

LIFE'S PUZZLE

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Abstract

The paper deals with the binominal sentence "Agriculture for Life". Associated with its reversed form, i.e. "Life for Agriculture", it was successfully used by a bright mind as an appealing motto. This is why the meaning of that homogenous sentence is further investigated on the basis of the third axiom of classical logic namely, that of the included third. When as hidden third the gravity is included then one of motto's fascinating meanings seems disclosed. Gravity contains life's key. For this purpose some legends and fairy tales, well known to Romanians, have been selected. The paper concludes that gravity holds indeed the key of life, but the nature of gravity remains unknown. A higher level of consciousness is necessary before decrypting the gravity.

Key words: anthropomorphism, automorphism, congruence, idiomorphism, transcendence.

INTRODUCTION

For theoretical physics the twenty-first century started in force. Stephen Hawking has summarised his former works and published in the year 2005 "The Theory of Everything" (Hawking, 1996; Hawking, 2001; Hawking, 2003; Hawking, 2005). In seven lectures the history of the universe from big bang to black holes is briefly presented. The book concludes with a desideratum, namely to do a unified theory of physics. That will allow understanding the real identity of mankind, where it is coming from and where it is directed to. For the time being the nature of gravity, even with the involvement of quantum mechanics, was not disclosed yet. The physicists are however optimists. After only two years from coming out of Hawking's book "New Theories of Everything" was published (Barrow, 2007). The author's quest for the ultimate explanation to discover the laws that govern the universe and are responsible for human existence, seems weak. In the year 2013 Lee Smolin in Canada, author of the book "Three Roads to Quantum Gravity", 2001, recently published a fascinating theory about time (Smolin, 2013). Since according to his view time is real and space only an illusion he is suggesting to reverse the binominal "space-time" in "time-space" and that would open the future for disclosing the most familiar of the

four fundamental forces existing in universe, the force of gravity. The other three forces, namely the electromagnetic, weak nuclear and strong nuclear ones are already well known and kept under control. The force of gravity is by far the weakest of all four forces and classical physics assumes it is propagating by gravitational waves while quantum mechanics by matter particles called "gravitons". In order to support the research in theoretical physics Large Hadron Colliders were built in the last two decades first near Geneva, Switzerland, and then, the second, in Manchester, (Marcelloni, 2013). In the year 2015 Manchester will produce collisions of a scale never achieved by any accelerator in the past, equivalent with 154 tons of TNT or similar to earthquakes of magnitude 4 on Richter scale. In addition, one of the objectives of laser research project, which recently started at Magurele Platform near Bucharest, is also to study new concepts in construction of particle accelerators. Therefore a true scientific offensive, based on the analytical Aristotelian thinking, is now, in the dawn of the new century, devoted to disclose the mystery of gravity.

The 4th International Conference of University of Agronomic Sciences and Veterinary Medicine of Bucharest is held this year under the well-known motto "Agriculture for Life, Life for Agriculture". The reversibility of this

binominal expression emphasises that the Life devoted to Agriculture is supposed to be rewarded in return by Agriculture with refreshed Life, according to endless cyclical laws of Nature (Sofronie, 2012). Since Agriculture and Life have similar biological roots the expression of the above praised motto is homogeneous and worth to be analysed according to the third axiom of classical logic, namely that of excluded third (Nicolescu, 2009). Recently, this axiom was further expanded by Prof. Basarab Nicolescu, and the included third may be optionally replaced with the hidden one (Nicolescu, 2014). In a trans-disciplinary analysis this new philosophical tool is a source of knowledge able to reach all levels of "Reality" namely those that corresponds to existing levels of understanding. For sure, in a world that is continuously moving, and Malthus theory of evolution not yet forgotten, such an analysis is expected to bring surprising results about the binominal Agriculture-Life. Particularly, for the purpose of this paper devoted to life, gravity is chosen as a hidden third. The interest for gravity is as old as the conscious life. There are many proofs that primitive people were aware about gravity and behaved accordingly. The knowledge progressively acquired was stored in legends or fairy tales, always cryptically protected. The thinking used in the past was concise and of synthetic type, like Plato's one, often with several meanings. From very early times people learned to use knowledge as an ascendant against the others. Some historians assumed first this attitude as being generated by self-surviving instincts. Not much later, at a planetary scale, the stored knowledge in human minds degenerated into sources of aggression against confrères. In spite of that primitive component of mankind evolution, amazing discoveries were made during centuries. In order to answer to the bewilderment expressed by paper's title few of the best known legends or fairy tales, more or less devoted to gravity and already fixed for a long time in the consciousness of Romanians, were selected below as study cases.

