COMMITTEE VI
Eastern Approaches to the
Unity of Spirit and Matter:
Qi and Science

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COMMENT ON TAKEUCHI: ANCIENT AND MODERN CHINESE QI THEORIES AND THEIR ENLIGHTENMENTS

by

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DISCUSSION PAPER

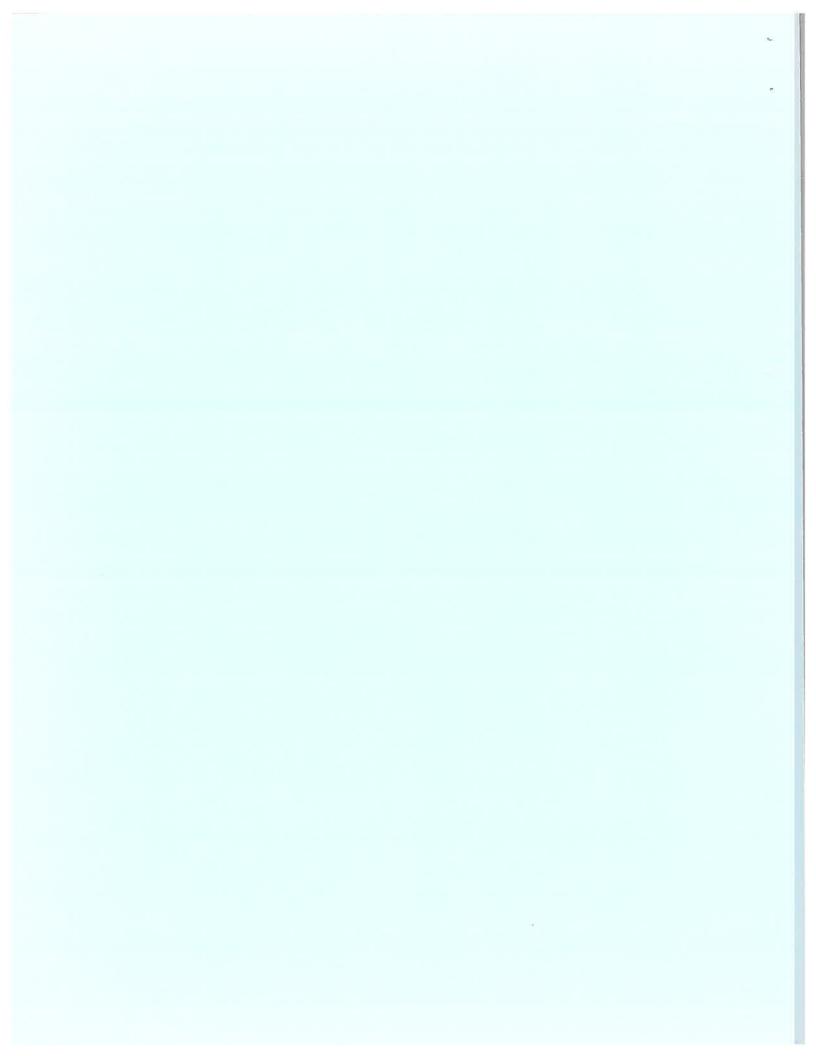
on

Seiji Takeuchi's

THE LI-QI THEORY IN QI THOUGHT AND SOME UNRESOLVED ISSUES

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Abstract

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In recent decades, such disciplines of modern science and technology, as computer science, information science, life science, space technology and energy source engineering have been advancing by leaps and bounds. It is the present epoch of science that impels people to explore the root of all things in the universe and the cause and laws of their coming into being, transforming and passing away. Yet the ago-old Chinese Ci theory, one of the quintessence of brilliant ancient Chinese civilization has set upon such an exploration ever since its inception.

