Association of Evolutionary Topics related to God and Chaos Theory

Hideaki Yanagisawa

Konosu Public Health Center, 4-5-10 Higashi, Konosu, Saitama, 365-0039,

Japan

science2001007@ybb.ne.jp

Abstract

Decrease in entropy is the process in which biological systems progress from a chaotic to a fixed state. In this case, there are two phenomena where such decrease in entropy occurs in living creatures: 1) gene evolution; and 2) executive function. Both phenomena can be explained by chaos theory. However, beyond theoretical thinking, we also need God-based explanations for such directional change in entropy. In fact, previous research has produced contradictions in chaos theory for science- and God-based explanations of the universe and evolution. Furthermore, since gravitation with mass is an attractive force, entropy increases according to the second law of thermodynamics. On the other hand, the Big Bang Theory, dark matter, and dark energy as well as mandalas are explained by ignored energy through Einstein's and Newton's gravitational equations. In these cases, a God-based explanation is not required when science-based explanations are possible.

Keywords: mandala, gravitation, dark energy/matter, Feigenbaum point, thermodynamics, biological evolution, entropy

Abbreviations

T   = time
E (t) = quantity of energy at time t.
E (0) = quantity of energy at time zero.
k   = fixed numbers.

Introduction

With regard to the relationship between science- and God-based explanations of evolution, several contradictions exist. Biological evolution requires a decrease in entropy, which conflicts with the second law of thermodynamics [1]. If the second law of thermodynamics is

absolute, then a God-based explanation is necessary for explaining evolution. In addition, after the reported Big Bang Theory [2] was established, the existence of God in relation to the beginning of the universe was posited again [3]. Therefore, it is suggested that the Big Bang theory was subconsciously reported with God-based beliefs. On the other hand, it has been reported that mandalas (concentric diagrams that have spiritual significance in religions such as Buddhism and Hinduism) have included the existence of God in their creations [4]. For example, Tibetan cosmological mandalas have been shown to be equal to the results of ignored energy in both Einstein's and Newton's gravitational equations [5].

These examples show that the existence of God depends more on an individual's belief [6], which supports the argument that God is in a constant state of change. Therefore, following Valle's [7] explanation based on chaos theory, this paper posits the following four points: 1) God-based explanations are conveniently used for contradictions in science; 2) God-based explanations are required for living and not physical phenomena; 3) God-based explanations can be used to describe the process of decreasing entropy in living creatures [8]; and 4) God-based explanations are limited by revised science.

Methods
Explanation of the Chaos Theory
Definition of chaos theory

According to the New Oxford American Dictionary, "chaos theory" is defined as "the branch of mathematics that deals with complex systems whose behavior is highly sensitive to slight changes in conditions, so that small alterations can give rise to strikingly great consequences." In this regard, it is important that such a chaotic state is not confused with the term "random." In mathematical terms, "random" means the "statistics governed by or involving equal chances for each item" (New Oxford American Dictionary). On the other hand, Stephen Kellert defined chaos theory as the "qualitative study of unstable aperiodic behavior in deterministic nonlinear dynamical systems." [9]

During the 1960s, meteorologist Edward Norton Lorenz noticed that when he calculated his weather model using differential equations on a computer, minute initial conditions eventually led to significant changes in weather conditions [7]. Thus, a basic feature of chaos theory is the high sensitivity to initial conditions in which "chaotic state" never means the "statistics governed by or involving equal chances." Although chaos theory was initially defined as a branch of mathematics, it has been increasingly and appropriately applied in the social sciences.

Relationship of continuous covariation to chaos theory

A representative chaos equation is given as:
$$Y(n+1) = p[1 - Y(n)]Y(n) \tag{1}$$
In this case, equation (1) includes the same meaning as equations (2) and (3):
$$Z(n) = p[1 - Y(n)]Y(n) \tag{2}$$
$$Y(n+1) = Z(n) \tag{3}$$

Since the calculations in equations (2) and (3) are alternately repeated, the solutions to $Z(n)$ and $Y(n)$ are in an ordered spiral chaos state. As $Y(n)$ is determined, $Y(n+1)$ changes according to equation (1). However, once $Y(n+1)$ moves to the position of $Y(n)$ in equation (1), $Y(n+2)$ also changes. Thus, $Y(n)$ is unable to settle into its original pre-chaos value. This relationship means that once a variable has changed into another, it becomes unable to settle into its original value, or as defined above, a "correlated variable relationship" that is equivalent to covariation. Hence, the relationship between $Y(n)$ and $Y(n+1)$ in equation (1) is covariation, and this relationship must continue to sustain the chaotic state. If no correlated variable relationship exists between the variables, then a chaotic state cannot be confirmed.

