American Journal of Mathematics and Statistics 2018, 8(1): 22-26
DOI: 10.5923/j.ajms.20180801.04

Creation of the Life Naturally Probable and Spontaneous or Supernaturally Exact and Predetermined?

Ailar Abdollahi[1,*], Sohrab Abdollahi[2]

[1]High School Student of Dr. Hesabi High School, Shiraz, Iran
[2]Payame Noor University, I.R. of Iran, Po Box 19395-3697, Thran, Iran

Abstract Statistical challenges have been used to determine if the life has been created by a designer (creationism) or it just arose out of the elemental nature of the universe (abiogenesis). In this research, mathematical model is used to estimate the origin of life based on statistical and probability of occurrence of a spontaneous phenomenon which causes creation of the first alive cell. The probability of life occurrence has direct relation with the time scale of cell replication and indirect relation with the number of particles (atoms) in the E. coli the primary simplest cell. The same as other models, this model is unrealistic but it may open new and more realistic way to approach the origin of the life. Statistics shows that spontaneous creation is almost impossible (probability of 0.19%), when we consider entropy and physicochemical laws this impossibility even gets stronger. In this model which is only based on probability shows that there must be an intelligent designer (or divine power) to spark the origin of the life. The nature cannot recognize or realize *seeing*, *dual sexuality* and *self consciousness* phenomena. Therefore, if someone consider these three factors then spontaneous creation become even more impossible.

Keywords Probability, Abiogenesis, Creationism, Life origin, E.coli

1. Introduction

Life and how it started has been a great dilemma for centuries among philosophers and scientists. Different religions have their own story and each scientist has his or her own interpretations regarding creation of the life. However, no any scientifically acceptable reason has been offered. Most religions especially Abrahamic religions [1] such as Judaism, Christianity and Islam believe that life spontaneously has been created by God without mentioning any natural or scientific explanations. In Islam religion, holey Groan in chapter 15 verse 26 says that: We did certainly create man out of clay from an altered black mud. In Christianity, in the first pages of Genesis chapter one in Bible describes the creation of man on the sixth day, after vegetation had been made on the third and animals earlier on the sixth [2].

Darwin and Pasteur have different and opposing theory about creation of life. Darwin believes that the first life on Earth could have evolved naturally from inanimate mater. However, Pasteur climes that God has created the life and this creation could not have arisen without the will of God [3].

* Corresponding author:
sohrab202020@yahoo.com (Ailar Abdollahi)
Published online at http://journal.sapub.org/ajms

At the beginning of 20th century, due to increasing knowledge about genetic and biochemical complexity of the cell, the origin of life becomes more complex. Some believe that life never was created, but it had always been an inherent part of the universe. James Ferris, author of "The Emergence of Life on Earth: A Historical and Scientific Overview" says that The Universe and matter are eternal and life is also eternal and always existed and that it is not from matter [4]. Some other scientist such as Lord Kelvin [5], Hermann von Helmholtz [6] and Svante Arrhenius [7] argue that there are sperms of the life wandering the universe and grow at appropriate conditions. They believe that meteorites carry life from one planet to another. This idea of seeds is called panspermia hypothesis [8-9, 7]. Now, some scientists use the word Transpermia for transferring of life from one planet to other instead of panspermia [10, 11].

Researches about the origin of life on earth have been mostly based on different experiments and assumptions. However in this work mathematical models and statistical calculation based on probabilities have been used for the estimation of the origin of the life. In fact, this mathematical model is used to predict the probability of spontaneous creation of life from matter or disprove this kind of creation. In other words, we may predict an origin of life by natural causes from both theistic and atheistic philosophical perspectives. This mathematical or statistical calculation is just an approximation a very simple idea to predict a huge complex phenomenon. There is no any firm and strong

reason behind this method. However, it is just a very rough struggle to approach this super great complex regarding life. This inexact and fallible method may open a gate for real and challenging statistical methods.

Abiogenesis is a field of science that talks about the origin of life from the natural processes using the earth material. Abiogenesis has been constantly under attacked (despite Miller-Urey experiment) [12] by creationists who believe that origin of life from material without any intellectual power is impossible. There is a mathematical theorem that explains a particular order of probability below which any event is considered to be essentially impossible (Borel's Law) [13, 14]. This law is not a universal law but can be used for specific physical problems.

This quarrel between abiogenist and creationists may be void. If we look at the problem in gestalten way, using totality rather than be confused in parts then we may see that both abiogenist and creationist ultimately are the same. How the material came to existence or who really made the material and the universe? Do they came out of thin air by itself or have been created by everlasting intellectual that we call God. Even if we prove that origin of life came spontaneously from the material or created by an intelligence still we have another problem that is how material and universe (habitat of life) came to existence?

