Acupuncture Treating Heart Disease Based on Eight Palaces or Eight Veins

—Mathematical Reasoning of Treatment Principle Based on Yin Yang Wu Xing Theory in Traditional Chinese Medicine (IV)

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Abstract

Theory of eight palaces (八宫) or eight veins (八脉) is useful in understanding the basic sick subsystems that may be to fall ills as the root-cause. By using mathematical reasoning based on Yin Yang Wu Xing Theory in Traditional Chinese Medicine (TCM), this paper demonstrates the treatment principle: "Even if all changed, it is hard to change one's nature" (江山易改，本性难移). The eight palaces or eight veins can be used to diagnose basic sick subsystems that may be to fall ills as the root-cause. The first or second transfer law of human body energies of the eight palaces or eight veins according to the different blood pH values of a human body whether in the normal range or not, respectively, assuming that the range of blood pH value is divided into four parts from small to large. Both second and third are for a healthy human body. Both the root-cause and symptoms come from the first transfer law of human body energies. And both first and fourth are for an unhealthy human body. Both the root-cause and symptoms come from the second transfer law of human body energies. A disease treatment should protect and maintain the balance of two incompatibility relations: the loving relationship and the killing relationship. As an application, acupuncture is used to treat atrial premature beats as a congenital heart disease.

Keywords

Traditional Chinese Medicine (TCM), Yin Yang Wu Xing Theory, Steady Multilateral Systems, Incompatibility Relations, Side Effects, Medical and Drug Resistance Problem

1. Introduction

Theory of eight palaces (八宫) or eight veins (八脉) is useful in determining the major or basic sick subsystems that may be to fall ills. Eight palaces is a general mathematical structure as the second physiological system of a steady multilateral system. It is to determine the major or basic sick subsystems that may be affected, based on the six indexes of comprehensive judgment. The six indexes are the energies of six subsystems wood (X) = {liver, bravery}, xiang-fire (X_S^x) = {pericardium, the triple energizer}, earth (X_K) = {spleen, stomach}, metal (K_X) = {lung, large intestine}, water (S_X) = {kidney, bladder} and jun-fire (X_S^j) = {heart, small intestine}, simple namely model of Jingluo or six hollow organs. The six indexes can be used to diagnose the major or basic sick subsystems that may be to fall ills.

The main purpose of observing the six energy indexes is in measuring all kinds of changes in energies for different subsystems of human body.

Let x^i be one of the six indexes of the subsystem energies of the steady multilateral system for any $i(1 \le i \le 6)$, denoted any one corresponding parameter of normal range (lower bound, upper bound, center) as follows respectively

$$\left(a^i, b^i, t_0^i\right), \ i = 1, 2, 3, 4, 5, 6.$$

Consider one of the six sign functions respectively

$$f_i = sign\left(x^i - t_0^i\right) + \left(x^i = t_0^i\right), \quad i = 1, 2, 3, 4, 5, 6.$$

If $f_i = 1$, the energy of the corresponding subsystem is Yang. Its state is intended to be real or real-normal.

If $f_i = -1$, the energy of the corresponding subsystem is Yin. Its state is intended to be virtual or virtual-normal.

The Hexagram-image of the eight palaces is as follows:

$$\boldsymbol{f} = \left(f_1, f_2, f_3, f_4, f_5, f_6\right).$$

There is a total of 64 Hexagram-images. There is also a total of eight palaces. Each of palaces has eight Hexagram-images.

There is a rule: for each of eight palaces, its all Hexagram-images have the same as nature, namely, "Even if all changed, it is hard to change one's nature" (江山易改,本性难移).

By using the treatment principle, the way of judging what palace a hexagram image belongs to can be used to diagnose the major or basic subsystems that may be to fall ills.

The human body blood pH value of eight palaces or eight veins is a general parameter linking together the complexity of relations between organ pairs, the organ itself, the capabilities for intervention reaction and self-protection of the body and mind as a whole, related to the environment, food, health and personal history, air, water, earth, climate, season, etc. By using the human body blood pH value of eight palaces, the way can be to determine the human body whether healthy or unhealthy.

There is an important indicator for human health: the value of blood pH, which, under normal conditions, ranges from 7.35 to 7.45, and the center is 7.4. Outside this range (acid: Yin condition; alkaline: Yang condition), disease appears. Almost always, when there is disease, the condition of blood is a Yin condition, little is a Yang condition.

There are a lot of evidences (e.g., experimental identification for probability and real applications) to support this viewpoint, such as, Shirakabe *et al.* [1], Kaur *et al.* [2], Aly *et al.* [3], Intven *et al.* [4], Patel *et al.* [5], Handman *et al.* [6], Natalia *et al.* [7], Barfod *et al.* [8], Zhu *et al.* [9], Zhu *et al.* [10], Robert *et al.* [11], Mona *et al.* [12], Saritas *et al.* [13], Stevens *et al.* [14], and so on.

The body begins to activate the necessary mechanisms to restore this parameter to its appropriate range. If the body is unable to restore optimal pH levels, the disease may become chronic and lead to dire consequences.

Zhang *et al.* [15]-[24] have started a great interest and admired works for Traditional Chinese Medicine (TCM), where, through mathematical reasoning, they demonstrate the presence of incompatibility relations, which are predominant in daily life, yet absent in traditional Aristotelian Western true-false logic.

Many people as Western person are beyond all doubt that the Yin Yang Wu Xing theory is superior to the traditional true-false logic, which does not contemplate incompatibility relations, which Zhang and Shao [20] have expertly explained from a mathematical standpoint.

The work Zhang [15] [16] has started, allows many people like Western person to think of a true re-foundation of mathematical language, to make it a better suited tool for the needs of mankind and the environment. Even so, Zhang and Shao [20] also bring to light the difficulty of establishing the values of both the intervention reaction coefficients ρ_1, ρ_2 and the self-protection coefficient ρ_3 as parameters with due accuracy.

In this paper, the introduction of six parameters such as the six indexes of subsystem energies of a human body will be suggested, in order to diagnose the major or basic subsystems that may be to fall ills. On the other hand, the introduction of a parameter such as a human body blood pH value will be suggested, in order to determine the human body whether healthy or unhealthy, by facilitating the understanding and the calculation of the values of both the intervention reaction coefficients ρ_1, ρ_2 and the self-protection coefficient ρ_3. This paper ventures to suggest this with all due to respect, because it is believed that the path Zhang [15] [16] has started, in such an understandable way from the mathematical point of view, will be very useful for all mankind searching for tools to understand the mechanisms of human body system.

Latest works discovered the academic relationships between Leibnitz and Jesuit priest J. Bouvet, linking the deduction of the Trigrams to German binary system, situation that coincidentally appears in quoted paper. This will clearly realize the scientific-mathematical fundamentals of TCM (see Contributions).

There are some publications [25]-[30], devoted to demonstrating in Occident the exact basis of Chinese Medicine, *i.e.* as Chinese Five Elements find precise

consistency with Euclid's Five Regular Polyhedra, as well as the trigrammatic order of the I-Ching hexagrams.

The article proceeds as follows. Section 2 contains a parameter model and basic theorems, in order to explain both the intervention reaction coefficients ρ_1, ρ_2 and the self-protection coefficient ρ_3 through the introduction of a parameter model to study the normal range of human body blood pH value, while the first or second transfer law of human body energies is demonstrated in Section 3, through the concept of both relation costs and a relationship analysis of the Hexagram-images of eight palaces. Furthermore, the major or basic subsystems that may be affected will be diagnosed with the Hexagram-image of the six indexes as eight palaces. If the range of the human body blood pH value is divided into four parts, for the human body in every part, the prevention or treatment method of human body diseases as the treatment principle of TCM is given in Section 4. As an application, acupuncture is used to treat atrial premature beats as congenital heart disease in Section 5 and conclusions are drawn in Section 6.

2. Parameter Model and Basic Theorems

The concepts and notations in Zhang [17] [18] are used start and still.

Let the note $\varphi = \left(\sqrt{5} - 1\right)/2 = 0.61803399$ be the **gold number**. Suppose that the note $\rho_0 = 0.5897545123$ is namely **healthy number**. It is because the healthy number ρ_0 can make the healthy balance conditions that $\rho_1 = \rho_3$, $\rho_2 = \rho_1\rho_3$ and $1 - \rho_2\rho_3 = \rho_1 + \rho_2\rho_3$ hold if $\rho_1 = \rho_0, \rho_2 = \rho_0^2$ and $\rho_3 = \rho_0$. Assume that the note $\rho_0' = 0.68232780$ is namely **unhealthy number**. It is because under the poor self-protection ability, the unhealthy number ρ_0' can make the following unhealthy balance conditions hold:

$$\rho_1 - \rho_3 = \rho_3 = \rho_0'/2 = 0.34116390,$$

$$\rho_2 - \rho_1\rho_3 = \rho_1\rho_3 = \left(\rho_0'\right)^2/2 = 0.23278561$$

$$1 - \rho_2\rho_3 = \rho_1 + \rho_2\rho_3$$

if $\rho_1 = \rho_0', \rho_2 = \left(\rho_0'\right)^2 = 0.46557123$ and $\rho_3 = \rho_0'/2$. Thus $\rho_0 < \varphi < \rho_0'$.

A parameter model of a human blood pH value in a mathematical sense based on Yin Yang Wu Xing Theory of TCM is reintroduced by using the functions $\lambda(x)$ and $\rho(x)$ of the human blood pH value x described as follows.

Let $x \in (7, 7.8)$ be a human blood pH value, where the values 7 and 7.8 are the minimum and maximum acceptable the blood pH value. The center value 7.4 is the target as the expectation of the human blood pH value. Define a function $\lambda(x)$ of the blood pH value x in below:

$$\lambda(x) = \frac{|x - 7.4|}{(7.8 - x)(x - 7)}, \forall x \in (7, 7.8)$$

$$= \begin{cases} \dfrac{x - 7.4}{(7.8 - x)(x - 7)}, & 7.8 > x \geq 7.4; \\ \dfrac{7.4 - x}{(7.8 - x)(x - 7)}, & 7 < x < 7.4. \end{cases} \tag{1}$$

A parameter model is considered as

$$\rho(x) = \frac{1/2}{\lambda(x) + 1/2}, \forall x \in (7, 7.8). \tag{2}$$

Theorem 2.1. [23] *Under model (2), the following statements hold.*

1) The one that $0 < \rho(x) = \frac{1/2}{\lambda(x) + 1/2} \le 1$ *is equivalent to the other that*

$0 \le \lambda(x) = \frac{1 - \rho(x)}{2\rho(x)} < +\infty$, *where* $\lambda(x)$ *is a monotone decreasing function of* x

if $x \in (7, 7.4]$ *or a monotone increasing function of* x *if* $x \in [7.4, 7.8)$; *and* $\rho(x)$ *is a monotone decreasing function of* $\lambda(x)$ *if* $\lambda(x) \in [0, +\infty)$; *and* $\lambda(x)$ *is a monotone decreasing function of* $\rho(x)$ *if* $\rho(x) \in (0, 1]$.

2) If $1 \ge \rho(x) \ge \rho_0$, *then*

$$\lambda(x) = \frac{1 - \rho(x)}{2\rho(x)} \le \frac{1 - \rho_0}{2\rho_0} = \rho_0^2 \le \rho(x)^2 \le 1;$$

$$\frac{\lambda(x)}{\rho(x)} = \frac{1 - \rho(x)}{2\rho(x)^2} \le \frac{1 - \rho_0}{2\rho_0^2} = \rho_0 \le \rho(x) \le 1;$$

and

$$\frac{\lambda(x)}{\rho(x)^2} = \frac{1 - \rho(x)}{2\rho(x)^3} \le \frac{1 - \rho_0}{2\rho_0^3} = 1.$$

3) If $0 < \rho(x) < \rho_0$, *then*

$$\lambda(x) = \frac{1 - \rho(x)}{2\rho(x)} > \frac{1 - \rho_0}{2\rho_0} = \rho_0^2 > \rho(x)^2 > 0;$$

$$\frac{\lambda(x)}{\rho(x)} = \frac{1 - \rho(x)}{2\rho(x)^2} > \frac{1 - \rho_0}{2\rho_0^2} = \rho_0 > \rho(x) > 0;$$

and

$$\frac{\lambda(x)}{\rho(x)^2} = \frac{1 - \rho(x)}{2\rho(x)^3} > \frac{1 - \rho_0}{2\rho_0^3} = 1.$$

4) Taking $0 < \rho_1 = \rho(x) < \rho_0, \rho_2 = \rho(x)^2$ *and* $\rho_3 = c\rho(x)$ *where* $0 \le c \le 1$, *there are*

$$\rho_1 - \rho_3 = \rho(x)(1 - c) \ge 0, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1 - c) \ge 0,$$

and $(\rho_1 + \rho_2\rho_3) = \rho(x) + c\rho(x)^3 < 1 - \rho_2\rho_3 = 1 - c\rho(x)^3$, *where*

$$\left|(\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3)\right| > 2(1 - c)\rho_0^3 = (1 - c)0.41024.$$

5) Taking $1 \ge \rho_1 = \rho(x) \ge \rho_0, \rho_2 = \rho(x)^2$ *and* $\rho_3 = c\rho(x)$ *where* $0 \le c \le 1$, *there are*

Firstly, $\rho_1 - \rho_3 = \rho(x)(1 - c) \ge 0, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1 - c) \ge 0$ *and*

$(\rho_1 + \rho_2\rho_3) = \rho(x) + c\rho(x)^3 \ge 1 - \rho_2\rho_3 = 1 - c\rho(x)^3$ *if*

$$1 \ge c \ge \frac{1-\rho(x)}{2\rho(x)^3} = \frac{\lambda(x)}{\rho(x)^2} \ge 0 \text{ ;}$$

Secondly,

$$\rho_1 - \rho_3 = \rho(x)(1-c) > \rho(x)/2, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c) > \rho(x)^2/2$$

and

$$(\rho_1 + \rho_2\rho_3) = \rho(x) + c\rho(x)^3 < 1 - \rho_2\rho_3 = 1 - c\rho(x)^3$$

where $\left|(\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3)\right| \le (\rho_0')^3 = 0.31767$.

If $0 \le c < \frac{1-\rho(x)}{2\rho(x)^3} = \frac{\lambda(x)}{\rho(x)^2} \le \frac{1}{2}$ *in which* $1 > \rho(x) \ge \rho_0'$;

Thirdly,

$$\rho_1 - \rho_3 = \rho(x)(1-c) \ge \rho(x)/2, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c) \ge \rho(x)^2/2$$

and

$$(\rho_1 + \rho_2\rho_3) = \rho(x) + c\rho(x)^3 < 1 - \rho_2\rho_3 = 1 - c\rho(x)^3$$

where $\left|(\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3)\right| \le 2\rho_0^3 = 0.41024$.

If $0 \le c \le \frac{1}{2} < \frac{1-\rho(x)}{2\rho(x)^3} = \frac{\lambda(x)}{\rho(x)^2} \le 1$ *in which* $\rho_0 \le \rho(x) < \rho_0'$;

Finally,

$$\rho_1 - \rho_3 = \rho(x)(1-c) < \rho(x)/2, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c) < \rho(x)^2/2$$

and

$$(\rho_1 + \rho_2\rho_3) = \rho(x) + c\rho(x)^3 < 1 - \rho_2\rho_3 = 1 - c\rho(x)^3$$

where $\left|(\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3)\right| < (\rho_0')^3 = 0.31767$.

If $\frac{1}{2} < c < \frac{1-\rho(x)}{2\rho(x)^3} = \frac{\lambda(x)}{\rho(x)^2} \le 1$ *in which* $\rho_0 \le \rho(x) < \rho_0'$.

In particular, when c is nearly to 1/2, there are

$$\rho_1 - \rho_3 = \rho(x)(1-c) \to \rho(x)/2, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c) \to \rho(x)^2/2$$

and *the following statements hold.*

a) *The absolute value* $\left|(\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3)\right|$ *is nearly to 0 if*

$$0 < c < \frac{1-\rho(x)}{2\rho(x)^3} = \frac{\lambda(x)}{\rho(x)^2} \le \frac{1}{2} \text{ in which } 1 > \rho(x) \ge \rho_0' \text{ .}$$

b) *The value* $\left[(\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3)\right]$ *is included in the interval*

$$\left[-\rho_0^3 = -0.20512, 0\right) \text{ if } 0 < c \le \frac{1}{2} < \frac{1-\rho(x)}{2\rho(x)^3} = \frac{\lambda(x)}{\rho(x)^2} \le 1 \text{ in which}$$

$\rho_0 \le \rho(x) < \rho_0'$.

c) *The value* $\left[(\rho_1 + \rho_2\rho_3) - (1 - \rho_2\rho_3)\right]$ *is included in the interval*

$$\left[-\rho_0^3 = -0.20512, 0\right) \quad if \quad \frac{1}{2} < c < \frac{1-\rho(x)}{2\rho(x)^3} = \frac{\lambda(x)}{\rho(x)^2} \le 1 \quad in \ which \quad \rho_0 \le \rho(x) < \rho_0'.$$

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Corollary 2.1. [23] *Under model* (2), *the following statements hold.*

1) For any $0 < d < 1$, *there is a unique solution* $u \in (7, 7.4)$ *and there is also a unique solution* $v \in (7.4, 7.8)$, *such that*

$$\lambda(7.4) = 0 \le \lambda(x) = \frac{1-\rho(x)}{2\rho(x)} \le \lambda(u) = \lambda(v) = (1-d)/(2d),$$

$$\rho(u) = \rho(v) = d \le \rho(x) = \frac{1/2}{\lambda(x)+1/2} \le 1 = \rho(7.4).$$

2) The condition $x \in [7.35, 7.45]$ *is equivalent to each of the following conditions:*

$$\lambda(7.4) = 0 \le \lambda(x) = \frac{1-\rho(x)}{2\rho(x)} \le \lambda(7.35) = \lambda(7.45) = 0.31743,$$

$$\rho(7.35) = \rho(7.45) = 0.61167 \le \rho(x) = \frac{1/2}{\lambda(x)+1/2} \le 1 = \rho(7.4).$$

3) The condition $x \in [7.35129, 7.44871]$ *is equivalent to each of the following conditions:*

$$\lambda(7.4) = 0 \le \lambda(x) = \frac{1-\rho(x)}{2\rho(x)} \le \lambda(7.35129) = \lambda(7.44871) = 0.30902,$$

$$\rho(7.35129) = \rho(7.44871) = \varphi \le \rho(x) = \frac{1/2}{\lambda(x)+1/2} \le 1 = \rho(7.4).$$

4) The condition $x \in [7.34539, 7.45461]$ *is equivalent to each of the following conditions:*

$$\lambda(7.4) = 0 \le \lambda(x) \le \lambda(7.34539) = \lambda(7.45461) = \rho_0^2 = 0.34781,$$

$$\rho(7.34539) = \rho(7.45461) = \rho_0 \le \rho(x) = \frac{1/2}{\lambda(x)+1/2} \le 1 = \rho(7.4).$$

5) The condition $x \in [7.36307, 7.43693]$ *is equivalent to each of the following conditions:*

$$\lambda(7.4) = 0 \le \lambda(x) \le \lambda(7.36307) = \lambda(7.43693) = \left(\rho_0'\right)^2 / 2 = 0.23279,$$

$$\rho(7.36307) = \rho(7.43693) = \rho_0' \le \rho(x) = \frac{1/2}{\lambda(x)+1/2} \le 1 = \rho(7.4). \quad \#$$

In west, through experiment or through practice observation, many researchers [1]-[14] have obtained the normal range of human blood pH value as $x \in [7.35, 7.45]$. But in TCM, from Yin Yang Wu Xing Theory, Zhang [17] has already determined: $\rho_0 \le \rho_1 \le 1$ for the normal range of a healthy body. Taking $\rho_1 = \rho(x), \rho_2 = \rho(x)^2$ and $\rho_3 = c\rho(x)$ where $0 \le c \le 1$ for a human body

which has the capabilities of both intervention reaction and self-protection. From Corollary **2.1**, the condition $\rho_0 \leq \rho_1 = \rho(x) \leq 1$ is equivalent to $x \in [7.34539, 7.45461]$. In other words, in Theory of TCM, the normal range of human blood pH value is considered as $x \in [7.34539, 7.45461]$, nearly to $x \in [7.35, 7.45]$. Of course, little difference of the two intervals which makes the diagnosis of disease as a result, there may be no much difference as a suspect. In fact, TCM uses the rule $\rho_0 \leq \rho_1 \leq 1$ from the Yin Yang Wu Xing Theory instead of the normal range of human blood pH value. The equivalence of Corollary **2.1** shows that TCM is the scientific.

Zhang [17] has already determined: a body is said healthy when the intervention reaction coefficient ρ_1 satisfies $1 \geq \rho_1 \geq \rho_0$. In logic and practice, it's reasonable that $\rho_1 + \rho_2$ is near to 1 if the input and output in a human body is balanced, since an output organ is absolutely necessary other organs of all consumption. In case: $\rho_1 + \rho_2 = 1$, all the energy for intervening organ can transmit to other organs which have neighboring relations or alternate relations with the intervening organ. The condition $1 \geq \rho_1 \geq \rho_0$ can be satisfied when $\rho_2 = \rho_1\rho_3$ and $\rho_3 = \rho_1$ for an organ since $\rho_1 + \rho_2 = 1$ implies $\rho_1 = \varphi \approx 0.61803 \geq \rho_0$. In this case, $\rho_2 = \varphi^2 \approx 0.38197$. If this assumption is set up, then the intervening principle: "Real disease with a healthy body is to rush down its son and virtual disease with a healthy body is to fill its mother" based on the Yin Yang Wu Xing theory in image mathematics by Zhang and Shao [20], is quite reasonable. But, in general, the ability of self-protection is often insufficient for a usual human body, *i.e.*, ρ_3 is small. A common standard is $\rho_3 = (1 - \rho_1)/(2\rho_2) \approx 1/2$ which comes from the balance condition $(1 - \rho_2\rho_3) = (\rho_1 + \rho_2\rho_3)$ of the loving relationship if $\rho_1 + \rho_2 \approx 1$. In other words, there is a principle which all losses are bear in a human body. Thus the general condition is often $\rho_1 \approx 0.61803 \geq \rho_3 \approx 0.5 \geq \rho_2 \approx 0.38197$. Interestingly, they are all near to the golden numbers. It is the idea to consider the unhealthy number $\rho_0' = 0.68232780$ since the poor condition of self-protection ability $\rho_3 = \rho_0'/2 = 0.34116390$ can make the unhealthy balance conditions hold

$$\rho_1 - \rho_3 = \rho_3 = \rho_0'/2 = 0.34116390,$$

$$\rho_2 - \rho_1\rho_3 = \rho_1\rho_3 = (\rho_0')^2/2 = 0.23278561$$

$$1 - \rho_2\rho_3 = \rho_1 + \rho_2\rho_3$$

if $\rho_1 = \rho_0'$ and $\rho_2 = (\rho_0')^2 = 0.46557123$.

By Theorem **2.1** and Corollary **2.1**, $x \in [7.35, 7.45]$ implies $1 \geq \rho_1 = \rho(x) \geq 0.61167 = \rho(7.35) = \rho(7.45)$.

And $x \in [7.35129, 7.44871]$ implies

$$1 \geq \rho_1 = \rho(x) \geq \varphi = \rho(7.35129) = \rho(7.44871).$$

And $x \in [7.34539, 7.45461]$ implies

$$1 \geq \rho_1 = \rho(x) \geq \rho_0 = \rho(7.34539) = \rho(7.45461),$$

where $\lambda(7.34539) = \lambda(7.45461) = \dfrac{1-\rho_0}{2\rho_0} = \rho_0^2$.

Since $(1-\rho_0^3) = (\rho_0 + \rho_0^3)$.

And $x \in [7.36307, 7.43693]$ implies

$$1 \geq \rho_1 = \rho(x) \geq \rho_0' = \rho(7.36307) = \rho(7.43693),$$

where $\lambda(7.36307) = \lambda(7.43693) = \dfrac{1-\rho_0'}{2\rho_0'} = \dfrac{(\rho_0')^2}{2}$.

Since $(1-\rho_0') = (\rho_0')^3$.

The last one is the healthy interval in a person's self-protection ability poor conditions. The interval range is relative to the normal human body's health requirements too strict. Only the first three interval ranges are considered as a normal human body's health. If keep two decimal places, then the first three intervals are the same as $x \in [7.35, 7.45]$. This shows that range $x \in [7.35, 7.45]$ is stable. The interval as the normal range of human blood pH value may be also appropriate. To conservative estimates, the interval of the largest length of the first three range intervals is used, *i.e.*, $x \in [7.34539, 7.45461]$, as the theoretical analysis of the normal range. In fact, the range $x \in [7.34539, 7.45461]$ is better than the range $x \in [7.35, 7.45]$. It is because the range $x \in [7.34539, 7.45461]$ satisfies the healthy balance conditions $\rho_1 = \rho_3, \rho_2 = \rho_1 \rho_3$ and $(1-\rho_2 \rho_3) \leq (\rho_1 + \rho_2 \rho_3)$ if $\rho_1 = \rho(x), \rho_2 = \rho(x)^2$ and $\rho_3 = c\rho(x) \to \rho_1$. In other words, the parameter $\rho_1 = \rho(x) \geq \rho_0$ or the range $x \in [7.34539, 7.45461]$ is the healthy running condition of both the killing relationship and the loving relation at the same time. But neither are the others. The human blood pH value must be precise calculation to keep at least 5 decimal places can ensure correct because of its sensitivity to the diagnosis of disease.

3. Relations of Steady Multilateral Systems

3.1. Energy Changes of a Steady Multilateral System

In order to apply the reasoning to other fields rather than the health of the human body complex system, Zhang [18] has started a steady multilateral system imitating a human body complex system. A most basic steady multilateral system is as follows.

Theorem 3.1. Zhang and Shao [20] *For each element* x *in a steady multilateral system V with two incompatibility relations, there exist five equivalence classes below:*

$$X = \{y \in V \mid y \sim x\}, X_S = \{y \in V \mid x \to y\}, X_K = \{y \in V \mid x \Rightarrow y\},$$

$$K_X = \{y \in V \mid y \Rightarrow x\}, S_X = \{y \in V \mid y \to x\},$$

which the five equivalence classes have relations in Figure 1. #

The Yin Yang Wu Xing model can be written as follows: Define

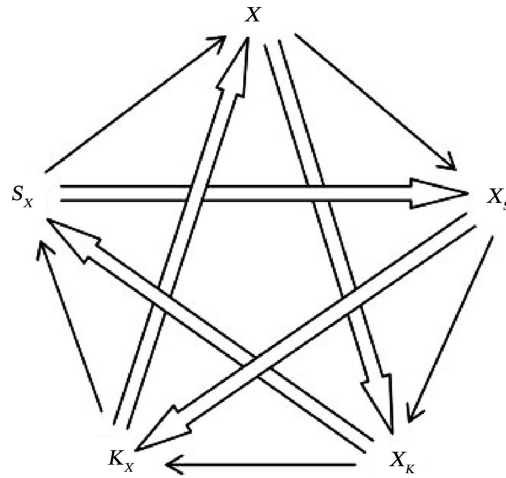$$V_0 = X, V_1 = X_S, V_2 = X_K, V_3 = K_X, V_4 = S_X,$$

Figure 1. Finding Yin Yang Wu Xing model.

corresponding to wood, fire, earth, metal, water, respectively, and assume $V = V_0 + V_1 + V_2 + V_3 + V_4$ where $V_i \cap V_j = \varnothing, \forall i \neq j$.

And take $\mathfrak{R} = \{R_0, R_1, \cdots, R_4\}$ satisfying

$$R_r = \sum_{i=0}^{4} V_i \times V_{mod(i+r,5)}, \forall r \in \{0,1,\cdots,4\}, R_i * R_j \subseteq R_{mod(i+j,5)},$$

where $V_i \times V_j = \{(x,y) : x \in V_i, y \in V_j\}$ is the Descartesian product in set theory and the following note $R_i * R_j = \{(x,y) : \exists u \in V \text{ such that } (x,u) \in R_i, (u,y) \in R_j\}$ is the **relation multiplication operation**. The relation multiplication of $*$ is isomorphic to the addition of module A. Then V^5 is a steady multilateral system with one equivalent relation R_0 and two incompatibility relations $R_1 = R_4^{-1}$ and $R_2 = R_3^{-1}$ where the note $R_i^{-1} = \{(x,y) : (y,x) \in R_i\}$ is the **relation inverse operation**.

The Yin and Yang mean the two incompatibility relations and the Wu Xing means the collection of five disjoint classification of $V^5 = V_0^5 + V_1^5 + V_2^5 + V_3^5 + V_4^5$. The model is called Yin Yang Wu Xing model, denoted simply by $V^5 = \{0,1,2,3,4\}$.

It can be proved that the steady multilateral system in Theorem **3.1** is the reasoning model of Yin Yang Wu Xing in TCM if there is an energy function $\varphi(*)$ satisfying

$$\frac{\Delta \varphi(X)}{\Delta} \to \frac{d\varphi(X)}{dX} = (1 - \rho_2 \rho_3) = (1 - c\rho(x)^3) > 0;$$

$$\frac{\Delta \varphi(X_S)}{\Delta} \to \frac{d\varphi(X_S)}{dX} = (\rho_1 + \rho_2 \rho_3) = \rho(x)(1 + c\rho(x)^2) > 0;$$

$$\frac{\Delta \varphi(X_K)}{\Delta} \to \frac{d\varphi(X_K)}{dX} = -(\rho_1 - \rho_3) = -\rho(x)(1 - c) < 0;$$

$$\frac{\Delta \varphi(K_X)}{\Delta} \to \frac{d\varphi(K_X)}{dX} = -(\rho_2 - \rho_1 \rho_3) = -\rho(x)^2(1 - c) < 0;$$

$$\frac{\Delta \varphi(S_X)}{\Delta} \to \frac{d\varphi(S_X)}{dX} = (\rho_2 - \rho_1 \rho_3) = \rho(x)^2(1 - c) > 0,$$

if increase the energy of X ($\forall \Delta\varphi(X) = \Delta > 0$),
where $\rho_1 = \rho(x), \rho_2 = \rho(x)^2, \rho_3 = c\rho(x), 0 < \rho(x) < 1, 0 \leq c \leq 1$.

