A Scientific Approach to an Intrinsic Nature of Ki (*)

The Evolution of Matters and the Genesis of Life

INTRODUCTION

In order to understand the intrinsic nature of ‘Ki’, we should fist understand the life and its generation. And, simultaneously, we should know how the cosmos had been created and evolved.

In the Orient, BC. 5-3, Lao-tzu (**) and Chang-tzu (**) [1] applied the Ki conception to the principle of generations. Their thoughts are summarized briefly as follows: The Ki comes from the way (truth, religious, doctrine), the cosmic dual forces come from the Ki, the compounds (five elements, metal, wood, water, fire, earth) come from the dual principle of negative and positive, and all creations come from the compounds. According to these thoughts, the life and the death is the meeting and parting of the Ki, respectively.

Modern experiments and observations to dissolve the cosmic mystery are developed by the exploitation of a space sciences and a radio astronomy, and they offer various information to be able to understand the scientific systems of the generation of universe and the intrinsic principle of life. The most convincing theory on the beginning of the cosmos is likely to be a big-bang theory.[2,3]

Scientific evidences to support a big-bang theory are summarized with the following findings.

Table 1. Findings to support a big-bang theory

INSERT TABLE 1 HERE

1

2

3

The following summary and figure is an outline of the beginning of cosmos and an outline of the energy differentiation into four natural forces at the time of beginning, respectively.

Table 2. An outline of the beginning of cosmos

INSERT TABLE 2 HERE

INSERT FIGURE 1 HERE

Figure 1. An outline of the energy differentiation

The cosmos came from a vacuum. The paradigm of ‘an empty vacuum’, accordingly, has to be converted to a new paradigm of ‘a space full of energy’. In other words, the energies certified such as natural forces and the energies uncertified are full in space, and we call a new conception of these energies Ki (*). Space energy, vacuum energy, zero-point energy, clean energy, or free energy is an individual terminology on this uncertain energy which can not be measured by a classical method.

If we can use this uncertain energy, an eternal machine not yet be explained by a general thermodynamics are supposed to be possible.

There are, however, a lot of dynamic machines in this nature: electrons turning around in an atom, rotation of earth, moon, and galactic systems. The most important and indispensable phenomenon is continuous dynamic evolution: the evolution of matters since the beginning of cosmos, the evolution of living organisms since the generation of life, and the evolution of spirit directing to a final point, omega point, since the generation of humans.

EVOLUTION OF MATTERS

1. Evolution of Elements

The most abundant elements in the universe are hydrogen (75%) and helium (23%). They are the most simple elements, and they are generated at the beginning of cosmos. The heavier elements, Li-Fe, are generated by the nuclear reaction of simple elements. The elements heavier than Fe are generated by the neutron capture reaction. [4]

INSERT FIGURE 2 HERE

Figure 2. Solar system abundance of nuclides

INSERT FIGURE 3 HERE

Figure 3. Cross-sectional view of pre supernova star

Figure 3 shows us that the heavier elements are formed in the deeper place of higher temperature

2. Chemical Evolution

The pairing of elements are so variable that innumerable compounds are generated. The generation of compounds, however, has to be performed by turn, from simple inorganic compounds to organized organic compounds, from organized organic compounds to high molecular organic compounds.

INSERT REACTIONS HERE

The structural change of simple compounds to highly organized compounds accompanies a change of function, from simple to diverse.

4

We call those changes chemical evolution. Some inorganic molecules in sidereal atmosphere ad in the inter-sidereal space are identified by the analysis of sidereal spectra. 21cm, 1.26cm, 1.35cm, and 6.21cm wave indicates hydrogen atom, ammonia molecule, water and formaldehyde molecules, respectively. The finding of formaldehyde in the space is sensational, because the densities of inter-sidereal space are extremely low, the formation of it must not be expected by a general collision mechanism

Table 3. Various compounds identified in the inter-sidereal clouds. [5]

INSERT TABLE 3 HERE

Because the low temperature in stellar space and the requirement of an activation energy for a chemical reaction, their reaction of neutral substances, in general, must be very hard to occur. The cosmic ray seems to be acted towards neutral substances to produce a reactive complex species.

INSERT REACTIONS HERE

The other main sources of energy for chemical reactions in the primitive earth are anticipated with the total solar radiation, ultraviolet rays, and electric discharge.

In order to understand the chemical evolution in primitive earth, we should know the composition of the primitive earth's atmosphere. Oparin and Rety suggested the reductive atmosphere composed mainly of methane, ammonia, hydrogen, and water. Miller has revived the experiment of the reaction of reductive atmosphere with an electric spark for a week, and he obtained various organic compounds, amino acids, oxyacids, and urea.