2. Methodology

Living chemistry consists mainly of carbon, oxygen, nitrogen, and hydrogen. These elements are key building blocks and make up the cell's dry weight. For a medium sized E. coli, for each nitrogen atom there are 4 carbons, 2 oxygen and 7 hydrogen atoms [15]. Accordingly, the empirical formula of an E. coli is: $C_4H_7O_2N_1$. For a medium sized E. coli, there are $1x10^{10}$ carbon atoms therefore the number of total atoms in E. coli is calculated as follows:

Number of total atoms in empirical formula = 1N + 4C + 2O + 7H = 14 atoms

Percent of carbon atom in E. coli = $\frac{4x1}{14}x100 = 28.57$

Percent of nitrogen atom in E.coli = $\frac{1x1}{14}x100 = 7.14$

Percent of oxygen atom in E.coli = $\frac{2x1}{14}x100 = 14.28$

Percent of hydrogen atom in E.coli = $\frac{7x1}{14}x100 = 50$

For 28.57 percent carbon atom there are 1 x 10^{10} atoms of carbon therefore, for 100 percent, the total number of atoms in E. coli is:

The number of total atoms in E. coli = $\frac{1x10^{10}x100}{28.57} = 3.5 \times 10^{10}$

By the same way, the number of nitrogen, oxygen and hydrogen atoms in an E. coli are 0.25 x 10^{10}, 0.50 x 10^{10} and 1.75 x 10^{10} respectively.

About how Earth became habitable, Mojzsis [16] explains that 40 million to 600 million years after the solar system formed, Earth was ready for life because at that time Earth has water and crust. This evidence came from the fact that geologists have found 4.3 billion years old rocks with minerals that were evidence of water abundance. Solar system formed around 4.57 billion years ago. Assume that we can have an estimate of 300 million years (somewhere between 40 to 600 million years) after the formation of solar system by which water and crust were available for life. Therefore, 4.27 billion years ago Earth was ready to start create the life. Some scientists believe that the first simple cells (Prokaryotic cells) were created around 3.5 to 3.8 billion years ago. Taking an average of 3.65 billion years for the creation of the first life, there were 620 million years of time which remained for creation of the first Prokaryotic cell. For the sake of clarity, let us to write down the main factors for our calculation:

The total number of atoms in a simple cell = 3.5 x 10^{10} atoms

The period of time in which a cell was created = 6.2 x 10^{8} million years

The probability of the spontaneous E.coli creation is directly related to the period of the time in which this cell is created and inversely related to the total number of atoms in that cell structure. The probability of one carbon atom stay in a right place in a biological molecule is 1 over the total number of atoms in E.coli multiple by the number of total carbon atom in E.coli and the result must be multiplied by probability related to the type of atoms. Probability related to carbon atom is 0.29 (4 divided by 14) for nitrogen atom is 0.07, for oxygen atom is 0.14 and hydrogen atom is 0.5. Therefore the probability of each type of atom in right place in biological cell is as follows:

Probability of one carbon atom in right place = 0.29 x $(\frac{1}{3.5 \times 10^{10}})$ $(1x10^{10}) = 0.083$

By the same way the probability of one nitrogen atom in right place is:

Probability of N atom in right place = 0.07 x $(\frac{1}{3.5 \times 10^{10}})$ $(0.25x10^{10}) = 0.005$ GF

Probability of O atom in right place = 0.14 x $(\frac{1}{3.5 \times 10^{10}})$ $(0.5x10^{10}) = 0.02$

Probability of H atom in right place = 0.5 x $(\frac{1}{3.5 \times 10^{10}})$ $(1.75x10^{10}) = 0.25$

If we consider atoms of carbon, nitrogen, oxygen and hydrogen sitting in the cell all together, then each related probabilities is multiplied by each other:

Probability of firs set of atoms = 0.083 x 0.005 x 0.02 x 0.25 = 0.000002

This probability is for one set of 4 atoms, therefore for total atom in E.coli, the probability roughly is equal to probability of one set of atoms multiplied by the inverse of total number of atoms in E.coli. Since each set of atoms consist of 4 atoms the result must be multiplied by 4 such as follow:

$$\textit{Total probability} = 0.000002 \times \frac{1}{3.5 \times 10^{10}} \times 4 = 2.3 \times 10^{-16}$$