The parameter $\rho_v = \rho_1 + \rho_2\rho_3$ is called the coefficient of the **vital** or righteousness energy. The parameter $\rho_e = 1 - \rho_2\rho_3$ is called the coefficient of the **evil** energy. A Human Body complex system is called **healthy** if the vital or righteousness coefficient $\rho_v = \rho_1 + \rho_2\rho_3$ is greater than or equal to the evil coefficient $\rho_e = 1 - \rho_2\rho_3$. Otherwise, the Human Body complex system is called **unhealthy**. For a healthy Human Body complex system, the transfer law of the Yang vital or righteousness energy in the Yin Yang Wu Xing Model is

$$\text{Wood}(X) \to \text{Fire}(X_S) \to \text{Earth}(X_K) \to \text{Metal}(K_X)$$
$$\to \text{Water}(S_X) \to \text{Wood}(X) \to \cdots.$$

Figure 1 in Theorem **3.1** is the figure of Yin Yang Wu Xing theory in Ancient China. The steady multilateral system V with two incompatibility relations is equivalent to the logic architecture of reasoning model of Yin Yang Wu Xing theory in Ancient China. What describes the general method of the steady multilateral system V with two incompatibility relations can be used in the Human Body complex systems.

By non-authigenic logic of TCM, *i.e.*, a logic which is similar to a group has nothing to do with the research object in Zhang and Shao [20], in order to ensure the reproducibility such that the analysis conclusion can be applicable to any complex system, a logical analysis model can be chosen which has nothing to do with the object of study. The *Tao* model of Yin and Yang is a generalized one which means that two is basic. But the *Tao* model of Yin Yang is simple in which there is not incompatibility relation. The analysis conclusion of *Tao* model of Yin Yang cannot be applied to an incompatibility relation model. Thus the Yin Yang Wu Xing model with two incompatibility relations of Theorem **3.1** will be selected as the logic analysis model in this paper.

On the other hand, the steady multilateral system $(V^2, \Re^2) = (V_0^2 + V_1^2, \{R_0^2, R_1^2\})$ is called the *Tao* model, denoted simply by $V^2 = \{0, 1\}$, if it satisfies the following conditions:

$$R_r^2 = \sum_{i=0}^{1} V_i^2 \times V_{mod(i+r, 2)}^2, \forall r \in \{0, 1\}, R_i^2 * R_j^2 = R_{mod(i+j, 2)}^2,$$
$$R_0^2 = \{(0, 0), (1, 1)\}, R_1^2 = \{(0, 1), (1, 0)\}.$$

The relation multiplication of $*$ is isomorphic to the addition of module 2. The element 1 or 0 is called a **Yang** force or a **Yin** force respectively. For a healthy human body, the transfer law of the *Tao* force in the *Tao* model is from Yang to Yin.

In TCM, any material can be found, not Yang is Yin. No matter of Yin and Yang are unable to see, known as **dark matter**, or **nonphysical**. Therefore, the *Tao* force is often existing in the physical world. Any a steady multilateral system only force under the action of the *Tao*, may be to be perceived.

In TCM, it is believed that any a Yin Yang Wu Xing complex system is made

up of three types of talent or material to combined changes. The three types come from the Yin energy in it's a layer Yin Yang Wu Xing system. It is because a lot of complex systems can be seen as a Yin Yang Wu Xing system. However, any a Yin Yang Wu Xing system is a human body observation of the objective object in one logic level, it will be a layer of the Yin Yang Wu Xing system of restriction and generation. In the Yin Yang Wu Xing system, both wood and fire are Yang; three types including earth, metal and water are Yin. So any Yin Yang Wu Xing system is generated by the three talents (earth, gold and water) at the upper logical level. The three types are generated from an upper layer of the Yin Yang Wu Xing system. For example, an upper layer of controlling on the Yin Yang Wu Xing system of human body is the nature, *Tao*, heaven, earth and people system, so the formation of the human body three materials are heaven (1), earth (2) and people (3).

The three *Tao* model can combine forming a steady multilateral system

$$\left(\boldsymbol{V}^8, \mathfrak{R}^8 \right) = \left(\boldsymbol{V}_1^8 + \cdots + \boldsymbol{V}_8^8, \left\{ \boldsymbol{R}_1^8, \cdots, \boldsymbol{R}_8^8 \right\} \right)$$

is called the **Eight-Hexagram** (八卦) model, denoted simply by

$$\boldsymbol{V}^8 = \left\{ (1,1,1), (0,1,1), (1,0,1), (0,0,1), (1,1,0), (0,1,0), (1,0,0), (0,0,0) \right\}$$

which satisfies the following conditions:

$$\boldsymbol{R}_r^8 = \sum_{i=1}^8 \boldsymbol{V}_i^8 \times \boldsymbol{V}_{i*r}^8, \forall r \in \{1, 2, \cdots, 8\},$$

$$\boldsymbol{R}_i^8 * \boldsymbol{R}_j^8 = \boldsymbol{R}_{i*j}^8, \forall i, j \in \{1, 2, \cdots, 8\},$$

$i*r$	1 = (111)	2 = (011)	3 = (101)	4 = (001)	5 = (110)	6 = (010)	7 = (100)	8 = (000)
1 = (111)	8 = (000)	7 = (100)	6 = (010)	5 = (110)	4 = (001)	3 = (101)	2 = (011)	1 = (111)
2 = (011)	7 = (100)	8 = (000)	5 = (110)	6 = (010)	3 = (101)	4 = (001)	1 = (111)	2 = (011)
3 = (101)	6 = (010)	5 = (110)	8 = (000)	7 = (100)	2 = (011)	1 = (111)	4 = (001)	3 = (101)
4 = (001)	5 = (110)	6 = (010)	7 = (100)	8 = (000)	1 = (111)	2 = (011)	3 = (101)	4 = (001)
5 = (110)	4 = (001)	3 = (101)	2 = (011)	1 = (111)	8 = (000)	7 = (100)	6 = (010)	5 = (110)
6 = (010)	3 = (101)	4 = (001)	1 = (111)	2 = (011)	7 = (100)	8 = (000)	5 = (110)	6 = (010)
7 = (100)	2 = (011)	1 = (111)	4 = (001)	3 = (101)	6 = (010)	5 = (110)	8 = (000)	7 = (100)
8 = (000)	1 = (111)	2 = (011)	3 = (101)	4 = (001)	5 = (110)	6 = (010)	7 = (100)	8 = (000)

The number $1, 2, 3, 4, 5, 6, 7, 8$ is called the Qian (乾), Dui (兑), Li (离), Zhen

(震), Xun (巽), Kan (坎), Gen (艮), Kun (坤) respectively. The set of $\{1,2,3,4,5,6,7,8\}$ is called the **Eight-Hexagram** (八卦) system.

On the other hand, the three types heaven (1), earth (2) and people (3) to any change combine forming the ***Telluric effluvium*** model as follows:

The steady multilateral system

$$\left(\boldsymbol{V}^6, \Re^6\right) = \left(\boldsymbol{V}_1^6 + \cdots + \boldsymbol{V}_6^6, \left\{\boldsymbol{R}_1^6, \cdots, \boldsymbol{R}_6^6\right\}\right)$$

is called the ***Telluric effluvium*** model, denoted simply by $\boldsymbol{V}^6 = \{e, (12), (13), (23), (123), (132)\}$, if it satisfies the following conditions:

$$\boldsymbol{R}_r^6 = \sum_{i=1}^{6} \boldsymbol{V}_i^6 \times \boldsymbol{V}_{i*r}^6, \forall r \in \{1, 2, \cdots, 6\},$$

$$\boldsymbol{R}_i^6 * \boldsymbol{R}_j^6 = \boldsymbol{R}_{i*j}^6, \forall i, j \in \{1, 2, \cdots, 6\},$$

$i*r$	$1=e$	$2=(12)$	$3=(13)$	$4=(23)$	$5=(123)$	$6=(132)$
$1=e$	$1=e$	$2=(12)$	$3=(13)$	$4=(23)$	$5=(123)$	$6=(132)$
$2=(12)$	$2=(12)$	$1=e$	$5=(123)$	$6=(132)$	$3=(13)$	$4=(23)$
$3=(13)$	$3=(13)$	$6=(132)$	$1=e$	$5=(123)$	$4=(23)$	$2=(12)$
$4=(23)$	$4=(23)$	$5=(123)$	$6=(132)$	$1=e$	$2=(12)$	$3=(13)$
$5=(123)$	$5=(123)$	$4=(23)$	$2=(12)$	$3=(13)$	$6=(132)$	$1=e$
$6=(132)$	$6=(132)$	$3=(13)$	$4=(23)$	$2=(12)$	$1=e$	$5=(123)$

The number 1 or 2 or 3 is called the tengen (天元), the earth material (地元), the people ability (人元), respectively. The set of {1, 2, 3} is called three types of talent or material. It is with elements, $e, (12), (13), (23), (123), (132)$ The each of elements, $e, (12), (13), (23), (123), (132)$ is called the primordial energy (元气), essence derived from food (谷气), defensive energy (卫气), essential substance circulating in the Meridians and blood Meridians (营气), genuine energy (真气), pectoral energy (宗气), respectively. Another name is respectively

$$\text{shaoyang}(e)(少阳), \text{yangming}((12))(阳明), \text{taiyang}((13))(太阳),$$
$$\text{jueyin}((23))(厥阴), \text{shaoyin}((123))(少阴), \text{taiyin}((132))(太阴).$$

Generally positive or Yang material, they are able to be perceived, but few can see the material itself, can only use signs. Therefore, the Yang energy symptoms of the set $\boldsymbol{M}_1 = \{e, (12), (13)\}$ is called the marrow energy (髓); The Yin energy of the set $\boldsymbol{M}_2 = \{(123)\}$ is called the blood energy (血); The Yin energy of the set $\boldsymbol{M}_3 = \{(132)\}$ is called the saliva energy (津); The Yin energy of the set $\boldsymbol{M}_4 = \{(23)\}$ is called the essence of water and grain (水谷精微).

Growth and conveyance in the six energies $e, (12), (13), (23), (123), (132)$ known as the **six roots** (根); As the fruit of these six energies $e, (12), (13), (23), (123), (132)$ known as the **six fruits** (结); Storage of these four energies $\boldsymbol{M}_1, \boldsymbol{M}_2, \boldsymbol{M}_3, \boldsymbol{M}_4$ known as the **four seas** (四海); Energy exchange of the four kinds of $\boldsymbol{M}_1, \boldsymbol{M}_2, \boldsymbol{M}_3, \boldsymbol{M}_4$ known as the **four streets** (四街). Of course, for a healthy human body, the transfer law of each of the six energies $e, (12), (13), (23), (123), (132)$ is from its **root (root-causes)** (根) to its **fruit (symptoms)** (结).

Western Medicine is different from TCM because the TCM has a concept of *Chi or Qi* (气) as a form of energy of steady multilateral systems. It is believed that this energy exists in all things of steady multilateral systems (living and non-living) including air, water, food and sunlight. *Chi* is said to be the unseen vital force that nourishes steady multilateral systems' body and sustains the life of a steady multilateral system imitating the human body complex system. It is also believed that an individual is born with an original amount of *Chi* at the beginning of life of a steady multilateral system imitating the human body complex system and as a steady multilateral system grows and lives, the steady multilateral system acquires or attains *Chi* or energy from "eating" and "drinking", from "breathing" the surrounding "air" and also from living in its environment. The steady multilateral system having an energy function is called **the anatomy system** or **the first physiological system**. And the first physiological system also affords *Chi* or energy for the steady multilateral system's meridian system (Zangxiang (藏象) and Jingluo (经络)) which forms a parasitic system of the steady multilateral system, called **the second physiological system** of the steady multilateral system. The second physiological system of the steady multilateral system controls the first physiological system of the steady multilateral system. A steady multilateral system would become ill or dies if the *Chi* or energy in the steady multilateral system is imbalanced or exhausted, which means that $\rho_1 = \rho(x) \to 0, \rho_2 = \rho(x)^2 \to 0$ and $\rho_3 = c\rho(x) \to 0$.

For example, in TCM, a human body as the first physiological system of the steady multilateral system following the Yin Yang Wu Xing theory was classified into five equivalence classes as follows:

Wood (X) = {liver, bravery, soul, ribs, sour, east, spring, birth};

Xiang-fire (X_S^x) = {pericardium, the triple energizer, nerve, blood vessel, bitter taste, the south, summer, growth};

Earth (X_K) = {spleen, stomach, willing, meat, sweetness, center, long summer, combined};

Metal (K_X) = {lung, large intestine, boldness, fur, spicy, west, autumn, accept};

Water (S_X) = {kidney, bladder, ambition, bone, salty, the north, winter, hiding};

Jun-fire (X_S^j) = {heart, small intestine, nerve, making blood, bitter taste, whole body, whole direction, throughout the year, overall growth}.

Fire (X_S) = xiang-fire (X_S^x) $\bigcup$ jun-fire (X_S^j).

The five equivalence classes also are called as five Zang-Organs or five subsystems of a steady complex system imitating a Human Body complex system. Each of five Zang-Organs is called as Liver Zang-organ as wood (X), Heart Zang-organ as fire (X_S), Spleen Zang-organ as earth (X_K), Lung Zang-organ as metal (K_X) and Kidney Zang-organ as water (S_X), respectively. There is only one of both the loving relation and killing relation between every two classes or organs. General close is loving, alternate is killing.

Suppose that the class fire (X_S) is divided into two classes xiang-fire (X_S^x)

and jun-fire (X_S^j). These six equivalence classes are also called six fu-organs or six hollow organs. Each of six fu-organs is called as Liver Fu-organ as wood (X), Pericardium Fu-organ or mutually Fu-organ or Xiang (相) Fu-organ as xiang-fire (X_S^x), Spleen Fu-organ as earth (X_K), Lung Fu-organ as metal (K_X), Kidney Fu-organ as water (S_X), and Heart Fu-organ or Js mammy Fu-organ or Jun (君) Fu-organ as jun-fire (X_S^j), respectively.

Although the energy of Jun (君) Fu-organ as jun-fire (X_S^j) is similar to or likes the energy of Xiang (相) Fu-organ as xiang-fire (X_S^x) in logic, the energy of the six fu-organs can be observed, but the energy of the five zang-organs (especially the energy of the heart Zang-organ) cannot be observed, only can be inferred.

In every category of internal, think that they are with an equivalent relationship, between each two of their elements there is a force of similar material accumulation of each other. It is because their pursuit of the goal is the same, *i.e.*, follows the same "Axiom system". It can increase the energy of the class at low cost near to zero if they accumulate together. Any nature material activity follows the principle of maximizing so energy or minimizing the cost. In other woods, the same energy attracts each other (同气相招).

In general, the size of the force of similar material accumulation of each other is smaller than the size of the loving force or the killing force in a stable Human Body complex system. The stability of any a Human Body complex system first needs to maintain the equilibrium of the killing force and the loving force. The key is the killing force. For a stable Human Body complex system, if the killing force is large, *i.e.*, the self-protection coefficient $\rho_3 = c\rho(x)$ becomes larger, in which needs a positive **exercise**, then the loving force is also large such that the force of similar material accumulation of each other is also large. They can make the Human Body complex system more stable. If the killing force is small, *i.e.*, the self-protection coefficient $\rho_3 = c\rho(x)$ becomes smaller, which means little **exercise**, then the loving force is also small such that the force of similar material accumulation of each other is also small. They can make the Human Body complex system becoming unstable.

The *Chi* or energy is also called the food hereafter for simply. In order to get the food, by Attaining Rule below, the second physiologic system must make the first physiologic system done an intervention of it, namely **exercise**. It is because only by intervention on the first physiologic system, the second physiologic system can be to get food.

The second physiologic system of the steady multilateral system controls the first physiologic system of the steady multilateral system imitating a Human Body complex system, abiding by the following rule.

Intervention Rule: In the case of virtual disease, the treatment method of intervention is to increase the energy. If the treatment has been done on X , the energy increment (or, increase degree) $\left|\Delta\varphi(X_S)\right|$ of the son X_S of X is greater than the energy increment (or, increase degree) $\left|\Delta\varphi(S_X)\right|$ of the mother S_X of X , *i.e.*, the best benefit is the son X_S of X . But the energy de-

crease degree $\left|\Delta\varphi\left(X_K\right)\right|$ of the prisoner X_K of X is greater than the energy decrease degree $\left|\Delta\varphi\left(K_X\right)\right|$ of the bane K_X of X, *i.e.*, the worst victim is the prisoner X_K of X.

In the case of real disease, the treatment method of intervention is to decrease the energy. If the treatment has been done on X, the energy decrease degree $\left|\Delta\varphi\left(S_X\right)\right|$ of the mother S_X of X is greater than the energy decrease degree $\left|\Delta\varphi\left(X_S\right)\right|$ of the son X_S of X *i.e.*, the best benefit is the mother S_X of X. But the energy increment (or, increase degree) $\left|\Delta\varphi\left(K_X\right)\right|$ of the bane K_X of X is greater than the energy increment (or, increase degree) $\left|\Delta\varphi\left(X_K\right)\right|$ of the prisoner X_K of X, *i.e.*, the worst victim is the bane K_X of X.

In mathematics, the changing laws are as follows.

1) If $\Delta\varphi\left(X\right)=\Delta>0$, *then* $\Delta\varphi\left(X_S\right)=\rho_1\Delta$, $\Delta\varphi\left(X_S\right)=-\rho_1\Delta$, $\Delta\varphi\left(X_K\right)=-\rho_2\Delta$, $\Delta\varphi\left(S_X\right)=\rho_2\Delta$;

2) If $\Delta\varphi\left(X\right)=-\Delta<0$, *then* $\Delta\varphi\left(S_X\right)=-\rho_1\Delta$, $\Delta\varphi\left(K_X\right)=\rho_1\Delta$, $\Delta\varphi\left(X_K\right)=\rho_2\Delta$, $\Delta\varphi\left(X_S\right)=-\rho_2\Delta$;

where $1\geq\rho_1\geq\rho_2\geq0$.

Both ρ_1 and ρ_2 are called intervention reaction coefficients, which are used to represent the capability of intervention reaction. The larger the intervention reaction coefficient ρ_1 is, the better the capability of intervention reaction is. The state $\rho_1=1$ is the best state but the state $\rho_1=0$ is the worst state.

The Intervention rule can be explained as: In general, the intervention rule is similar to force and reaction in Physics. In other words, if a subsystem of a multilateral system V has been done an intervention of it, then the energy of subsystem which has a neighboring relation (or beneficiary) changes in the same direction of the force, and the energy of subsystem which has an alternate relation (or victim) changes in the opposite direction of the force. The size of the energy changed is equal, but the direction opposite.

Self-protection Rule: In the case of virtual disease, the treatment method of intervention is to increase the energy. If the treatment has been done on X, the worst victim is the prisoner X_K of X. Thus, the treatment of self-protection is to restore the prisoner X_K of X and the restoring method of self-protection is to increase the energy $\varphi\left(X_K\right)$ of the prisoner X_K of X by using the intervention force on X according to the intervention rule.

In the case of real disease, the treatment method of intervention is to decrease the energy. If the treatment has been done on X, the worst victim is the bane K_X of X. Thus, the treatment of self-protection is to restore the bane K_X of X and the restoring method of self-protection is to decrease the energy $\varphi\left(K_X\right)$ of the bane K_X of X by using the same intervention force on X according to the intervention rule.

In mathematics, the following self-protection laws hold.

1) If $\Delta\varphi\left(X\right)=\Delta>0$, *then the energy of subsystem* X_K *will decrease the increment* $\left(-\rho_1\Delta\right)$, *which is the worst victim. So the capability of self-protection*

increases the energy of subsystem X_K by increment $(\rho_3\Delta)(0\le\rho_3\le\rho_1)$ in order to restore the worst victim X_K by according to the intervention rule.

2) If $\Delta\varphi(X)=-\Delta<0$, then the energy of subsystem K_X will increase the increment $(\rho_1\Delta)$, which is the worst victim. So the capability of self-protection decreases the energy $\varphi(K_X)$ of subsystem K_X by increment $(-\rho_3\Delta)(0\le\rho_3\le\rho_1)$ in order to restore the worst victim K_X by according to the intervention rule.

The self-protection rule can be explained as: the general principle of a self-protection subsystem is that the worst victim is protected firstly, the protection method is in the same way to the intervention force but any beneficiary should be not protected.

Attaining Rule: *The second physiologic system of the steady multilateral system will work by using Attaining Rule, if the first physiologic system of the steady multilateral system runs normally. The work is in order to attain the Chi or energy from the first physiologic system of the steady multilateral system by mainly utilizing the balance of the loving relationship of the first physiologic system.*

In mathematics, suppose that the steady multilateral system imitating the Human Body complex system of X is healthy. If X is done an intervention of it, then the second physiologic system will attain the *Chi* or energy from X directly.

Suppose that the steady multilateral system imitating the Human Body complex system of X is unhealthy. If X is done an intervention of it, then the second physiologic system will attain the *Chi* or energy from X indirectly. If virtual X is done an intervention of it, it will attain the *Chi* or energy (Yang energy) from the son X_S of X. If real X is done an intervention of it, it will attain the *Chi* or energy (Yin energy) from the mother S_X of X.

Affording Rule: *The second physiologic system of the steady multilateral system will work by using Affording Rule, if the first physiologic system of the steady multilateral system runs hardly. The work is in order to afford the Chi or energy for the first physiologic system of the steady multilateral system, by mainly protecting or maintaining the balance of the killing relationship of the steady multilateral system, to drive the first physiologic systems will begin to run normally.*

In mathematics, suppose that the steady multilateral system imitating the Human Body complex system of X is healthy. The second physiologic system doesn't afford any *Chi* or energy for the first physiologic system.

Suppose that the steady multilateral system imitating the Human Body complex system of X is unhealthy and the capability of self-protection is lack, *i.e.*, $\rho_3=c\rho(x)\ge0$ and $0<\rho_1<\rho_0$. The second physiologic system will afford the *Chi* or energy for X directly, at the same time, affording the *Chi* or energy for other subsystems, in order to protect or maintain the balance of the killing relationship, abiding by the intervening principle of "Strong inhibition of the same time, support the weak", such that the capability of self-protection is restored, *i.e.*, $\rho_3=c\rho(x)>0$ and $1\ge\rho_1=\rho(x)>\rho_0$, to drive the first physiologic sys-

tem beginning to work. #

The *Chi* or energy is also called the food hereafter for simply. In order to get the food, by Attaining Rule, the second physiologic system must make the first physiologic system done an intervention of it, namely **exercise**. It is because only by intervention in the first physiologic system, the second physiologic system can be to get food.

In particular, the **eight palaces** system is defined in mathematically as follows:

Definition 3.1. (eight palaces or eight veins) *Assume that the **Eight-Hexagram** model V^8 is implemented by the **Eight-Hexagram** force of the **Eight-Hexagram** model V^8. Then the steady multilateral system $V^8 \times V^8 = \{(i, j) \mid i \in V^8, j \in V^8\}$ is called the model of **eight palaces or eight veins** of the steady multilateral system.*

The model satisfies as follows:

$$R_{(r,r')}^{(8,8)} = \sum_{(i,i')=(1,1)}^{(8,8)} V_{(i,i')}^{(8,8)} \times V_{(i*r,i'*r')}^{(8,9)}, \forall (r,r') \in V^8 \times V^8,$$

$$R_{(i,i')}^{(8,8)} * R_{(j,j')}^{(8,8)} = R_{(i*j,i'*j')}^{(8,8)}.$$

*Here, the multiplication operation * is that of the **Eight-Hexagram** Model. Each of the elements,*

$$(1,1),(1,5),(1,7),(1,8),(5,8),(7,8),(3,8),(3,1),$$
$$(2,2),(2,6),(2,8),(2,7),(6,7),(8,7),(4,7),(4,2),$$
$$(3,3),(3,7),(3,5),(3,6),(7,6),(5,6),(1,6),(1,3),$$
$$(4,4),(4,8),(4,6),(4,5),(8,5),(6,5),(2,5),(2,4),$$
$$(5,5),(5,1),(5,3),(5,4),(1,4),(3,4),(7,4),(7,5),$$
$$(6,6),(6,2),(6,4),(6,3),(2,3),(4,3),(8,3),(8,6),$$
$$(7,7),(7,3),(7,1),(7,2),(3,2),(1,2),(5,2),(5,7),$$
$$(8,8),(8,4),(8,2),(8,1),(4,1),(2,1),(6,1),(6,8),$$

is called respectively

Qian$(1,1)$, Gou$(1,5)$, Dun$(1,7)$, Fou$(1,8)$, Guan$(5,8)$, Bo$(7,8)$, Jin$(3,8)$, You$(3,1)$;

Dui$(2,2)$, Kun$(2,6)$, Cui$(2,8)$, Xian$(2,7)$, Jian$(6,7)$, Qian$(8,7)$, Xiao$(4,7)$, Mei$(4,2)$;

Li$(3,3)$, Lv$(3,7)$, Ding$(3,5)$, Wei$(3,6)$, Meng$(7,6)$, Huan$(5,6)$, Song$(1,6)$, Ren$(1,3)$;

Zhen$(4,4)$, Yu$(4,8)$, Jie$(4,6)$, Heng$(4,5)$, Sheng$(8,5)$, Jing$(6,5)$, Da$(2,5)$, Sui$(2,4)$;

Xun$(5,5)$, Xu$(5,1)$, Jia$(5,3)$, Yi$(5,4)$, Wang$(1,4)$, He$(3,4)$, Yi$(7,4)$, Gu$(7,5)$;

Kan$(6,6)$, Jie$(6,2)$, Tun$(6,4)$, Ji$(6,3)$, Ge$(2,3)$, Feng$(4,3)$, Ming$(8,3)$, Shi$(8,6)$;

$$\mathrm{Gen}(7,7), \mathrm{Bi}(7,3), \mathrm{Xu}(7,1), \mathrm{Sun}(7,2), \mathrm{Gui}(3,2), \mathrm{Lv}(1,2),$$
$$\mathrm{Fu}(5,2), \mathrm{Jian}(5,7);$$
$$\mathrm{Kun}(8,8), \mathrm{Fu}(8,4), \mathrm{Lin}(8,2), \mathrm{Tai}(8,1), \mathrm{Zhuang}(4,1), \mathrm{Guai}(2,1),$$
$$\mathrm{Xu}(6,1), \mathrm{Bi}(6,8);$$

corresponding to the Chinese words respectively:

乾 (1, 1), 姤 (1, 5), 遁 (1, 7), 否 (1, 8), 观 (5, 8), 剥 (7, 8), 晋 (3, 8), 有 (3, 1);

兑 (2, 2), 困 (2, 6), 萃 (2, 8), 咸 (2, 7), 蹇 (6, 7), 谦 (8, 7), 小 (4, 7), 妹 (4, 2);

离 (3, 3), 旅 (3, 7), 鼎 (3, 5), 未 (3, 6), 蒙 (7, 6), 涣 (5, 6), 讼 (1, 6), 人 (1, 3);

震 (4, 4), 豫 (4, 8), 解 (4, 6), 恒 (4, 5), 升 (8, 5), 井 (6, 5), 大 (2, 5), 随 (2, 4);

巽 (5, 5), 畜 (5, 1), 家 (5, 3), 益 (5, 4), 妄 (1, 4), 嗑 (3, 4), 颐 (7, 4), 蛊 (7, 5);

坎 (6, 6), 节 (6, 2), 屯 (6, 4), 既 (6, 3), 革 (2, 3), 丰 (4, 3), 明 (8, 3), 师 (8, 6);

艮 (7, 7), 贲 (7, 3), 畜 (7, 1), 损 (7, 2), 睽 (3, 2), 履 (1, 2), 孚 (5, 2), 渐 (5, 7);

坤 (8, 8), 复 (8, 4), 临 (8, 2), 泰 (8, 1), 壮 (4, 1), 夬 (2, 1), 需 (6, 1), 比 (6, 8).

Also corresponding to the notations in Theorem 3.1 respectively:

$$K_X^+(1,1), K_X^+(1,5), K_X^+(1,7), K_X^+(1,8), K_X^+(5,8), K_X^+(7,8),$$
$$K_X^+(3,8), K_X^+(3,1);$$
$$K_X^-(2,2), K_X^-(2,6), K_X^-(2,8), K_X^-(2,7), K_X^-(6,7), K_X^-(8,7),$$
$$K_X^-(4,7), K_X^-(4,2);$$
$$X_S^-(3,3), X_S^-(3,7), X_S^-(3,5), X_S^-(3,6), X_S^-(7,6), X_S^-(5,6),$$
$$X_S^-(1,6), X_S^-(1,3);$$
$$X^+(4,4), X^+(4,8), X^+(4,6), X^+(4,5), X^+(8,5), X^+(6,5),$$
$$X^+(2,5), X^+(2,4);$$
$$X^-(5,5), X^-(5,1), X^-(5,3), X^-(5,4), X^-(1,4), X^-(3,4),$$
$$X^-(7,4), X^-(7,5);$$
$$S_X^+(6,6), S_X^+(6,2), S_X^+(6,4), S_X^+(6,3), S_X^+(2,3), S_X^+(4,3),$$
$$S_X^+(8,3), S_X^+(8,6);$$
$$X_K^+(7,7), X_K^+(7,3), X_K^+(7,1), X_K^+(7,2), X_K^+(3,2), X_K^+(1,2),$$
$$X_K^+(5,2), X_K^+(5,7);$$
$$X_K^-(8,8), X_K^-(8,4), X_K^-(8,2), X_K^-(8,1), X_K^-(4,1), X_K^-(2,1),$$
$$X_K^-(6,1), X_K^-(6,8).$$

Here, each of the elements: X, X_S, X_K, K_X, S_X *is called wood, fire, earth,*

metal, water, respectively, and this is $*^+$ Yang, $*^-$ is Yin. Each of sets:

$$\boldsymbol{K}_X^+(*,*), \boldsymbol{K}_X^-(*,*), \boldsymbol{X}_S^-(*,*), \boldsymbol{X}^+(*,*), \boldsymbol{X}^-(*,*), \boldsymbol{S}_X^+(*,*), \boldsymbol{X}_K^+(*,*), \boldsymbol{X}_K^-(*,*)$$

is called Qian palace (乾宫), Dui palace (兑宫), Li palace (离宫), Zhen palace (震宫), Xun palace (巽宫), Kan palace (坎宫), Gen palace (艮宫), Kun palace (坤宫), respectively.

Each of elements:

$$\boldsymbol{K}_X^+(1,1), \boldsymbol{K}_X^-(2,2), \boldsymbol{X}_S^-(3,3), \boldsymbol{X}^+(4,4), \boldsymbol{X}^-(5,5), \boldsymbol{S}_X^+(6,6), \boldsymbol{X}_K^+(7,7), \boldsymbol{X}_K^-(8,8)$$

is called the **primordial spirit** (元神) of Qian palace (乾宫), Dui palace (兑宫), Li palace (离宫), Zhen palace (震宫), Xun palace (巽宫), Kan palace (坎宫), Gen palace (艮宫), Kun palace (坤宫), respectively.