INSERT FIGURE 4 HERE

5

Figure 4. Miller's Apparatus

When he added carbon monoxide, nitrogen, and carbon dioxide into the vessel of reductive atmosphere, he obtained hydrogen cyanide and some aldehydes in addendum.

INSERT REACTIONS HERE

An oxyacid and amino acid are formed by the reaction of hydrogen cyanide to aldehyde, and adenine, a component of nucleic acid, is formed by the reaction of hydrogen cyanides mutually. Proteins and nucleic acids, highly organized fundamental high molecular organic compounds, are generated by the reaction of simple organic compounds. [6,7,8] Those reactions are highly endothermic and a direction of high negative entropy.

INSERT FIGURE 5 HERE

Figure 5. Structure of a protein (a) and a nucleic acid (b).

3. The Climax of Chemical Evolution, Origin of Life

Unexpected chemical species, thiocyanate ion, SCN, and glycine, are identified at the bottom of the Red Sea. The environment of the bottom of the Red Sea is reductive: no oxygen, no bacteria, but some gases, methane and ammonia. It is, accordingly, possible to imagine that the formation of glycine is not biological but geological.

The only existence of glycine, an amino acid, means that the biological contamination has not happened; this must rather be a significant discovery for an understanding on the chemical evolution and the genesis of life proceeded in the sea water.

6

7

8

Table 4. Comparison of components in human blood and sea water (% weight). [9]

INSERT TABLE 4 HERE

We know that living organisms were alive several billion years ago. Traces of an algae and a bacterium living 2-3 billion years before are found in various fossils.

The central idea of molecular biology, which is applicable to all living organisms, bacteria, plants, animals, and even mankind, manifested by the development of modern sciences. The outlines are as follows:

The structure of DNA, a nucleic acid, is a double stranded helix, and it has not only a function of self-duplication, but also has a delivering function of his genetic information of the biogenesis of proteins.

An enzyme, a specific protein, accelerates and controls various biological metabolic functions.

The formation of high molecular organic compounds, nucleic acids, and proteins, in the process of chemical evolution, must be a very significant moment for the generation of life. [10,11,12,13,14]

The multimolecular systems formed with these high molecular organic compounds are supposed to be organized, and the formation of a primitive cell likely to be generated in them ultimately.

Several model experiments such as coazervate, protenoid microsphere, and marigranule, gave us confidence for an understanding of the generation of a primitive cell from a multimolecular system. [15]

9

10

11

12

13

14

15

INSERT FIGURE 6 HERE

Figure 6. Models: a. coazervate, b. proteinoid microsphere, c. marigranule.

Highly organized substances, high molecular compounds, are formed through the chemical evolution, and the multimolecular systems are formed with them. The eventuality of chemical evolution along with the evolution of elements would be enough to show us the beginning of life.

The function of growth and propagation of these multimolecular systems seem to have formed with the following four steps progressively:

First step: Formation of hydrocarbons and simple organic compounds.

Second step: Formation of amino acids, nucleotides, and more organized organic compounds from hydrocarbons.

Third step: Formation of high molecular compounds, protein, and nucleic acids.

Fourth step: Multimolecular systems formed with high molecular compound are beginning to have function.

The organization of simple structure and the diversification of a simple function are typical characteristic features of overall chemical evolution. This direction is a useful course; entropy is decreased or energies are absorbed. The direction of chemical evolution leading to the generation of life is coincided with the direction of the evolution of living organisms.

The steps of development and the characteristic feature of cell systems which is evolved from the multimolecular systems are summarized as follows:

Pre-cell system:

- Multimolecular system is formed with high molecular compounds.
- The levels in order or harmony of the chemical reactions in the multimolecular systems are low.
- The transmission mechanisms of information are not formed.

- Synthetic systems of proteins and nucleic acids are not produced.

Pseudo- cell system:

- The order or harmony of the transmission of energy and substances are elevated in multimolecular systems.
- Membranes are formed.
- The function of proteins and nucleic acids are beginning to specialize.
- Synthetic function of proteins and nucleic acids are generated.
- A primitive transmission mechanism of information are generated.
- The levels of self-preservation and self-reproduction of multimolecular systems are elevated.

Primitive-cell system:

- Higher levels of self-preservation and self-reproduction of cell systems are formed.
- The order or harmony of transmission of energy and substances are completed.
- Nucleic acids became a source of genetic information.
- The synthetic mechanisms of proteins and nucleic acids are completed.