From ancient times to modern days, origin of the cosmos and all things has always been an important and fundamental question that many scholars and scientists have paid special attention to and theorized about. The Chinese Qi theory is the sequel of such ancient searches while the cosmic big bang hypothesis is its modern counterpart. Through the ages, however opinions vary, on unanimous conclusion could be drawn. In this paper, we shall make some crude explorations on ancient and modern Chinese Qi theories.

There are a lot of discussion on the concept of Qi. What is Qi? What is the relationship between Qi and Ii as well as Qi and things in the universe? Due to historical limitations, especially the limitation of science and culture, many arguments came from accumulated experience or Buddhism or Taoism "Self-Meditation", hence lacking objective verification.

In order to delve further into some of the problems of the Qi theory, this paper consists of three parts. Part one, an outline of the ancient Chinese Qi theory, part two, a preliminary exploration of modern Chinese Qi theory and the last part, some important enlightenments drawn from ancient and modern Chinese Qi theories.

Ancient scholars of the Hundred schools introduced the concept of Qi to expound the origin of all beings in the cosmos. There were pointed out "Before separation of the primeval influences, it was a single choas, and Qi was supposed to give birth to all things in the universe. Thus we see, from the ancient point of view, Qi, embracing Yin and Yang (the negative and positive) is the primeval influence that formed all things in the universe, namely, the origin and bulk of the universe depended upon the integrated interacting Yin and Yang.

To facilitate a comparison of the ancient and modern cosmological theories let's review briefly the big-bang theory (leave out).

To sum up, the Qi introduced by ancients is similar to the primeval material mentioned above, and the ancients believed that the Qi was the source of all things in the universe.

It is a basic aim for the ancient Qi theory to expound the cause and patterns of generation, transformation and passing away of all things in the universe. To discuss this important and basic object, ancient scholars created a set of logical constructions which greatly fascinated us. One of the best sets among them is

Yi Jing (Classic of Change) in which eight basic trigrams (Ba Gua) and sixty-four symbolic hexagrams were raised.

To sum up, the ancient Qi theory is a comprehensive theory that elucidates origin of the universe and the ever changing nature,

society and human life. Its cream will always be a precious pearl of dazzling radiance in the Chinese history of civilization. Its prfound implication are still to be disclosed even today. Some of them could be regarded as gems of world culture and unfathomable enigma that demand further research before they could be fully expounded.

Accompainted by the rapid development of science and technology, research activities have been extending to the depths of the universe and human life, i.e. to the ultra macroscopic world and the submicroscopic world, to explore the mysteries of the origin of the universe and human life. In this new situation, it is natural to further explore new contents of the Qi theory on the basic of the ancient Qi theory.

There are nowadays different explanations about Qi, some regarded the Qi as an energy flux in the human body, and others, as a kind of matter presented when a human body is in Qigong state, and matter is accompanied by force action and manifestation of energy and so on.

After reviewing the results of a great deal of research work, the writer believes Qi is a composite of matter, energy and information.

Reviewing the data that the writer had collected, the writer proposed at the ICUS held in Japan in April 1986, that for the research of Qi, the idea of the Qi field and Qi energy be defined. The writer believed when Qi information is transmitted there must be a medium, which is the so-called Qi field. In analogy to the approach used in studies of electricity, the author now propose

the use of such concepts as Qitron (including Yin Qitrons and Yang Qitrons). Qi channels, Qi resistance etc.

Obviously new approaches must be used in the studies on Qi probably the best testing instruments are human bodies that show strong Qi function.

The Qi theory like other scientific theories arouses scientists' serious attention. The further study of the Qi theory will certainly bring about a new scientific revolution. The history of science will enter a new stage of development at which matter, energy, force, optics, electromagnetic and so on will be understood anew.

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I deem it a great honour to have the opportunity of perusing Mr. Seiji Takeuchi's dissertation "Problems Left Over by the Li-Qi Theory in the Qi Ideology".