Each of elements:

$$\boldsymbol{K}_X^+(1,5), \boldsymbol{K}_X^-(2,6), \boldsymbol{X}_S^-(3,7), \boldsymbol{X}^+(4,8), \boldsymbol{X}^-(5,1), \boldsymbol{S}_X^+(6,2), \boldsymbol{X}_K^+(7,3), \boldsymbol{X}_K^-(8,4)$$

is called the **First generation** (一世) of Qian palace (乾宫), Dui palace (兑宫), Li palace (离宫), Zhen palace (震宫), Xun palace (巽宫), Kan palace (坎宫), Gen palace (艮宫), Kun palace (坤宫), respectively.

Each of elements:

$$\boldsymbol{K}_X^+(1,7), \boldsymbol{K}_X^-(2,8), \boldsymbol{X}_S^-(3,5), \boldsymbol{X}^+(4,6), \boldsymbol{X}^-(5,3), \boldsymbol{S}_X^+(6,4), \boldsymbol{X}_K^+(7,1), \boldsymbol{X}_K^-(8,2)$$

is called the **Second generation** (二世) of Qian palace (乾宫), Dui palace (兑宫), Li palace (离宫), Zhen palace (震宫), Xun palace (巽宫), Kan palace (坎宫), Gen palace (艮宫), Kun palace (坤宫), respectively.

Each of elements:

$$\boldsymbol{K}_X^+(1,8), \boldsymbol{K}_X^-(2,7), \boldsymbol{X}_S^-(3,6), \boldsymbol{X}^+(4,5), \boldsymbol{X}^-(5,4), \boldsymbol{S}_X^+(6,3), \boldsymbol{X}_K^+(7,2), \boldsymbol{X}_K^-(8,1)$$

is called the **Third generation** (三世) of Qian palace (乾宫), Dui palace (兑宫), Li palace (离宫), Zhen palace (震宫), Xun palace (巽宫), Kan palace (坎宫), Gen palace (艮宫), Kun palace (坤宫), respectively.

Each of elements:

$$\boldsymbol{K}_X^+(5,8), \boldsymbol{K}_X^-(6,7), \boldsymbol{X}_S^-(7,6), \boldsymbol{X}^+(8,5), \boldsymbol{X}^-(1,4), \boldsymbol{S}_X^+(2,3), \boldsymbol{X}_K^+(3,2), \boldsymbol{X}_K^-(4,1)$$

is called the **Fourth generation** (四世) of Qian palace (乾宫), Dui palace (兑宫), Li palace (离宫), Zhen palace (震宫), Xun palace (巽宫), Kan palace (坎宫), Gen palace (艮宫), Kun palace (坤宫), respectively.

Each of elements:

$$\boldsymbol{K}_X^+(7,8), \boldsymbol{K}_X^-(8,7), \boldsymbol{X}_S^-(5,6), \boldsymbol{X}^+(6,5), \boldsymbol{X}^-(3,4), \boldsymbol{S}_X^+(4,3), \boldsymbol{X}_K^+(1,2), \boldsymbol{X}_K^-(2,1)$$

is respectively called the **Fifth generation** (五世) of Qian palace (乾宫), Dui palace (兑宫), Li palace (离宫), Zhen palace (震宫), Xun palace (巽宫), Kan palace (坎宫), Gen palace (艮宫), Kun palace (坤宫).

Each of elements:

$$\boldsymbol{K}_X^+(3,8), \boldsymbol{K}_X^-(4,7), \boldsymbol{X}_S^-(1,6), \boldsymbol{X}^+(2,5), \boldsymbol{X}^-(7,4), \boldsymbol{S}_X^+(8,3), \boldsymbol{X}_K^+(5,2), \boldsymbol{X}_K^-(6,1)$$

is respectively called the **Wandering soul** (游魂) of Qian palace (乾宫), Dui palace (兑宫), Li palace (离宫), Zhen palace (震宫), Xun palace (巽宫), Kan palace

(坎宫), *Gen palace* (艮宫), *Kun palace* (坤宫).

Each of elements:

$$K_X^+(3,1), K_X^-(4,2), X_S^-(1,3), X^+(2,4), X^-(7,5), S_X^+(8,6), X_K^+(5,7), X_K^-(6,8)$$

is respectively called the **Return of the soul** (归魂) of *Qian palace* (乾宫), *Dui palace* (兑宫), *Li palace* (离宫), *Zhen palace* (震宫), *Xun palace* (巽宫), *Kan palace* (坎宫), *Gen palace* (艮宫), *Kun palace* (坤宫).

In the **eight palaces or eight veins**, *Yang* is respectively:

Qian palace (乾宫), *Kan palace* (坎宫), *Gen palace* (艮宫), *Zhen palace* (震宫).

Yin is respectively:

Xun palace (巽宫), *Li palace* (离宫), *Kun palace* (坤宫), *Dui palace* (兑宫).

Yin is in the inside (里), *Yang* is in the outside (表). The relationship between the inside and the outside is the symmetrical relationship.

The **eight palaces** are also corresponding to **eight veins. Therefore, in eight palaces or eight veins**, other names of them are corresponding to the human body organs respectively:

Belt vein (带脉) as *Qian palace* (乾宫) $K_X^+(*,*)$ corresponding to metal (K_X) = {*lung, large intestine*}: For *Yang* meridians, It links the foot *ShaoYang gallbladder meridian* $X^+(0,e)$ (足少阳胆经) in *DaiMai* (带脉, GB26), *WuQu* (五枢, GB27), *WeiDao* (维道, GB28) and *ZuLinQi* (足临泣, GB41). It is the penetration of the *Yang link vein* (阳维脉) and the *Yang cross vein* (阳跷脉) through the foot *ShaoYang gallbladder meridian* $X^+(0,e)$ (足少阳胆经). Also links the *governor vein* (督脉) in *YaMen* (哑门, DU15) and *FengFu* (风府, DU16) through the *Yang link vein* (阳维脉).

For *Yin* meridians, it connects the *ren vein* (任脉) through the *governor vein* (督脉) in n *HuiYin* (会阴, RN1). It also connects the hand *TaiYin lung meridian* $K_X^-(1,(132))$ (手太阴肺经) in *LieQue* (列缺, Lu7) and *TaiYuan* (太渊, Lu9) through the *ren vein* (任脉). The idea is that veins meet in *TaiYuan* (太渊, Lu9).

The idea is that *ZuLinQi* (足临泣, GB41) mainly manages the *Belt vein* (带脉) as *Qian palace* (乾宫) $K_X^+(*,*)$. It is mainly in order to absorb the energy of $K_X^+(*,*)$ belonging to metal (K_X) = {*lung, large intestine*} and to maintain the security of X.

Yin link vein (阴维脉) as *Dui palace* (兑宫) $K_X^-(*,*)$ corresponding to {*lower energizer*} $\subset X_S^{x+}(1,e)$ (手少阳三焦经): For *Yin* meridians, it links the foot *JueYin liver meridian* $X^-(0,(23))$ (足厥阴肝经) in *QiMen* (旗门, LR14), links the hand *JueYin pericardium meridian* $X_S^{x-}(1,(23))$ (手厥阴心包经) in *NeiGuan* (内关, PC6), links the foot *ShaoYin kidney meridian* $S_X^-(0,(123))$ (足少阴肾经) in *ZhuBin* (筑宾, KI9), links the foot *TaiYin spleen meridian* $X_K^-(0,(132))$ (足太阴脾经) in *ChongMen* (冲门, SP12), *FuHui* (府会, SP13), *DaHeng* (大横, SP15) and *FuAi* (腹哀, SP16).

Also it links the *ren vein* (任脉) in *TianTu* (天突, RN22) and *LianQuan* (廉泉, RN23). Connects the hand *TaiYin lung meridian* $K_X^-(1,(132))$ (手太阴肺经) in *LieQue* (列缺, Lu7) and *TaiYuan* (太渊, Lu9) through the *ren vein* (任脉).

The idea is that veins meet in TaiYuan (太渊, *Lu9*).

The idea is that NeiGuan (内关, *PC6*) mainly manages the Yin link vein (阴维脉) as Dui palace (兑宫) $K_X^-(*,*)$. It is mainly in order to absorb the energy of $K_X^-(*,*)$ corresponding to {lower energizer} $\subset X_S^{x+}(1,e)$ （手少阳三焦经） and to maintain the security of X_S^x.

Governor vein (督脉) as Li palace (离宫) $X_S^-(*,*)$ corresponding to fire (X_S^j) = {heart, small intestine}: For Yang meridians, it links the foot ShaoYang Gallbladder meridian $X^+(0,e)$ （足少阳胆经） in ChangQiang (长强, *DU1*) and DaZhui (大锥, *DU14*) and BaiHui (百会, *DU20*), links the hand ShaoYang triple energizer meridian $X_S^{x+}(1,e)$ （手少阳三焦经） in DaZhui (大锥, *DU14*) and BaiHui (百会, *DU20*), links the foot YangMing stomach meridian $X_K^+\left(0,(12)\right)$ （足阳明胃经） in DaZhui (大锥, *DU14*) and BaiHui (百会, *DU20*) and ShenTing (神庭, *DU24*) and ShuiGou (水沟, *DU26*), links the hand YangMing large intestine $K_X^+\left(1,(12)\right)$ （手阳明大肠经） in DaZhui (大锥, *DU14*) and BaiHui (百会, *DU20*) and ShuiGou (水沟, *DU26*), links the foot TaiYang bladder meridian $S_X^+\left(0,(13)\right)$ （足太阳膀胱经） in DaZhui (大锥, *DU14*), BaiHui (百会, *DU20*), NaoHu (脑户, *DU17*), ShenTing (神庭, *DU24*) and TaoDao (陶道, *DU13*). And links the hand TaiYang small intestine meridian $X_S^{j+}\left(1,(13)\right)$ （手太阳小肠经） in HouXi (后溪, *SI3*), DaZhui (大锥, *DU14*) and BaiHui (百会, *DU20*).

For Yin meridians, it links the foot JueYin liver meridian $X^-\left(0,(23)\right)$ （足厥阴肝经） in BaiHui (百会, *DU20*), links the foot ShaoYin kidney meridian $S_X^-\left(0,(123)\right)$ （足少阴肾经） in ChangQiang (长强, *DU1*). Also links the ren vein (任脉) and the impact vein (冲脉) in HuiYin (会阴, *RN1*). Connects the hand TaiYin lung meridian $K_X^-\left(1,(132)\right)$ （手太阴肺经） in LieQue (列缺, *Lu7*) and TaiYuan (太渊, *Lu9*) through the ren vein (任脉) or directly contacting the hand YangMing large intestine $K_X^+\left(1,(12)\right)$ （手阳明大肠经）. The idea is that veins meet in TaiYuan (太渊, *Lu9*).

The idea is that HouXi (后溪, *SI3*) mainly manages the Governor vein (督脉) as Li palace (离宫) $X_S^-(*,*)$. It is mainly in order to absorb the energy of $X_S^-(*,*)$ belonging to jun-fire (X_S^j) = {heart, small intestine} and to maintain the security of K_X.

Yang cross vein (阳蹻脉) as Zhen palace (震宫) $X^+(*,*)$ corresponding to wood (X) = {liver, bravery}: For Yang meridians, it links the foot ShaoYang Gallbladder meridian $X^+(0,e)$ （足少阳胆经） in JuLiao (居髎, *GB29*), links the hand ShaoYang triple energizer meridian $X_S^{x+}(1,e)$ （手少阳三焦经） in TianLiao (天髎, *SJ15*), links the foot YangMing stomach meridian $X_K^+\left(0,(12)\right)$ （足阳明胃经） in ChengQi (承泣, *ST1*) and JuLiao (巨髎, *ST3*) and DiCang (地仓, *ST4*), links the hand YangMing large intestine meridian $K_X^+\left(1,(12)\right)$ （手阳明大肠经） in JianYu (肩髃, *LI15*), JuGu (巨骨, *LI16*) and DiCang (地仓, *ST4*), links the foot TaiYang bladder meridian $S_X^+\left(0,(13)\right)$ （足太阳膀胱经） in ShenMai (申脉, *BL62*) and PuCan (仆参, *BL61*) and PuYang (跗阳, *BL59*) and QngMing (晴明, *BL1*), and link the hand TaiYang small intestine meridian $X_S^{j+}\left(1,(13)\right)$ （手太阳小肠经） in NaoShu (臑俞, *SI10*).

For Yin meridians, it also contacts the ren vein (任脉) in ChengQi (承泣,

ST1) of the foot YangMing stomach meridian $X_K^+\left(0,(12)\right)$ （足阳明胃经）, *and connects the hand TaiYin lung meridian* $K_X^-\left(1,(132)\right)$ （手太阴肺经） *in Lie-Que* （列缺, *Lu7*） *and TaiYuan* （太渊, *Lu9*） *through the ren vein* （任脉） *or directly contacting the hand YangMing large intestine meridian* $K_X^+\left(1,(12)\right)$ （手阳明大肠经）. *The idea is that veins meet in TaiYuan* （太渊, *Lu9*）.

The idea is that ShenMai （申脉, *BL62*） *mainly manages the Yang cross vein* （阳跷脉） *as Zhen palace* （震宫） $X^+(*,*)$. *It is mainly in order to absorb the energy of* $X^+(*,*)$ *belonging to wood* (X) = {*liver, bravery*} *and to maintain the security of* K_X.

Yin cross Vein （阴跷脉） *as Xun palace* （巽宫） $X^-(*,*)$ *corresponding to* {*liver, middle energizer*} $\subset X \cup X_S^{x+}\left(1,e\right)$: *For Yin meridians, it links the foot ShaoYin kidney meridian* $S_X^-\left(0,(123)\right)$ （足少阴肾经） *in Zhaohai* （照海, *K16*） *and JiaoXin* （交信, *K18*）.

Also it contacts the well point YongQuan （涌泉, *K11*） *through the foot ShaoYin kidney meridian* $S_X^-\left(0,(123)\right)$ （足少阴肾经）. *The upper part of the well point YongQuan* （涌泉, *K11*） *runs through the liver diaphragm corresponding to the foot JueYin liver meridian* $X^-\left(0,(23)\right)$ （足厥阴肝经）.

And it is also in the penetration of the impact vein （冲脉） *through the foot ShaoYin kidney meridian* $S_X^-\left(0,(123)\right)$ （足少阴肾经） *in JiaoXin* （交信, *KI8*） *and ZhuBin* （筑宾, *KI9*） *which are chieh or Qie dens. And also contacts the ren vein* （任脉） *through the impact vein* （冲脉） *in HuiYin* （会阴, *RN1*）. *And also connects the hand TaiYin lung meridian* $K_X^-\left(1,(132)\right)$ （手太阴肺经） *in Lie-Que* （列缺, *Lu7*） *and TaiYuan* （太渊, *Lu9*） *through the ren vein* （任脉）. *The idea is that veins meet in TaiYuan* （太渊, *Lu9*）.

For Yang meridians, it links the foot YangMing stomach meridian $X_K^+\left(0,(12)\right)$ （足阳明胃经） *in QingMing* （晴明, *BL1*）, *links the foot TaiYang bladder meridian* $S_X^+\left(0,(13)\right)$ （足太阳膀胱经） *in QingMing* （晴明, *BL1*）, *and links the hand TaiYang small intestine meridian* $X_S^{j+}\left(1,(13)\right)$ （手太阳小肠经） *in QingMing* （晴明, *BL1*）. *Also links the Yang cross vein* （阳跷脉） *in QingMing* （晴明, *BL1*）. *And contacts the foot ShaoYang Gallbladder meridian* $X^+\left(0,e\right)$ （足少阳胆经） *in JuLiao* （居髎, *GB29*） *through the Yang cross Vein* （阳跷脉）.

The idea is that ZhaoHai mainly manages the Yin cross vein （阴跷脉） *as Xun palace* （巽宫） $X^-(*,*)$. *It is mainly in order to absorb the energy of* $X^-(*,*)$ *corresponding to* {*liver, middle energizer*} $\subset X \cup X_S^{x+}\left(1,e\right)$ *and to maintain the security of* K_X.

Ren vein （任脉） *as Kan palace* （坎宫） $S_X^+(*,*)$ *corresponding to water* (S_X) = {*kidney, bladder*}: *For Yin meridians, it links the foot JueYin liver meridian* $X^-\left(0,(23)\right)$ （足厥阴肝经） *in QuGu* （曲骨, *RN2*） *and ZhongJi* （中极, *RN3*） *and GuanYuan* （关元, *RN4*）, *links the foot TaiYin spleen meridian* $X_K^-\left(0,(132)\right)$ （足太阴脾经） *in XiaWang* （下脘, *RN10*）, *ZhongJi* （中极, *RN3*） *and GuanYuan* （关元, *RN4*）, *links the foot ShaoYin kidney meridian* $S_X^-\left(0,(123)\right)$ （足少阴肾经） *in ZhongJi* （中极, *RN3*） *and GuanYuan* （关元, *RN4*）.

And it connects the hand TaiYin lung meridian $K_X^-\left(1,(132)\right)$ (手太阴肺经) in LieQue (列缺, *Lu7*) and TaiYuan (太渊, *Lu9*). The idea is that veins meet in TaiYuan (太渊, *Lu9*).

For Yang meridians, it links the hand ShaoYang triple energizer meridian $X_S^{x+}\left(1,e\right)$ (手少阳三焦经) in ZhongWan (中脘, *RN12*), links the foot YangMing stomach meridian $X_K^+\left(0,(12)\right)$ (足阳明胃经) in ZhongWan (中脘, *RN12*) and ShangWan (上脘, *RN13*), and links the hand TaiYang small intestine meridian $X_S^{j+}\left(1,(13)\right)$ (手太阳小肠经) in ZhongWan (中脘, *RN12*) and ShangWan (上脘, *RN13*).

The idea is that LieQue mainly manages the Ren vein (任脉) as Kan palace (坎宫) $S_X^+\left(*,*\right)$. It is mainly in order to absorb the energy of $S_X^+\left(*,*\right)$ belonging to water (S_X) = {kidney, bladder} and to maintain the security of X_K.

Yang link Veins (阳维脉) as Gen palace (艮宫) $X_K^+\left(*,*\right)$ corresponding to {upper energizer} $\subset X_S^{x+}\left(1,e\right)$ (手少阳三焦经): For Yang meridians, it links the foot ShaoYang Gallbladder meridian $X^+\left(0,e\right)$ (足少阳胆经) in YangJiao (阳交, *GB35*) and JianBing (肩井, *GB21*), links the hand ShaoYang triple energizer meridian $X_S^{x+}\left(1,e\right)$ (手少阳三焦经) in TianLiao (天髎, *SJ15*) and WaiGuan (外关, *SJ5*), links the foot YangMing stomach meridian $X_K^+\left(0,(12)\right)$ (足阳明胃经) in TouWei (头维, *ST8*), links the foot TaiYang bladder meridian $S_X^+\left(0,(13)\right)$ (足太阳膀胱经) in JinMen (金门, *BL63*) and links the hand TaiYang small intestine meridian $X_S^{j+}\left(1,(13)\right)$ (手太阳小肠经) in NaoShu (臑俞, *SI10*). Also links the governor vein (督脉) in YaMen (哑门, *DU15*) and FengFu (风府, *DU16*).

For Yin meridians, it connects the ren vein (任脉) through the governor vein (督脉) in HuiYin (会阴, *RN1*). It also connects the hand TaiYin lung meridian $K_X^-\left(1,(132)\right)$ (手太阴肺经) in LieQue (列缺, *Lu7*) and TaiYuan (太渊, *Lu9*) through the ren vein (任脉). The idea is that veins meet in TaiYuan (太渊, *Lu9*).

The idea is that WaiGuan (外关, *SJ5*) mainly manages the Yang link vein (阳维脉) as Gen palace (艮宫) $X_K^+\left(*,*\right)$. It is mainly in order to absorb the energy of $X_K^+\left(*,*\right)$ corresponding to {upper energizer} and to maintain the security of X_S^j.

Impact vein (冲脉) as Kun palace (坤宫) $X_K^-\left(*,*\right)$ corresponding to earth (X_K) = {spleen, stomach}: For Yin meridians, it links the foot TaiYin spleen meridian $X_K^-\left(0,(132)\right)$ (足太阴脾经) in GongSun (公孙, *SP4*), and contacts the foot ShaoYin kidney meridian $S_X^-\left(0,(123)\right)$ (足少阴肾经) in HengGu (横骨, *KI11*), DaHe (大赫, *KI12*), QiXue (气穴, *KI13*), SiMan (四满, *Ki14*), ZhongZhu (中注, *KI15*), HuangShu (肓俞, *KI16*), ShangQu (商曲, *KI17*), ShiGuan (石关, *KI18*), YinDu (阴都, *KI19*), FuTongGu (腹通谷, *KI20*) and YouMen (幽门, *KI21*). Also links the ren vein (任脉) in YinJiao (阴交, *RN7*) and HuiYin (会阴，*RN1*). It also connects the hand TaiYin lung meridian $K_X^-\left(1,(132)\right)$ (手太阴肺经) in LieQue (列缺, *Lu7*) and TaiYuan (太渊, *Lu9*) through the ren vein (任脉). The idea is that veins meet in TaiYuan (太渊, *Lu9*).

For Yang meridians, links the foot YangMing stomach meridian $X_K^+\left(0,(12)\right)$ (足阳明胃经) in QiChong (气冲, *ST30*). Also links the governor vein (督脉) in HuiYin (会阴, *RN1*).

The idea is that GongSun (公孙, SP4) mainly manages the impact vein (冲脉) as Kun palace (坤宫) $X_K^-(*,*)$. The impact vein (冲脉) is a sea of blood and a sea of twelve meridians. It is mainly in order to absorb the energy of $X_K^-(*,*)$ belonging to earth (X_K) = {spleen, stomach} and to maintain the security of S_X .

The laws of *Five Zang-organs, Six fu-organs, Ten heavenly stems hidden behind Twelve earthly branches, Ten heavenly stems and Twelve earthly branches hidden behind eight palaces or eight veins* are summarized in **Figures 2-5**. #
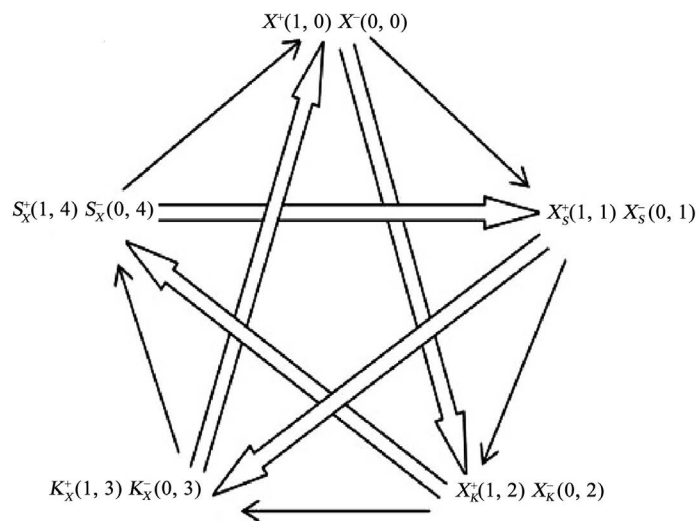
Figure 2. Relations of ten heavenly stems.
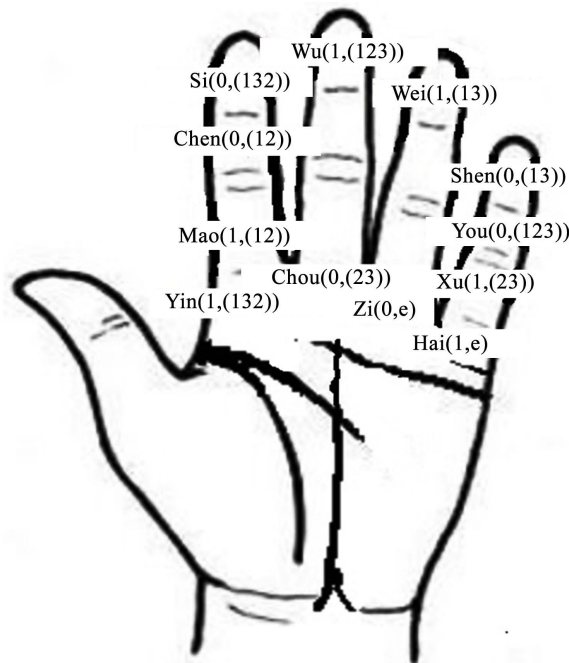
Figure 3. Relations of twelve earthly branches.
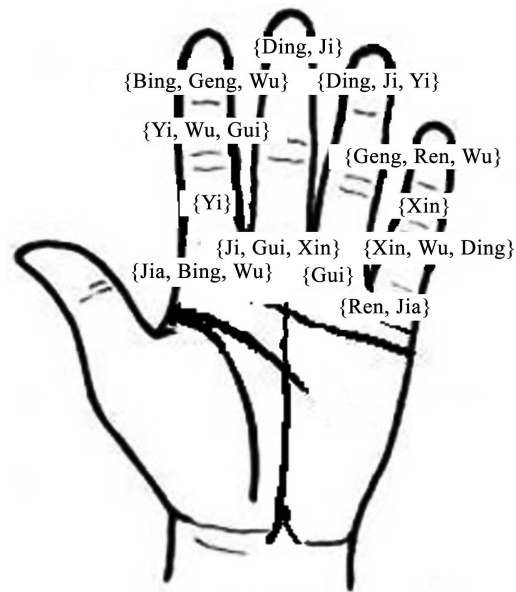
Figure 4. Ten heavenly stems hidden behind twelve earthly branches.
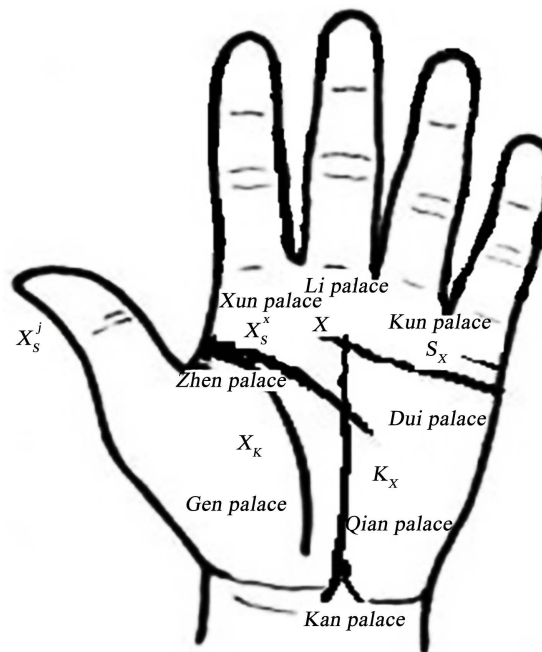
Figure 5. Relations between eight palaces and six fu-organs.

In TCM, the model of *eight palaces or eight veins* is not only the anatomy systems as the first physiological system corresponding to their steady multilateral systems, but also it is the human body logic model as the second physiological system corresponding to their steady multilateral systems. If there is the *Eight-Hexagram* model V^8, then the model of *eight palaces or eight veins* $V^8 \times V^8$ must be existed in logic. So they form a parasitic system of the Yin Yang Wu Xing system V^5, namely the second physiological system $V^8 \times V^8$ of the steady multilateral systems.

In TCM, in spite of the Zangxiang model cannot be observed, but the model of Jingluo or six hollow organs can. Thus it can be reasoned according to the system reasoning of **eight palaces or eight veins** $V^8 \times V^8$. So the system logic relation of both the ten heavenly stems $V^2 \times V^5$, the twelve earthly branches $V^2 \times V^6$ and **eight palaces or eight veins** $V^8 \times V^8$ must be known.

Definition 3.2. (Logic relation between ten heavenly stems, twelve earthly branches and eight palaces) *All logic relations of that both ten heavenly stems and twelve earthly branches are hidden behind the eight palaces must follow the relationship between the symmetry of the eight palaces.*

All logic relations of that both ten heavenly stems and twelve earthly branches are hidden behind the Eight-Palaces are summarized in Table 1.

Watch Table 1, *all pure Yang: Ren-Jia, Wu, Bing, Geng of Ten Heavenly Stems are hidden behind all pure Yang: Qian, Kan, Gen, Zhen of the eight palaces; all pure Yin: Gui-Yi, Ji, Ding, Xin of Ten Heavenly Stems are hidden behind clockwise all pure Yin: Qun, Li, Dui, Xun of the eight palaces.*

All pure Yang: Wu-Zi, Xu-Chen, Shen-Yin, Wu-Zi of twelve earthly branches are hidden behind all pure Yang: Qian, Kan, Gen, Zhen of the eight palaces; all pure Yin: Chou-Wei, Hai-Si, You-Mao, Wei-Chou of twelve earthly branches are hidden behind counterclockwise all pure Yin: Qun, Li, Dui, Xun of the eight palaces. #

Example 2.1. The name of the primordial spirit of Qian Palace is

$$\boldsymbol{K}_X^+ (1,1) = \boldsymbol{K}_X^+ \left(\text{Outside of Qian}, \text{Inside of Qian} \right)$$
$$= \left(\text{Qian Ren Xu, Qian Ren Shen, Qian Ren Wu;} \right.$$
$$\left. \text{Qian Jia Chen, Qian Jia Yin, Qian Jia Zi} \right).$$

The name of the two generations of Dui Palace is

$$\boldsymbol{K}_X^- (2,8) = \boldsymbol{K}_X^- \left(\text{Outside of Dui}, \text{Inside of Qun} \right)$$
$$= \left(\text{Dui Ding Si, Dui Ding Wei, Dui Ding You;} \right.$$
$$\left. \text{Qun Yi Mao, Qun Yi Si, Qun Yi Wei} \right).$$

All eight palace elements for naming can use the following formula:

$$\text{Eight-Hexagram} + \text{Ten Stems} + \text{Twelve Branches.} \quad \#$$

Definition 3.3. (Energy of eight palaces or eight veins) *Suppose that the each Hexagram-image of* **eight palaces** *is represented as a six-dimensional vector:*

$$\boldsymbol{f} = \left(f_1, f_2, f_3, f_4, f_5, f_6 \right), \quad f_i \in \{1, -1\}, \quad i = 1, 2, 3, 4, 5, 6.$$

Then the following number is called the energy of the Hexagram-image.

$$e_f = \left(\left(|f_1| + f_1 \right)/2 \right) 2^5 + \left(\left(|f_2| + f_2 \right)/2 \right) 2^4 + \left(\left(|f_3| + f_3 \right)/2 \right) 2^3$$
$$+ \left(\left(|f_4| + f_4 \right)/2 \right) 2^2 + \left(\left(|f_5| + f_5 \right)/2 \right) 2^1 + \left(\left(|f_6| + f_6 \right)/2 \right), \quad \#$$
$$f_i \in \{1, -1\}, \quad i = 1, 2, 3, 4, 5, 6.$$

Property 3.1. (Energy Distribution of eight palaces or Eight Veins)

Table 1. Ten heavenly stems and twelve earthly branches hidden behind eight palaces for making names.