On the other hand, the probability has direct relationship with the total time during which possibility of spontaneous creation of the cell existed. The total time in which Earth had life creation potential is about 620 millions of years. Now the time scale of spontaneous creation of a cell must be known. According to the literature [17], it takes 40 minutes for an E.coli cell to replicate itself and we can take this time as *creation time scale* of E.coli. Then we have to find out how many time scales are there in 620 millions of years:

$$620000000 \text{ my} \times 365 \text{ day} \times 24 \text{ hr} \times \frac{60}{40} = 8146800000000 = 8.1468 \times 10^{12}$$

Now we know that the total probability of spontaneous creation of E.coli has direct relationship with the total numbers of time scales and inverse relationship with the total number of atoms make up the E.coli. The Spontaneous Creation Probability (SCP) is number of timescales multiplied by total probability:

$$SCP = 8.1468 \times 10^{12} \times 2.3 \times 10^{-16} = 1.9 \times 10^{-3}$$

The maximum probability (certainty and exactness) of spontaneous creation occurs when SCP is equal to 1. If SCP is smaller than 1, then certainty changes to probability and as the SCP gets smaller and smaller then the probability point of view (uncertainty) gets larger and larger such that at SCP equal to zero then it is impossible that the life be created spontaneously by itself or nature. The calculation in this paper regarding creation of E.coli, shows that the SCP is almost 0.0019 or 0.19% of certainty and 99.81% uncertainty. Therefore, spontaneous creation is almost rejected and there should be an intelligent designer or power of divine to design the life. This impossibility of spontaneous creation gets even worse if we consider more complex organism (organism having different sex, ability to see and having the sense of self consciousness) in this case the possibility of spontaneous creation has no any logical bases. In fact seeing, having male and female sexes and self consciousness phenomena are something that the nature cannot recognize or realize them and it needs an intelligent designer to realize or recognize them. Darwinian evolution has meaning when the organism tries to adapt with its environment but it cannot explain the origin of the life.

3. Results and Discussion

Using mathematical method to prove origin of life is somehow unrealistic because a huge number of parameters must be considered in order to be able to have a firm and exact calculation. Finding and applying these parameters is extremely difficult. In fact, we are unable to have an exact calculation in this regard.

Collection of atoms in especial order to create a cell does not obey only complex probability principles but it also obeys physical and chemical principles which are purely exact, do not have anything to do with the probability. Another factor is entropy which is some kind of energy. Therefore, right and secret collection of atoms to produce cell involves apparently three natural forces: One is probability which is magically by chance and it has random nature, second is physical and chemical laws which are exact and pure and have scientific nature. The third is entropy which is some kind of energy and opposing force toward right collection and fine organization. Nature has a great tendency toward disorderness or high entropy. Therefore energy has to be used to order the nature and decreasing the entropy. As you see entropy in nature opposes spontaneous creation.

In this method or any other methods which are based on mathematical or statistical calculation, spontaneous creation depends upon two factors: The number of atoms and the time during which complete collection of atoms ends up making an alive cell. Therefore, the mathematical method considers only probability point of view but not firm laws of nature and entropy. This is why pure mathematical method which is based on probability never can solve the origin of the life.

The relationship between cell creation and three factors i.e. natural law, entropy and probability, can be shown by a triangle as is shown in Figure 1. I call this triangle as Life Origin Triangle (LOT). These three factors have different properties. The nature of the probability is randomness which is derived by the time. The nature of the entropy is energy which is naturally derived by a tendency to be maximum. The nature of natural laws is logic which never violates its principles.

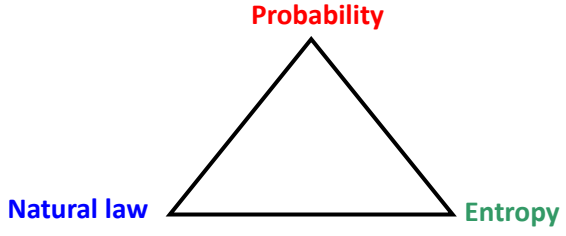

Figure 1. Life origin triangle; relation between probability, natural laws and entropy

In this case, the power that create E.coli must control the randomness (probability), oppose the entropy and sometimes breaks the laws of the nature in appropriate duration of the time. Therefore, the statistical calculation based on Borel's law mainly considers probability and time but entropy and physical or chemical laws are not seriously involved in its calculation. However, in this method, the statistical calculation based on the probability part of the story shows that the spontaneous creation of life without an intelligent designer is almost impossible. Since the other two factors, entropy and natural laws have opposing nature regarding spontaneous creation, therefore bringing them into creation adventure make the validity of divine creation even further. For more complex organism, there are three characteristics that nature and material cannot recognize or understand it. These characteristics are:

1. Having different sexes, male and female: How the nature, material and environment can distinguish between male and female? It cannot be dictated by environment and cannot be the result of adaptation either. The sexuality is a conceptual thing.
2. Having eyes to see: How the material can dictate the seeing phenomenon? Seeing phenomenon is more conceptual rather than physical.
3. Self consciousness: The phenomenon of self consciousness is subjective which cannot be seen, felt or touched by another object. It cannot be manipulated by environment or nature. An advanced computer or robot is able to do everything even better and faster than man but it cannot have the sense of self consciousness indeed.