Mr. Seiji Takeuchi has made a profound study of the ancient Chinese Qi ideology, especially the Li-Qi theory with Zhu Zi as its representative. The problem discussed in the dissertation that "Li is prior to Qi" as advocated by Zhu Zi is one of the points at issue in the study of the Qi ideology that has been carried on in China for more than two thousand years. No conclusion has ever been reached as to the dispute about which is prior to which of the Li and Qi ideologies and it is very probable that the dispute will go on being unsettled.

It is quite recommendable that the author cites as proof the expositions of many ancient masters to expound and prove his points of view. What is of special significance is that the author puts forward the idea that human evil nature can be corrected through self-cultivation. This point of view is dialectical and hence correct and should be regarded as positive. However, in modern times we must have a contemporaneous understanding of the "self-cultivation". In ancient times, a man could cultivate himself behind closed doors, but the idea of "self-cultivation" should be vested with new contents in modern time.

Some of the significant problems talked about in the dissertation of how the universe and all things on earth came into existence and the origin of mankind have been tested and verified by science. Others need still further study. One of the essences of ancient Chinese Qi ideology is harmony and coordination and impartiality. For instance, voidness and solidness, being and not being, matter and spirit, and "yin" and "yang" should be highly united with none of the aspects being laid special emphasis on.

As for the significant problem of the essence of matter and of life, this is one of the topics, to the study of which people devote themselves at present, and the author puts forward some viewpoints that deserve study. It seems, however, that a large amount of arguments should be supplemented, especially evidence in real society.

In a word, that the author puts forward his own viewpoints for people to consult and study is beneficial.

For the settlement of the above problems, scientific and social experiments should be carried on a large scale, and with the reliable results of these experiments, people will be able to test and verify these problems and then, being convinced proceed to be of benefit to mankind.

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Ancient and Modern Chinese Qi Theories and Their Enlightenments

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I. Introduction

In recent decades, such disciplines of modern science and technology, as computer science, information science, bicengineering, life science, space technology and energy source engineering have been advancing by leaps and bounds. It is the present epoch of science that impels people to explore the root of all things in the universe and the cause and laws of their coming into being, transforming and passing away. Yet the age-old Chinese Qi theory, one of the quintessence of brilliant ancient Chinese civilization has set upon such an exploration ever since its inception.

From ancient times to modern days, origin of the cosmos and all things has always been an important and fundamental question that many scholars and scientists have paid special attention to and theorized about. The Chinese Qi theory is the sequel of such ancient searches while the cosmic big bang hypothesis is its modern counterpart. Through the ages, however, opinions vary, no unanimous conclusion could be drawn. In this paper, we shall make some crude explorations on ancient and modern Chinese Qi theories.

There are a lot of discussion on the concept of Qi. What is Qi? What is the relationship between Qi and Ii as well as Qi and all things in the universe? Due to historical limitations, especially the limitation of science and culture, many arguments

came from accumulated experience or Buddhism or Taoism "Self.
Meditation", hence lacking objective verification.

In order to delve further into some of the problems of the Qi theory, this paper consists of three parts. Part one, an outline of the ancient Chinese Qi theory, Part two, a preliminary exploration of modern Chinese Qi theory and the last part, some important enlightenments drawn from ancient and modern Chinese Qi theories.

- II. An Outline of the Ancient Chinese Qi Theory
 - 1. The concept Qi in ancient Chinese Qi theory

Ancient scholars of the Hundred Schools introduced the concept of Qi to expound the origin of all beings in the cosmos. But what is Qi? 《Lun-Heng (Critical Essays). on Heaven》[1] out: "Before separation of the primeval influences, it was a single chaos. " The author pointed out: "There were boundaries for Qi, the light transparent, thin and diffuse portion stretched to form the heaven and the heavy, turbid, condensed and stagnated portion formed the earth" [2] In reference [3], Qi was supposed to give birth to all things in the universe. Thus we see, from the ancient point of view. Qi, embracing Yin and Yang (the negative and positive) is the primeval influence that formed all things in the universe, namely, the origin and bulk of the universe depended upon the integrated interacting Yin and Yang. In reference [4] it was further pointed out "all things came from the interaction of heaven and earth, or the primeval influences Qi in reference [6]. "Qi was the Supreme Vacuity" inferring that universe was an entity of Qi. It was inferred that the Supreme Ultimate and Qi was the same entity with different names [6].