In addition, a logistic schema of equation (1) is shown in the upper-right portion of Figure 1 [10]. Part M in Figure 1 is the Feigenbaum point (which is enlarged in Figure 2) [11] and Parts F, G, and H represent fixed, localized, and expanded chaotic states, respectively. Continuous covariation is a required condition for the occurrence of chaotic phenomena [12] and only fixed or "all non-localized answers" (randomness) are produced without covariation. In addition, localized chaotic answers always require continuous covariation and the chaos phenomenon with covariation is represented in Parts G and H.
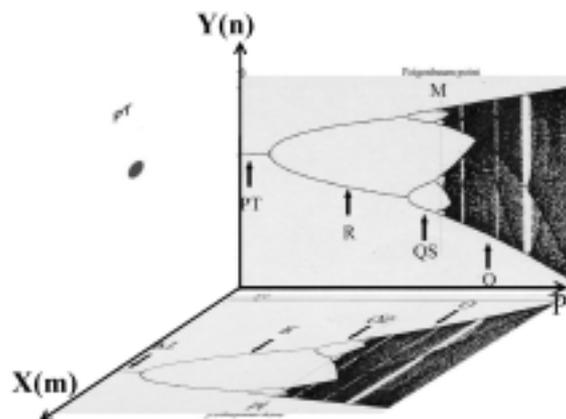

Figure 1: A three-dimensional logistic schemas of equations (1), (4) and (5).
A logistic schema of equation (1) is shown in the upper-right portion. A logistic schema of equation (4) is shown in the lower-right portion.

Relationship of Entropy to Chaos Theory

In statistical mechanics, entropy is a random function that includes no absolute direction. In addition, since mass is related with some force to near circumstances, trifling continuous covariations exist in all natural phenomena. Therefore, the term "random" in natural phenomena represents a significantly expanded chaotic state. As seen in Figure 2, increasing entropy is equal to the direction from Parts H to F, while decreasing entropy represents an "anti-random" state that is equal to the direction from Parts F to H. Each direction is decided by the value of "p" in equation (1) above.
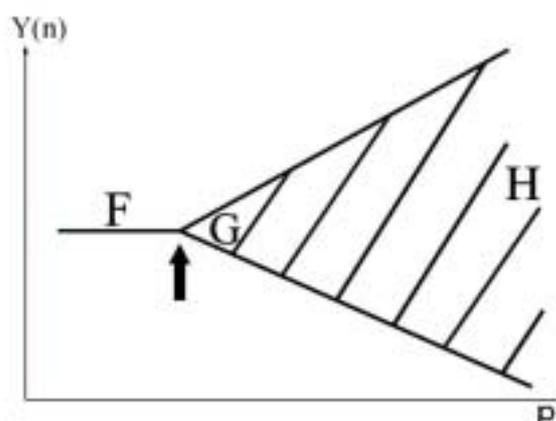
Figure 2: Enlarged Part M in Figure 1.
An arrow is the Feigenbaum point.

Relationship of Entropy to Thermodynamics

According to Styer [1], entropy (the second law of thermodynamics) never decreases for isolated systems. In addition, a number of scientists believe that the law of increasing entropy is indicated to all energies. However, this is a mistake since thermal energy is not equal to all energies. Thermal energy is the energy that a substance or system includes in relation to its temperature, i.e., the energy over moving molecules. Therefore, the second law of thermodynamics may not indicate energy without matter. In fact, there is no phenomenon that includes increasing entropy between two different electromagnetic waves and when there is no movement of matter, the increase of entropy becomes non-absolute. The cause of increasing entropy in thermodynamics can only be explained through the directional force of gravity. Furthermore, in energy without matter, entropy may be constant or it may decrease [13].