WHAT GRAVITY DOES IS?

Thinkers like Aristotle, Archimedes and Galileo Galilee dealt with what today is called gravity, but none understood it properly. Isaac Newton (1643-1727) was the only one who discovered the two fundamental proprieties of the matter, namely inertia and gravity. Inertia preserves the mechanical state of rest or rectilinear and uniform motion of a body, while gravity is the force of attraction of the Earth. He extended the interaction between material bodies to the whole universe as a law equally valid in Heaven and on Earth like the *Pater noster* prayer also states. Newton's work, in its three books, also includes action as cause of motion and the equilibrium of material bodies as well. It is entitled *Philosophiae Naturalis Principia Mathematica*, in deliberate contrast with Descartes' *Principia Philosophies*, and was published in 1687.

According to the law of universal gravitation, as it is called by Hawking in (Hawking, 2003), the attraction force F developed between two bodies with masses m_1 and m_2 , distanced between them by r , is defined by the expression

$$F = K \frac{m_1 m_2}{r^2} \quad (1)$$

where Newton's universal constant K , determined with Cavendish balance, assumes the value

$$K = 6.673 \times 10^{-11} \text{ Nm}^2 \text{ kg}^{-2}. \quad (2)$$

Particularly, by considering the Earth as one of the two bodies with mass M while the gravitational mass of the other body, located on Earth surface at distance R from its center, is written with m_g , expression (1) assumes the form

$$F = K \frac{M m_g}{R^2}. \quad (3)$$

On the other hand according to Newton's second law, the force acting on an inertial mass m_i moving with acceleration a , has the expression

$$F = m_i a. \quad (4)$$

By comparing expressions (3) and (4)

$$m_i a = K \frac{M m_g}{R^2},$$

and since experimentally it was proved that the two masses m_i and m_g are equal, i.e.

$$m_i = m_g = m \quad (5)$$

one finds the intensity of the gravitational field under its two forms of scalar and vector,

$$a \rightarrow g = K \frac{M}{R^2} = 9,81m/s^2 \rightarrow \vec{g} \quad (6)$$

which assumes acceleration dimension with its numerical usual value. Returning to expression (4) one obtains the scalar and vector forms of gravity force

$$F \rightarrow G = mg \rightarrow \vec{G}. \quad (7)$$

This is the attraction force of Earth that keeps all material bodies on permanent contact with Earth surface and is also called weight. The above theoretic results are confirmed by reality and are of great use for practical purposes. Unfortunately, more than that is unknown. This is why about gravity a legend with Newton's apple, which follows the cryptic rules of antiquity, was created.

ETERNAL YOUTH

Among the 37 legends or fairy tales published by Petre Ispirescu (1830-1887) at the end of the nineteenth century in Bucharest, one is titled "Youth without Age, and Life without Death" (Ispirescu, 1882). The story tells that a prince guided by his winged horse went out into the world to find the eternal youth. Needless to say man and horse had to overcome many obstacles, but finally his dream came true. Their arrival on that blessed land was heartily greeted by a beautiful young girl who lived together with two of her elder sisters as well as by representatives of all species of animals and birds like on Noah's Ark. Of course, the prince married that sweet girl and they lived happy for a long time, inside the borders of that privileged territory, but without having any children. When he once, by accident, overpassed the forbidden borders of their land the prince was immediately severely punished. Returning home with his winged horse he was astonished to find out that in the meantime many years had passed. Alone and abandoned even by his horse, he eventually passed away in deep sadness. The message of this story states that life on Earth is like a river, namely a

permanent, continuous and endless regenerating process. Only the participants in this universal process are compulsory ephemerides and should be periodically refreshed. Eternal youth, as that imagined by prince, would be possible only on a far planet, with a different gravitational field, and without any regenerative components, like a living utopian museum.