CONCLUSION

The living organism are represented by the two characteristic properties: propagation or immortality and evolution or objectivity. The living organisms, therefore, become characterized by means of the theory; animism, hylozoism, philosophically. [16,17]

Animism is a theory of which living organisms and inanimate matter are distinguished originally; in living organisms, there exists metemprical vital forces which cannot be explained by physical mechanisms.

16

17

Hylozoism, a theory of pan-psyches, on the other hand, is a theory of which all creations are alive; in all creations there exists life, spirit, or mind.

Oparin has mentioned that life is a distinct peculiar form of motion of matter. This peculiar form is not distinguished from inorganic systems, it is, rather, created as a new quality in the overall developing process of material evolution.

Teilhard [18] has mentioned that the terminus of universal evolution is a human being, and at the same time, there are strong relationships between man and nature.

The thoughts mentioned above suggest that there exists ‘a flame of mind’ even in fundamental materials, quarks, and also there exists life even in inorganic compounds. Capra said that ‘matter is the pattern of mind’.[19]

The forces operated in human evolution, mental vector, are evolved to be a super consciousness, omega point, eventually. The successive evolution of consciousness indicates a complete unification. God exists in all creations. Substance and energy, matter and mind, they are not independent, but a unitary sterical structures of a function.

The impulsive force, accordingly in material evolution, the vital energy in biological evolution, and the spiritual vector in mental evolution, they are not separated one, but the same origin substantially. They could, therefore, be unified by some other conception. Here, I would like to propose Ki conception.

INSERT FIGURE 7 HERE

Figure 7. A summary of Ki conception

18

19

APPENDICES

1. Kigong (**)

Kigong, a type of Ki-application, is a practice acquainted with physical and mental exercises.

INSERT KIGONG FIGURE HERE

Hard Kigong involves skills for attack and defense through the training of one's body and mind. Soft Kigongs which involves medical treatments are divided into outer Kigong and inner Kigong. Outer Kigong involves treatment of a patient by means of Ki-infusion from a Kigongsa (a man who can apply Ki). In an occasion, its possible to treat himself by circulating his own Ki. Inner Kigong involves a preservation for good health. In order to preserve one's good health, it is necessary to circulate his own Ki with the right attitude, the right respiration, and the relaxed mind. Inner Kigong involves several styles: massage, finger pressing, meditation, and special moving posture, etc.

2. Scientific Ki measurements

1) Infrared spectra are radiated from all the substances which is in above zero degree Kelvin. The IR spectra from the palm of the hand of an ordinary person have a simple linear wave, the IR spectra, however, from the palm of the hand of a man who is an expert in Kigong shows sharp peaks and the shapes of the peaks are different from individual experts.

INSERT FIGURE 8 HERE

Figure 8. IR spectrum from a palm of an ordinary person. [20]

20

INSERT FIGURE 9 HERE

Figure 9. IR spectrum from Kigongsa “A”.

INSERT FIGURE 10 HERE

Figure 10. IR spectrum from Kigongsa “B”.

2) Sonic waves with ultra low frequencies under 16 Hertz are radiated from the right hand’s palm while he emits Ki. Two types of peaks are shown below.

INSERT FIGURE 11 HERE

Figure 11. A sonic wave from Kigongsa “C”.

INSERT FIGURE 12 HERE

Figure 12. A sonic wave from Kigongsa “D”.

3) Raman spectroscopy shows us that Ki, in general, does not affect pure water, while it does affect the molecular aggregation in salt water through the interaction of water molecules and mineral ions.
4) The influences of Ki on a molecule are experimented on a biologically important molecule, RNA, a genetic substance.

The changes of Ultraviolet spectrum of yeast RNA in an aqueous solution by the application of Ki are shown below.

INSERT FIGURE 13 HERE

Figure 13. A UV spectrum of a yeast RNA on Ki

The increase of absorbency by the application of Ki means that the hydrogen bonds in a double stranded RNA molecules are damaged.

5) The magnetic field discharged from a Kigongsa was 4 Gaus. This magnetism is much stronger than the terrestrial magnetism of 0.5-0.8 Gaus.

6) The certification of static electricity in a Kigongsa means that Ki affects the order of electric current in cells.

7) When a Kigongsa emits his own Ki, photons, a micro particle, increased more than double, from 550 to 1,300.

8) Ki affects the secretion rate of a hormone, for example, Dopamine. [21]

21