To facilitate a comparison of the ancient and modern cosmological theories let's review briefly the big-bang theory. In 1927, the Belgian priest George Lamaitre made a hypothesis "that the universe originated from "an primeval atom", which had a small volume and very high density. Because of a series of radioactive decay, the primeval atom was in an unstable state, it exploded suddenly, leading to expansion of the universe. Then the materials flying to all directions gradually coalesced to form various elements. Various celestial bodies (galaxies, stars, etc.) were formed when the expansion velocity gradually decelerated. The cosmics ray observed today are remnant radiation of the colossal explosion. According to this hypothesis the cosmos expands and its density cuts down continuously, and either a thin empty cosmos might be formed or the expansion would stop, reverting to contraction as a result of the dominant action of gravitational force when expansion get to a certain degree.

Another model of cosmic expansion was introduced by the Russian born scientist George Gamow and his colleagues in 1940 correlating cosmic expansion to the motion of fundamental particles. They believed that the cosmos came of "a primeval material" which was of super high temperature and high density. When the temperature reduced to about a billion degrees centigrade, it was full of radiation and various particles, such as protons, neutrons, electrons, mesons, hyperons and photons. A colossal expansion took place giving rise to a primeval fireball and the cosmos began to expand. When the temperature continued to drop, matter gradually condensed to form elements, nebulae, galaxies and celestial bodies. As a result of this process evolved the world observed today. The

30k microwave background radiation discovered in 1965 was believed to be remnant information of primeval colossal explosion providing scientific evidences for the cosmic big bang hypothesis.

To sum up, the Qi introduced by ancients is similar to the primeval material mentioned above, and the ancients believed that the Qi (Taiji or Taixu) was the source of all things in the universe.

2. The Logical Construction in Ancient Chinese Qi Theory It is a basic aim for the ancient Qi theory to expound the cause and patterns of generation, transformation and passing away of all things in the universe. To discuss this important and basic object, ancient scholars created a set of logical constructions which greatly fascinated us. One of the best sets among them is « Yi Jing » (Classic of Change) in which eight basic trigrams (Ba Gua) and sixty-four symbolic hexagrams were raised. Generally speaking, its logical construction is: Taiji (the great ultimate) creates the two principles, the two principles create the four quadrants, the four quadrants create the eight basic trigrams and from the eight basic trigrams elvolve the sixtyfour symbolic hexagrams. The two symbols here mean two kinds of Qi, namely Yin Qi (the female or negative Qi) symbolized "____" and Yang Qi (the male or positive Qi) symbolized "_____" respectively . The four quadrants were symbolized "_____", "____", "____", "__ __" respectively. It was believed that the two principles were invisible and the four quadrants were visible but shapeless. The eight basic trigrams were symbolized "-". "==", "==", "==", "==", "==", "==", "==" respectively. They stood for matter which were visible and tangible. In Chinese characters they are 乳, 兑, 离, 裹, 荚, 坎, 艮, 坤, and the eight Chinese characters stand for heaven, gloss, fire, thunder, wind, water, mountain and earth respectively. (See figure 1). They are concrete things and phenomena in nature.