Palace sequence	Yang palace	Ten heavenly stems	Twelve earthly branches	Yin palace	Ten heavenly stems	Twelve earthly branches
outside	Qian (乾) (father)	Ren (壬)	Xu (戌)	Kun (坤) (mother)	Gui (癸)	You (酉)
outside	Qian (乾) (father)	Ren (壬)	Shen (申)	Kun (坤) (mother)	Gui (癸)	Hai (亥)
outside	Qian (乾) (father)	Ren (壬)	Wu (午)	Kun (坤) (mother)	Gui (癸)	Chou (丑)
inside	Qian (乾) (father)	Jia (甲)	Chen (辰)	Kun (坤) (mother)	Yi (乙)	Mao (卯)
inside	Qian (乾) (father)	Jia (甲)	Yin (寅)	Kun (坤) (mother)	Yi (乙)	Si (巳)
inside	Qian (乾) (father)	Jia (甲)	Zi (子)	Kun (坤) (mother)	Yi (乙)	Wei (未)
outside	Kan (坎) (middle son)	Wu (戊)	Yin (寅)	Li (离) (middle daughter)	Ji (己)	Wei (未)
outside	Kan (坎) (middle son)	Wu (戊)	Zi (子)	Li (离) (middle daughter)	Ji (己)	You (酉)
outside	Kan (坎) (middle son)	Wu (戊)	Xu (戌)	Li (离) (middle daughter)	Ji (己)	Hai (亥)
inside	Kan (坎) (middle son)	Wu (戊)	Shen (申)	Li (离) (middle daughter)	Ji (己)	Chou (丑)
inside	Kan (坎) (middle son)	Wu (戊)	Wu (午)	Li (离) (middle daughter)	Ji (己)	Mao (卯)
inside	Kan (坎) (middle son)	Wu (戊)	Chen (辰)	Li (离) (middle daughter)	Ji (己)	Si (巳)
outside	Gen (艮) (young son)	Bing (丙)	Zi (子)	Dui (兑) (young daughter)	Ding (丁)	Si (巳)
outside	Gen (艮) (young son)	Bing (丙)	Xu (戌)	Dui (兑) (young daughter)	Ding (丁)	Wei (未)
outside	Gen (艮) young son	Bing (丙)	Shen (申)	Dui (兑) (young daughter)	Ding (丁)	You (酉)
inside	Gen (艮) (young son)	Bing (丙)	Wu (午)	Dui (兑) (young daughter)	Ding (丁)	Hai (亥)
inside	Gen (艮) (young son)	Bing (丙)	Chen (辰)	Dui (兑) (young daughter)	Ding (丁)	Chou (丑)
inside	Gen (艮) (young son)	Bing (丙)	Yin (寅)	Dui (兑) (young daughter)	Ding (丁)	Mao (卯)
outside	Zhen (震) (older son)	Geng (庚)	Xu (戌)	Xun (巽) (older daughter)	Xin (辛)	Mao (卯)
outside	Zhen (震) (older son)	Geng (庚)	Shen (申)	Xun (巽) (older daughter)	Xin (辛)	Si (巳)
outside	Zhen (震) (older son)	Geng (庚)	Wu (午)	Xun (巽) (older daughter)	Xin (辛)	Wei (未)
inside	Zhen (震) (older son)	Geng (庚)	Chen (辰)	Xun (巽) (older daughter)	Xin (辛)	You (酉)
inside	Zhen (震) (older son)	Geng (庚)	Yin (寅)	Xun (巽) (older daughter)	Xin (辛)	Hai (亥)
inside	Zhen (震) (older son)	Geng (庚)	Zi (子)	Xun (巽) (older daughter)	Xin (辛)	Chou (丑)

The energy of every Hexagram-image in every **Palace**, or its average value in every palace, or its standard deviation in every palace is as follows respectively.

1) *Qian* (乾) =

f_1	f_2	f_3	f_4	f_5	f_6	energy	image	palace
1	1	1	1	1	1	63	0	1
1	1	1	1	1	−1	62	1	1
1	1	1	1	−1	−1	60	2	1
1	1	1	−1	−1	−1	56	3	1
1	1	−1	−1	−1	−1	48	4	1
1	−1	−1	−1	−1	−1	32	5	1
1	−1	1	−1	−1	−1	40	6	1
1	−1	1	1	1	1	47	7	1

The average energy is equal to 51.0 and the standard deviation of energy is equal to11.20.

2) *Dui* (兑) =

f_1	f_2	f_3	f_4	f_5	f_6	energy	image	palace
−1	1	1	−1	1	1	27	0	2
−1	1	1	−1	1	−1	26	1	2
−1	1	1	−1	−1	−1	24	2	2
−1	1	1	1	−1	−1	28	3	2
−1	1	−1	1	−1	−1	20	4	2
−1	−1	−1	1	−1	−1	4	5	2
−1	−1	1	1	−1	−1	12	6	2
−1	−1	1	−1	1	1	11	7	2

The average energy is equal to 19.0 and the standard deviation of energy is equal to 8.93.

3) *Li* (离) =

f_1	f_2	f_3	f_4	f_5	f_6	energy	image	palace
1	−1	1	1	−1	1	45	0	3
1	−1	1	1	−1	−1	44	1	3
1	−1	1	1	1	−1	46	2	3
1	−1	1	−1	1	−1	42	3	3
1	−1	−1	−1	1	−1	34	4	3
1	1	−1	−1	1	−1	50	5	3
1	1	1	−1	1	−1	58	6	3
1	1	1	1	−1	1	61	7	3

The average energy is equal to 47.5 and the standard deviation of energy is equal to 8.72.

4) *Zhen* (震) =

f_1	f_2	f_3	f_4	f_5	f_6	energy	image	palace
−1	−1	1	−1	−1	1	9	0	4
−1	−1	1	−1	−1	−1	8	1	4
−1	−1	1	−1	1	−1	10	2	4
−1	−1	1	1	1	−1	14	3	4
−1	−1	−1	1	1	−1	6	4	4
−1	1	−1	1	1	−1	22	5	4
−1	1	1	1	1	−1	30	6	4
−1	1	1	−1	−1	1	25	7	4

The average energy is equal to 15.5 and the standard deviation of energy is equal to 8.98.

5) *Xun* (巽) =

f_1	f_2	f_3	f_4	f_5	f_6	energy	image	palace
1	1	−1	1	1	−1	54	0	5
1	1	−1	1	1	1	55	1	5
1	1	−1	1	−1	1	53	2	5
1	1	−1	−1	−1	1	49	3	5
1	1	1	−1	−1	1	57	4	5
1	−1	1	−1	−1	1	41	5	5
1	−1	−1	−1	−1	1	33	6	5
1	−1	−1	1	1	−1	38	7	5

The average energy is equal to 47.5 and the standard deviation of energy is equal to 8.98.

6) *Kan* (坎) =

f_1	f_2	f_3	f_4	f_5	f_6	energy	image	palace
−1	1	−1	−1	1	−1	18	0	6
−1	1	−1	−1	1	1	19	1	6
−1	1	−1	−1	−1	1	17	2	6
−1	1	−1	1	−1	1	21	3	6
−1	1	1	1	−1	1	29	4	6
−1	−1	1	1	−1	1	13	5	6
−1	−1	−1	1	−1	1	5	6	6
−1	−1	−1	−1	1	−1	2	7	6

The average energy is equal to 15.5 and the standard deviation of energy is equal to 8.72.

7) *Gen* (艮) =

f_1	f_2	f_3	f_4	f_5	f_6	energy	image	palace
1	−1	−1	1	−1	−1	36	0	7
1	−1	−1	1	−1	1	37	1	7
1	−1	−1	1	1	1	39	2	7
1	−1	−1	−1	1	1	35	3	7
1	−1	1	−1	1	1	43	4	7
1	1	1	−1	1	1	59	5	7
1	1	−1	−1	1	1	51	6	7
1	1	−1	1	−1	−1	52	7	7

The average energy is equal to 44.0 and the standard deviation of energy is equal to 8.93.

8) *Kun* (坤) =

f_1	f_2	f_3	f_4	f_5	f_6	energy	image	palace
−1	−1	−1	−1	−1	−1	0	0	8
−1	−1	−1	−1	−1	1	1	1	8
−1	−1	−1	−1	1	1	3	2	8
−1	−1	−1	1	1	1	7	3	8
−1	−1	1	1	1	1	15	4	8
−1	1	1	1	1	1	31	5	8
−1	1	−1	1	1	1	23	6	8
−1	1	−1	−1	−1	−1	16	7	8

The average energy is equal to 12.0 and the standard deviation of energy is equal to 11.20.

9) The energy of all eight palaces total average and total standard deviation is as follows respectively. Meet with "The same energy attracting each other" rule.

palace	average	deviation	palace	average	deviation
Qian	51.00	11.20	Kun	12.00	11.20
Kan	15.50	8.72	Li	47.50	8.72
Gen	44.00	8.93	Dui	19.00	8.93
Zhen	15.50	8.98	Xun	47.50	8.98

The energy balance

$$\left(11.20 = 11.20, 8.72 = 8.72, 8.93 = 8.93, 8.98 = 8.98\right)$$

between the standard deviation of all symmetrical palaces shows that the distribution of the energy is reasonable.

The energy difference

$$\left(11.2 = \max\left(11.2, 8.72, 8.73, 8.93\right)\right.$$
$$\left.< 12.0 = \min\left(51.00, 12.00, 15.50, 47.50, 44.00, 19.00\right)\right)$$

between the standard deviation and the average of all palaces shows that the classification of the energy is reasonable.

10) The energy of all eight palaces total average is equal to 31.5 and the energy of all Eight palaces total standard deviation is equal to 18.62.

The energy of first four hexagrams of all palaces total average is equal to 31.5 and the energy of first four hexagrams of all palaces total standard deviation is equal to 17.93.

The energy of last four hexagrams of all palaces total average energy is equal to 31.5 and the energy of last four hexagrams of all palaces total standard deviation is equal to 19.58.

The energy balance $\left(31.5 = 31.5 = 31.5\right)$ of total average between all palaces, the first four hexagrams of all palaces and the last four hexagrams energy of all palaces shows that the distribution of energy is reasonable.

The energy difference

$$\left(19.58 = \max\left(18.62, 17.35, 19.58\right) < 31.5\right)$$

of total standard deviation and total average between all palaces, the first four hexagrams of all palaces and the last four hexagrams energy of all palaces shows that the classification of the energy is reasonable.

11) The energy of every outsider and insider in every palace total average or the energy of every outsider and insider in every palace total standard deviation is in Table 2, respectively. Meet with "The same energy attracting each other" rule.

The energy balance

$$\left(7.41 = 7.41, 12.10 = 12.10, 6.55 = 6.55, 10.37 = 10.37;\right.$$
$$\left.3.10 = 3.10, 1.71 = 1.71, 1.71 = 1.71, 2.63 = 2.63\right)$$

Table 2. Eight palaces energy distribution.

Palace sequence	Yang palace	Ten heavenly stems (mean)	Twelve earthly branches (deviation)	Yin palace	Ten heavenly stems (mean)	Twelve earthly branches (deviation)
outside	Qian (乾) (father)	Ren (壬) (41.75)	Xu (戌) (7.41)	Kun (坤) (mother)	Gui (癸) (21.25)	You (酉) (7.41)
outside	Qian (乾) (father)	Ren (壬) (41.75)	Shen (申) (7.41)	Kun (坤) (mother)	Gui (癸) (21.25)	Hai (亥) (7.41)
outside	Qian (乾) (father)	Ren (壬) (41.75)	Wu (午) (7.41)	Kun (坤) (mother)	Gui (癸) (21.25)	Chou (丑) (7.41)
inside	Qian (乾) (father)	Jia (甲) (60.25)	Chen (辰) (3.10)	Kun (坤) (mother)	Yi (乙) (2.75)	Mao (卯) (3.10)
inside	Qian (乾) (father)	Jia (甲) (60.25)	Yin (寅) (3.10)	Kun (坤) (mother)	Yi (乙) (2.75)	Si (巳) (3.10)
inside	Qian (乾) (father)	Jia (甲) (60.25)	Zi (子) (3.10)	Kun (坤) (mother)	Yi (乙) (2.75)	Wei (未) (3.10)
outside	Kan (坎) (middle son)	Wu (戊) (12.25)	Yin (寅) (12.10)	Li (离) (middle daughter)	Ji (己) (50.75)	Wei (未) (12.10)
outside	Kan (坎) (middle son)	Wu (戊) (12.25)	Zi (子) (12.10)	Li (离) (middle daughter)	Ji (己) (50.75)	You (酉) (12.10)
outside	Kan (坎) (middle son)	Wu (戊) (12.25)	Xu (戌) (12.10)	Li (离) (middle daughter)	Ji (己) (50.75)	Hai (亥) (12.10)
inside	Kan (坎) (middle son)	Wu (戊) (18.75)	Shen (申) (1.71)	Li (离) (middle daughter)	Ji (己) (44.25)	Chou (丑) (1.71)
inside	Kan (坎) (middle son)	Wu (戊) (18.75)	Wu (午) (1.71)	Li (离) (middle daughter)	Ji (己) (44.25)	Mao (卯) (1.71)
inside	Kan (坎) (middle son)	Wu (戊) (18.75)	Chen (辰) (1.71)	Li (离) (middle daughter)	Ji (己) (44.25)	Si (巳) (1.71)
outside	Gen (艮) (young son)	Bing (丙) (36.75)	Zi (子) (6.55)	Dui (兑) (young daughter)	Ding (丁) (11.75)	Si (巳) (6.55)
outside	Gen (艮) (young son)	Bing (丙) (36.75)	Xu (戌) (6.55)	Dui (兑) (young daughter)	Ding (丁) (11.75)	Wei (未) (6.55)
outside	Gen (艮) (young son)	Bing (丙) (36.75)	Shen (申) (6.55)	Dui (兑) (young daughter)	Ding (丁) (11.75)	You (酉) (6.55)
inside	Gen (艮) (young son)	Bing (丙) (51.25)	Wu (午) (1.71)	Dui (兑) (young daughter)	Ding (丁) (26.25)	Hai (亥) (1.71)
inside	Gen (艮) (young son)	Bing (丙) (51.25)	Chen (辰) (1.71)	Dui (兑) (young daughter)	Ding (丁) (26.25)	Chou (丑) (1.71)
inside	Gen (艮) (young son)	Bing (丙) (51.25)	Yin (寅) (1.71)	Dui (兑) (young daughter)	Ding (丁) (26.25)	Mao (卯) (1.71)
outside	Zhen (震) (older son)	Geng (庚) (20.75)	Xu (戌) (10.37)	Xun (巽) (older daughter)	Xin (辛) (42.25)	Mao (卯) (10.37)
outside	Zhen (震) (older son)	Geng (庚) (20.75)	Shen (申) (10.37)	Xun (巽) (older daughter)	Xin (辛) (42.25)	Si (巳) (10.37)
outside	Zhen (震) (older son)	Geng (庚) (20.75)	Wu (午) (10.37)	Xun (巽) (older daughter)	Xin (辛) (42.25)	Wei (未) (10.37)

Continued

inside	Zhen (震) (older son)	Geng (庚) (10.25)	Chen (辰) (2.63)	Xun (巽) (older daughter)	Xin (辛) (52.75)	You (酉) (2.63)
inside	Zhen (震) (older son)	Geng (庚) (10.25)	Yin (寅) (2.63)	Xun (巽) (older daughter)	Xin (辛) (52.75)	Hai (亥) (2.63)
inside	Zhen (震) (older son)	Geng (庚) (10.25)	Zi (子) (2.63)	Xun (巽) (older daughter)	Xin (辛) (52.75)	Chou (丑) (2.63)

between the standard deviation of all symmetrical outsider and insider palaces shows that the distribution of the energy is reasonable.

The energy difference

$$\begin{aligned} &\left(12.10 = \max\left(7.41, 12.10, 6.55, 10.37\right)\right. \\ &\approx 11.75 = \min\left(41.75, 21.25, 12.25, 50.75, 36.75, 11.75, 20.75, 42.25\right); \\ &3.10 = \max\left(3.10, 1.71, 1.71, 2.63\right) \\ &\approx 2.75 = \min\left(60.25, 2.75, 18.75, 44.25, 51.25, 26.25, 10.25, 52.75\right)\Big) \end{aligned}$$

between the standard deviation and the average of all symmetrical outsider or insider palaces shows that the classification of the energy is reasonable.

12) *Eight palace disposition* (八宫秉性):

Qian palace (*Yang metal, father*): *Gou* (姤), *Dun* (遁), *Fou* (否), *Guan* (观), *Bo* (剥), *Jin* (晋), *You* (有).

Dui palace (*Yin metal, girl*): *Kun* (困), *Cui* (萃), *Xian* (咸), *Jian* (蹇), *Qian* (谦), *Xiao* (小), *Mei* (妹).

Li palace (*Yin fire, female*): *Lv* (旅), *Ding* (鼎), *Wei* (未), *Meng* (蒙), *Huan* (涣), *Song* (讼), *Ren* (人).

Zhen palace (*Yang fire, old male*): *Yu* (豫), *Jie* (解), *Heng* (恒), *Sheng* (升), *Jing* (井), *Da* (大), *Sui* (随).

Xun palace (*Yin wood, old female*): *Xv* (畜), *Jia* (家), *Yi* (益), *Wang* (妄), *He* (嗑), *Yi* (颐), *Gu* (蛊).

Kan palace (*Yang water, male*): *Jie* (节), *Dun* (屯), *Ji* (既), *Ge* (革), *Feng* (丰), *Ming* (明), *Shi* (师).

Gen palace (*Yang earth, boys*): *Bi* (贲), *Xu* (畜), *Sun* (损), *Gui* (睽), *Lv* (履), *Fu* (孚), *Jian* (渐).

Kun palace (*Yin earth, mother*): *Fu* (复), *Lin* (临), *Tai* (泰), *Zhuang* (壮), *Guai* (夬), *Xv* (需), *Bi* (比). #

Energy concept is an important concept in Physics. Zhang [17] [18] introduces this concept to the human body. And image mathematics in Zhang and Shao [20] uses these concepts to deal with the human body diseases. By **eight palaces or eight veins** $V^8 \times V^8$, it can be used to determine the major or basic subsystems that may be affected by using the six indexes of comprehensive judgment as the Eight palaces.

In mathematics, a human body is said to have **Energy** (or **Dynamic**) if there is a non-negative function $\varphi(*)$ which makes every organ or subsystem meaningful of the human body.

Suppose that V is a human body having an energy function, then V in the human body during a normal operation, its energy function for any organ or subsystem of the human body has an **average** (or **expected value** in Statistics), this state is called as **normal** when the energy function is nearly to the average. Normal state is the better state.

That an organ of the human body is **not running properly** (or **disease, abnormal**) is that the energy deviation from the average of the subsystems is too large, the high (**real disease**) or the low (**virtual disease**).

In addition to study these real or virtual diseases, TCM is often not only considered the energy change (Attaining or Affording in Zhang [23]) of each element in the corresponding group $V^8 \times V^8$, but also studied a kind of **relation costs** in group $V^8 \times V^8$.

There are three kinds of relationship between each of two elements of **eight palaces or eight veins** $V^8 \times V^8$, namely the **merged**, **synthesized** and **combined**.

The **merged** relationship between two energy elements x and y is the joining operation in the corresponding group system $V^8 \times V^8$, *i.e.*, $\{x\} \cup \{y\} = \{z\}$. The element z is the result of two energy elements x and y merging. The purpose of merging is in order to get the large result energy of element z through inputting two energy elements x and y.

The **synthesized** relationship between two elements x and y is the multiply operation in the corresponding group system $V^8 \times V^8$ with a multiplication $*$, *i.e.*, $x * y = z$. The element z is the result of two elements x and y synthesized. The purpose of synthesized is in order to get the result energy of element z through inputting two elements x and y.

The **combined** relationship between two elements x and y is the division operation in the corresponding group system $V^8 \times V^8$ with a multiplication $*$, *i.e.*, $x^{-1} * y = z$ The element z is the cost of two elements x and y combined. The purpose of combined is in order to maintain or strengthen the relation between x and y through inputting the cost element z.

But in **eight palaces or eight veins** $V^8 \times V^8$, the **synthesized** and **combined** operations are the same since $x^{-1} = x$.

In general, a relationship cost is low if the cost element in the corresponding group is easy to get. A relationship cost is high, on the other hand, if the cost element in the corresponding is hard to come by.

Denoted the human body blood pH value x of the normal range (lower bound, upper bound, center) as follows

$$\left(a = 7.34539, b = 7.45461, t_0 = 7.4 \right).$$

In this case, in general, the human body blood pH value $x \in [a, b]$ which means $\rho_0 \le \rho_1 = \rho(x) \le 1$. This relation cost is low because this relation cost element is easy to get. The low relation cost can make the intervention increasing the sizes of both the intervention reaction coefficients ρ_1, ρ_2 and the self-protection coefficient ρ_3.

If a human body belongs to a palace, then Hexagram-image change of he/she is in the same palace. For insider of every palaces: Qian, Dui. Li, Zhen, Xun, Kan, Gen, and Zhen, the difference is small. The adjacent relationship between insider elements of palace is with low costs.

But in general, the human body blood pH value $x \notin [a,b]$ which means $0 < \rho_1 = \rho(x) < \rho_0$. This relation cost is high because the relation cost element is hard to come by. The high relation cost can make the sizes of both the intervention reaction coefficients ρ_1, ρ_2 and the self-protection coefficient ρ_3 decreasing response to intervention.

If a human body belongs to a palace, then Hexagram-image change of he/she is in the same palace. But for symmetrical palaces: Qian and Kun, Dui and Gen, Li and Kan, Zhen and Xun, the difference is big. All relationship of symmetrical palaces is with high costs.

The purpose of intervention is to make the human body return to normal state. The method of intervention is to increase or decrease the energy of an organ.

What kind of intervening should follow the principle to treat it? Western medicine emphasizes directly human body treatments on a sick organ after the sick of organ has occurred, but the indirect intervening of oriental medicine is required before the sick of organ will occur. Which is more reasonable?

Based on this idea, many issues are worth further discussion. For example, if an intervening has been implemented to a sick organ before the sick of organ will occur, what Hexagram-image relation will be **low cost** which does not need to be done an intervention of it? what Hexagram-image relation will be **high cost** which needs to be done an intervention of it?

3.2. Kinds of Relationship Costs of Steady Multilateral Systems

For a steady multilateral system V with two incompatibility relations, suppose that the subsystems X, X_S, X_K, K_X, S_X are the same as those defined in Theorem 3.1. Then the relation diseases can be decomposed into the following classes:

Definition 3.4. (merged (合并), synthesized (合化或者合成) and combined (化合)) *Suppose that both x and y are two elements of system of **eight palaces** or **Eight Extra Meridians** or **Eight Veins** $V^8 \times V^8$.*

*The **merged** relationship between two energy elements x and y is the joining operation in the corresponding group system $V^8 \times V^8$, i.e., $\{x\} \cup \{y\} = \{z\}$ The element z is the result of two same energy elements x and y merging. The purpose of merging is in order to get the large result energy of element z through inputting two energy elements x and y.*

*The **synthesized** relationship between two elements x and y is the multiply operation in the corresponding group system $V^8 \times V^8$ with a multiplication $*$, i.e., $x * y = z$. The element z is the result of two elements x and y synthesized. The purpose of synthesized is in order to get the result energy of element z through inputting two elements x and y.*

The **combined** relationship between two elements *x* and *y* is the division operation in the corresponding group system $V^8 \times V^8$ with a multiplication *, i.e., $x^{-1} * y = z$ The element *z* is the cost of two elements *x* and *y* combined. The purpose of combined is in order to maintain or strengthen the relation between *x* and *y* through inputting the cost element *z*.

The **synthesized** and **combined** operations in system of **the eight palaces** or **eight veins** $V^8 \times V^8$ are the same since $x^{-1} = x$. #

Property 3.2. *Suppose that both x and y are two elements of **eight palaces** or **eight veins** $V^8 \times V^8$. Then the following statements are true.*

*1) The **synthesized** and **combined** relationships of **eight palaces** or **eight veins** $V^8 \times V^8$ at low costs is as follows:*

Even if all changed, it is hard to change one's Qian palace nature.

$\mathrm{Qian}(1,1), \mathrm{Gou}(1,5), \mathrm{Dun}(1,7), \mathrm{Fou}(1,8), \mathrm{Guan}(5,8), \mathrm{Bo}(7,8),$

$\mathrm{Jin}(3,8), \mathrm{You}(3,1);$

$\mathrm{Qian}(1,1)^{\pm 1} * \mathrm{Gou}(1,5) = \mathrm{Fu}(8,4) = X_K^-(8,4)$ as the energy 1.

$\mathrm{Gou}(1,5)^{\pm 1} * \mathrm{Dun}(1,7) = \mathrm{Shi}(8,6) = S_X^+(8,6)$ as the energy 2.

$\mathrm{Dun}(1,7)^{\pm 1} * \mathrm{Fou}(1,8) = \mathrm{Qian}(8,7) = K_X^-(8,7)$ as the energy 4.

$\mathrm{Fou}(1,8)^{\pm 1} * \mathrm{Guan}(5,8) = \mathrm{Yu}(4,8) = X^+(4,8)$ as the energy 8.

$\mathrm{Guan}(5,8)^{\pm 1} * \mathrm{Bo}(7,8) = \mathrm{Bi}(6,8) = X_K^-(6,8)$ as the energy 16.

$\mathrm{Bo}(7,8)^{\pm 1} * \mathrm{Jin}(3,8) = \mathrm{Yu}(4,8) = X^+(4,8)$ as the energy 8.

$\mathrm{Jin}(3,8)^{\pm 1} * \mathrm{You}(3,1) = \mathrm{Tai}(8,1) = X_K^-(8,1)$ as the energy 7.

$\mathrm{You}(3,1)^{\pm 1} * \mathrm{Qian}(1,1) = \mathrm{Bi}(6,8) = X_K^-(6,8)$ as the energy 16.

One's Qian Palace nature is Gou (姤) (1, 5), Dun (遁) (1, 7), Fu (否) (1, 8), Guan (观) (5, 8), Bo (剥) (7, 8), Jin (晋) (3, 8), You (有) (3, 1). They mean: This father saw the beauty to hide away of Gou (姤) (1, 5), to stop hiding behind anything of Dun (遁) (1, 7), and to other people's advice to veto ability of Fu (否) (1, 8). Strong ability to observe things around of Guan (观) (5, 8), seizes the chance to have exploited actively of Bo (剥) (7, 8), and creates life by leaps and bounds promotion of Jin (晋) (3, 8). Finally will achieve great wealth of You (有) (3, 1).

Even if all changed, it is hard to change one's Dui palace nature.

$\mathrm{Dui}(2,2), \mathrm{Kun}(2,6), \mathrm{Cui}(2,8), \mathrm{Xian}(2,7), \mathrm{Jian}(6,7), \mathrm{Qian}(8,7),$

$\mathrm{Xiao}(4,7), \mathrm{Mei}(4,2);$

$\mathrm{Dui}(2,2)^{\pm 1} * \mathrm{Kun}(2,6) = \mathrm{Fu}(8,4) = X_K^-(8,4)$ as the energy 1.

$\mathrm{Kun}(2,6)^{\pm 1} * \mathrm{Cui}(2,8) = \mathrm{Shi}(8,6) = S_X^+(8,6)$ as the energy 2.

$\mathrm{Cui}(2,8)^{\pm 1} * \mathrm{Xian}(2,7) = \mathrm{Qian}(8,7) = K_X^-(8,7)$ as the energy 4.

$\mathrm{Xian}(2,7)^{\pm 1} * \mathrm{Jian}(6,7) = \mathrm{Yu}(4,8) = X^+(4,8)$ as the energy 8.

$$\text{Jian}(6,7)^{\pm 1} * \text{Qian}(8,7) = \text{Bi}(6,8) = X_K^-(6,8) \text{ as the energy 16.}$$

$$\text{Qian}(8,7)^{\pm 1} * \text{Xiao}(4,7) = \text{Yu}(4,8) = X^+(4,8) \text{ as the energy 8.}$$

$$\text{Xiao}(4,7)^{\pm 1} * \text{Mei}(4,2) = \text{Tai}(8,1) = X_K^-(8,1) \text{ as the energy 7.}$$

$$\text{Mei}(4,2)^{\pm 1} * \text{Dui}(2,2) = \text{Bi}(6,8) = X_K^-(6,8) \text{ as the energy 16.}$$

One's Dui Palace nature is Kun (困) (2, 6), Cui (萃) (2, 8), Xian (咸) (2, 7), Jian (蹇) (6, 7), Qian (谦) (8, 7), Xiao (小) (4, 7), Mei (妹) (4, 2). They mean: The young daughter life is difficult of Kun (困) (2, 6), but her thinking to excel of Cui (萃) (2, 8), and to help know gratitude of Xian (咸) (2, 7). Because things are difficult of Jian (蹇) (6, 7), to deal with things more modest low-key of Qian (谦) (8, 7), and cause life is too small clearance into small chance of Xiao (小) (4, 7). Finally its best chance is to find a good husband get married of Mei (妹) (4, 2).

Even if all changed, it is hard to change one's Li palace nature.

$\text{Li}(3,3), \text{Lv}(3,7), \text{Ding}(3,5), \text{Wei}(3,6), \text{Meng}(7,6), \text{Huan}(5,6),$
$\text{Song}(1,6), \text{Ren}(1,3);$

$$\text{Li}(3,3)^{\pm 1} * \text{Lv}(3,7) = \text{Fu}(8,4) = X_K^-(8,4) \text{ as the energy 1.}$$

$$\text{Lv}(3,7)^{\pm 1} * \text{Ding}(3,5) = \text{Shi}(8,6) = S_X^+(8,6) \text{ as the energy 2.}$$

$$\text{Ding}(3,5)^{\pm 1} * \text{Wei}(3,6) = \text{Qian}(8,7) = K_X^-(8,7) \text{ as the energy 4.}$$

$$\text{Wei}(3,6)^{\pm 1} * \text{Meng}(7,6) = \text{Yu}(4,8) = X^+(4,8) \text{ as the energy 8.}$$

$$\text{Meng}(7,6)^{\pm 1} * \text{Huan}(5,6) = \text{Bi}(6,8) = X_K^-(6,8) \text{ as the energy 16.}$$

$$\text{Huan}(5,6)^{\pm 1} * \text{Song}(1,6) = \text{Yu}(4,8) = X^+(4,8) \text{ as the energy 8.}$$

$$\text{Song}(1,6)^{\pm 1} * \text{Ren}(1,3) = \text{Tai}(8,1) = X_K^-(8,1) \text{ as the energy 7.}$$

$$\text{Ren}(1,3)^{\pm 1} * \text{Li}(3,3) = \text{Bi}(6,8) = X_K^-(6,8) \text{ as the energy 16.}$$

One's Li Palace nature is Lv (旅) (3, 7), Ding (鼎) (3, 5), Wei (未) (3, 6), Huan (蒙) (7, 6), Huan (涣) (5, 6), Song (讼) (1, 6), Ren (人) (1, 3). They mean: The middle-aged daughter good nature tourism of Lv (旅) (3, 7), but parents are loyal to leadership of Ding (鼎) (3, 5), work like don't like quiet of Wei (未) (3, 6). Because like illuminating new things of Huan (蒙) (7, 6), do things distractions to focus on one thing for a long time of Huan (涣) (5, 6), and a natural but argue action ability of the brain of Song (讼) (1, 6). Finally her excellent interpersonal relationship of Ren (人) (1, 3).