THE KISS

In March 1907, after only two months spent as practicing to Auguste Rodin (1840 -1917) in Paris, Brancusi rented a workshop in Montparnasse area and started his independent work of creation. So, in the same year he created his own "Kiss" as a replica to Rodin's statue with the same title. Brancusi's "Kiss" is reported to an orthogonal system of Cartesian axes such as the faces of lovers are joined along the vertical axis, while the embracing parallel arms along the horizontal axis. That vertical axis of reference is not a randomly one, but an axis of symmetry. This means the two members of the couple are physically well balanced in the gravitational field as a basic condition of being conscious about the step they are following. But really fascinating is that they are mirroring in each other. In mathematics mirroring means congruence or superposing. It is the best proof of true, genuine love that motivates their reciprocal attraction for fulfilling the act of kissing. In the first phase the statue was limited to the bust of lovers inscribed into a hexahedral parallelepiped that satisfies Euler's topological theorem between facets, peaks and edges, $F+P=E+2 \rightarrow 6+8=3 \times 4+2$. By its gravitational orientation the statue received a cosmic connection, while the horizontal force of embracing, being free of gravity, participates in the act of kissing with its maximum intensity. According to his original concept, radically different by Rodin's "Kiss", the statue is not representing a real, ephemeral kiss, but a symbol of the eternal kiss, that involving the total union of lovers with universe. When Brancusi was asked to produce a funeral monument for Tania Rachevskaia, a Russian anarchist girl who committed suicide for love in 1908, in the

second phase of his act of creation, he decided to extend the statue of "the Kiss" to the whole bodies of the couple. This small statue of only 30x20x89,6 cm, in cheap, ordinary limestone, is still preserved and carefully watched in Montparnasse Cemetery from Paris. In the third phase of creation, thirty years later, already in 1937, the stylized image of this extended "Kiss" was carved in the travertine plates of the "Gate of the Kiss" in Targu Jiu, Romania. A chain with forty copies, is suggesting a typical Romanian round dance that Mircea Eliade (1907-1986) called in his book "Solilocvii", published in 1932, "the cosmic dance". Thus, by his "Kiss", symbolizing the beginning of gravitational life, Brancusi became definitely consecrated in cosmic geometry of the universe.

WISDOM OF THE EARTH

In the same year 1907 this small statue in crinoidal limestone, collected from the Catacombs of Paris, with dimensions 24.9x16.5x56.5cm was called by Brancusi himself "the Wisdom of the Earth". It is written that in 1910, when the statue was submitted to the Art Museum in Bucharest to be exhibited, it roused contradictory reactions, not being well understood by onlookers. Most of them were intrigued by the strange shape of its head, but it was finally accepted. Ten years ago the statue was called *Sophrosyne* meaning "soundness of mind" in Greek (Pogorilovschi, 2005). The above mentioned misunderstandings were possible because everybody *ab initio* believed that the statue is representing a woman what is untrue. Neither is the Sphinx erected in Egypt by AKA Cheops a woman, but a lioness with a woman head. Nowadays the reality is regarded with more straightforwardness than before. Wisdom comes from the ability of the human brain to think, and the brain is the matter located in head. Therefore the statue is without any doubt symbolically representing the Earth's geoid, accordingly reshaped by sculptor's intuition, supported by a female body. This proportionally reduced in dimensions model of the Earth is perfectly centered on female body by their common vertical plan of symmetry. As a proof, the female body was also

gravitationally shaped with a firm vertical back and a large horizontal base. The stylized eyes, nose, mouth, ears and even hair on the Earth surface were applied by the sculptor for the sake of camouflage only. For long time, people learned to hide their secrets like thesauri. The idea of supporting a cosmic body on human shoulders is not new. In Greek mythology Titan Atlas held up the celestial spheres. It is supposed that for an inhabited Earth Brancusi preferred a female as the unique being able to generate life. Once this meaning of the statue is accepted, it would be easy to understand that its wisdom consists in the gravitational field itself. Earth and humans are in resonance, and therefore the humans are responsible for Earth future. The statue might be regarded as a homage brought by Brancusi to gravity.