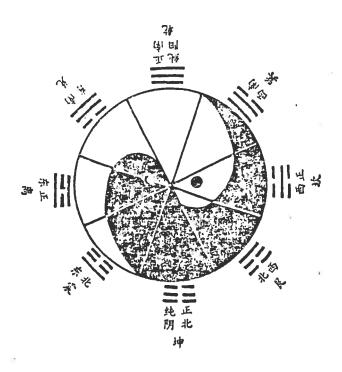


Fig. 1 Eight Basic Trigrams

It can be seen from the Taiji eight basic trigrams that it is a cycle in which both Qis, Yin and Yang are without origin, endless and mutually embracing. From the eight fundamental elements (represented by basic trigrams) of the eight diagrams we also can see that the ancients started with the most fundamental elements of the natural world, matter and phenomena when they tried to explain the origin of the universe. In those days, when the science and culture were at a low level that was the only thing that could be done. Such are the so-called macroscopic matter and phenomenon of today. On the base of the eight

diagram, the sixty-four symbolic hexagrams were evolved as the result of further subdivision and development of the former. In the sixty-four diagrams longitudinal six bit binary symbols were used to represent the sixty-four states (matter, phenomenon, or event) from Heaven to Earth respectively, as shown in figure 2.

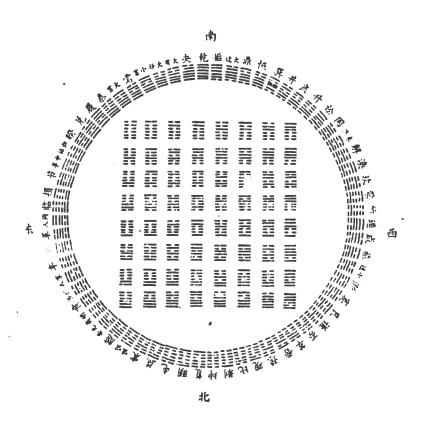


Fig. 2 Sixty-Four Symbolic Hexagrams

The ancients started with this logic conception to infer unknown events. Of course, both knowledge and experience accumulated by people in the long river of history and personal intuition are included here. They successfully summed up much valuable experience and formed a systematic theory, and then extended it, giving each divinatory symbol of the eight diagram several implications, as shown in figure 3.

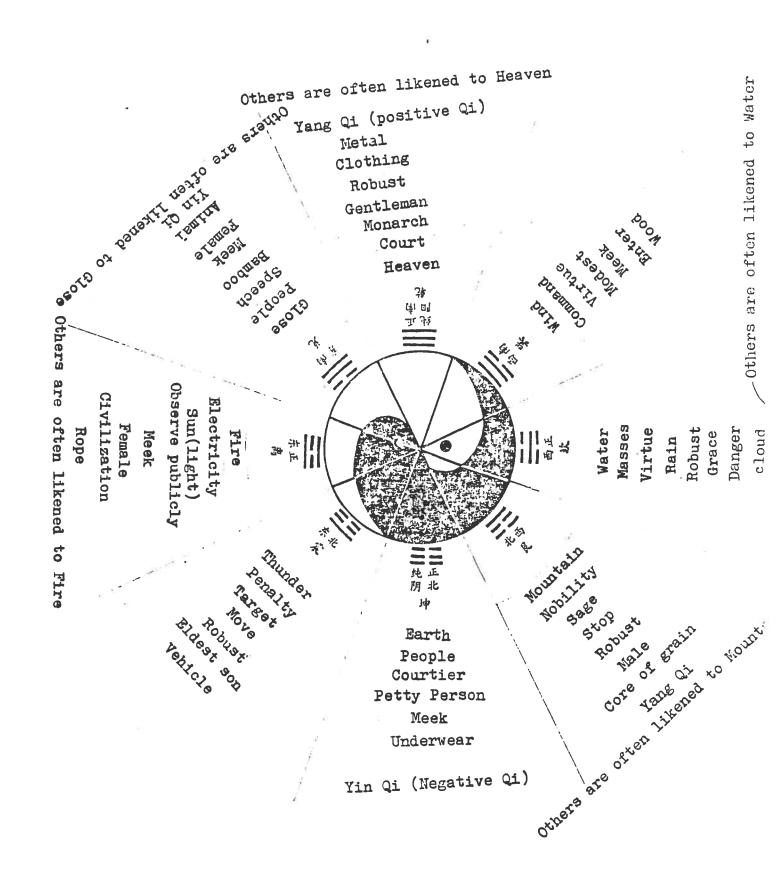
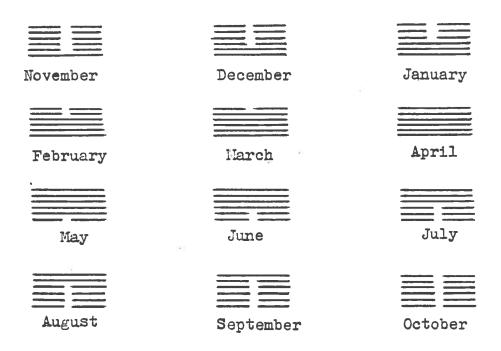