Even if all changed, it is hard to change one's Zhen palace nature.

$\text{Zhen}(4,4), \text{Yu}(4,8), \text{Jie}(4,6), \text{Heng}(4,5), \text{Sheng}(8,5), \text{Jing}(6,5),$
$\text{Da}(2,5), \text{Sui}(2,4);$

$$\text{Zhen}(4,4)^{\pm 1} * \text{Yu}(4,8) = \text{Fu}(8,4) = X_K^-(8,4) \text{ as the energy 1.}$$

$$\text{Yu}(4,8)^{\pm 1} * \text{Jie}(4,6) = \text{Shi}(8,6) = S_X^+(8,6) \text{ as the energy 2.}$$

$$\text{Jie}(4,6)^{\pm 1} * \text{Heng}(4,5) = \text{Qian}(8,7) = K_X^-(8,7) \text{ as the energy 4.}$$

$$\text{Heng}(4,5)^{\pm 1} * \text{Sheng}(8,5) = \text{Yu}(4,8) = X^+(4,8) \text{ as the energy 8.}$$

$$\text{Sheng}(8,5)^{\pm 1} * \text{Jing}(6,5) = \text{Bi}(6,8) = \boldsymbol{X}_K^-(6,8) \text{ as the energy 16.}$$

$$\text{Jing}(6,5)^{\pm 1} * \text{Da}(2,5) = \text{Yu}(4,8) = \boldsymbol{X}^+(4,8) \text{ as the energy 8.}$$

$$\text{Da}(2,5)^{\pm 1} * \text{Sui}(2,4) = \text{Tai}(8,1) = \boldsymbol{X}_K^-(8,1) \text{ as the energy 7.}$$

$$\text{Sui}(2,4)^{\pm 1} * \text{Zhen}(4,4) = \text{Bi}(6,8) = \boldsymbol{X}_K^-(6,8) \text{ as the energy 16.}$$

One's Zhen Palace nature is Yu (豫) (*4, 8*), Jie (解) (*4, 6*), Heng (恒) (*4, 5*), Sheng (升) (*8, 5*), Jing (井) (*6, 5*), Da (大) (*2, 5*), Sui (随) (*2, 4*). They mean: The older son has nature feeling ability of Yu (豫) (*4, 8*), to put their own interpretation did not solve the problem like and view of, Jie (解) (*4, 6*), but to do things with perseverance of Heng (恒) (*4, 5*). Life opportunities under normal rising of Sheng (升) (*8, 5*), handles affairs in order of Jing (井) (*6, 5*), and causes the life with the mark of luck of Da (大) (*2, 5*). Finally it is the excellent random strain capacity of Sui (随) (*2, 4*).

Even if all changed, it is hard to change one's Xun palace nature.

$$\text{Xun}(5,5), \text{Xu}(5,1), \text{Jia}(5,3), \text{Yi}(5,4), \text{Wang}(1,4), \text{He}(3,4),$$
$$\text{Yi}(7,4), \text{Gu}(7,5);$$

$$\text{Xun}(5,5)^{\pm 1} * \text{Xu}(5,1) = \text{Fu}(8,4) = \boldsymbol{X}_K^-(8,4) \text{ as the energy 1.}$$

$$\text{Xu}(5,1)^{\pm 1} * \text{Jia}(5,3) = \text{Shi}(8,6) = \boldsymbol{S}_X^+(8,6) \text{ as the energy 2.}$$

$$\text{Jia}(5,3)^{\pm 1} * \text{Yi}(5,4) = \text{Qian}(8,7) = \boldsymbol{K}_X^-(8,7) \text{ as the energy 4.}$$

$$\text{Yi}(5,4)^{\pm 1} * \text{Wang}(1,4) = \text{Yu}(4,8) = \boldsymbol{X}^+(4,8) \text{ as the energy 8.}$$

$$\text{Wang}(1,4)^{\pm 1} * \text{He}(3,4) = \text{Bi}(6,8) = \boldsymbol{X}_K^-(6,8) \text{ as the energy 16.}$$

$$\text{He}(3,4)^{\pm 1} * \text{Yi}(7,4) = \text{Yu}(4,8) = \boldsymbol{X}^+(4,8) \text{ as the energy 8.}$$

$$\text{Yi}(7,4)^{\pm 1} * \text{Gu}(7,5) = \text{Tai}(8,1) = \boldsymbol{X}_K^-(8,1) \text{ as the energy 7.}$$

$$\text{Gu}(7,5)^{\pm 1} * \text{Xun}(5,5) = \text{Bi}(6,8) = \boldsymbol{X}_K^-(6,8) \text{ as the energy 16.}$$

One's Xun Palace nature is Xu (畜) (*5, 1*), Jia (家) (*5, 3*), Yi (益) (*5, 4*), Wang (妄) (*1, 4*), He (嗑) (*3, 4*), Yi (颐) (*7, 4*), Gu (蛊) (*7, 5*). They mean: The older daughter likes a small amount of saving money of Xu (畜) (*5, 1*), more attention to a family of Jia (家) (*5, 3*), and friends can get income from her of Yi (益) (*5, 4*). But her own delusion has a greater chance of making a fortune of Wang (妄) (*1, 4*), doing thing hesitant of He (嗑) (*3, 4*), if a delusion of convergence, then she will inspire the live of Yi (颐) (*7, 4*). Final convergence delusion if not, then she can often be loved ones under the method of deception of Gu (蛊) (*7, 5*).

Even if all changed, it is hard to change one's Kan palace nature.

$$\text{Kan}(6,6), \text{Jie}(6,2), \text{Tun}(6,4), \text{Ji}(6,3), \text{Ge}(2,3), \text{Feng}(4,3),$$
$$\text{Ming}(8,3), \text{Shi}(8,6);$$

$$\text{Kan}(6,6)^{\pm 1} * \text{Jie}(6,2) = \text{Fu}(8,4) = \boldsymbol{X}_K^-(8,4) \text{ as the energy 1.}$$

$$\text{Jie}(6,2)^{\pm 1} * \text{Tun}(6,4) = \text{Shi}(8,6) = \boldsymbol{S}_X^+(8,6) \text{ as the energy 2.}$$

$$\text{Tun}(6,4)^{\pm 1} * \text{Ji}(6,3) = \text{Qian}(8,7) = \boldsymbol{K}_X^-(8,7) \text{ as the energy 4.}$$

$$\text{Ji}(6,3)^{\pm 1} * \text{Ge}(2,3) = \text{Yu}(4,8) = \boldsymbol{X}^+(4,8) \text{ as the energy 8.}$$

$\text{Ge}(2,3)^{\pm 1} * \text{Feng}(4,3) = \text{Bi}(6,8) = X_K^-(6,8)$ as the energy 16.

$\text{Feng}(4,3)^{\pm 1} * \text{Ming}(8,3) = \text{Yu}(4,8) = X^+(4,8)$ as the energy 8.

$\text{Ming}(8,3)^{\pm 1} * \text{Shi}(8,6) = \text{Tai}(8,1) = X_K^-(8,1)$ as the energy 7.

$\text{Shi}(8,6)^{\pm 1} * \text{Kan}(6,6) = \text{Bi}(6,8) = X_K^-(6,8)$ as the energy 16.

One's Kan Palace nature is Jie (节) (6, 2), Tun (屯) (6, 4), Ji (既) (6, 3), Ge (革) (2, 3), Feng (丰) (4, 3), Ming (明) (8, 3), Shi (师) (8, 6). They mean: The middle-aged son loves to save of Jie (节) (6, 2), and be good at hoarding supplies of Tun (屯) (6, 4), and doing things according to the established things of Ji (既) (6, 3). But he changes the ability strong of Ge (革) (2, 3), change can also get a harvest of Feng (丰) (4, 3), and can see to understand a lot of things of Ming (明) (8, 3). Finally the person good at word and willing to teachers of Shi (师) (8, 6).

Even if all changed, it is hard to change one's Gen palace nature.

$\text{Gen}(7,7), \text{Bi}(7,3), \text{Xu}(7,1), \text{Sun}(7,2), \text{Gui}(3,2), \text{Lv}(1,2),$
$\text{Fu}(5,2), \text{Jian}(5,7);$

$\text{Gen}(7,7)^{\pm 1} * \text{Bi}(7,3) = \text{Fu}(8,4) = X_K^-(8,4)$ as the energy 1.

$\text{Bi}(7,3)^{\pm 1} * \text{Xu}(7,1) = \text{Shi}(8,6) = S_X^+(8,6)$ as the energy 2.

$\text{Xu}(7,1)^{\pm 1} * \text{Sun}(7,2) = \text{Qian}(8,7) = K_X^-(8,7)$ as the energy 4.

$\text{Sun}(7,2)^{\pm 1} * \text{Gui}(3,2) = \text{Yu}(4,8) = X^+(4,8)$ as the energy 8.

$\text{Gui}(3,2)^{\pm 1} * \text{Lv}(1,2) = \text{Bi}(6,8) = X_K^-(6,8)$ as the energy 16.

$\text{Lv}(1,2)^{\pm 1} * \text{Fu}(5,2) = \text{Yu}(4,8) = X^+(4,8)$ as the energy 8.

$\text{Fu}(5,2)^{\pm 1} * \text{Jian}(5,7) = \text{Tai}(8,1) = X_K^-(8,1)$ as the energy 7.

$\text{Jian}(5,7)^{\pm 1} * \text{Gen}(7,7) = \text{Bi}(6,8) = X_K^-(6,8)$ as the energy 16.

One's Gen Palace nature is Bi (贲) (7, 3), Xu (畜) (7, 1), Sun (损) (7, 2), Gui (睽) (3, 2), Lv (履) (1, 2), Fu (孚) (5, 2), Jian (渐) (5, 7). They mean: The young son works hard and likes to do all the things by the recognition of Bi (贲) (7, 3), and is good at saving a lot of money of Xu (畜) (7, 1), and do things get damaged income also not care of Sun (损) (7, 2). But he is difficult to get the respect they deserve of Gui (睽) (3, 2), to be honest to fulfill a commitment of Lv (履) (1, 2), and life the pursuit of a smooth transition of Fu (孚) (5, 2). Finally the status of the growth of life often is gradually rising slowly of Jian (渐) (5, 7).

Even if all changed, it is hard to change one's Kun palace nature.

$\text{Kun}(8,8), \text{Fu}(8,4), \text{Lin}(8,2), \text{Tai}(8,1), \text{Zhuang}(4,1), \text{Guai}(2,1),$
$\text{Xu}(6,1), \text{Bi}(6,8);$

$\text{Kun}(8,8)^{\pm 1} * \text{Fu}(8,4) = \text{Fu}(8,4) = X_K^-(8,4)$ as the energy 1.

$\text{Fu}(8,4)^{\pm 1} * \text{Lin}(8,2) = \text{Shi}(8,6) = S_X^+(8,6)$ as the energy 2.

$\text{Lin}(8,2)^{\pm 1} * \text{Tai}(8,1) = \text{Qian}(8,7) = K_X^-(8,7)$ as the energy 4.

$\text{Tai}(8,1)^{\pm 1} * \text{Zhuang}(4,1) = \text{Yu}(4,8) = X^+(4,8)$ as the energy 8.

$\text{Zhuang}(4,1)^{\pm 1}*\text{Guai}(2,1)=\text{Bi}(6,8)=X_K^-(6,8)$ as the energy 16.

$\text{Guai}(2,1)^{\pm 1}*\text{Xu}(6,1)=\text{Yu}(4,8)=X^+(4,8)$ as the energy 8.

$\text{Xu}(6,1)^{\pm 1}*\text{Bi}(6,8)=\text{Tai}(8,1)=X_K^-(8,1)$ as the energy 7.

$\text{Bi}(6,8)^{\pm 1}*\text{Kun}(8,8)=\text{Bi}(6,8)=X_K^-(6,8)$ as the energy 16.

One's Kun Palace nature is *Fu* (复) (*8, 4*), *Lin* (临) (*8, 2*), *Tai* (泰) (*8, 1*), *Zhuang* (壮) (*4, 1*), *Guai* (夬) (*2, 1*), *Xu* (需) (*6, 1*), *Bi* (比) (*6, 8*). They mean: *The mother likes doing repeating things over and over again of Fu* (复) (*8, 4*), *to visit a lot of things of Lin* (临) (*8, 2*), *and contax happiness life of Tai* (泰) (*8, 1*). *In health body in middle age of Zhuang* (壮) (*4, 1*), *things are not good at decision making of Guai* (夬) (*2, 1*), *and a social demand is very big of Xu* (需) (*6, 1*). *Finally the person is good at and people with envy-envy-hate psychology of Bi* (比) (*6, 8*).

2) *The* **synthesized** *and* **combined** *relationships of* **eight palaces or eight veins** $V^8 \times V^8$ *at high costs are as follows*:

Symmetrial palaces of Qian $(*,*)$ and Kun $(*,*)$ are combined at high costs.

$\text{Qian}(1,1),\text{Gou}(1,5),\text{Dun}(1,7),\text{Fou}(1,8),\text{Guan}(5,8),\text{Bo}(7,8),$

$\text{Jin}(3,8),\text{You}(3,1);$

$\text{Kun}(8,8),\text{Fu}(8,4),\text{Lin}(8,2),\text{Tai}(8,1),\text{Zhuang}(4,1),\text{Guai}(2,1),$

$\text{Xu}(6,1),\text{Bi}(6,8).$

$\text{Qian}(1,1)^{\pm 1}*\text{Kun}(8,8)=\text{Qian}(1,1)=K_X^+(1,1)$ as the energy 63.

$\text{Gou}(1,5)^{\pm 1}*\text{Fu}(8,4)=\text{Qian}(1,1)=K_X^+(1,1)$ as the energy 63.

$\text{Dun}(1,7)^{\pm 1}*\text{Lin}(8,2)=\text{Qian}(1,1)=K_X^+(1,1)$ as the energy 63.

$\text{Fou}(1,8)^{\pm 1}*\text{Tai}(8,1)=\text{Qian}(1,1)=K_X^+(1,1)$ as the energy 63.

$\text{Guan}(5,8)^{\pm 1}*\text{Zhuang}(4,1)=\text{Qian}(1,1)=K_X^+(1,1)$ as the energy 63.

$\text{Bo}(7,8)^{\pm 1}*\text{Guai}(2,1)=\text{Qian}(1,1)=K_X^+(1,1)$ as the energy 63.

$\text{Jin}(3,8)^{\pm 1}*\text{Xu}(6,1)=\text{Qian}(1,1)=K_X^+(1,1)$ as the energy 63.

$\text{Youi}(3,1)^{\pm 1}*\text{Bi}(6,8)=\text{Qian}(1,1)=K_X^+(1,1)$ as the energy 63.

Symmetrial palaces of $\text{Dui}(*,*)$ and $\text{Gen}(*,*)$ are combined at high costs.

$\text{Dui}(2,2),\text{Kun}(2,6),\text{Cui}(2,8),\text{Xian}(2,7),\text{Jian}(6,7),\text{Qian}(8,7),$

$\text{Xiao}(4,7),\text{Mei}(4,2).$

$\text{Gen}(7,7),\text{Bi}(7,3),\text{Xu}(7,1),\text{Sun}(7,2),\text{Gui}(3,2),\text{Lv}(1,2),$

$\text{Fu}(5,2),\text{Jian}(5,7).$

$\text{Dui}(2,2)^{\pm 1}*\text{Gen}(7,7)=\text{Qian}(1,1)=K_X^+(1,1)$ as the energy 63.

$\text{Kun}(2,6)^{\pm 1}*\text{Bi}(7,3)=\text{Qian}(1,1)=K_X^+(1,1)$ as the energy 63.

$\text{Cui}(2,8)^{\pm 1}*\text{Xu}(7,1)=\text{Qian}(1,1)=K_X^+(1,1)$ as the energy 63.

$\text{Xian}(2,7)^{\pm 1}*\text{Sun}(7,2)=\text{Qian}(1,1)=K_X^+(1,1)$ as the energy 63.

$$\text{Jian}(6,7)^{\pm 1} * \text{Gui}(3,2) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Qian}(8,7)^{\pm 1} * \text{Lv}(1,2) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Xiao}(4,7)^{\pm 1} * \text{Fu}(5,2) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Mei}(4,2)^{\pm 1} * \text{Jian}(5,7) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

Symmetrial palaces of $\text{Li}(*,*)$ and $\text{Kan}(*,*)$ are combined at high costs.
$\text{Li}(3,3), \text{Lv}(3,7), \text{Ding}(3,5), \text{Wei}(3,6), \text{Meng}(7,6), \text{Huan}(5,6),$
$\text{Song}(1,6), \text{Ren}(1,3),$
$\text{Kan}(6,6), \text{Jie}(6,2), \text{Tun}(6,4), \text{Ji}(6,3), \text{Ge}(2,3), \text{Feng}(4,3),$
$\text{Ming}(8,3), \text{Shi}(8,6).$

$$\text{Li}(3,3)^{\pm 1} * \text{Kan}(6,6) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Lv}(3,7)^{\pm 1} * \text{Jie}(6,2) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Ding}(3,5)^{\pm 1} * \text{Tun}(6,4) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Wei}(3,6)^{\pm 1} * \text{Ji}(6,3) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Meng}(7,6)^{\pm 1} * \text{Ge}(2,3) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Huan}(5,6)^{\pm 1} * \text{Feng}(4,3) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Song}(1,6)^{\pm 1} * \text{Ming}(8,3) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Ren}(1,3)^{\pm 1} * \text{Shi}(8,6) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

Symmetrial palaces of $\text{Zhen}(*,*)$ and $\text{Xun}(*,*)$ are combined at high costs.
$\text{Zhen}(4,4), \text{Yu}(4,8), \text{Jie}(4,6), \text{Heng}(4,5), \text{Sheng}(8,5), \text{Jing}(6,5),$
$\text{Da}(2,5), \text{Sui}(2,4).$
$\text{Xun}(5,5), \text{Xu}(5,1), \text{Jia}(5,3), \text{Yi}(5,4), \text{Wang}(1,4), \text{He}(3,4),$
$\text{Yi}(7,4), \text{Gu}(7,5).$

$$\text{Zhen}(4,4)^{\pm 1} * \text{Xun}(5,5) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Yu}(4,8)^{\pm 1} * \text{Xu}(5,1) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Jie}(4,6)^{\pm 1} * \text{Jia}(5,3) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Heng}(4,5)^{\pm 1} * \text{Yi}(5,4) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Sheng}(8,5)^{\pm 1} * \text{Wang}(1,4) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Jing}(6,5)^{\pm 1} * \text{He}(3,4) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Da}(2,5)^{\pm 1} * \text{Yi}(7,4) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

$$\text{Sui}(2,4)^{\pm 1} * \text{Gu}(7,5) = \text{Qian}(1,1) = \boldsymbol{K}_X^+(1,1) \text{ as the energy } 63.$$

*All relation laws of **eight palaces or eight veins** are summarized in* Figure 5.

It means that the Your palm in Figure 5, *the adjacent relationship between insider elements of palace is with low costs but the relationship of symmetrical palaces is with high costs.* #

Property 3.3. *The energy of the eight palaces synthesized is summarized in* Table 3, *respectively.*

Table 3. Energy synthesized of eight palaces.

No.	vein	palace	Jia	Yi	Bing	Ding	Wu	Ji	Geng	Xin	Ren	Gui
1	Belt_vein (带脉)	Qian	8.5	**20.333333333**	8.6666666667	6.5	7	11.166666667	3.3333333333	11	15.166666667	4.3333333333
2	Yin_link_vein (阴维脉)	Dui	3.6666667	9	15.333333333	**23.666666667**	9.3333333333	6	8.3333333333	11.333333333	2.6666666667	6.6666666667
3	Governor_vein (督脉)	Li	4.8333333	5	7.3333333333	4.1666666667	3.6666666667	23.5	2	**30.333333333**	11.5	3.6666666667
4	Yang_cross_vein (阳跷脉)	Zhen	4	5.6666666667	2	10.666666667	8.6666666667	5	20.333333333	**26.666666667**	4.3333333333	8.6666666667
5	Yin_cross_vein (阴跷脉)	Xun	6.1666667	8.3333333333	9.3333333333	3.1666666667	7	9.1666666667	**14.666666667**	**23**	5.5	9.6666666667
6	Ren_vein (任脉)	Kan	4.1666667	5.6666666667	3.3333333333	8.5	**17.666666667**	15.833333333	8	15.666666667	2.8333333333	14.333333333
7	Yang_link_vein (阳维脉)	Gen	6.5	9	**20**	16.166666667	6.3333333333	10.166666667	2.6666666667	10.333333333	7.1666666667	7.6666666667
8	Impact_vein (冲脉)	Kun	16.833333	11.666666667	3.3333333333	8.5	12.333333333	3.1666666667	7.3333333333	7.6666666667	2.8333333333	**22.333333333**

Each of the eight palaces is corresponding to each of the eight veins in Table 3.

The energy of each of the eight palaces synthesized is the sum of energy of each element of ten heavenly stems for the corresponding palace in Table 3.

The boldface in Table 3 *is the largest energy of ten heavenly stems for the corresponding palace.#*

3.3. First Transfer Laws of a Human Body's Energies of Steady Multilateral Systems with a Healthy Body

Theorem 3.2. (The first transfer law of the ten Heavenly Stems with a healthy body) [23] *Suppose that a human body is healthy. Let the human blood pH value* $x \in [7.34539, 7.45461]$ *which is equivalent to the conditions* $\rho_0 \le \rho_1 = \rho(x) \le 1$ *and* $0 < c \le 1$.

*The transfer law of each of the 10 kinds of energy in the **Zangxiang** system or the **ten Heavenly Stems model** is from its **root-causes** to its **symptoms**.*

*Furthermore, for the healthy body, the first transfer law of the **Yang** vital or righteousness energies of the ten heavenly stems is transferring **along** the loving or liking order of the ten heavenly stems as follows:*

$$\xrightarrow{less} \text{real Jia}(1,0)\, X^+ \xleftrightarrow{less} \text{real Yi}(0,0)\, X^-$$

$$\xrightarrow{less} \text{real Bing}(1,1)\, X_S^+ \xleftrightarrow{less} \text{real Ding}(0,1)\, X_S^-$$

$$\xrightarrow{rare} \text{virtual Wu}(1,2)\, X_K^+ \xleftrightarrow{less} \text{virtual Ji}(0,2)\, X_K^-$$

$$\xrightarrow{more} \text{virtual Geng}(1,3)\, K_X^+ \xleftrightarrow{less} \text{virtual Xin}(0,3)\, K_X^-$$

$$\xrightarrow{rare} \text{real Ren}(1,4)\, S_X^+ \xleftrightarrow{less} \text{real Gui}(0,4)\, S_X^-$$

$$\xrightarrow{less} \text{real Jia}(1,0)\, X^+ \xleftrightarrow{less} \text{real Yi}(0,0)\, X^- \xrightarrow{less} \cdots.$$

*And the first transfer law of the **Yin** vital or righteousness energies of the ten heavenly stems is transferring **against** the loving or liking order of the ten heavenly stems as follows:*

$$\cdots \overset{less}{\leftarrow} \text{virtual Yi}\,(0,0)\,\boldsymbol{X}^{-} \overset{less}{\leftrightarrow} \text{virtual Jia}\,(1,0)\,\boldsymbol{X}^{+}$$

$$\overset{less}{\leftarrow} \text{virtual Gui}\,(0,4)\,\boldsymbol{S}_{X}^{-} \overset{less}{\leftrightarrow} \text{virtual Ren}\,(1,4)\,\boldsymbol{S}_{X}^{+}$$

$$\overset{rare}{\leftarrow} \text{real Xin}\,(0,3)\,\boldsymbol{K}_{X}^{-} \overset{less}{\leftrightarrow} \text{real Geng}\,(1,3)\,\boldsymbol{K}_{X}^{+}$$

$$\overset{more}{\leftarrow} \text{real Ji}\,(0,2)\,\boldsymbol{X}_{K}^{-} \overset{less}{\leftrightarrow} \text{real Wu}\,(1,2)\,\boldsymbol{X}_{K}^{+}$$

$$\overset{rare}{\leftarrow} \text{virtual Ding}\,(0,1)\,\boldsymbol{X}_{S}^{-} \overset{less}{\leftrightarrow} \text{virtual Bing}\,(1,1)\,\boldsymbol{X}_{S}^{+}$$

$$\overset{less}{\leftarrow} \text{virtual Yi}\,(0,0)\,\boldsymbol{X}^{-} \overset{less}{\leftrightarrow} \text{virtual Jia}\,(1,0)\,\boldsymbol{X}^{+} \overset{less}{\leftarrow}\cdots.$$

All transfer laws of the **Zangxiang** system or the **ten Heavenly Stems model for a healthy body** are summarized in Figure 2.

It means that only both the liking relation and the loving relation have the first transfer law of the **Yang or Yin** vital or righteousness energies of the ten heavenly stems. **Yang** is transferring **along** the loving or liking order of the ten heavenly stems. **Yin** is transferring **against** the loving or liking order of the ten heavenly stems. #

Theorem 3.3. (**The first transfer law of the twelve earthly branches with a healthy body**) [23] *Suppose that a human body is healthy. Let the human blood pH value* $x \in [7.34539, 7.45461]$ *which is equivalent to the conditions* $\rho_0 \leq \rho_1 = \rho(x) \leq 1$ *and* $0 < c \leq 1$.

The transfer law of each of the 12 kinds of energy in the **Jingluo** system or the **twelve earthly branches model** is from its **root-causes** to its **symptoms**.

Furthermore, for the healthy body, the first transfer law of the **Yang** vital energies of the twelve earthly branches is transferring **along** the loving or liking order of the twelve earthly branches as follows:

$$\text{real Chou}\,\boldsymbol{X}^{-}\big(0,(23)\big) \overset{less}{\leftrightarrow} \text{real Zi}\,\boldsymbol{X}^{+}\big(0,e\big)$$

$$\overset{less}{\rightarrow} \text{real Hai}\,\boldsymbol{X}_{S}^{x+}\big(1,e\big) \overset{less}{\leftrightarrow} \text{real Xu}\,\boldsymbol{X}_{S}^{x-}\big(1,(23)\big)$$

$$\overset{rare}{\Leftarrow} \text{real You}\,\boldsymbol{S}_{X}^{-}\big(0,(123)\big) \overset{less}{\leftrightarrow} \text{real Shen}\,\boldsymbol{S}_{X}^{+}\big(0,(13)\big)$$

$$\overset{rare}{\Rightarrow} \text{real Wei}\,\boldsymbol{X}_{S}^{j+}\big(1,(13)\big) \overset{less}{\leftrightarrow} \text{real Wu}\,\boldsymbol{X}_{S}^{j-}\big(1,(123)\big)$$

$$\overset{rare}{\rightarrow} \text{virtual Si}\,\boldsymbol{X}_{K}^{-}\big(0,(132)\big) \overset{less}{\leftrightarrow} \text{virtual Chen}\,\boldsymbol{X}_{K}^{+}\big(0,(12)\big)$$

$$\overset{less}{\rightarrow} \text{virtual Mao}\,\boldsymbol{K}_{X}^{+}\big(1,(12)\big) \overset{less}{\leftrightarrow} \text{virtual Yin}\,\boldsymbol{K}_{X}^{-}\big(1,(132)\big).$$

The first transfer law of the **Yin** vital energies of the twelve earthly branches is transferring **against** the loving or liking order of the ten heavenly stems as follows:

$$\overset{less}{\leftarrow} \text{real Yin}\,\boldsymbol{K}_{X}^{-}\big(1,(132)\big) \overset{less}{\leftrightarrow} \text{real Mao}\,\boldsymbol{K}_{X}^{+}\big(1,(12)\big)$$

$$\overset{more}{\leftarrow} \text{real Chen}\,\boldsymbol{X}_{K}^{+}\big(0,(12)\big) \overset{less}{\leftrightarrow} \text{real Si}\,\boldsymbol{X}_{K}^{-}\big(0,(132)\big)$$

$$\overset{rare}{\leftarrow} \text{virtual Wu}\,\boldsymbol{X}_{S}^{j-}\big(1,(123)\big) \overset{less}{\leftrightarrow} \text{virtual Wei}\,\boldsymbol{X}_{S}^{j+}\big(1,(13)\big)$$

$$\overset{rare}{\Leftarrow} \text{virtual Shen}\,\boldsymbol{S}_{X}^{+}\big(0,(13)\big) \overset{less}{\leftrightarrow} \text{virtual You}\,\boldsymbol{S}_{X}^{-}\big(0,(123)\big)$$

$$\overset{rare}{\Rightarrow} \text{virtual Xu}\,\boldsymbol{X}_{S}^{x-}\big(1,(23)\big) \overset{less}{\leftrightarrow} \text{virtual Hai}\,\boldsymbol{X}_{S}^{x+}\big(1,e\big)$$

$$\overset{less}{\leftarrow} \text{virtual Zi}\,\boldsymbol{X}^{+}\big(0,e\big) \overset{less}{\leftrightarrow} \text{virtual Chou}\,\boldsymbol{X}^{-}\big(0,(23)\big).$$

*All first transfer laws of the **Jingluo** system or the **twelve earthly branches model for a healthy body** are summarized in Figure 3.*

*It means that only both the liking relation and the adjacent relation have the first transfer law of the **Yang or Yin** vital or righteousness energies of the twelve earthly branches. **Yang** is transferring **along** the loving or liking order of the twelve earthly branches. **Yin** is transferring **against** the loving or liking order of the twelve earthly branches. #*

For a healthy body falling a real disease, the relation note
real Xu $X_S^{x-} \overset{less}{\leftrightarrow}$ real Hai X_S^{x+} can be considered as the mother of the relation note real Wu $X_S^{j-} \overset{less}{\leftrightarrow}$ real Wei X_S^{j+}. It is because the relationship note

$$\text{real Hai } X_S^{x+} \overset{less}{\leftrightarrow} \text{real Xu } X_S^{x-}$$
$$\overset{rare}{\Leftarrow} \text{real You } S_X^- \overset{less}{\leftrightarrow} \text{real Shen } S_X^+$$
$$\overset{rare}{\Rightarrow} \text{real Wei } X_S^{j+} \overset{less}{\leftrightarrow} \text{real Wu } X_S^{j-}$$

can be abbreviated as

$$\text{real Hai } X_S^{x+} \overset{less}{\leftrightarrow} \text{real Xu } X_S^{x-}$$
$$\rightarrow \text{real Wei } X_S^{j+} \overset{less}{\leftrightarrow} \text{real Wu } X_S^{j-}.$$

The idea is that the subsystem xiang-fire (X_S^x) can substitute for the subsystem jun-fire (X_S^j) under fault for a healthy body falling a real disease.

