Energizer is believed to involve the complete process of qi transformation, and the ingestion, digestion, transmission as well as excretion of food and water. Thus, if we acknowledge the intangible aspects in the makeup of the human beings, it should be a small shift to assimilate the concept of Triple Energizer. A good example to help people understand the uniqueness of TCM theory is the tacit knowledge<sup>[15]</sup> and the 'systematic science' principles<sup>[17]</sup>, which is different from conventional sciences and CWM.

The term 'Triple Energizer Meridian' may be easier to understand than the term 'Triple Energizer organ' because it is externally-internally related to the Pericardium Meridian, linking up the spatial functional

sequence (five elements) to the temporal sequence of the human life system. Triple Energizer passes on Yuan-Primordial qi and transmits body fluid. *Su Wen (Essential Questions)* says, 'Triple Energizer is the officer in charge of irrigation and it regulates the water passage'<sup>[1]</sup>. TCM conceives of Triple Energizer as a great Fu organ in the thoracic and abdominal cavities, the largest viscera.

The recent discovery by Dr. Neil Theise, *et al* is actually the organ 'Triple Energizer'<sup>[13]</sup>. This term originated from TCM's holistic view and systematic thinking, which overcomes the limitation of three-dimensional space<sup>[17]</sup>. As a little complex object for an ordinary organ, Triple Energizer is an interstitial tissue being coordinated and guided by invisible systems (energy, matter, and information), including a network to control the body fluid and waterway operation<sup>[16]</sup>. There is also a meridian corresponding to the Triple Energizer system, with its corresponding meridian. This organ acts like a harbor of the spatial functional sequence (five elements) and the temporal sequence (meridian flow) of the life system and has been actually described in TCM books for more than 3 000 years<sup>[18]</sup>. For example, Triple Energizer has the function of managing water flow. If there is not enough yang energy in the body, as a result of a clogged airway or blocked waterway, the fluid would be stored under the skin and cause swelling problems<sup>[13]</sup>. *Huang Di Nei Jing (Yellow Emperor's Classic of Internal Medicine)* says, 'Triple Energizer patients are full of qi in the abdomen, and the lower abdomen is particularly expanded when one has the difficulty of urgent urination. If overflowing, it is like water. If being left in, it will swell'<sup>[1]</sup>. Therefore, edema should be treated from Triple Energizer by adjusting the organ's functions. TCM practitioners believe that the onset of some cancers is related to 'an accumulation of pathogenic qi'. If the function of rise and fall is out of order in the Triple Energizer mechanism, pathogenic qi would be accumulated in water internally. Studies of epidemiology show that a holistic approach of TCM, which combines the utilization of 'syndrome differentiation of Triple Energizer', energy 'guidance', physical and mental treatment, detoxification, and anti-cancer treatment together, has saved many people's lives and improved their quality of life<sup>[18]</sup>.

Drawing on the findings regarding cardiac function disclosed above, we surmise that both Western and Oriental modes of thinking have their own advantages and disadvantages. For example, CWM pays more attention to the structure of space and the dividing analyses; wisdom and thoughts are characterized by strong operability, enable to exert the skills and techniques to the fullest extent, and establish the main force of medical industrialization. However, when dealing with complex issues, the CWM may not be comprehensive and profound to see the holistic image.

On the other hand, TCM is very profound on exploring relationships of the human with universe as well as the life with consciousness. The achievements of TCM as a great wisdom to promote the balance of nature, although not easily understood by ordinary people, may greatly benefit the future development of human beings and the health science.

Both TCM and CWM can learn from each other. We are grateful to the Western scientists who discovered the 'interstitial organ' as well as the advanced testing instruments and techniques. By using these techniques, they have identified the physical structure of Triple Energizer with a clear picture, so that people can visually study this organ. It also can help us further understand the function of Triple Energizer. Meanwhile we are very surprised by the fact that Western medical experts did not realize that the organ they declared to be something new had actually been discovered and applied to clinics about 3 000 years ago in TCM. A common sense that 'one has five Zang and six Fu organs' is familiar to ordinary people in Asian, but surprisingly it has remained unknown to Westerners. We think one of the major reasons causing this misunderstanding is the isolation between CWM and TCM, lacking a proper and equal platform for communication. Therefore, we argue through this unique incidence that CWM and TCM should learn from each other, complement each other's strengths, and establish a new model of cooperation, in order to better serve human beings.