Fig. 3 Extended Eight Basic Trigrams



Relation between Season and Sixty-four Diagram

The ancients used this extended eight diagrams and sixty-four diagrams to divine success or failure and fortunes of a country or a person. Certainly, there is some mysticism in it. However, after in-depth rethinking, you would find the idea extremely remarkable. They always seeked to find out about the conditions and the origins when they attempted to forecast the future events. It is quite dialectical and realistic to give each divinatory symbol of the eight diagrams several (usually 8—9) different implications and to forecast the future by the availability or non-availability of these elements.

To sum up, the ancient Qi theory is a comprehensive theory that elucidates origin of the universe and the ever changing nature, society and human life. Its cream will always be a precious pearl of dazzling radiance in the Chinese history of civilization. Its profound implications are still to be disclosed even today. Some of them could be regarded as gems of world culture and unfathomable enigma that demand further research before they could be fully expounded.

- III. Tentative Discussion on the Modern Chinese Qi Theory
- 1. Implications of the Modern Qi Theory

Accompanied by the rapid development of science and technology, research activities have been extending to the depths of the universe and human life, i.e. to the ultra macroscopic world and the submicroscopic world, to explore the mysteries of the origin of the universe and human life. In this new situation, it is natural to further explore new contents of the Qi theory on the basis of the ancient Qi theory.

Recently, many researchers of social science and natural science from Chinese and other countries have been studying the real implications of Qi. A lot of facts demonstrate that the definition by the ancient scholars, i.e. the Qi is the origin of the universe, is correct. The problem now is how to define the Qi based on modern science. There are nowadays different explanations about Qi. Some regarded the Qi as an energy flux in the human body, and others, as a kind of matter presented when a human body is in Qigong state, and matter is accompanied by force action and manifestation of energy. It is said that the Qi is a biological current in the human

body and has radiation characteristics and so on.

After reviewing the results of a great deal of research work, the writer believes Qi is a composite of matter, energy and information (noting that the terms used here are not exactly in the same sense as they are usually used). This composite is a unity of matter and spirit, the void and the solid, time and space, and the positive and negative principles (i.e. so-called Yin and Yang). In different situations, this same unity will present the property of matter, energy or information etc. Their unification will cause an infinite varieties of fantastic phenomena or effects, among which are the supernormal abilities eximibited by same people.

2. Various Qi Phenomena and Their Tests

Supernormal phenomena presented by the Qi action are innumerable. In order to further discuss the Qi phenomena and effects, quite a few instances are enumerated below.

In modern China, it was not until 1980 when a boy in Sichuan Province was found capable of reading with his ears that i began to arouse people's attention. Since then much has been reported concerning human beings' exceptional functions.

In 1987, it was reported in "Qi Gong and Science" that a certain Li-ping Wang, leader of the eighteenth generation of the Long Meng Branch of Dao Jia Gong, after having cultivated himself for ten years, undergoing all kinds of hardships of Dao Jia ascetic practices, had attained the realm of thoroughly remoulding himself, so much so that he could keep his mind in check and remould his inborn nature. He was able, it was reported, to X ray and cure his patients a many from him. With Qi Gong emitted. He could make the atmospheric temperature drop, cattle panic-stricken, hit people from behind a column, summon wind and rain, and so on and so forth.