On the other hand, for a healthy body falling a virtual disease, the relation note

$$\text{virtual Xu } X_S^{x-} \overset{less}{\leftrightarrow} \text{virtual Hai } X_S^{x+}$$

can be considered as the mother of the relation note
virtual Wu $X_S^{j-} \overset{less}{\leftrightarrow}$ virtual Wei X_S^{j+}. It is because the relationship note

$$\text{virtual Wu } X_S^{j-} \overset{less}{\leftrightarrow} \text{virtual Wei } X_S^{j+}$$
$$\overset{rare}{\Leftarrow} \text{virtual Shen } S_X^+ \overset{less}{\leftrightarrow} \text{virtual You } S_X^-$$
$$\overset{rare}{\Rightarrow} \text{virtual Xu } X_S^{x-} \overset{less}{\leftrightarrow} \text{virtual Hai } X_S^{x+}$$

can be abbreviated as

$$\text{virtual Wu } X_S^{j-} \overset{less}{\leftrightarrow} \text{virtual Wei } X_S^{j+}$$
$$\overset{less}{\leftarrow} \text{virtual Xu } X_S^{x-} \overset{less}{\leftrightarrow} \text{virtual Hai } X_S^{x+}.$$

The idea is that the subsystem xiang-fire (X_S^x) can substitute for the subsystem jun-fire (X_S^j) under fault for a healthy body falling a virtual disease.

Side effects of medical problems were the question: in the medical process, destroyed the balance of the normal subsystems which are not sick or done an intervention of them. The energy change of the intervention system is not the true side effects issue. The energy change is called the pseudo or non-true side

effects issue since it is just the food of the second physiological system of the steady multilateral system for a healthy body by Attaining Rule.

The existence conditions for side effects are that the value $\rho_v = (\rho_1 + \rho_2\rho_3) = (\rho(x) + c\rho(x)^3)$ tends to be small and that the value $\rho_e = (1 - \rho_2\rho_3) = (1 - c\rho(x)^3)$ tends to be large, at the same time, such that the unhealthy condition $\rho_v = (\rho_1 + \rho_2\rho_3) < \rho_e = (1 - \rho_2\rho_3)$ holds and $\rho_3 = c\rho(x) \to 0$.

The best state of the self-protection coefficient, *i.e.*, $\rho_3 = c\rho(x) \to \rho(x) = \rho_1$, where $c \to 1$, implies the non-existence of any side effects issue if the treatment principle of TCM is used.

Therefore any disease that causes side effects issue occurrence in the first place dues to the non-best state of self-protection ability, *i.e.*, $0 \leq \rho_3 = c\rho(x) < \rho(x) = \rho_1$. To follow or utilize the running of the first transfer law can make both $\rho(x) \to 1$ and $0 < c \to 1$. At this point, the paper advocates to follow or to utilize the first transfer law. It is in order to avoid the side effects issue occurrence for a healthy body. #

3.4. Second Transfer Laws of a Human Body's Energies of Steady Multilateral Systems with an Unhealthy Body

Theorem 3.4. (The transfer law of the ten heaven stems with an unhealthy body) [23] *Suppose that a human body is unhealthy. Let the human blood pH value $x \notin [7.34539, 7.45461]$ which is equivalent to the conditions $\rho_0 > \rho_1 = \rho(x) > 0$ and $0 \leq c \leq 1$.*

*The transfer law of each of the 10 kinds of energy in the **Zangxiang** system or the **ten heaven stems model for an unhealthy body** is from its **root-causes** to its **symptoms**.*

*Furthermore, for the unhealthy body, if a subsystem X of a steady multilateral system V falls a real disease, then the disease comes from the mother S_X of X. The transfer law of the **Yang** vital or righteousness energies of the ten heavenly stems is transferring **against** the killing or liking order of the ten heavenly stems as follows:*

$$\text{real Jia}(1,0)\ X^+ \overset{less}{\Leftrightarrow} \text{real Yi}(0,0)\ X^-$$

$$\overset{rare}{\Leftarrow} \text{real Geng}(1,3)\ K_X^+ \overset{less}{\Leftrightarrow} \text{real Xin}(0,3)\ K_X^-$$

$$\overset{rare}{\Leftarrow} \text{real Bing}(1,1)\ X_S^+ \overset{less}{\Leftrightarrow} \text{real Ding}(0,1)\ X_S^-$$

$$\overset{rare}{\Leftarrow} \text{real Ren}(1,4)\ S_X^+ \overset{less}{\Leftrightarrow} \text{real Gui}(0,4)\ S_X^-$$

$$\overset{more}{\Leftarrow} \text{virtual Wu}(1,2)\ X_K^+ \overset{less}{\Leftrightarrow} \text{virtual Ji}(0,2)\ X_K^-$$

$$\overset{less}{\Leftarrow} \text{real Jia}(1,0)\ X^+ \overset{less}{\Leftrightarrow} \text{real Yi}(0,0)\ X^-$$

*And if a subsystem X of a steady multilateral system V falls a virtual disease, then the disease comes from the son X_S of X. The transfer law of the **Yin** vital or righteousness energies of the ten heavenly stems is transferring*

along the killing or liking order of the ten heavenly stems as follows:

$$\text{virtual Yi}(0,0)\ \boldsymbol{X}^{-} \overset{less}{\Leftrightarrow} \text{virtual Jia}(1,0)\ \boldsymbol{X}^{+}$$

$$\overset{rare}{\Rightarrow} \text{virtual Ji}(0,2)\ \boldsymbol{X}_K^{-} \overset{less}{\Leftrightarrow} \text{virtual Wu}(1,2)\ \boldsymbol{X}_K^{+}$$

$$\overset{rare}{\Rightarrow} \text{virtual Gui}(0,4)\ \ \boldsymbol{S}_X^{-} \overset{less}{\Leftrightarrow} \text{virtual Ren}(1,4)\ \boldsymbol{S}_X^{+}$$

$$\overset{rare}{\Rightarrow} \text{virtual Ding}(0,1)\ \boldsymbol{X}_S^{-} \overset{less}{\Leftrightarrow} \text{virtual Bing}(1,1)\ \boldsymbol{X}_S^{+}$$

$$\overset{more}{\Rightarrow} \text{real Xin}(0,3)\ \boldsymbol{K}_X^{-} \overset{less}{\Leftrightarrow} \text{real Geng}(1,3)\ \boldsymbol{K}_X^{+}$$

$$\overset{less}{\Rightarrow} \text{virtual Yi}(0,0)\ \boldsymbol{X}^{-} \overset{less}{\Leftrightarrow} \text{virtual Jia}(1,0)\ \boldsymbol{X}^{+}.$$

All transfer laws of the **Zangxiang** system or the **ten heaven stems model for an unhealthy body** are summarized in Figure 2. It means that only both the liking relation and the killing relation have the transfer law of the **Yang or Yin** vital or righteousness energies of the ten heavenly stems. **Yang** is transferring **against** the killing or liking order of the ten heavenly stems. **Yin** is transferring **along** the killing or liking order of the ten heavenly stems. #

Theorem 3.5 (The transfer law of the twelve earthly branches with an unhealthy body) [23] *Suppose that a human body is unhealthy. Let the human blood pH value* $x \notin [7.34539, 7.45461]$ *which is equivalent to the conditions* $\rho_0 > \rho_1 = \rho(x) > 0$ *and* $0 \le c \le 1$.

The transfer law of each of the 12 kinds of energy in the **Jingluo** *system or the* **twelve earthly branches model for an unhealthy body** *is from its* **root-causes** *to its* **symptoms**.

Furthermore, for the unhealthy body, if a subsystem $\boldsymbol{X}$ *of a steady multilateral system* $\boldsymbol{V}$ *falls a real disease, then the disease comes from the mother* $\boldsymbol{S}_X$ *of* $\boldsymbol{X}$. *The second transfer law of the* **Yang** *vital energies of the twelve earthly branches is transferring* **against** *the killing or liking order of the twelve earthly branches as follows:*

$$\text{real Zi}\ \boldsymbol{X}^{+}(0,e) \overset{less}{\Leftrightarrow} \text{real Chou}\ \boldsymbol{X}^{-}(0,(23))$$

$$\overset{rare}{\Leftarrow} \text{real Yin}\ \boldsymbol{K}_X^{-}(1,(132)) \overset{less}{\Leftrightarrow} \text{real Mao}\ \boldsymbol{K}_X^{+}(1,(12))$$

$$\overset{rare}{\Leftarrow} \text{real Hai}\ \boldsymbol{X}_S^{x+}(1,e) \overset{less}{\Leftrightarrow} \text{real Xu}\ \boldsymbol{X}_S^{x-}(1,(23))$$

$$\overset{less}{\Leftrightarrow} \text{real Wu}\ \boldsymbol{X}_S^{j-}(1,(123)) \overset{less}{\Leftrightarrow} \text{real Wei}\ \boldsymbol{X}_S^{j+}(1,(13))$$

$$\overset{rare}{\Leftarrow} \text{real Shen}\ \boldsymbol{S}_X^{+}(0,(13)) \overset{less}{\Leftrightarrow} \text{real You}\ \boldsymbol{S}_X^{-}(0,(123))$$

$$\overset{more}{\Leftarrow} \text{virtual Si}\ \boldsymbol{X}_K^{-}(0,(132)) \overset{less}{\Leftrightarrow} \text{virtual Chen}\ \boldsymbol{X}_K^{+}(0,(12)).$$

For the unhealthy body, if a subsystem $\boldsymbol{X}$ *of a steady multilateral system* $\boldsymbol{V}$ *falls a virtual disease, then the disease comes from the son* $\boldsymbol{X}_S$ *of* $\boldsymbol{X}$. *The second transfer law of the* **Yin** *vital energies of the twelve earthly branches is transferring* **along** *the killing or liking order of the twelve earthly branches as follows:*

$$\text{virtual Zi } \boldsymbol{X}^{+}(0,e) \overset{less}{\Leftrightarrow} \text{virtual Chou } \boldsymbol{X}^{-}(0,(23))$$

$$\overset{rare}{\Rightarrow} \text{virtual Si } \boldsymbol{X}_{K}^{-}(0,(132)) \overset{less}{\Leftrightarrow} \text{virtual Chen } \boldsymbol{X}_{K}^{+}(0,(12))$$

$$\overset{rare}{\Rightarrow} \text{virtual Shen } \boldsymbol{S}_{X}^{+}(0,(13)) \overset{less}{\Leftrightarrow} \text{virtual You } \boldsymbol{S}_{X}^{-}(0,(123))$$

$$\overset{less}{\Rightarrow} \text{virtual Wu } \boldsymbol{X}_{S}^{j-}(1,(123)) \overset{less}{\Leftrightarrow} \text{virtual Wei } \boldsymbol{X}_{S}^{j+}(1,(13))$$

$$\overset{less}{\Leftrightarrow} \text{virtual Hai } \boldsymbol{X}_{S}^{x+}(1,e) \overset{less}{\Leftrightarrow} \text{virtual Xu } \boldsymbol{X}_{S}^{x-}(1,(23))$$

$$\overset{more}{\Rightarrow} \text{real Yin } \boldsymbol{K}_{X}^{-}(1,(132)) \overset{less}{\Leftrightarrow} \text{real Mao } \boldsymbol{K}_{X}^{+}(1,(12)).$$

All second transfer laws of the *Jingluo* system or the *twelve earthly branches model for an unhealthy body* are summarized in Figure 3.

It means that only both the liking relation and the alternate relation have the second transfer law of the **Yang or Yin** vital or righteousness energies of the twelve earthly branches. **Yang** is transferring **against** the killing or liking order of the twelve earthly branches. **Yin** is transferring **along** the killing or liking order of the twelve earthly branches. #

For an unhealthy body falling a real disease, the relation note real Xu $\boldsymbol{X}_{S}^{x-} \overset{less}{\Leftrightarrow}$ real Hai $\boldsymbol{X}_{S}^{x+}$ also can be considered as the prisoner of the relation note real Wu $\boldsymbol{X}_{S}^{j-} \overset{less}{\Leftrightarrow}$ real Wei $\boldsymbol{X}_{S}^{j+}$. It is because the relationship note

$$\text{real Hai } \boldsymbol{X}_{S}^{x+}(1,e) \overset{less}{\Leftrightarrow} \text{real Xu } \boldsymbol{X}_{S}^{x-}(1,(23))$$

$$\overset{less}{\Leftrightarrow} \text{real Wu } \boldsymbol{X}_{S}^{j-}(1,(123)) \overset{less}{\Leftrightarrow} \text{real Wei } \boldsymbol{X}_{S}^{j+}(1,(13))$$

can be abbreviated as

$$\text{real Hai } \boldsymbol{X}_{S}^{x+}(1,e) \overset{less}{\Leftrightarrow} \text{real Xu } \boldsymbol{X}_{S}^{x-}(1,(23))$$

$$\overset{less}{\Leftarrow} \text{real Wu } \boldsymbol{X}_{S}^{j-}(1,(123)) \overset{less}{\Leftrightarrow} \text{real Wei } \boldsymbol{X}_{S}^{j+}(1,(13)).$$

The idea is that the subsystem xiang-fire ($\boldsymbol{X}_{S}^{x}$) can substitute for the subsystem jun-fire ($\boldsymbol{X}_{S}^{j}$) under fault for an unhealthy body falling a real disease.

On the other hand, for an unhealthy body falling a virtual disease, the relation note virtual Xu $\boldsymbol{X}_{S}^{x-} \overset{less}{\Leftrightarrow}$ virtual Hai $\boldsymbol{X}_{S}^{x+}$ also can be considered as the prisoner of the relation note virtual Wu $\boldsymbol{X}_{S}^{j-} \overset{less}{\Leftrightarrow}$ virtual Wei $\boldsymbol{X}_{S}^{j+}$. It is because the relationship note

$$\text{virtual Wu } \boldsymbol{X}_{S}^{j-}(1,(123)) \overset{less}{\Leftrightarrow} \text{virtual Wei } \boldsymbol{X}_{S}^{j+}(1,(13))$$

$$\overset{less}{\Leftrightarrow} \text{virtual Hai } \boldsymbol{X}_{S}^{x+}(1,e) \overset{less}{\Leftrightarrow} \text{virtual Xu } \boldsymbol{X}_{S}^{x-}(1,(23))$$

can be abbreviated as

$$\text{virtual Wu } \boldsymbol{X}_{S}^{j-}(1,(123)) \overset{less}{\Leftrightarrow} \text{virtual Wei } \boldsymbol{X}_{S}^{j+}(1,(13))$$

$$\overset{less}{\Rightarrow} \text{virtual Hai } \boldsymbol{X}_{S}^{x+}(1,e) \overset{less}{\Leftrightarrow} \text{virtual Xu } \boldsymbol{X}_{S}^{x-}(1,(23)).$$

The idea is that the subsystem xiang-fire ($\boldsymbol{X}_{S}^{x}$) can substitute for the subsystem jun-fire ($\boldsymbol{X}_{S}^{j}$) under fault for an unhealthy body falling a virtual disease. #

Medical and drug resistance problem is that such a question, beginning more appropriate medical treatment, but is no longer valid after a period. In the state

$$\rho_1 - \rho_3 = \rho(x)(1-c) \to 0, \rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c) \to 0,$$

by Theorems **3.2** and **3.3**, any medical and drug resistance problem is non-existence if the treatment principle of TCM is used.

But in the state

$$\rho_1 - \rho_3 = \rho(x)(1-c) \to \rho(x), \rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c) \to \rho(x)^2,$$

by Theorems **3.4** and **3.5**, the medical and drug resistance problem is always existence, even if the treatment principle of TCM has been used. It is because virtual X_K cannot kill real S_X if X is done an intervention of it by increasing its energy.

The existence conditions for a medical and drug resistance problem are both $\rho_1 - \rho_3 = \rho(x)(1-c)$ and $\rho_2 - \rho_1\rho_3 = \rho(x)^2(1-c)$ tending to be large at the same time, *i.e.*, *c* tends to be small for a fixed $\rho(x) > 0$ such that the unhealthy condition $\rho_v = (\rho_1 + \rho_2\rho_3) < \rho_e = (1-\rho_2\rho_3)$ holds.

In other words, the lack of capability of self-protection, *i.e.*, $\rho_3 = c\rho(x) \to 0$, implies the possible existence of a medical and drug resistance problem, although the treatment principle of TCM has been used. At this point, the paper advocates to follow or utilize the second transfer law in order to prevent and avoid the medical and drug resistance issue occurrence for the unhealthy body. #

4. Treatment Principle of TCM

Theorem 4.1. [23] *Suppose that the subsystem X of a steady multilateral system falls ill. Let x be the blood pH value of a human body as the steady multilateral system. Denoted the parameter x of the normal range (lower bound, upper bound, center) as follows*

$$(a = 7.34539, b = 7.45461, t_0 = 7.4).$$

Then the following statements are true.

*1) Suppose that $x < a$ as **virtual**, in which X or X_K falls a virtual disease with an unhealthy body. The subsystem X or X_K itself is the root-cause of a happened virtual disease. And the son X_S of X is the symptoms of an expected or a happened virtual disease. The primary treatment is to increase the energy of the subsystem X or X_K directly. And the secondary treatment is to increase the energy of the son X_S of X, and at the same time, to decrease the energy of the prisoner K_X of X_S.*

*2) Suppose that $x \in [a, t_0)$ as **virtual-normal**, in which X or S_X will fall an expected virtual disease with a healthy body. The mother S_X of X is the root-cause of an expected virtual disease. And the subsystem X or S_X is the symptoms of an expected virtual disease. The primary treatment is to increase the energy of the mother subsystem S_X of X which is an indirect treating*

for X. And the secondary treatment is to increase the energy of X itself, and at the same time, to decrease the energy of the prisoner X_K of X.

3) Suppose that $x \in [t_0, b]$ as **real-normal**, in which X or X_S will encounter an expected real disease with a healthy body. The son X_S of X is the root-cause of an expected real disease. And the subsystem X itself is the symptoms of an expected real disease. The primary treatment is to decrease the energy of the son subsystem X_S of X which is an indirect treating for X. And the secondary treatment is to decrease the energy of X itself, and at the same time, to increase the energy of the bane K_X of X.

4) Suppose that $x > b$ as **real**, in which X or K_X encounters a real disease with an unhealthy body. The subsystem X or K_X itself is the root-cause of an expected or a happened real disease. And the mother S_X of X is the symptoms of an expected real disease. The primary treatment is to decrease the energy of the subsystem X or K_X directly. And the secondary treatment is to decrease the energy of the mother S_X of X, and at the same time, to increase the energy of the bane X_K of S_X. #

Theorem 4.2. *Suppose that a steady multilateral system has six indexes. Let x^i be one of the six indexes of the subsystem energies of the steady multilateral system for any $i \, (1 \le i \le 6)$. Denoted any one corresponding parameter of normal range (lower bound, upper bound, center) as follows respectively*

$$\left(a^i, b^i, t_0^i\right), \quad i = 1, 2, 3, 4, 5, 6.$$

Consider one of the six sign functions respectively

$$f_i = sign\left(x^i - t_0^i\right) + \left(x^i = t_0^i\right), \; i = 1, 2, 3, 4, 5, 6.$$

If $f_i = 1$, the energy of the corresponding subsystem is Yang. Its state is intended to be real or real-normal.

If $f_i = -1$, the energy of the corresponding subsystem is Yin. Its state is intended to be virtual or virtual-normal.

The Hexagram-image of eight palaces or eight veins $V^8 \times V^8$ is as follows:

$$\boldsymbol{f} = \left(f_1, f_2, f_3, f_4, f_5, f_6\right).$$

Then the following statements are true.

1) If the Hexagram-image belongs the Qian palace K_X^+ continuously, then the root-cause of the falling-ill subsystem may be wood (X).

2) If the Hexagram-image belongs the Dui palace K_X^- continuously, then the root-cause of the falling-ill subsystem may be xiang-fire (X_S^x).

3) If the Hexagram-image belongs the Li palace X_S^- continuously, then the root-cause of the falling-ill subsystem may be metal (K_X).

4) If the Hexagram-image belongs the Zhen palace X^+ continuously, then the root-cause of the falling-ill subsystem may be metal (K_X).

5) If the Hexagram-image belongs the Xun palace X^- continuously, then the root-cause of the falling-ill subsystem may be metal (K_X).

6) If the Hexagram-image belongs the Kan palace S_X^+ continuously, then the

root-cause of the falling-ill subsystem may be earth (X_K).

7) *If the Hexagram-image belongs the Gen palace* X_K^+ *continuously, then the root-cause of the falling-ill subsystem may be jun-fire* (X_S^j).

8) *If the Hexagram-image belongs the Kun palace* X_K^- *continuously, then the root-cause of the falling-ill subsystem may be water* (S_X).

All laws of Eight palaces are summarized in Figure 5. #

Remark 1. How to confirmed mathematical properties based on Yin Yang Wu Xing Theory in TCM? How to test energy of Eight Palaces?

If a person is determined to be mathematically treatable, it is only necessary to determine which palace the person belongs to.

Palmistry in TCM is a good way to determine which palace a person belongs to. See Figure 5.

The six messages in palmistry reflect the corresponding energy of the viscera of the human body.

The first line is the emotional line, called wood (X). Reflects the energy of subsystem wood (X). A normal emotional line is a line located at the top of the palm from the left bottom side of the Kun palace to the bottom of the Li palace, represented by " $f_1 = +1$ ", missing or broken lines are called abnormal lines, represented by " $f_1 = -1$ ".

The second line is the long term business line or long term wisdom line, called xiang-fire (X_S^x). Reflects the energy of subsystem xiang-fire (X_S^x). A normal long-term career line is located at the top of the palm from the right side of the Xun palace below the start to the lower end of the Li palace of a line, with " $f_2 = +1$ ", the missing line or broken line are called abnormal long-term career line, with " $f_2 = -1$ ".

The third line is the lifeline, called earth (X_K). Reflects the energy of subsystem earth (X_K). A normal lifeline is located in the upper part of the palm from the right side of the Xun palace below the beginning, to the Gen palace left side of a line, with " $f_3 = +1$ ", lack of line or broken line are called abnormal lifeline, with " $f_3 = -1$ ".

The fourth line is the lucky line, called metal (K_X). Reflects the energy of subsystem metal (K_X). A normal lucky line is a line located under the palm of the hand, starting from the upper part of the Kan palace, to the lower part of the Li palace, and is indicated by " $f_4 = +1$ ". Missing or broken lines are called abnormal lifelines, and are indicated by " $f_4 = -1$ ".

The fifth line, the marriage line, is called water (S_X). Represents the energy of subsystem water (S_X). A normal marriage line is a line located on the top of the palm from the left side of the Kun palace to the right side of the Kun palace, represented by " $f_5 = +1$ ". Missing or broken lines are called abnormal marriage lines, represented by " $f_5 = -1$ ".

The sixth line is the short-term business line or short-term wisdom line, called jun-fire (X_S^j). Reflects the power of the subsystem jun-fire (X_S^j). A normal short-term business line is located in the palm of the thumb fingernail crescent

part, crescent in 5 mm above normal, with "$f_6 = +1$" said, lack of line or broken line is called abnormal short-term business line, with "$f_6 = -1$" said.

If a person's Hexagram-image $f = (f_1, f_2, f_3, f_4, f_5, f_6)$ is known, then it is possible to determine which palace the person belongs to. Once we know which palace a person belongs to, we know the corresponding the average energy and standard deviation for that palace. The energy distribution of all the eight palaces of Yang and Yin is as follows.

Yang palace	average	deviation	Yin palace	average	deviation
Qian	51.00	11.20	Kun	12.00	11.20
Kan	15.50	8.72	Li	47.50	8.72
Gen	44.00	8.93	Dui	19.00	8.93
Zhen	15.50	8.98	Xun	47.50	8.98

Remark 2. Theory of eight palaces (八宫) or eight veins (八脉) could be showed in Figure 5. All the figures should be illustrated by figure legends carefully.

In Figure 5, the eight palaces or eight veins symmetrically maintain the safety of the six fu-organs. Such as the Qian palace or Belt vein symmetrically maintain the safety of the wood (X) fu-organ; The Dui palace or Yin link vein symmetrically maintains the safety of the xiang-fire (X_S^x) fu-organ. The Li palace or Governor vein, the Zhen palace or Yang cross vein and the Xun Palace or Yin cross vein symmetrically maintain the safety of the metal (K_X) fu-organ. The Kan palace or Ren vein symmetrically maintains the safety of the earth (X_K) fu-organ. The Gen palace or Yang link vein symmetrically maintains the safety of the jun-fire (X_S^j) fu-organ. The Kun palace or Impact vein symmetrically maintains the safety of the water (S_X) fu-organ. #

5. Acupucture Is Used to Treat Atrial Premature Beats as Congenital Heart Disease

The patient, male, is 46 years old. Due to heart aches, sleepless nights, and nervousness as a heart disease, he went to the First Affiliated Hospital of Henan University of Traditional Chinese Medicine on June 13, 2018. Testing electrocardiogram, his sinus heart rate was 50 to 132 beats per minute, a marked arrhythmia. Tests showed that he had severe atrial premature beats. Atrial premature beats were 11,668 beats/24 h (1625 in pairs, 136 in two union law and 45 in three union law). Abnormal cardiac beats were 11,670 beats per 24 h. Matrix atrial tachycardia was 930 beats/24 h. The body's blood pH value is higher (7.53211, real, normal range [7.34539, 7.45461] and the center 7.4). Choose western commonly used anti-arrhythmic drug treatment, basically no effect. Because the disease runs in the family, hence goes to a Beijing hospital for his genetic testing. Genetic testing results show that a clear diagnosis of atrial premature beats as a congenital heart disease. This disease in western medicine, there is no treatment and effective drugs. On July 3, 2018, the patient to Henan province

Zhang Bibo Institute of TCM acupuncture treatment.

The patient's suffering from the disease is a genetic disease, is relatively rare, should adhere to TCM thinking. According to the clinical symptoms, atrial premature beats as congenital heart disease in TCM is "Cardiac over-expression or fever syndrome" category. Need to regulate heart and small intestine, adjust *Chi* and blood. The age of patients is middle-old, his capability of self-protection is poor. Its pathogenesis is congenital excessive or fever energy, acquired neurotic, need to adjust the heart and small intestine, adjust excessive or fever.

Atrial premature beats as congenital heart disease in TCM belongs to "cardiac over-expression or fever syndrome" category. The paper of the Emperor Neijing (《皇帝内经》) discusses the pathogenesis " Heart fever, first feel the heart is not happy, a few days later began to fever, when the heat into Five Zang-organs and Uprightness *Chi* conflict, then suddenly heartache, annoyed, vomiting, headache, face red, no sweat. Meet to RenGui (壬癸) day, because of the fire by water kills and seriously ill. Every BingDing (丙丁) day when the fire flourishing, then out of the great sweat and heat retreat. If the evil spirit prevails, the sicker patients will die on RenGui (壬癸) day. During treatment of cardiac over-expression or fever syndrome, acupuncture should be performed on the hand ShaoYin (少阴) heart meridian and the hand TaiYang (太阳) small intestine meridian." Think its pathogenesis is: the heart and the small intestine *Chi* blood too exuberant, *Chi* blood is not clear.

The paper of the Emperor Neijing (《皇帝内经》) treatment method is put forward as follows: "Summer began to be in season, the heart began to grow. If the pulse shape search small and weak pulse imposing manner, is abundant Yang *Chi* be the spirit flush to the body surface, heat fumigation in meat Cou (肉腠, 肌肉纹理) justified, inward effect on meridians, so acupuncture should be rushed down by points Cou. Acupuncture not too deep, as long as through the skin and disease can be cured. This is because evil spirits reside in superficial places. Alleged exuberant meridian as Cou, it is to point to plump and sufficient Yang vein." "The cure for the fever is in their transport points (俞穴), adjust its virtual and real condition, harmony with its inverse and smooth. Veins of the same flesh and blood are with its time by months". Points out that the treatment should take the hand TaiYang (太阳) small intestine meridian, rush down their transport points (俞穴).

Palmistry can be used to identify the size of energy of six indices in the six subsystems of the human body complex system.

Watch Figure 5. The emotional line X is strong. It means that the energy of wood (X) = {liver, bravery} is real or real-normal. This is $f_1 = +1$.

The long term career line or long term wisdom line X_S^x is strong. It means that the energy of xiang-fire (X_S^x) = {pericardium, triple energizers} is real or real-normal. This is $f_2 = +1$.

The lifeline X_K is weak. It means that the energy of earth (X_K) = {spleen, stomach} is virtual or virtual-normal. This is $f_3 = -1$.

The lucky line K_X is weak. It means that the energy of metal (K_X) = {lung, large intestine} is virtual or virtual-normal. This is $f_4 = -1$.

The marriage line S_X is strong. It means that the energy of water (S_X) = {kidney, bladder} is real or real-normal. This is $f_5 = +1$.

Short-term business lines or short-term wisdom lines X_S^j are strong. It means that the energy of jun-fire (X_S^j) = {heart, small intestine} is real or real-normal. This is $f_6 = +1$.

The Hexagram-image of the eight palaces or eight veins is as follows:
$$f = (f_1, f_2, f_3, f_4, f_5, f_6) = (+1, +1, -1, -1, +1, +1).$$

The Hexagram-image is the moderately convincing diagram (ZhongFu (中孚) $X_K^+(5, 2)$) of up wind and down marsh. It is also the **Wandering soul (游魂)** of Gen palace (艮宫) = $X_K^+(*, *)$. Another name is Fu $(5, 2) = X_K^+(5, 2)$. Gen palace (艮宫) which the Hexagram-image Fu $(5, 2) = X_K^+(5, 2)$ belongs to is Yang earth $X_K^+(*, *)$, like a small-aged son. One's Gen Palace nature is Bi (贲), Xu (畜), Sun (损), Gui (睽), Lv (履), Fu (孚), Jian (渐). They mean: The young son works hard and likes to do all the things by the recognition of Bi (贲) (7, 3), and is good at saving a lot of money of Xu (畜) (7, 1), and do things get damaged income also not care of Sun (损) (7, 2). But he is difficult to get the respect they deserve of Gui (睽) (3, 2), to be honest to fulfill a commitment of Fu (履) (1, 2), and life the pursuit of a smooth transition of Fu (孚) (5, 2). Finally the status of the growth of life often is gradually rising slowly of Jian (渐) (5, 7). Gen palace (艮宫) = $X_K^+(*, *)$ is corresponding to Yang Link Vein (阳维脉): It is mainly in order to absorb the energy of $X_K^+(*, *)$ corresponding to {upper energizer} and to maintain the security of X_S^j.