Divine creation of life does not make Darwinian evolution (natural selection and adaptation) invalid or vice versa. After all, there have to be some primary living organisms on which natural selection and adaptation and theory of evolution to work.

4. Conclusions

The creation of life is extremely complex and it has many dimensions such as entropy, physicochemical laws and probability which oppose spontaneous order of materials. Statistical calculation is unrealistic and rough estimation and it considers only probability dimension which involves number of atoms and duration of time, nonetheless it may prove that life creation needs a designer or divine power. There must be a mediator to control and make the opposing powers of three dimensions work together to create life.

After creation of life by designer, then Darwinian evolution theory can work to evolve the created organism by natural selection and adaptation. There are many characteristics which cannot be explained by spontaneous creation such as duality of sex male and female, ability of vision and sense of self consciousness.

Indeed, if we have a gestalt view, and consider whole Universe, then we realize that still we are in the beginning of the creation story. As a matter of fact, who creates the universe? Assume that a person such as Darwin claiming that universe was organized be evolution. Then the question will be how universe originated and from what? The great Iranian mystic and poet Hafez says that "Excuse the wrangle of seventy two races—since they did not know the truth—they stray in the way of legend".

ACKNOWLEDGMENTS

I would like to express my special thanks of gratitude to my teacher (Mrs. Salimpoor) as well as principal of Dr. Hesabi High School (Mrs. Riyahi) who gave me the golden opportunity to write this paper, which also helped me in doing a lot of research and I came to know about so many new things. I am really thankful to them. Secondly I would also like to thank my parents and friends who helped me a lot in finalizing this paper.

REFERENCES

[1] Cook, C., Powell, A. and Sims, A., 2009, "Spirituality and Psychiatry. Royal College of Psychiatrists." London. 236.

[2] Frederick E. G., 1983, "Biblical Views of Creation." 4 (3). Quarter Summer. 30-38.

[3] Than, K., 2007, "Greatest Mysteries: How Did Life Arise on Earth?" live science.

[4] Ferris, J. P. Fry, I., 2001, "The Emergence of Life on Earth: A Historical and Scientific Overview." Kluwer Academic Publishing.

[5] Thomson (Lord Kelvin), W., 1871, "Inaugural Address to the British Association Edinburgh. We must regard it as probably to the highest degree that there are countless seed-bearing meteoritic stones moving through space." Nature 4(92), 261–278.

[6] Von Helmholtz, H., 1971, "The Origin of the Planetary System." In Selected Writings of Hermann von Helmholtz, ed. Russell Kahl (Middletown, Conn.). 266-96.

[7] Arrhenius, S., 1908, "Worlds in the Making: The Evolution of the Universe." New York, Harper & Row.

[8] Kamminga, H., 1982, "Life from Space - A History of Panspermia." Vistas in Astronomy. 26, 67.

[9] Arrhenius, S., 1903, "The Propagation of Life in Space." Die Umschau. 7. 481.

[10] Life Experiment., 2009, (http://www.planetary.org/programs/projects/life/).

[11] Warmflash, D, and Ciftcioglu, N., 2009, "Living interplanetary flight experiment: an experiment on survivability of microorganisms during interplanetary transfer." (http://www.lpi.usra.edu/meetings/phobosdeimos2007/pdf/7043.pdf)(PDF).

[12] Miller, S. and Urey, H., 1959, "Organic compound synthesis on the primitive earth." Science 130, 245–251.

[13] Stockwell, J., 2002, "Borel's Law and the Origin of Many Creationist Probability Assertions." http://www.talkorigins.org/faqs/abioprob/borelfaq.html.

[14] Borel, E., 1963, "Probability and Certainty. Dover, translated from the original, Probabilite et Certitude," Presses Universitaire de France, (1950).

[15] Cell biology by the numbers: "What is the elemental composition of a cell?" http://book.bionumbers.org/what-is-the-elemental-composition-of-a-cell/.

[16] Mojzsis, S. J., 2001, "Life and the evolution of Earths atmosphere, In Earth-inside and out," edited by E. Mathes: New press. New York. 32-39.

[17] Bank, E., 2010, "How Much Time Does It Take for a DNA Molecule to Replicate?" Demand Media (http://classroom.synonym.com/much-time-dna-molecule-replicate-21660.html).