### 3 Deep Understanding and Exploration of Medicine and Consciousness-the Powerful Health Function

One of the TCM advantages is the understanding of spirit or consciousness (including the mind and the subconsciousness) and its relationship to illness. In Western philosophy, spirit and body tend to be treated distinctly and separately. The spirit is believed to dominate the human body but at a much higher level. In conventional Eastern philosophy, however, spirit and body are always considered to be unified. Ancient Eastern philosophers believed that the spirit is a substantial embodiment of the 'whole will', rather than isolated from the physical body. Once it was very difficult to see that social relationships influence illnesses. Now, that effect is better understood. Consciousness can act on the 'whole will' and influence the body's balance. Especially in a stressful relationship, the consciousness can produce a vicious cycle: an extreme change of the emotion imbalances the entire body. In response, imbalance strengthens emotional vibrations in the brain and dominates consciousness. Original normal balance is displaced and the distorted information is transmitted to other parts of the body. New cells are generated in an aberrant and malignant

environment. For example, cardiovascular diseases and cancers result from the maladjustment of the inner environment in the entire body. New cells can continue to be aberrant if the imbalance of the inner environment is unchanged, even though old pathological cells are removed. Therefore, successful treatment of such disease is to treat 'the illness in the mind' to change the inner environment. Only if the inner environment and 'the illness in the mind' are completely cured, can other problems be readily resolved.

Quantum theory introduced human consciousness to modern science with the concept of quantum 'collapse': the state of particle-wave changes. This is a great contribution to science. It is also a breakthrough that enlightens the questions in TCM and acupuncture<sup>[14]</sup>. TCM's principle, 'treat the mind-body together'<sup>[8-10]</sup>, is the strategy that unifies heart and conscious power to utilize the million-year-old evolution of self-healing (immune) abilities<sup>[19]</sup>.

### 4 Advantages of Chinese Culture and Eastern Methodology

How could Chinese sages explore the secrets of the human body so deeply thousands of years ago?

How can modern physics and astronomy come to amazingly similar conclusions in line with the ancient Eastern philosophy of TCM?

As introduced in the background section, an outstanding Chinese cultural characteristic is commitment to the humanist outlook<sup>[1,4]</sup>. Ancient Chinese sages clearly prioritized the greater goal for whole human beings and nature rather than personal goals. They tried to rise above common responses to acquire wisdom on a much higher plane. Taoism has at all times and in varying forms appealed to the thinking of the Chinese people. The Chinese term 'analogism' or 'imagery analogism'<sup>[18]</sup> is different from the logic of modern scientific thinking, and it may be considered more advantageous in some cases.

An object's inner energy is always moving, changing, and radiating light. Images or shadows flash around every object visible or invisible. The colorful aura light's changeable image is an example. Ancient TCM doctors 'visualized the inside of the body', located the meridian system, and observed images around the body to collect health information. This method became the method of analysis, especially in complex situations.

Analogism refers to the use of emotional, imaginative, and intuitive concepts. That is where an abstract symbol represents the object. This symbol simplifies information to grasp the key character of an object. Analogism recognizes and comprehends objects to represent them. Eastern thinking classifies or specifies categories based on similar subjects with the known

identical characteristics. This is a deriving process which sorts out the similar but not exactly same, corresponding (homologues) but not equal. Analogism is not limited to a specific range of images that are alike. It allows infinite analogizing of the functional relationship and the dynamic properties that support the same premise<sup>[18]</sup>.