Relationship of Entropy to Biological Evolution

According to Darwin's theory of evolution, the learning function of genes was ignored. For example, the neck of a giraffe had become extremely long due to possible mutation or natural selection. However, a giraffe cannot sustain itself if no adaption to such a long neck occurs. In this case, the heart of a giraffe requires high-output ejection to send blood to the brain that is far from its position. Therefore, high-blood pressure and hypertension is common in the species. In fact, the average life span of a giraffe is only 20 years, which is half the life span of other animals of the same weight. In this case, giraffe's adaptation to the hypertensive heart is not only an evolutionary one but an internal one in which a gene was transformed to auto-regulate blood pressure. If this did not occur, then the giraffe's long neck would cause rupture of the brain vessels and eventual death. Therefore, evolution is the change from adaptability into a fixed state that enhances the life span of a species. The author calls this hypothesis the "gene's learning function."

Another example can be seen in the case of a pregnant mother. When a pregnant mother's hypertension is treated, the onset age of the child's eventual hypertension occurs later. If such hypertension is not treated through several generations, then the family will suffer from ongoing hypertension.

Furthermore, pseudogenes may be utilized to organize information in the gene's learning function, and pseudogene evolution and natural selection has been previously reported [14]. In this case, natural selection is where living creatures select more beneficial information, which is applied toward adaptation. Such adaptation and the gene's learning function is the same as the executive function [15, 16]. As seen in Figure 2, it can be explained as the direction from Parts F to H.

## Relationship of Entropy to Thinking

From equation (1), the $X(m)$ axis is perpendicular to the p and $Y(n)$ axes. In addition to equation (1), the following chaos equation is assumed:

$$X(m+1) = p[1 - X(m)]X(m) \qquad (4)$$

From equations (1) and (4), a three-dimensional logistic schema is imagined. The logistic schema of equation (4) is shown on the lower-right portion of Figure 1. An equation for a plane including the $Y(n)$ and $X(m)$ axes is as follows:

$$\frac{Y(n+1)}{X(m+1)} = \frac{[1 - Y(n)]Y(n)}{[1 - X(m)]X(m)} \qquad (5)$$

Equation (5) is shown in the left-hand portion of Figures 1 and 3 while p is erased in the equation. According to "p" that changes from 3.0 to 3.7, the numbers of answers in equation (5) changes to 1, 4, 16, localized chaotic state, and expanded chaotic state. One answer of Part PT is shown on the left side of Figure 1 while the localized chaotic answer of Part M is shown in the left side of Figure 3. The processes from the chaotic state to the fixed state are the methods of rearranging thoughts. In addition, the information randomly collected is unified into one thought by these processes and the
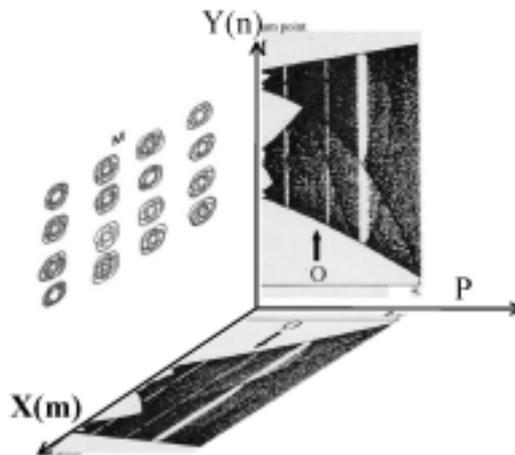
Figure 3: Three-dimensional logistic schemas of equations (1), (4) and (5). Part M is localized chaotic answer.

rough process from Figure 3 to Figure 1 is represented in Figure 2.

There are a number of methods of organizing thoughts such as the SEIQoL-DW method [17], the Kawakida Jiro (KJ) method [18], Theoretical Substruction, Mind Map, Counseling, and Dialectics. The relationship of the chaos equation to the KJ and Counseling methods [19] can be explained as the direction from Parts F to H, as seen in Figure 2.

The relationship between chaos theory and Piaget's theory of cognitive development has previously been explored [20]. Therefore, the author's submission of the relations in decreasing entropy includes Piaget's theory.

Relationship of Entropy to God's Call in Nightingale's Philosophy

According to McDonald [21], Nightingale believed that she heard God's call a number of times and her first call was received on February 7, 1837 (1998). In those days, she questioned the purpose of life for the upper class and pondered the need for charity to battle poverty and unemployment. This was the primary reason for her becoming a nurse. In this case, a science-based explanation of God's calls that Nightingale heard may be explained as a process of decreasing entropy beyond the Feigenbaum point [8]. This is equivalent to the direction from Parts H to F in Figure 2.