By Theorem **4.2**, the root-cause of the falling-ill subsystem may be jun-fire (X_S^j) = {heart, small intestine}. Thus, in Theorem **4.1**, it is needed to suppose that the subsystem X_S^x of a steady multilateral system falls ill.

Because the body pH blood value is $x = 7.53211 > b = 7.45461$ or $0 < \rho_1 = \rho(x) < \rho_0$, the subsystem jun-fire (X_S^j) = {heart, small intestine} falls a real disease with an unhealthy body. It is the case (4) of Theorem **4.1** for fire (X_S).

By (4) of Theorem **4.1** or Theorem **3.5**, the subsystem jun-fire (X_S^j) = {heart, small intestine} itself is the root-cause of a happened real disease. The mother of jun-fire (X_S^j) = {heart, small intestine} is the xiang-fire (X_S^x) (pericardium and triple energizer) for an unhealthy body of falling real ills. And the mother xiang-fire (X_S^x) (pericardium and triple energizer) of jun-fire (X_S^j) = {heart, small intestine} is the symptoms of an expected real disease.

By (4) of Theorem **4.1**, the primary treatment is to decrease the energy of the subsystem jun-fire (X_S^j) = {heart, small intestine} directly. And the secondary treatment is to decrease the energy of the mother xiang-fire (X_S^x) (pericardium and triple energizer) of jun-fire (X_S^j) = {heart, small intestine}, and at the same time, to increase the energy of the bane water (S_X) (kidney and bladder) of xiang-fire (X_S^x) (pericardium and triple energizer).

Follow the tips of the emperor's internal Canon, for treatment of fever diseases, acupuncture not too deep, as long as through the skin and disease can be cured. In TCM, there is a method of treating diseases of eight palaces around the belly button. The eight signs are arranged in the same way as the palms. Treat premature heart disease with the main and secondary methods mentioned above. Acupuncture directions are selected in Li palace, Kan palace, Gen palace and Dui palace.

The primary treatment is to decrease the energy of the subsystem jun-fire (X_S^j) = {heart, small intestine} or Governor Vein (督脉) as Li palace (离宫) $X_S^-(*,*)$ belonging to jun-fire (X_S^j) = {heart, small intestine}. and at the same time, to decrease the energy of the subsystem Yang link Veins (阳维脉) as Gen palace (艮宫) $X_K^+(*,*)$ corresponding to {upper energizer} $\subset X_S^{x+}(1,e)$ (手少阳三焦经) directly.

And the secondary treatment is to decrease the energy of the mother xiang-fire (X_S^x) (pericardium and triple energizer) or Yin Link Vein (阴维脉) as Dui palace (兑宫) $K_X^-(*,*)$ corresponding to {lower energizer} $\subset X_S^{x+}(1,e)$ (手少阳三焦经) of jun-fire (X_S^j) = {heart, small intestine}, and at the same time, to increase the energy of the bane water (S_X) (kidney and bladder) or Ren Vein (任脉) as Kan palace (坎宫) $S_X^+(*,*)$ belonging to water (S_X) = {kidney, bladder} of xiang-fire (X_S^x) (pericardium and triple energizer).

Methods: Mild, fire discharge, slightly prickly Yang pulse. For the first four weeks, once a day. Then later, once a week.

More context about acupuncture treating heart disease should be showed in the paper. First of all, the direct needle method was used to shallow the puncture around the navel of the Li palace and the Gen palace. The needle should be placed first, and the epidermis can be pierced lightly. Since it is a catharsis method, acupuncture should be quick and very fast, the direction from the inside to the outside.

Secondly, after 5 minutes, the needle was used to suppress the strong and support the weak. The direct needling method was used to shallow the puncture on the Kan palace around the navel, while the drainage needling method was used to shallow the Dui palace around the navel. The filling method for Kan palace should be slowing down the needle, the direction from the outside to the inside, shallow puncture skin can be. The catharsis method for Dui palace should be quick under the needle, the direction from the inside to the outside, shallow puncture skin can be.

A session takes about an hour.

Its pathogenesis is congenital excessive or fever energy, acquired neurotic, need to adjust the heart and small intestine, adjust excessive or fever.

After one year of acupuncture therapy, the patient congenital excessive or fever energy of power and neurotic symptoms improved significantly, not to cause heart pain, sleep smoothly at night, a significant stabilization of the nervous system. Review of electrocardiogram on October 22, 2019 at the first affi-

liated hospital of Henan University of Traditional Chinese Medicine, his sinus heart rate was 46 to 120 beats per minute, a normal range of sinus rhythm. Tests showed that he had hardly any atrial premature beats. Atrial premature beats were 21 beats/24h (2 in pairs, 0 in two union law and 0 in three union law). Abnormal cardiac beats were 24 beats per 24 h. Matrix atrial tachycardia was 0 beats/24h. The body's blood pH value is normal (7.43181, real-normal, normal range [7.34539, 7.45461] and the center 7.4). Patient with symptoms improved obviously, and hardly any abnormal cardiac beats. Return no recurrence.

Governor vein (督脉) as Li palace (离宫) $X_S^-(*,*)$ corresponding to fire (X_S^j) = {heart, small intestine}: For Yang meridians, it links the foot ShaoYang Gallbladder meridian $X^+(0,e)$ (足少阳胆经) in ChangQiang (长强, DU1) and DaZhui (大锥, DU14) and BaiHui (百会, DU20), links the hand ShaoYang triple energizer meridian $X_S^{x+}(1,e)$ (手少阳三焦经) in DaZhui (大锥, DU14) and BaiHui (百会, DU20), links the foot YangMing stomach meridian $X_K^+(0,(12))$ (足阳明胃经) in DaZhui (大锥, DU14) and BaiHui (百会, DU20) and ShenTing (神庭, DU24) and ShuiGou (水沟, DU26), links the hand YangMing large intestine $K_X^+(1,(12))$ (手阳明大肠经) in DaZhui (大锥, DU14) and BaiHui (百会, DU20) and ShuiGou (水沟, DU26), links the foot TaiYang bladder meridian $S_X^+(0,(13))$ (足太阳膀胱经) in DaZhui (大锥, DU14), BaiHui (百会, DU20), NaoHu (脑户, DU17), ShenTing (神庭, DU24) and TaoDao (陶道, DU13). And links the hand TaiYang small intestine meridian $X_S^{j+}(1,(13))$ (手太阳小肠经) in HouXi (后溪, SI3), DaZhui (大锥, DU14) and BaiHui (百会, DU20).

For Yin meridians, it links the foot JueYin liver meridian $X^-(0,(23))$ (足厥阴肝经) in BaiHui (百会, DU20), links the foot ShaoYin kidney meridian $S_X^-(0,(123))$ (足少阴肾经) in ChangQiang (长强, DU1). Also links the ren vein (任脉) and the impact vein (冲脉) in HuiYin (会阴, RN1). Connects the hand TaiYin lung meridian $K_X^-(1,(132))$ (手太阴肺经) in LieQue (列缺, Lu7) and TaiYuan (太渊, Lu9) through the ren vein (任脉) or directly contacting the hand YangMing large intestine $K_X^+(1,(12))$ (手阳明大肠经). The idea is that veins meet in TaiYuan (太渊, Lu9).

The idea is that HouXi (后溪, SI3) mainly manages the Governor vein (督脉) as Li palace (离宫) $X_S^-(*,*)$. It is mainly in order to absorb the energy of $X_S^-(*,*)$ belonging to jun-fire (X_S^j) = {heart, small intestine} and to maintain the security of K_X.

Therefore, acupuncture direction selected in Li palace (离宫) by using the rushing down method can be to decrease the energy of jun-fire (X_S^j) = {heart, small intestine}.

Yang link Veins (阳维脉) as Gen palace (艮宫) $X_K^+(*,*)$ corresponding to {upper energizer} $\subset X_S^{x+}(1,e)$ (手少阳三焦经): For Yang meridians, it links the foot ShaoYang Gallbladder meridian $X^+(0,e)$ (足少阳胆经) in YangJiao (阳交, GB35) and JianBing (肩并, GB21), links the hand ShaoYang triple energizer meridian $X_S^{x+}(1,e)$ (手少阳三焦经) in TianLiao (天髎, SJ15) and WaiGuan (外关, SJ5), links the foot YangMing stomach meridian $X_K^+(0,(12))$ (足

阳明胃经) in TouWei (头维, ST8), links the foot TaiYang bladder meridian $S_X^+\left(0,(13)\right)$ (足太阳膀胱经) in JinMen (金门, BL63) and links the hand TaiYang small intestine meridian $X_S^{j+}\left(1,(13)\right)$ (手太阳小肠经) in NaoShu (臑俞, SI10). Also links the governor vein (督脉) in YaMen (哑门, DU15) and FengFu (风府, DU16).

For Yin meridians, it connects the ren vein (任脉) through the governor vein (督脉) in HuiYin (会阴, RN1). It also connects the hand TaiYin lung meridian $K_X^-\left(1,(132)\right)$ (手太阴肺经) in LieQue (列缺, Lu7) and TaiYuan (太渊, Lu9) through the ren vein (任脉). The idea is that veins meet in TaiYuan (太渊, Lu9).

The idea is that WaiGuan (外关, SJ5) mainly manages the Yang link vein (阳维脉) as Gen palace (艮宫) $X_K^+\left(*,*\right)$. It is mainly in order to absorb the energy of $X_K^+\left(*,*\right)$ corresponding to {upper energizer} and to maintain the security of X_S^j.

Therefore, acupuncture direction selected in Gen palace (艮宫) by using the rushing down method can be to decrease the energy of jun-fire (X_S^j) = {heart, small intestine}.

Yin link vein (阴维脉) as Dui palace (兑宫) $K_X^-\left(*,*\right)$ corresponding to {lower energizer} $\subset X_S^{x+}\left(1,e\right)$ (手少阳三焦经): For Yin meridians, it links the foot JueYin liver meridian $X^-\left(0,(23)\right)$ (足厥阴肝经) in QiMen (旗门, LR14), links the hand JueYin pericardium meridian $X_S^{x-}\left(1,(23)\right)$ (手厥阴心包经) in NeiGuan (内关, PC6), links the foot ShaoYin kidney meridian $S_X^-\left(0,(123)\right)$ (足少阴肾经) in ZhuBin (筑宾, KI9), links the foot TaiYin spleen meridian $X_K^-\left(0,(132)\right)$ (足太阴脾经) in ChongMen (冲门, SP12), FuHui (府会, SP13), DaHeng (大横, SP15) and FuAi (腹哀, SP16).

Also it links the ren vein (任脉) in TianTu (天突, RN22) and LianQuan (廉泉, RN23). Connects the hand TaiYin lung meridian $K_X^-\left(1,(132)\right)$ (手太阴肺经) in LieQue (列缺, Lu7) and TaiYuan (太渊, Lu9) through the ren vein (任脉). The idea is that veins meet in TaiYuan (太渊, Lu9).

The idea is that NeiGuan (内关, PC6) mainly manages the Yin link vein (阴维脉) as Dui palace (兑宫) $K_X^-\left(*,*\right)$. It is mainly in order to absorb the energy of $K_X^-\left(*,*\right)$ corresponding to {lower energizer} $\subset X_S^{x+}\left(1,e\right)$ (手少阳三焦经) and to maintain the security of X_S^x.

Therefore, acupuncture direction selected in Dui palace (兑宫) by using the rushing down method can be to decrease the energy of xiang-fire (X_S^x) = {pericardium, triple energizer}.

Ren vein (任脉) as Kan palace (坎宫) $S_X^+\left(*,*\right)$ corresponding to water (S_X) = {kidney, bladder}: For Yin meridians, it links the foot JueYin liver meridian $X^-\left(0,(23)\right)$ (足厥阴肝经) in QuGu (曲骨, RN2) and ZhongJi (中极, RN3) and GuanYuan (关元, RN4), links the foot TaiYin spleen meridian $X_K^-\left(0,(132)\right)$ (足太阴脾经) in XiaWang (下脘, RN10), ZhongJi (中极, RN3) and GuanYuan (关元, RN4), links the foot ShaoYin kidney meridian $S_X^-\left(0,(123)\right)$ (足少阴肾经) in ZhongJi (中极, RN3) and GuanYuan (关元, RN4).

And it connects the hand TaiYin lung meridian $K_X^-\left(1,(132)\right)$ (手太阴肺经) in LieQue (列缺, Lu7) and TaiYuan (太渊, Lu9). The idea is that veins meet in TaiYuan (太渊, Lu9).

For Yang meridians, it links the hand ShaoYang triple energizer meridian $X_S^{x+}\left(1,e\right)$ (手少阳三焦经) in ZhongWan (中脘, RN12), links the foot YangMing stomach meridian $X_K^+\left(0,(12)\right)$ (足阳明胃经) in ZhongWan (中脘, RN12) and ShangWan (上脘, RN13), and links the hand TaiYang small intestine meridian $X_S^{j+}\left(1,(13)\right)$ (手太阳小肠经) in ZhongWan (中脘, RN12) and ShangWan (上脘, RN13).

The idea is that LieQue mainly manages the Ren vein (任脉) as Kan palace (坎宫) $S_X^+\left(*,*\right)$. It is mainly in order to absorb the energy of $S_X^+\left(*,*\right)$ belonging to water (S_X) = {kidney, bladder} and to maintain the security of X_K.

Therefore, acupuncture direction selected in Kan palace (坎宫) by using filling method can be to increase the energy of water (S_X) = {kidney, bladder}.

The above points are suitable, can adjust the energy function of heart and small intestine, discharging *Chi* and blood, promoting the viscera energy function recovery.

This example with the type of atrial premature beats as congenital heart diseases, at present, in the world is a medical problem, no effective drugs and methods of treatment. The author USES "regulate heart and small intestine, *Chi* and blood discharged" thinking of TCM treatment of one year, does have effect and obvious effect. Consulting relevant literature, the writer has not been found by acupuncture treatment of this kind of disease related information, so the topic.

The analysis of this paper focuses on the mathematical structure of eight palaces (八宫) or eight veins (八脉). How about the real cases? In the real cases, there are a lot of kinds of diseases. In mathematics, first, you must determine the scope of the illness. That is to say: must determine which palace or Zangxiang or meridian disease belongs to. For example, for the purpose of this case, must first determine the disease belongs to the heart Zang organ jun-fire (X_S^j) (君火) or the hand ShaoYin heart meridian (手少阴心经) or the hand TaiYang small intestine meridian (手太阳小肠经). It is equivalent mainly to consider the real diseases of the Li palace (离宫) and the Gen palace (艮宫) as the Governor Vein (督脉) and the Yang link vein (阳维脉).

How to fit the eight palaces (八宫) or eight veins (八脉) into a mathematical model. Regards the eight palaces (八宫) or eight veins (八脉) as a mathematical model, which can be mathematically proved that is to diagnose major or basic subsystems that may be to fall ills. For example, for the purpose of this case, major or basic subsystems that may be to fall ills should be jun-fire (X_S^j) by using Theorem **4.2**. Furthermore, by Theorem **4.1**, dealing with the first method is to deal directly with the hand ShaoYin heart meridian (手少阴心经) and the hand TaiYang small intestine meridian (手太阳小肠经) of the disease as the root-cause, *i.e.*, to decrease the energy of the hand ShaoYin heart meridian (手少阴心经) and the hand TaiYang small intestine meridian (手太阳小肠经) as the

Li palace (离宫) and the Gen palace (艮宫) as the Governor Vein (督脉) and the Yang link vein (阳维脉). Auxiliary treatment method is to decrease the energy of the hand JueYin pericardium meridian (手厥阴心包经) or the hand ShaoYang triple energizer meridian (手少阳三焦经) or Yin link vein (阴维脉) or Dui palace (兑宫) as symptoms, at the same time, increase the energy of Ren vein (任脉) or Kan palace (坎宫) as symptoms. This method of healing must pass the mathematics to prove.

The effect of eight palaces (八宫) or eight veins (八脉) on the blood pH value should be evaluated. Measurement of the blood pH value objective is to determine whether the body health, disease of real or virtual illness, and mathematically sure cure method. For example, for the purpose of this case, the blood pH value in the range is the situation of the (4) of Theorem **4.1** as **real**, natural the cure method is determined. So, measuring the blood pH value in the range is a very important work. Because different people treat diseases differently at different times, must by measuring the blood pH value in the range at any time, to determine the cure method should be used at any time.

For the purpose of this case, it may be not necessary to show the hand JueYin pericardium meridian (手厥阴心包经) xiang-fire (X_S^{x-}) or the hand ShaoYang triple energizer meridian (手少阳三焦经) xiang-fire (X_S^{x+}) corresponding to Yin link vein (阴维脉) or Dui palace (兑宫). But from the perspective of mathematical analysis, it is must be considered. Because the hand ShaoYin heart meridian (手少阴心经) and the hand JueYin pericardium meridian (手厥阴心包经) although belong to the heart Zang organ as fire (X_S), but the hand JueYin pericardium meridian (手厥阴心包经) can substitute for the hand ShaoYin heart meridian (手少阴心经) under fault. So to decrease the energy of the heart Zang organ as fire (X_S) must be not only to decrease directly the energy of the hand ShaoYin heart meridian (手少阴心经) as jun-fire (X_S^{j-}) corresponding to Governor vein (督脉) as Li palace (离宫) and Yang link veins (阳维脉) as Gen palace (艮宫), which is the heart itself, but also to decrease the energy of the hand JueYin pericardium meridian (手厥阴心包经) as xiang-fire (X_S^{x-}) corresponding to Yin link vein (阴维脉) as Dui palace (兑宫), which is the mother of heart, at the same time, to increase the energy of the bane water (S_X) of xiang-fire (X_S^{x-}), which is corresponding to Ren vein (任脉) as Kan palace (坎宫). #

6. Conclusions

This work shows how to treat the diseases of a human body by using the six indexes of the subsystem energies of the steady multilateral system.

Let x^i be one of the six indexes of the subsystem energies of the steady multilateral system for any $i(1 \le i \le 6)$, denoted any one corresponding parameter of normal range (*lower bound, upper bound, center*) as follows $\left(a^i, b^i, t_0^i\right), i = 1, 2, 3, 4, 5, 6$ respectively.

The normal range of theory is $x^i \in \left[a^i, b^i\right]$, nearly to $x^i \in \left[a_0^i, b_0^i\right]$ and the

center is t_0^i, nearly to t_{0*}^i, respectively.

From eight palaces or eight veins, by Theorem **4.2**, the disease problem of subsystem X can be easily diagnosed. Abiding by TCM's idea: "Even if all changed, it is hard to change one's nature" (江山易改, 本性难移), it can be used as the basis of analyzing after.

The first or second transfer law of human body energies changes according to the different human body blood pH value whether in the normal range or not. For the normal range, the first transfer law of human body energies in Theorems **3.2** and **3.3** will run; for the abnormal range, the second transfer law of human body energies in Theorems **3.4** and **3.5** will run.

Assume that the range of a human body's blood pH value x is divided into four parts from small to large. Both second and third are for a healthy body with a virtual or real disease respectively. In this case, the root-cause of an expected virtual or an expected real disease is the mother or son of the falling-ill subsystem X respectively, and the symptom is the subsystem X itself. Abiding by TCM's idea: "Searching for a root cause of disease in cure, treatment of both the root-cause and symptoms at the same time" (治病求本, 标本兼治), the treating works are first the prevention or the treatment for the mother or son of a virtual or real disease, respectively, the second is to the prevention or the treatment for a more serious relation disease between virtual X and real X_K or between virtual K_X and real X, respectively. Both the root-cause and the symptoms come from the first transfer law of human energies in Theorems **3.2** and **3.3**.

And both first and fourth are for an unhealthy human body with a virtual or real disease respectively. In this case, the root-cause of a virtual or real disease is the subsystem X itself, and the symptoms are the son or mother of the fall-ill subsystem X respectively. Abiding by TCM's idea: "Search for a root cause of disease in treatment and cure both the root-cause and symptoms at the same times" (治病求本, 标本兼治), the treating works are first the prevention or the treatment for itself of a virtual or real disease respectively, the second is the prevention or the treatment for a more serious relation disease between virtual X_S and real K_X or between virtual X_K and real S_X, respectively. Both the root-cause and the symptoms come from the second transfer law in Theorems **3.4** and **3.5**.

A human body disease treatment should protect and maintain the balance or order of two incompatibility relations: the loving or liking relationship and the killing or liking relationship. The method for doing so can make the $\rho_3 = c\rho(x)$ tending to be large, *i.e.*, all of both $\rho(x)$ and c tend to be large, at least, greater than zero for an unhealthy human body; or, the best, equal to 1 for a healthy human body.

The following way can make the capabilities of both intervention reaction and self-protection become in the best state, the non-existence of side effects issue, the non-existence of medical and drug resistance problem, and so on.

1) Suppose that $x < a = 7.34539$, as **virtual**, in which either X or X_K falls a virtual disease with an unhealthy human body. The subsystem either X

or X_K itself is the root-cause of a happened virtual disease. And the son X_S of X is the symptoms of an expected or a happened virtual disease. Abiding by TCM's idea: "Search for a root cause of disease in treatment and cure both the root-cause and symptoms at the same times" (治病求本, 标本兼治), it should be done to do in the following.

In order to protect or maintain the loving relationship, abiding by TCM's idea "Virtual disease with an unhealthy human body is to fill itself" (虚则补之), increase the energy of either X or X_K directly.

In order to protect or maintain the killing relationship, abiding by TCM's idea "Don't have disease cure and cure non-ill" (不治已病治未病), do a preventive treatment for the more serious relation disease between virtual X_S and real K_X. Through the intervening principle of "Strong inhibition of the same time, support the weak" (抑强扶弱), increase the energy of the son X_S of X while decreasing the energy of the prisoner K_X of X_S.

2) Suppose that $a = 7.34539 \leq x < t_0 = 7.4$, as **virtual-normal**, in which either X or S_X falls an expected virtual disease with a healthy human body. The mother S_X of the subsystem X is the root-cause of an expected virtual disease. And the subsystem X itself is the symptoms of an expected virtual disease. Abiding by TCM's idea: "Search for a root cause of disease in treatment and cure both the root-cause and symptoms at the same times" (治病求本, 标本兼治), the following works should be done.

In order to protect or maintain the loving relationship, abiding by TCM's idea "Virtual disease with a healthy human body is to fill its mother" (虚则补其母), increase the energy of the mother S_X of X. The treating way is an indirect treating for X.

In order to protect or maintain the killing relationship, abiding by TCM's idea "Don't have disease cure and cure non-ill" (不治已病治未病), do a preventive treatment for the more serious relation disease between virtual X and real X_K. Through the intervening principle of "Strong inhibition of the same time, support the weak" (抑强扶弱), increase the energy of X itself while decreasing the energy of the prisoner X_K of X.

3) Suppose that $t_0 = 7.4 \leq x \leq b = 7.45461$, as **real-normal**, in which either X or X_S falls an expected real disease with a healthy human body. The son X_S of the subsystem X is the root-cause of an expected real disease. And the subsystem X itself is the symptoms of an expected real disease. Abiding by TCM's idea: "Search for a root cause of disease in treatment and cure both the root-cause and symptoms at the same times" (治病求本, 标本兼治), the following works should be done.

In order to protect or maintain the loving relationship, abiding by TCM's idea "Real disease with a healthy human body is to rush down its son" (实则泄其子), decrease the energy of the son X_S of X. The treating way is an indirect treating for X.

In order to protect or maintain the killing relationship, abiding by TCM's idea

"Don't have disease cure and cure non-ill" (不治已病治未病), do a preventive treatment for the more serious relation disease between virtual K_X and real X. Through the intervening principle of "Strong inhibition of the same time, support the weak" (抑强扶弱), decrease the energy of X itself while increasing the energy of the bane K_X of X.

4) Suppose that $x > b = 7.45461$, as **real**, in which either X or K_X falls a real disease with an unhealthy human body. The subsystem either X or K_X itself is the root-cause of a happened real disease. And the mother S_X of X is the symptoms of an expected or a happened real disease. Abiding by TCM's idea: "Search for a root cause of disease in treatment and cure both the root-cause and symptoms at the same times" (治病求本,标本兼治), the following works should be done.

In order to protect or maintain the loving relationship, abiding by TCM's idea "Real disease with an unhealthy human body is to rush down itself" (实则泄之), decrease the energy of X or K_X directly.

In order to protect or maintain the killing relationship, abiding by TCM's idea "Don't have disease cure and cure non-ill" (不治已病治未病), do a preventive treatment for the more serious relation disease between virtual X_K and real S_X. Through the intervening principle of "Strong inhibition of the same time, support the weak" (抑强扶弱), decrease the energy of the mother S_X of X while increasing the energy of the bane X_K of S_X.

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Conflicts of Interest

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

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Appendix

Proofs of Theorem 2.1 and Corollary 2.1 can be found in Zhang [23].

Proofs of Theorems 3.2-3.5 and 4.1 can be found in Zhang and Zhang [24].

Proof of Property 3.1. Consider the system of **_eight palaces or eight veins_** as *follows*

$$V^8 \times V^8 = \left\{ f = \left(f_1, f_2, f_3, f_4, f_5, f_6 \right) \mid f_i \in \{1, -1\}, i = 1, 2, 3, 4, 5, 6 \right\}.$$

According to the defined energy function,

$$e_f = \left(\left(|f_1| + f_1 \right)/2 \right) 2^5 + \left(\left(|f_2| + f_2 \right)/2 \right) 2^4 + \left(\left(|f_3| + f_3 \right)/2 \right) 2^3$$
$$+ \left(\left(|f_4| + f_4 \right)/2 \right) 2^2 + \left(\left(|f_5| + f_5 \right)/2 \right) 2^1 + \left(\left(|f_6| + f_6 \right)/2 \right),$$
$$f_i \in \{1, -1\}, \quad i = 1, 2, 3, 4, 5, 6.$$

Directly computational energy function can get the conclusion of hope. And you can get all the Numbers in the palace and the palace of the image. It completes the proof. #