Qi Gong master Wang Liping



Qi Gong master Jiang Lizhong

Wai-Qi (external Qi) produced by Qi Gong masters can exert some influence, either slow down or accelerate, on chemical reactions involving free radicals [8], can effect changes in the laser Raman spectra of tap water, physiological saline solution and glucose solution [9], change plasma enkelphalin of blood [10], provide men with secondary remote sensing and command systems [11], enhance feeling exchanges between Qi Gong masters and surrounding plants [12], promote the early sprouting and cold resistance of seeds [13], delay the decline of old age liquid intelligence [14], cure teenagers of myopia [15], regulate hormone secretions in the human body [16], render air luminescent [17], cure hysterical paralysis [18], effect remote control of human behavior [19] and remote transmission of

consciousness and information ⁽²⁰⁾, effect abstinence from food and subsistence on Qi ⁽²¹⁾, effect full recovery from complicated fracture within half an hour ⁽²²⁾, effect changes in hemoglobin content of blood ⁽²³⁾, effect transport of material objects ⁽²⁴⁾, can snap a steel spoon ⁽²⁵⁾, enable people to float in the air ⁽²⁶⁾etc. Explanation of such supernormal phenomena are of course still beyond modern science. But, they are existing proven facts that we cannot ignore or refute. The only way out, or the only correct attitude for seekers of truth and progress in mankind is, face the facts and conduct in-depth research that will enlighten us, so that we could make use of our knowledge of such phenomena for the general welfare and progress of mankind.

Although some of these phenomena can be tested by means of modern scientific instruments , many of them are beyond these instruments. So we have to modify the conventional approaches used in such studies.

3. New Models of the Qi Theory and New Approaches

We have listed a number of very unusual phenomena, which could hardly be explained by modern science. To study them, we have to put forward some new models and approaches.

Many scholars in various countries are now engaged in studies of such phenomena, using electromagnetic, optical, electronic instruments in their observations and measurements. These instruments and approaches of course are helpful. But Qi is not a simple entity that involves only mechanical, optical, electromagnetic and other conventional physical forces. Some of its content are probably beyond modern science. For example, in many of the experiments, that have been done the evidences obtained showed that Qi or Qi

field should have an intensity far greater than that reflected in the measured data.

Obviously new approaches must be used in the studies on Qi. Probably the best testing instruments are human bodies that show strong Qi Gong functions. Reviewing the data that the writer had collected, the writer proposed at the ICUS Conference held in Japan in April 1986, that for the research of Qi, the idea of the Qi field and Qi energy be defined. The writer believed when Qi information is transmitted there must be a medium, which is the so-called Qi field. In analogy to the approach used in studies of electricity, the author now propose the use of such concepts as Qitron (including Yin Qitrons and Yang Qitrons). Qi channels, Qi resistance etc.

4. Segregation table for the Sixty-four Symbolic Hexagrams and the Binary Counter

Fig. 4 is the segregation table for the sixty-four Symbolic hexagrams. In Fig. 5 are diagrams of a computer binary counter and its waveforms. From these two figures, we can see there is perfect analogy between the segregation table for the sixty-four symbolic hexagrams that Chinese have used for divination. How fascinating and unbelievable to find, thousand of years ago, long before the first invention of a modern binary counter, some Chinese scholars had thought of the same logical construction and adopted the idea in constructing their 64 symbolic hexagrams for the expression of their concept on the origin of the universe.