Relationship of God to the Law of the Universe
No big bang theory

In 1927, astronomer Edwin Hubble observed a red-shift in light from intergalactic space [22]. This finding helped to support the Big Bang theory and the idea that the universe was in fact expanding from a single point [2]. However, this red-shift was not reported as a Doppler effect but as decreasing energy with time [5, 23].

In this case, the Big Bang theory was an approximation of a new theory in which the more distant the heavenly bodies are observed, the less their red-shift per distance will be confirmed. Therefore, the age of the so-called Big Bang has been revised from its original 12.5 billion to 13.7 billion years.

Ignored Energy in Einstein's and Newton's Gravitational Equations

The ignored energy by Newton's and Einstein's equations is given as follows [5]:

$$E(t) = E(0)(1 - e^{kt})e^{kt} \qquad (6)$$

However, there is energy that cannot be ignored in newer gravitation equations, especially since the gravitational energy from distant celestial bodies is approximately equal to zero. Therefore, the total energy from the distant masses is equal to the ignored energy in Newton's and Einstein's equations. In addition, the distance to the turning point between the attractive force and the repulsive force is calculated from equation (6) [24].

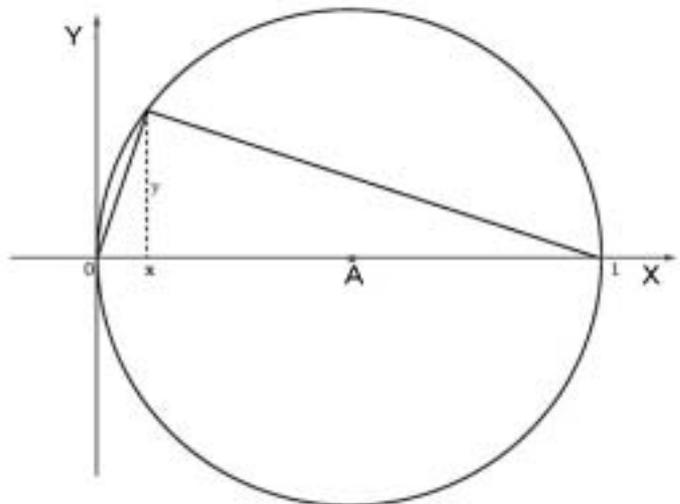**Relationship of Ignored Energy to the Buddhist Mandala Structures**

Equation (6) can be converted into:

$$E(t) = E(0)(1 - x)x \qquad (7)$$

where

$$e^{kt} = x \qquad (0 < x < 1) \qquad (8)$$

From equation (8), it follows that:

Figure 4: A circle according to equation (15).

$$0 \leq E(t) \leq \frac{E(0)}{4} \qquad (9)$$

Now, let:
$$Z = (1-x)x \qquad (10)$$

Then, from equations (9) and (10), we have:
$$0 \leq Z \leq \frac{1}{4} \qquad (11)$$

Next, from equations (8) and (9), we have:
$$Z = y^2 = (1-x)x \qquad (12)$$

$$(x - \frac{1}{2})^2 + y^2 = (\frac{1}{2})^2 \qquad (13)$$

Figure 5: The squares according to equation (6).

Equation (13) represents a circle with the center A ($x = 1/2$, $y = 0$) and a radius $1/2$, as shown in Figure 4. The square of length y is described by equation (12). From equations (11) and (12):

$$0 \leq y \leq \frac{1}{2} \qquad (14)$$

The squares of length y from 0 to 1/2 are shown in Figure 5, which is similar to a Buddhist mandala structure. In Figure 6, a representative Buddhist mandala is shown [25]. In addition, a reported Tibetan cosmological model is also similar to this particular structure [5, 26].

Relationship of God to Buddhist Mandala Structures

A Buddhist mandala structure is equal to the law of gravitation from distant heavenly bodies. This energy, called "dark matter" and "dark energy," was known by ancient scientists who organized their thoughts through a process that converted a chaotic state into a fixed one. In this case, mandalas were created as the result of such organizational thoughts. Ancient scientists had never known Newton's and Einstein's equations. However, they might recognize a difference of movements between near heavenly bodies and distant heavenly bodies. It is possible that they considered the movements of distant heavenly bodies as their cosmological model [26].

Figure 6: A representative structure of a Buddhist mandala.