Proof of Property 3.2. Consider the system of **_eight palaces or eight veins_** as follows: $V^8 \times V^8 = \left\{ (i, j) \mid i \in V^8, j \in V^8 \right\}$. Its all relations are as follows:

$$R_{(8,8)}^{(8,8)} = \{ ((1,1),(1,1)), ((1,5),(1,5)), ((1,7),(1,7)), ((1,8),(1,8)),$$
$$((5,8),(5,8)), ((7,8),(7,8)), ((3,8),(3,8)), ((3,1),(3,1));$$
$$((2,2),(2,2)), ((2,6),(2,6)), ((2,8),(2,8)), ((2,7),(2,7)),$$
$$((6,7),(6,7)), ((8,7),(8,7)), ((4,7),(4,7)), ((4,2),(4,2));$$
$$((3,3),(3,3)), ((3,7),(3,7)), ((3,5),(3,5)), ((3,6),(3,6)),$$
$$((7,6),(7,6)), ((5,6),(5,6)), ((1,6),(1,6)), ((1,3),(1,3));$$
$$((4,4),(4,4)), ((4,8),(4,8)), ((4,6),(4,6)), ((4,5),(4,5)),$$
$$((8,5),(8,5)), ((6,5),(6,5)), ((2,5),(2,5)), ((2,4),(2,4));$$
$$((5,5),(5,5)), ((5,1),(5,1)), ((5,3),(5,3)), ((5,4),(5,4)),$$
$$((1,4),(1,4)), ((3,4),(3,4)), ((7,4),(7,4)), ((7,5),(7,5));$$
$$((6,6),(6,6)), ((6,2),(6,2)), ((6,4),(6,4)), ((6,3),(6,3)),$$
$$((2,3),(2,3)), ((4,3),(4,3)), ((8,3),(8,3)), ((8,6),(8,6));$$
$$((7,7),(7,7)), ((7,3),(7,3)), ((7,1),(7,1)), ((7,2),(7,2)),$$
$$((3,2),(3,2)), ((1,2),(1,2)), ((5,2),(5,2)), ((5,7),(5,7));$$
$$((8,8),(8,8)), ((8,4),(8,4)), ((8,2),(8,2)), ((8,1),(8,1)),$$
$$((4,1),(4,1)), ((2,1),(2,1)), ((6,1),(6,1)), ((6,8),(6,8)) \}.$$

$$R_{(8,4)}^{(8,8)} = \{ ((1,1),(1,5)), ((1,5),(1,1)), ((1,7),(1,3)), ((1,8),(1,4)),$$
$$((5,8),(5,4)), ((7,8),(7,4)), ((3,8),(3,4)), ((3,1),(3,5));$$
$$((2,2),(2,6)), ((2,6),(2,2)), ((2,8),(2,4)), ((2,7),(2,3)),$$
$$((6,7),(6,3)), ((8,7),(8,3)), ((4,7),(4,3)), ((4,2),(4,6));$$

$$((3,3),(3,7)),((3,7),(3,3)),((3,5),(3,1)),((3,6),(3,2)),$$
$$((7,6),(7,2)),((5,6),(5,2)),((1,6),(1,2)),((1,3),(1,7));$$
$$((4,4),(4,8)),((4,4),(4,8)),((4,6),(4,2)),((4,5),(4,1)),$$
$$((8,5),(8,1)),((6,5),(6,1)),((2,5),(2,1)),((2,4),(2,8));$$
$$((5,5),(5,1)),((5,1),(5,2)),((5,3),(5,7)),((5,4),(5,8)),$$
$$((1,4),(1,8)),((3,4),(3,8)),((7,4),(7,8)),((7,5),(7,1));$$
$$((6,6),(6,2)),((6,2),(6,6)),((6,4),(6,8)),((6,3),(6,7)),$$
$$((2,3),(2,7)),((4,3),(4,7)),((8,3),(8,7)),((8,6),(8,2));$$
$$((7,7),(7,3)),((7,3),(7,7)),((7,1),(7,5)),((7,2),(7,6)),$$
$$((3,2),(3,6)),((1,2),(1,6)),((5,2),(5,6)),((5,7),(5,3));$$
$$((8,8),(8,4)),((8,4),(8,8)),((8,2),(8,6)),((8,1),(8,5)),$$
$$((4,1),(4,5)),((2,1),(2,5)),((6,1),(6,5)),((6,8),(6,4))\}.$$

$$\boldsymbol{R}_{(8,6)}^{(8,8)} = \{((1,1),(1,3)),((1,5),(1,7)),((1,7),(1,1)),((1,8),(1,6)),$$
$$((5,8),(5,6)),((7,8),(7,6)),((3,8),(3,6)),((3,1),(3,3));$$
$$((2,2),(2,4)),((2,6),(2,8)),((2,8),(2,6)),((2,7),(2,5)),$$
$$((6,7),(6,5)),((8,7),(8,5)),((4,7),(4,5)),((4,2),(4,4));$$
$$((3,3),(3,1)),((3,7),(3,5)),((3,5),(3,7)),((3,6),(3,8)),$$
$$((7,6),(7,8)),((5,6),(5,8)),((1,6),(1,8)),((1,3),(1,1));$$
$$((4,4),(4,2)),((4,8),(4,6)),((4,6),(4,8)),((4,5),(4,7)),$$
$$((8,5),(8,7)),((6,5),(6,7)),((2,5),(2,7)),((2,4),(2,2));$$
$$((5,5),(5,7)),((5,1),(5,3)),((5,3),(5,1)),((5,4),(5,2)),$$
$$((1,4),(1,2)),((3,4),(3,2)),((7,4),(7,2)),((7,5),(7,7));$$
$$((6,6),(6,8)),((6,2),(6,4)),((6,4),(6,2)),((6,3),(6,1)),$$
$$((2,3),(2,1)),((4,3),(4,1)),((8,3),(8,1)),((8,6),(8,8));$$
$$((7,7),(7,5)),((7,3),(7,1)),((7,1),(7,3)),((7,2),(7,4)),$$
$$((3,2),(3,4)),((1,2),(1,4)),((5,2),(5,4)),((5,7),(5,5));$$
$$((8,8),(8,6)),((8,4),(8,2)),((8,2),(8,4)),((8,1),(8,3)),$$
$$((4,1),(4,3)),((2,1),(2,3)),((6,1),(6,3)),((6,8),(6,6))\}.$$

$$\boldsymbol{R}_{(8,7)}^{(8,8)} = \{((1,1),(1,2)),((1,5),(1,6)),((1,7),(1,8)),((1,8),(1,7)),$$
$$((5,8),(5,7)),((7,8),(7,7)),((3,8),(3,7)),((3,1),(3,2));$$
$$((2,2),(2,1)),((2,6),(2,5)),((2,8),(2,7)),((2,7),(2,8)),$$
$$((6,7),(6,8)),((8,7),(8,8)),((4,7),(4,8)),((4,2),(4,1));$$
$$((3,3),(3,4)),((3,7),(3,8)),((3,5),(3,6)),((3,6),(3,5)),$$
$$((7,6),(7,5)),((5,6),(5,5)),((1,6),(1,5)),((1,3),(1,4));$$
$$((4,4),(4,3)),((4,8),(4,7)),((4,6),(4,5)),((4,5),(4,6)),$$
$$((8,5),(8,6)),((6,5),(6,6)),((2,5),(2,6)),((2,4),(2,3));$$

$$\big((5,5),(5,6)\big),\big((5,1),(5,2)\big),\big((5,3),(5,4)\big),\big((5,4),(5,3)\big),$$
$$\big((1,4),(1,3)\big),\big((3,4),(3,3)\big),\big((7,4),(7,3)\big),\big((7,5),(7,6)\big);$$
$$\big((6,6),(6,5)\big),\big((6,2),(6,1)\big),\big((6,4),(6,3)\big),\big((6,3),(6,4)\big),$$
$$\big((2,3),(2,4)\big),\big((4,3),(4,4)\big),\big((8,3),(8,4)\big),\big((8,6),(8,5)\big);$$
$$\big((7,7),(7,8)\big),\big((7,3),(7,4)\big),\big((7,1),(7,2)\big),\big((7,2),(7,1)\big),$$
$$\big((3,2),(3,1)\big),\big((1,2),(1,1)\big),\big((5,2),(5,1)\big),\big((5,7),(5,8)\big);$$
$$\big((8,8),(8,7)\big),\big((8,4),(8,3)\big),\big((8,2),(8,1)\big),\big((8,1),(8,2)\big),$$
$$\big((4,1),(4,2)\big),\big((2,1),(2,2)\big),\big((6,1),(6,2)\big),\big((6,8),(6,7)\big)\big\}.$$

$$\boldsymbol{R}_{(4,8)}^{(8,8)}=\big\{\big((1,1),(5,1)\big),\big((1,5),(5,5)\big),\big((1,7),(5,7)\big),\big((1,8),(5,8)\big),$$
$$\big((5,8),(1,8)\big),\big((7,8),(3,8)\big),\big((3,8),(7,8)\big),\big((3,1),(7,1)\big);$$
$$\big((2,2),(6,2)\big),\big((2,6),(6,6)\big),\big((2,8),(6,8)\big),\big((2,7),(6,7)\big),$$
$$\big((6,7),(2,7)\big),\big((8,7),(4,7)\big),\big((4,7),(8,7)\big),\big((4,2),(8,2)\big);$$
$$\big((3,3),(7,3)\big),\big((3,7),(7,7)\big),\big((3,5),(7,5)\big),\big((3,6),(7,6)\big),$$
$$\big((7,6),(6,6)\big),\big((5,6),(4,6)\big),\big((1,6),(5,6)\big),\big((1,3),(5,3)\big);$$
$$\big((4,4),(8,4)\big),\big((4,8),(8,8)\big),\big((4,6),(8,6)\big),\big((4,5),(8,5)\big),$$
$$\big((8,5),(4,5)\big),\big((6,5),(2,5)\big),\big((2,5),(6,5)\big),\big((2,4),(6,4)\big);$$
$$\big((5,5),(1,5)\big),\big((5,1),(1,1)\big),\big((5,3),(1,3)\big),\big((5,4),(1,4)\big),$$
$$\big((1,4),(5,4)\big),\big((3,4),(7,4)\big),\big((7,4),(3,4)\big),\big((7,5),(3,5)\big);$$
$$\big((6,6),(2,6)\big),\big((6,2),(2,2)\big),\big((6,4),(2,4)\big),\big((6,3),(2,3)\big),$$
$$\big((2,3),(6,3)\big),\big((4,3),(8,3)\big),\big((8,3),(4,3)\big),\big((8,6),(4,6)\big);$$
$$\big((7,7),(3,7)\big),\big((7,3),(3,3)\big),\big((7,1),(3,1)\big),\big((7,2),(3,2)\big),$$
$$\big((3,2),(7,2)\big),\big((1,2),(5,2)\big),\big((5,2),(1,2)\big),\big((5,7),1(5,7)\big);$$
$$\big((8,8),(4,8)\big),\big((8,4),(4,4)\big),\big((8,2),(4,2)\big),\big((8,1),(4,1)\big),$$
$$\big((4,1),(8,1)\big),\big((2,1),(6,1)\big),\big((6,1),(2,1)\big),\big((2,8),(2,8)\big)\big\}.$$

$$\boldsymbol{R}_{(8,1)}^{(8,8)}=\big\{\big((1,1),(1,8)\big),\big((1,5),(1,4)\big),\big((1,7),(1,2)\big),\big((1,8),(1,1)\big),$$
$$\big((5,8),(5,1)\big),\big((7,8),(7,1)\big),\big((3,8),(3,1)\big),\big((3,1),(3,8)\big);$$
$$\big((2,2),(2,7)\big),\big((2,6),(2,3)\big),\big((2,8),(2,1)\big),\big((2,7),(2,2)\big),$$
$$\big((6,7),(6,2)\big),\big((8,7),(8,2)\big),\big((4,7),(4,2)\big),\big((4,2),(4,7)\big);$$
$$\big((3,3),(3,6)\big),\big((3,7),(3,2)\big),\big((3,5),(3,4)\big),\big((3,6),(3,3)\big),$$
$$\big((7,6),(7,3)\big),\big((5,6),(5,3)\big),\big((1,6),(1,3)\big),\big((1,3),(1,6)\big);$$
$$\big((4,4),(4,5)\big),\big((4,8),(4,1)\big),\big((4,6),(4,3)\big),\big((4,5),(4,4)\big),$$
$$\big((8,5),(8,4)\big),\big((6,5),(6,4)\big),\big((2,5),(2,4)\big),\big((2,4),(2,5)\big);$$
$$\big((5,5),(5,4)\big),\big((5,1),(5,8)\big),\big((5,3),(5,6)\big),\big((5,4),(5,5)\big),$$
$$\big((1,4),(1,5)\big),\big((3,4),(3,5)\big),\big((7,4),(7,5)\big),\big((7,5),(7,4)\big);$$
$$\big((6,6),(6,3)\big),\big((6,2),(6,7)\big),\big((6,4),(6,5)\big),\big((6,3),(6,6)\big),$$
$$\big((2,3),(2,6)\big),\big((4,3),(4,6)\big),\big((8,3),(8,6)\big),\big((8,6),(8,3)\big);$$

$$((7,7),(7,2)),((7,3),(7,6)),((7,1),(7,8)),((7,2),(7,7)),$$
$$((3,2),(3,7)),((1,2),(1,7)),((5,2),(5,7)),((5,7),(5,2));$$
$$((8,8),(8,1)),((8,4),(8,8)),((8,2),(8,7)),((8,1),(8,8)),$$
$$((4,1),(4,8)),((2,1),(2,8)),((6,1),(6,8)),((6,8),(6,1))\}.$$

$$\boldsymbol{R}_{(6,8)}^{(8,8)} = \{((1,1),(3,1)),((1,5),(3,5)),((1,7),(3,7)),((1,8),(3,8)),$$
$$((5,8),(7,8)),((7,8),(5,8)),((3,8),(1,8)),((3,1),(1,1));$$
$$((2,2),(4,2)),((2,6),(4,6)),((2,8),(4,8)),((2,7),(4,7)),$$
$$((6,7),(6,7)),((8,7),(6,7)),((4,7),(2,7)),((4,2),(2,2));$$
$$((3,3),(1,3)),((3,7),(1,7)),((3,5),(1,5)),((3,6),(1,6)),$$
$$((7,6),(5,6)),((5,6),(7,6)),((1,6),(3,6)),((1,3),(3,3));$$
$$((4,4),(2,4)),((4,8),(2,8)),((4,6),(2,6)),((4,5),(2,5)),$$
$$((8,5),(6,5)),((6,5),(8,5)),((2,5),(4,5)),((2,4),(4,4));$$
$$((5,5),(7,5)),((5,1),(7,1)),((5,3),(7,3)),((5,4),(7,4)),$$
$$((1,4),(3,4)),((3,4),(1,4)),((7,4),(5,4)),((7,5),(5,5));$$
$$((6,6),(8,6)),((6,2),(8,2)),((6,4),(8,4)),((6,3),(8,3)),$$
$$((2,3),(4,3)),((4,3),(2,3)),((8,3),(6,3)),((8,6),(6,6));$$
$$((7,7),(5,7)),((7,3),(5,3)),((7,1),(5,1)),((7,2),(5,2)),$$
$$((3,2),(1,2)),((1,2),(3,2)),((5,2),(7,2)),((5,7),(7,7));$$
$$((8,8),(6,8)),((8,4),(6,4)),((8,2),(6,2)),((8,1),(6,1)),$$
$$((4,1),(2,1)),((2,1),(4,1)),((6,1),(8,1)),((6,8),(8,8))\}.$$

$$\vdots$$

$$\boldsymbol{R}_{(8,1)}^{(8,8)} = \{((1,1),(8,8)),((1,5),(8,4)),((1,7),(8,2)),((1,8),(8,1)),$$
$$((5,8),(4,1)),((7,8),(2,1)),((3,8),(6,1)),((3,1),(6,8));$$
$$((2,2),(7,7)),((2,6),(7,3)),((2,8),(7,1)),((2,7),(7,2)),$$
$$((6,7),(3,2)),((8,7),(1,2)),((4,7),(5,2)),((4,2),(5,7));$$
$$((3,3),(6,6)),((3,7),(6,2)),((3,5),(6,5)),((3,6),(6,3)),$$
$$((7,6),(2,3)),((5,6),(4,3)),((1,6),(8,3)),((1,3),(8,6));$$
$$((4,4),(4,5)),((4,8),(5,1)),((4,6),(5,3)),((4,5),(5,4)),$$
$$((8,5),(1,4)),((6,5),(3,4)),((2,5),(7,4)),((2,4),(7,5));$$
$$((5,5),(4,4)),((5,1),(4,8)),((5,3),(4,6)),((5,4),(4,5)),$$
$$((1,4),(8,5)),((3,4),(6,5)),((7,4),(2,5)),((7,5),(2,4));$$
$$((6,6),(3,3)),((6,2),(3,7)),((6,4),(3,5)),((6,3),(3,6)),$$
$$((2,3),(7,6)),((4,3),(5,6)),((8,3),(1,6)),((8,6),(1,3));$$
$$((7,7),(2,2)),((7,3),(2,6)),((7,1),(2,8)),((7,2),(2,7)),$$
$$((3,2),(6,7)),((1,2),(8,7)),((5,2),(4,7)),((5,7),(4,2));$$
$$((8,8),(1,1)),((8,4),(1,5)),((8,2),(1,7)),((8,1),(1,8)),$$
$$((4,1),(5,8)),((2,1),(7,8)),((6,1),(3,8)),((6,8),(3,1))\}.$$

Use of these relations, to calculate the cost of all the specified relationship, can be found: the liking relationship with low costs, and the symmetrical relationship with high costs. It completes the proof. #

Proof of Property 3.3. By Properties **3.1** and **3.2**, the relation cost of (8, 4), (8, 6), (8, 7), (8, 1), (4, 8), (6, 8) is the energy of 1, 2, 4, 7, 8, 16, it is low, respectively.

The relationships between the **primordial spirit**

$$K_X^+(1,1), K_X^-(2,2), X_S^-(3,3), X^+(4,4),$$
$$X^-(5,5), S_X^+(6,6), X_K^+(7,7), X_K^-(8,8),$$

and the **first generation**

$$K_X^+(1,5), K_X^-(2,6), X_S^-(3,7), X^+(4,8),$$
$$X^-(5,1), S_X^+(6,2), X_K^+(7,3), X_K^-(8,4),$$

respectively belong the relation $R_{(8,4)}^{(8,8)}$. The relation element (8, 4) is a low cost as the energy of 1 since it is just considering the system X_S^j change. Each of the relationships is called the liking relation.

Similarly, the each of the relations between the **first generation** and the **second generation**, or between the **second generation** and the **third generation**, or between the **third generation** and the **fourth generation**, or between the **fourth generation** and the **fifth generation**, or between the **fifth generation** and the **wandering souls**, or between the **wandering souls** and the **return of soul**, or between the **return of soul** and the **primordial spirit** belongs to $R_{(8,6)}^{(8,8)}$, $R_{(8,7)}^{(8,8)}$, $R_{(4,8)}^{(8,8)}$, $R_{(6,8)}^{(8,8)}$, $R_{(4,8)}^{(8,8)}$, $R_{(8,1)}^{(8,8)}$, $R_{(6,8)}^{(8,8)}$ respectively. Each of the relation elements (8, 6), (8, 7), (4, 8), (6, 8), (4, 8), (8, 1), (6, 8), is a low cost as the energies of 2, 4, 8, 16, 8, 7, 16, since it is just considering each change of the systems respectively

$$S_X, K_X, X_K, X_S^x, X_K, \{K_X, S_X, X_S^j\}, X_S^x.$$

Each of the relations is called the **liking relation**.

Because only the change of these relations can be considered, so each relationship of palace elements is called a similar or **liking relationship**.

By Definition **3.2** and Definition **3.3** in Zhang [23], there are

$$\text{Qian}(1,1), \text{Hou}(1,5), \text{Dun}(1,7), \text{Fou}(1,8), \text{Guan}(5,8), \text{Bo}(7,8),$$
$$\text{Jin}(3,8), \text{You}(3,1);$$

$$\text{Qian}(1,1) = (\text{Qian Ren Xu, Qian Ren Shen, Qian Ren Wu,}$$
$$\text{Qian Jia Chen, Qian Jia Yin, Qian Jia Zi})$$
$$= (\{\text{Ren}\} \cup \{\text{Xin, Wu, Ding}\}, \{\text{Ren}\} \cup \{\text{Geng, Ren, Wu}\}, \{\text{Ren}\} \cup \{\text{Ding, Ji}\},$$
$$\{\text{Jia}\} \cup \{\text{Yi, Gui, Wu}\}, \{\text{Jia}\} \cup \{\text{Jia, Bing, Wu}\}, \{\text{Jia}\} \cup \{\text{Gui}\})$$
$$= \left(3\frac{1}{3}\right)\{\text{Jia}\} + \left(\frac{1}{3}\right)\{\text{Yi}\} + \left(\frac{1}{3}\right)\{\text{Bing}\} + \left(\frac{5}{6}\right)\{\text{Ding}\} + \left(1\frac{1}{3}\right)\{\text{Wu}\} + \left(\frac{1}{2}\right)\{\text{Ji}\}$$
$$+ \left(\frac{1}{3}\right)\{\text{Geng}\} + \left(\frac{1}{3}\right)\{\text{Xin}\} + \left(3\frac{1}{3}\right)\{\text{Ren}\} + \left(1\frac{1}{3}\right)\{\text{Gui}\}.$$

$$\text{Hou}(1,5) = (\text{Qian Ren Xu, Qian Ren Shen, Qian Ren Wu,}$$
$$\text{Xun Xin You, Xun Xin Hai, Xun Xin Chou})$$
$$= (\{\text{Ren}\} \cup \{\text{Xin, Wu, Ding}\}, \{\text{Ren}\} \cup \{\text{Geng, Ren, Wu}\}, \{\text{Ren}\} \cup \{\text{Ding, Ji}\},$$
$$\{\text{Xin}\} \cup \{\text{Xin}\}, \{\text{Xin}\} \cup \{\text{Ren, Jia}\}, \{\text{Xin}\} \cup \{\text{Ji, Gui, Xin}\})$$
$$= \left(\frac{1}{2}\right)\{\text{Jia}\} + (0)\{\text{Yi}\} + (0)\{\text{Bing}\} + \left(\frac{5}{6}\right)\{\text{Ding}\} + \left(\frac{2}{3}\right)\{\text{Wu}\} + \left(\frac{5}{6}\right)\{\text{Ji}\}$$
$$+ \left(\frac{1}{3}\right)\{\text{Geng}\} + \left(4\frac{2}{3}\right)\{\text{Xin}\} + \left(3\frac{5}{6}\right)\{\text{Ren}\} + \left(\frac{1}{3}\right)\{\text{Gui}\}.$$

$$\text{Dun}(1,7) = (\text{Qian Ren Xu, Qian Ren Shen, Qian Ren Wu,}$$
$$\text{Gen Bing Wu, Gen Bing Chen, Gen Bing Yin})$$
$$= (\{\text{Ren}\} \cup \{\text{Xin, Wu, Ding}\}, \{\text{Ren}\} \cup \{\text{Geng, Ren, Wu}\}, \{\text{Ren}\} \cup \{\text{Ding, Ji}\},$$
$$\{\text{Bing}\} \cup \{\text{Ding, Ji}\}, \{\text{Bing}\} \cup \{\text{Yi, Gui, Wu}\}, \{\text{Bing}\} \cup \{\text{Jia, Bing, Wu}\})$$
$$= \left(\frac{1}{3}\right)\{\text{Jia}\} + \left(\frac{1}{3}\right)\{\text{Yi}\} + \left(3\frac{1}{3}\right)\{\text{Bing}\} + \left(1\frac{1}{3}\right)\{\text{Ding}\} + \left(1\frac{1}{3}\right)\{\text{Wu}\} + (1)\{\text{Ji}\}$$
$$+ \left(\frac{1}{3}\right)\{\text{Geng}\} + \left(\frac{1}{3}\right)\{\text{Xin}\} + \left(3\frac{1}{3}\right)\{\text{Ren}\} + \left(\frac{1}{3}\right)\{\text{Gui}\}.$$

$$\text{Fou}(1,8) = (\text{Qian Ren Xu, Qian Ren Shen, Qian Ren Wu,}$$
$$\text{Kun Yi Mao, Kun Yi Si, Kun Yi Wei})$$
$$= (\{\text{Ren}\} \cup \{\text{Xin, Wu, Ding}\}, \{\text{Ren}\} \cup \{\text{Geng, Ren, Wu}\}, \{\text{Ren}\} \cup \{\text{Ding, Ji}\},$$
$$\{\text{Yi}\} \cup \{\text{Yi}\}, \{\text{Yi}\} \cup \{\text{Bing, Geng, Wu}\}, \{\text{Yi}\} \cup \{\text{Ding, Ji, Yi}\})$$
$$= (0)\{\text{Jia}\} + \left(4\frac{1}{3}\right)\{\text{Yi}\} + \left(\frac{1}{3}\right)\{\text{Bing}\} + \left(1\frac{1}{6}\right)\{\text{Ding}\} + (1)\{\text{Wu}\} + \left(\frac{5}{6}\right)\{\text{Ji}\}$$
$$+ \left(\frac{2}{3}\right)\{\text{Geng}\} + \left(\frac{1}{3}\right)\{\text{Xin}\} + \left(3\frac{1}{3}\right)\{\text{Ren}\} + (0)\{\text{Gui}\}.$$

$$\text{Guan}(5,8) = (\text{Xun Xin Mao, Xun Xin Si, Xun Xin Wei,}$$
$$\text{Kun Yi Mao, Kun Yi Si, Kun Yi Wei})$$
$$= (\{\text{Xin}\} \cup \{\text{Yi}\}, \{\text{Xin}\} \cup \{\text{Bing, Geng, Wu}\}, \{\text{Xin}\} \cup \{\text{Ding, Ji, Yi}\},$$
$$\{\text{Yi}\} \cup \{\text{Yi}\}, \{\text{Yi}\} \cup \{\text{Bing, Geng, Wu}\}, \{\text{Yi}\} \cup \{\text{Ding, Ji, Yi}\})$$
$$= (0)\{\text{Jia}\} + \left(5\frac{2}{3}\right)\{\text{Yi}\} + \left(\frac{2}{3}\right)\{\text{Bing}\} + \left(\frac{2}{3}\right)\{\text{Ding}\} + \left(\frac{2}{3}\right)\{\text{Wu}\} + \left(\frac{2}{3}\right)\{\text{Ji}\}$$
$$+ \left(\frac{2}{3}\right)\{\text{Geng}\} + (3)\{\text{Xin}\} + (0)\{\text{Ren}\} + (0)\{\text{Gui}\}.$$

$$\text{Bo}(7,8) = (\text{Gen Bing Zi, Gen Bing Xu, Gen Bing Shen,}$$
$$\text{Kun Yi Mao, Kun Yi Si, Kun Yi Wei})$$
$$= (\{\text{Bing}\} \cup \{\text{Gui}\}, \{\text{Bing}\} \cup \{\text{Xin, Ding, Wu}\}, \{\text{Bing}\} \cup \{\text{Geng, Ren, Wu}\},$$
$$\{\text{Yi}\} \cup \{\text{Yi}\}, \{\text{Yi}\} \cup \{\text{Bing, Geng, Wu}\}, \{\text{Yi}\} \cup \{\text{Ding, Ji, Yi}\})$$
$$= (0)\{\text{Jia}\} + \left(4\frac{1}{3}\right)\{\text{Yi}\} + \left(3\frac{1}{3}\right)\{\text{Bing}\} + \left(\frac{2}{3}\right)\{\text{Ding}\} + (1)\{\text{Wu}\} + \left(\frac{1}{3}\right)\{\text{Ji}\}$$
$$+ \left(\frac{2}{3}\right)\{\text{Geng}\} + \left(\frac{1}{3}\right)\{\text{Xin}\} + \left(\frac{1}{3}\right)\{\text{Ren}\} + (1)\{\text{Gui}\}.$$

$$\text{Jin}(3,8) = \big(\text{Li Ji Wei, Li Ji You, Li Ji Hai, Kun Yi Mao,}$$
$$\text{Kun Yi Si, Kun Yi Wei}\big)$$
$$= \big(\{\text{Ji}\} \cup \{\text{Yi, Ding, Ji}\}, \{\text{Ji}\} \cup \{\text{Xin}\}, \{\text{Ji}\} \cup \{\text{Jia, Ren}\},$$
$$\{\text{Yi}\} \cup \{\text{Yi}\}, \{\text{Yi}\} \cup \{\text{Bing, Geng, Wu}\}, \{\text{Yi}\} \cup \{\text{Ding, Ji, Yi}\}\big)$$
$$= \left(\frac{1}{2}\right)\{\text{Jia}\} + \left(4\frac{2}{3}\right)\{\text{Yi}\} + \left(\frac{1}{3}\right)\{\text{Bing}\} + \left(\frac{2}{3}\right)\{\text{Ding}\} + \left(\frac{1}{3}\right)\{\text{Wu}\} + \left(3\frac{2}{3}\right)\{\text{Ji}\}$$
$$+ \left(\frac{1}{3}\right)\{\text{Geng}\} + (1)\{\text{Xin}\} + \left(\frac{1}{2}\right)\{\text{Ren}\} + (0)\{\text{Gui}\}.$$

$$\text{You}(3,1) = \big(\text{Li Ji Wei, Li Ji You, Li Ji Hai, Qian Jia Chen,}$$
$$\text{Qian Jia Yin, Qian Jia Zi}\big)$$
$$= \big(\{\text{Ji}\} \cup \{\text{Yi, Ding, Ji}\}, \{\text{Ji}\} \cup \{\text{Xin}\}, \{\text{Ji}\} \cup \{\text{Jia, Ren}\},$$
$$\{\text{Jia}\} \cup \{\text{Yi, Gui, Wu}\}, \{\text{Jia}\} \cup \{\text{Jia, Bing, Wu}\}, \{\text{Jia}\} \cup \{\text{Gui}\}\big)$$
$$= \left(3\frac{5}{6}\right)\{\text{Jia}\} + \left(\frac{2}{3}\right)\{\text{Yi}\} + \left(\frac{1}{3}\right)\{\text{Bing}\} + \left(\frac{1}{3}\right)\{\text{Ding}\} + \left(\frac{2}{3}\right)\{\text{Wu}\} + \left(3\frac{1}{3}\right)\{\text{Ji}\}$$
$$+ (0)\{\text{Geng}\} + (1)\{\text{Xin}\} + \left(\frac{1}{2}\right)\{\text{Ren}\} + \left(1\frac{1}{3}\right)\{\text{Gui}\}.$$

The comprehensive all of the above conclusion, the sum of the ten heavenly stems for the Qian palace is

$$\Sigma = \left(8\frac{1}{2}\right)\{\text{Jia}\} + \left(20\frac{1}{3}\right)\{\text{Yi}\} + \left(8\frac{2}{3}\right)\{\text{Bing}\} + \left(6\frac{1}{2}\right)\{\text{Ding}\} + (7)\{\text{Wu}\}$$
$$+ \left(11\frac{5}{6}\right)\{\text{Ji}\} + \left(3\frac{1}{3}\right)\{\text{Geng}\} + (11)\{\text{Xin}\} + \left(15\frac{5}{6}\right)\{\text{Ren}\} + \left(4\frac{1}{3}\right)\{\text{Gui}\}.$$

Similarly, the sums of the ten heavenly stems for all palaces in Table 3 can be obtained. It completes the proof. #

Proof of Theorem 4.2. By (9) of Property 3.1., the minimum value of the energy of all eight palaces total average is 12, and the maximum value of the energy of all eight palaces total standard deviation is 11.20, so the average value can judge as abnormal large if it is larger then 12.

Watch Table 3, for the Qian-Palace K_X^+, the energy of Yi (0, 0) (20 1/3 or 20.33333) as Yin wood (X) is abnormal large. Because K_X^+ kills X, so the root-cause of the falling-ill subsystem may be wood (X) if the Hexagram-image belongs to the Qian palace K_X^+ continuously.

Similarly, watch Table 3, for the Dui-Palace K_X^-, the energies of Ding (0, 1) (23 2/3 or 23.66667) and Bing (1, 1) (15 1/3 or 15.33333) as fire (X_S) are abnormal normal, and the main part is Ding (0,1) (23 2/3 or 23.66667) as Yinfire (X_S) or xiang-fire (X_S^x). Because X_S^x kills K_X^-, so the root-cause of the falling-ill subsystem may be xiang-fire (X_S^x) if the Hexagram-image belongs to the Dui palace K_X^- continuously.

Watch Table 3, for the Li-Palace X_S^-, the energy of Xin (0, 3) (30 1/3 or 30.33333) as Yin metal (K_X) is abnormal large, Because X_S^- kills K_X, so the root-cause of the falling-ill subsystem may be metal (K_X) if the Hexagram-image belongs to the Li palace X_S^- continuously.

Watch Table 3, for the Zhen-Palace X^+, the energies of Xin (0, 3) (26 2/3 or 26.66667) and Geng (1,3) (20 1/3or 20.33333) as metal (K_X) are abnormal large, and the main part is Xin (0,3) (26 2/3 or 26.66667) as Yin metal (K_X). Because K_X kills X^+, so the root-cause of the falling-ill subsystem may be the subsystem metal (K_X) if the Hexagram-image belongs to the Zhen palace X^+ continuously.

Watch Table 3, for the Xun-Palace X^-, the energies of Xin (0, 3) (23) and Geng (1, 3) (14 2/3 or 14.66667) as metal (K_X) are abnormal large, and the main part is Xin (0, 3) (23) as Yin metal (K_X). Because K_X kills X^-, so the root-cause of the falling-ill subsystem may be the subsystem metal (K_X) if the Hexagram-image belongs to the Xun palace X^- continuously.

Watch Table 3, for the Kan-Palace S_X^+, the energies of Wu (1, 2) (17 2/3 or 17.66667) and Ji (0, 2) (15.81/3 or 15.833333) as earth (X_K) are abnormal large, and the main part is Wu (1, 2) (17 2/3 or 17.66667) as Yang earth (X_K). Because X_K kills S_X^+, so the root-cause of the falling-ill subsystem may be the subsystem earth (X_K) if the Hexagram-image belongs to the Kan palace S_X^+ continuously.

Watch Table 3, for the Gen-Palace X_K^+, the energies of Bing (1, 1) (20) and Ding (0, 1) (16.1 2/3 or 16.166667) as fire (X_S) are abnormal large, and the main part is Bing (1, 1) (20) as Yang fire or jun-fire (X_S^j). Because X_S^j loves X_K^+, so the root-cause of the falling-ill subsystem may be the subsystem jun-fire (X_S^j) if the Hexagram-image belongs to the Gen palace X_K^+ continuously.

Watch Table 3 again, for the Kun-Palace X_K^-, the energy of Gui (0, 4) (22 1/3 or 22.3333) as Yin water (S_X) is abnormal large. Because X_K^- kills S_X, so the root-cause of the falling-ill subsystem may be the subsystem water (S_X) if the Hexagram-image belongs to the Kun palace X_K^- continuously. It completes the proof. #