On one hand, Eastern thinking connects to the much deeper wisdom of abstract concepts, which improves understanding of the objective world based on physicality. On the other hand, analogism combines reasoning by analogy with an intuitive understanding of the objective world. This method has been widely used in TCM, as in the five-element theory<sup>[4]</sup>. The recognition of the symbolism-digit therapy<sup>[18]</sup> within TCM principles and practices helps enhance understanding of the essence of TCM, and helps clarify the connection between the body and the universe through invisible energy and information systems such as qi field<sup>[9,11,17]</sup>. This foundation of TCM is not easily understood by modern society.

The holographic principles and the 'state and tendency' of *Yi Jing (The Book of Changes)*<sup>[2,4]</sup> support the observation and belief that, in all operations, there is no thought and no action, being still without movement, but following the wisdom when acting on, penetrating to the root of all phenomena, and creating all miracle<sup>[2]</sup>. Albert Einstein said, 'There is no logical way to find these elements in law, only the intuitive way, the feeling, helps lay the groundwork behind the later appearance<sup>[19]</sup>'. *Huang Di Nei Jing (Yellow Emperor's Classic of Internal Medicine)* explains it is something we never heard, but seems to flash in our mind, making our eyes sharp and our spirit clear. Our intelligent intuition already understands it; although we cannot describe it with words, we could still visualize it; although quite dusky, it seems quite clear to us, like a cloud blown away by the wind. It is thus called the miracle<sup>[8]</sup>. Those are intrinsic properties or potential wisdom of human beings, which includes inspiration.

The aforementioned points of view have been achieved in quantum theory over three-dimensions, whereas they were previously not acceptable by conventional sciences and CWM which are based on the atomic scale of reductionism within a three-dimensional space. We need other ways to handle the complexity of objects, such as life, the universe, the human body, and consciousness<sup>[9,17]</sup>.

Holism is defined in TCM theory as the universe and living nature interacting as wholes that are more than the mere sum of elementary particles. The ancient Chinese saw the body's functions from a holistic point of view and handled the most complicated system on difficult subjects, using tangible and intangible aspects of the body and our existence from a simplified model with great wisdom and prediction skills. For example,

Lao Zi described the universe as 'Vague, opaque, in a dream-like state of semi-consciousness, with image. Obscure, in a half-awake state of consciousness, with material. Murky, in a half-asleep state of consciousness, with energy and essence. This is the real and full, with spirit and information'<sup>[2]</sup>.

## 5 Review and Thinking

As a fundamental concept of *Yi Jing (The Book of Changes)*, the symbols and trigrams are adopted from another paper<sup>[14]</sup>. The symbols were created about 7 500-9 500 years ago in the Fu Xi period before the appearance of written characters. Each of the eight diagram symbols has three parts called Gua (divinatory symbols) and is composed of the yang hexagram (—) and the yin hexagram (- -). The diagrams represent the eight fundamental phenomena and can be used to symbolize all objects and situations in the universe. Because all things in the universe are believed to be originally developed from the qi (energy) of yin and yang, the trigrams are believed to be able to describe everything in the universe. The 64 hexagrams of *Yi Jing (The Book of Changes)* are arranged or composed using the eight diagrams (Table 1). This is a typical example encoding a complex object with a simple format. The 64 hexagrams have been widely used in astronomy, geography, ancient calendars and calculations as the state and tendency in forecasts for thousands of years<sup>[14]</sup>.

The diagrams illustrated in Table 1 represent the eight fundamental phenomena and show that the universe of all things was originally developed from the qi (energy) of yin and yang. The symbols and digits of trigrams are common terms in the theory of trigrams with infinite connotations. At the most basic level, each symbol of a trigram corresponds to a specific digit. The trigram symbols and digits are like two sides of a coin that show various aspects of change at different stages. A trigram symbol determines a digit, and that digit reflects the trigram symbol.