In general, we feel the presence of God through the process of decreasing entropy beyond the Feigenbaum point. In addition, we can observe a fixed state similar to these ancient scientists. Therefore, if we realize a fixed state in our thoughts, then we may subconsciously realize the solution of a chaotic state and feel the presence of God through an observation of Buddhist mandala structures.
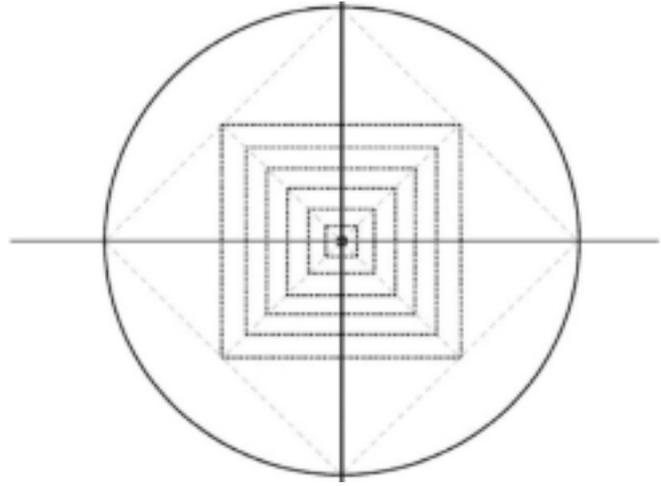
Results

Since gravitation with mass is only attractive force, entropy increases over time in physical phenomena with matter. However, a decrease in entropy occurs in the phenomena of gene evolution and executive function. Both of these phenomena can be explained by chaos theory. In addition, the Big Bang theory, dark matter and dark energy can be explained by ignored energy through Einstein's and Newton's gravitational equations as well as in the designs of mandalas. In such cases, God-based explanations are not required when science-based explanations are possible.

Discussion

As a medical doctor who has treated many patients, this author discovered a new stress law, as seen in equation (15).

$$\frac{dE(t)}{dt} = kE(t) \qquad (15)$$

Equation (6) is deduced from equation (15). In this law, the term "time" is extremely important and necessary for living creatures to change naturally. However, there is no relation to time in entropy, as explained by statistics, and according to the second law of thermodynamics, such a change is used as a so-called arrow of time.

With regard to thermodynamics and evolution, the relationship of time to change in entropy for living creatures is the reverse of physical phenomena [1]. If the second law of thermodynamics is considered absolute, then a God-based explanation is necessary for living creatures. However, since the contradiction between living creatures and the second law of thermodynamics was solved by chaos theory, God (in relation to evolution) is not required [13, 16]. Furthermore, regarding the relationship between science- and God-based explanations of evolution, several contradictions exist. Therefore, God appears to be used conveniently depending on the circumstance.

Concerning the creation of the universe, the Big Bang theory was also a mistake. The Big Bang theory is a God-based science that needs imaginary energy such as dark matter and dark energy. According to the new gravitation equation provided earlier, the universe simply exists without the Big Bang theory [5, 23]. In this case, if God created the universe, then he had to first create both innumerable chaos equations and gravitational equations. Accordingly, was the universe naturally formed after God did his homework? Therefore, a God-based explanation is not required to explain the creation of the universe. Furthermore, living creatures in chaotic phenomena experience the so-called butterfly effect [7] in which a difference between "no flap of a butterfly" and "one flap of the butterfly" changes the eventual course of a hurricane. It is this "butterfly effect" that small alterations can give rise to strikingly great consequences in chaotic phenomena. In this case, a result can be very different from a prediction. We will have hope to this effect. It is our prayers to God.

Conclusion

Through this research, several contradictions in chaos theory exist for science- and God-based explanations of the universe, thermodynamics, and evolution. In addition, the term "time" is very important and necessary for living creatures and it always relates to change in natural phenomena.

In the second law of thermodynamics, an increase in entropy is used as a so-called arrow of time. However, since gravitation with mass is only an attractive force, entropy increases over time in physical phenomena. Entropy decreases over time in living creatures through gene evolution and executive function. Therefore, we need God-based explanations in living phenomena in which the change of entropy is in the reverse direction to physical phenomena.

Since a contradiction to the Big Bang theory is solved by a new physical theory, a

God-based explanation for the universe does not exist. When we understand our own thinking subconsciously, only then can we understand science-based God's laws individually.

Summery

   God can be explained as a process of decreasing entropy beyond a Feigenbaum point.
When we understand our own thinking subconsciously, only then can we understand science-based God's laws individually.

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