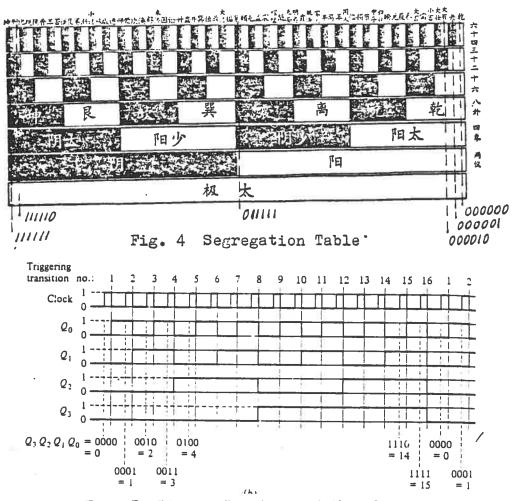


Fig. 5 Binary Counter and Waveforms

The contrast shows that the inference of the 64 divinatory symbols can be drawn by computers. Judging from the exposition of the 64 divinatory symbols, reaching the logical argumentational conclusion lies in the given conditions and their combinations. If we catalog a binary code in each of the 64 symbols, we can infer by the computer in accordance with the principle of inference of the 64 divinatory symbols. This method offers great conveniences to our deep understanding of the said principles and their contents, and helps attain remarkable accuracy. Besides, this method will help us to reach conclusions which the ancient scholars had not been able to arrive at. The human brain's ability in inference is, after all, very much limited. The above tentative ideas will greatly improve upon the manual inference.

IV. The Enlightenment of the Qi Theory

By summing up the informations ancient and modern with regard to the Qi theory, we know that the Qi is a inclusive term of a kind of primeval material and spirit which make up the universe. It can be called generalized existence. Qi can be divided into superficies and potentiality. It has the properties of energy, action, matter, transmission and so on. The Qi theory reveals to us that Qi is a kind of unified existence, it is not simply a substance, but a synthesized composite, and that we must have a new and generalized understanding of the conventional physical conceptions and properties of matter, energy, force, etc.

Any two bodies in the universe attract each other with a force which varies directly as the product of their masses. But in Qi theory, the Qi Force in the Qi phenomenon sends a serious challenge to some of the definitions and laws in modern and classical mechanics. For example, a spear head can't get through the throat, it is quite contrary to everyday mechanical phenomenon. Again, that a person's force can contend with that of a car is also a kind of supernormal phenomenon. According to the medical science , if a person's temperature gets up to higher than 40°C, the protein will be damaged, but a person with Qi Gong can even touch a piece of burning red iron with his hand or tongue without getting the slightest burn. This is also going beyond the normal physical phenomena.

These supernormal phenomena force us to study a new conception of matter and force etc. in physics and chemistry.

At present, the phenomena that arise in the Qi world of consciousness transmission, thought moving, thought writing further encourage us to make deeper and more extensive study of
the present time and space viewpoint. Furthermore, the appearance of consciousness transmission phenomena raises a sharp question:
Is its velocity equal to that of the electromagnetic wave? Is the
velocity of light the limit of velocity? These are part of the
new questions raised before us.

V. Concluding Remarks

The Qi theory like other scientific theories arouses scientists' serious attention. The further study of the Qi theory will certainly bring about a new scientific revolution. The history of science will enter a new stage of development at which matter, energy, force, optics, electromagnetic and so on will be understood anew.

On the basis of the origin of the Qi theory, we must be careful to avoid going to extremes, laying emphasis on one side while neglecting another. For example, in the relationship between matter and spirit, we must not lay emphasis on matter while neglecting spirit, we must link both of them up organically. The ancient Qi theory tells us that things will develop in the opposite direction when they become extreme, and that holding one and discarding the other must be avoided in all means, since this runs counter to the theory.

The domain of scientific research will be greatly extended and new science, new concepts and new theories will come into being as we achieve deeper understanding of the Qi theory. The world will be harmonious, coordinated and in peace. A new world of peaceful development will be created and permeated with harmony and love. This is the heartiest good wish of all scientists. It will be a great honor to the present writer if this paper can make contributions to the grand cause, be they cost so little.

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