*Yi Jing (The Book of Changes)* itself is the conclusion of these symbols. Trigrams represent the basic properties of the universe, and are abstracted into eight groups. To paraphrase Confucius, 'Qian suggests the idea of a horse or the head; Kun, an ox or the belly; Zhen, a dragon or the feet; Xun, a fowl or the thighs; Kan, a pig or the ears; Li, a pheasant or the eyes; Gen, a dog or the hands; and Dui, a sheep or the mouth'. In this quotation, the term 'suggests the idea of' does not mean 'the same as', 'equal to' or 'is'. In short, a trigram itself is nothing but a representative symbol of something in the universe. Understanding in symbolism-digit knowledge is more flexible than it is in general scientific knowledge. Connotations can be understood from the imagery analogism<sup>[18]</sup> or 'tacit knowledge'<sup>[15]</sup>,

which supplements the limitation of scientific thought that is derived from methodology. Analogism uses the senses, abstract meanings, images, intuitive concepts, and symbols to convey meaning about an object or

phenomenon. Gradually, by following the rules of analogies, the phenomena occurring in human physiology and pathology with great complex can be gradually explained in TCM.

**Table 1. Diagram of the evolutionary sequence of former heaven trigrams**

Digit	1	2	3	4	5	6	7	8
Trigrams (yao III)								
Bigrams (yao II)								
Monograms (yao I)								
Tai Ji								

Conventional science usually pays more attention to the superficial structure or a restructured view. However, conventional sciences have become so technical that only a very small number of specialists are able to master the mathematics used to describe them. Even though the gene has been studied in a great detail, one has to admit that more than 1 000 genes in a simple piece of seaweed are not independent. To be sure of finding the highest level of fitness, in this case, one should work out the total number of combinations, a multiplier of 2 to the power of 1 000, or about 10 to the power of 300. No matter how advanced the present computation, it cannot to be done nearby<sup>[14]</sup>. A scientific report demonstrates that the gene adjustment has occurred in a retinal medical experiment following an optimization. The results were achieved through a special prescription of TCM energy product that greatly prolonged the survival of a cultured retinal neuron sample and inhibited H<sub>2</sub>O<sub>2</sub>-induced toxicity. The DNA microarray analysis also shows that among 1 176 genes tested, 72 genes were up-regulated and 77 genes were down-regulated<sup>[9]</sup>. The up- and down-regulation is an important action for promoting human health. Within the framework of Western culture, CWM focuses on analyses of anatomical structures of the subjects. With the rapid development of modern science and technology, CWM has made great achievements in studies on the structure of the human body, becoming the mainstream medicine in the world. However, while experiencing rapid development, CWM also suffers fatal flaws. For example, lacking a holistic approach and an internal logic among human organs and between human beings and the universe, CWM denies the existence of invisible substances, qi (the vital energy),

and the mind<sup>[16]</sup>. As a result, it leads to the separation of body and mind, high rates of misdiagnoses, and the severe side effects of drugs. Unable to fully exploit the powerful self-healing capacities of human body, it also results in suffering due to excessive treatment and high financial costs. Therefore, the treatment of many diseases in CWM is not clearly targeted, especially when dealing with complex subjects, such as the patient with multiple diseases, physical and mental diseases, and many other factors involving mental, environmental and social problems, etc. In such situations, CWM is often powerless or helpless.

In the past 100 years or so, some Chinese have lost their confidence in TCM. They criticize traditional Chinese culture and declare TCM to be feudalism or superficial. This paper is prepared to recognize the facts and rebuild people's confidence in TCM of Eastern culture and to promote the legacy of mankind. Modern scientific experiments have been gradually confirming the hidden processes and predictions in TCM, thereby revealing the true value of TCM. Following the exploration of Chinese culture and the new development efforts of scientific research, people will recognize the real value of TCM theories and appreciate the great treasure offered to the world.

Both TCM and CWM have advantage and disadvantage. By taking the advantages and avoiding the disadvantages, this attitude and effort would gradually become the kernel and strength for establishing future medicine. It is believed to be wise to concentrate on the successful parts and avoid the mistakes from both sides for the sake of mankind. Chinese cultural heritage can be one of the guiding lights to a bright future.

**Conflict of Interest**

The authors declared that there was no conflict of interest regarding the publication of this paper.

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