OEDIPUS

The question is why should gravity be praised by humans? To this question Oedipus is definitely answering. In short, the story starts in Egypt where the King Khufu or AKA Cheops erected the Sphinx (2558-2532 BC) beside his Great Pyramid. The Sphinx is a memorial devoted to the beginning of time, called by Egyptians *ZepTepi*, which according to Robert Bauval occurred in the year 11,451 BC. In that very year human consciousness was fixed in brain as in solid matter. About that event Plato (428-348 BC) in his *Timaeus*, famously wrote that World Soul was being crucified on the World Body (Black, 2010). According to a legend the Greeks, aware by that event, took the name of Sphinx to a mythological monster, also as a winged lioness with a woman's face, which used to check whether human consciousness works. The people found unconscious were immediately killed. It is said that once the monster met Oedipus, the King of Thebes and asked him the riddle: "What is it that has a voice and walks on four legs in the morning, on two at noon, and on three in the evening?" Oedipus immediately answered that it was man who, as a child crawls on all fours, as an adult walks on two legs, and in old age uses a stick as a third leg. In this way Oedipus escaped by monster's punishment, but his answer contains a great truth: during adult life

the role of the stick is assumed by gravity. It is the gravity which provides to all bipeds their stability of equilibrium in both mechanical states, those of rest and motion. Similarly the gravity acts on plants, flowers and trees. This is why gravity is worth of human homage.

NARCISSUS

Brancusi devoted in 1913 a small statue of white marble to *Narcissus* without expressing any compassion for his sorrow. Brancusi was conscious of this sad and paradoxical legend in the same time. All the boys in the world are beautiful, and therefore none of them is motivated to commit suicide only for reason of his own beauty. Considering the legend from the viewpoint of physics, it seems that in fact Narcissus discovered that his own image mirrored by the shimmering water was immaterial and therefore free of gravity. Only he, the material one, was subjected to the permanent action of gravity being prevented to move and act as a free person. This is why he decided to find his freedom by suicide. Plato also drew attention that by mirroring transcendence from material life to the immaterial one occurs. Since then the call for liberation from gravity's compulsions took large proportions becoming a true Narcissus Syndrome. It is strange however, that the same gravity which is praised in Oedipus Legend is blamed in the Narcissus one. This duplicity of character is typical for human structure.

ADAM AND EVE

This Biblical legend is mostly paradoxical by bringing innocent people under the tree of knowledge and then proclaiming that their access to knowledge is forbidden. Since the seventeenth century Newton had proved that in the incriminated apple tree was hidden nothing else but the knowledge of that time about gravity, namely the free falling down of material bodies. Why should people be kept afar off that knowledge? Is gravity of top secret? Since the end of twentieth century the puzzle started to intrigue scientists. Brancusi devoted to Legend of Adam and Eve, with his sincere compassion, a wooden statue of

239.4cm in height, so that it may always be regarded by anyone upwards. The heads of the two partners, with open mouths as if shouting "not guilty" and faces expressing wonder for their unexpected expulsion are rigorously superposed on the same vertical axis on which their bodies are melting into each other, that a thin trunk resulted. Such shaped the statue is displaying the total solidarity of Adam and Eve in facing with dignity that accusation of sin. Since 1921 the statue is exposed at Solomon R. Guggenheim Museum in New York. Brancusi remained consequent in his interest for gravity in spite of the prohibition around this subject.

THE BIRDS

Like humans the birds are also bipedal and have similar problems for preserving their equilibrium in the gravitational field. Between the years 1910 and 1924 Brancusi created statues of birds gravitationally shaped with respect to their vertical plans of symmetry where gravity centers are always located. With statues like the "Magic Bird" 1910, "Bird in Space" 1923 and "the Cock" 1924 he took a step forward by explicitly involving gravity in his creation. The shapes of statues became more precise than his earlier creations showing confidence and desire to continuing his search.

FLYING BIRDS

Brancusi produced the pen drawing entitled "Snail and Birds" in 1929 for illustrate the book of poet Ilarie Voronca about "Plants and Animals" (Brezeanu, 2005). The flight of birds into precise formation compared with a snail's trail seems magnificent and joyful in the same time. For the eyes of twenty-first century it can equally represent the flight of a formation of drones. But what is a flight if not a proof of taming the gravity? The author's option for the above mentioned Narcissus Syndrome was then definitely expressed.

ENDLESS COLUMN

"The Column" as a vertical succession of coffins is a funeral monument devoted to the Unknown Soldier. It was completed in three

months only, from Aug.15 to Nov.15, 1937. Brancusi used for shaping his Column three topological concepts, i.e. the anthropomorphic, idiomorphic and automorphic ones (Sofronie, 2001; Sofronie, 2004; Sofronie, 2005). In the first stage of his creation by “the Kiss” and “the Wisdom of the Earth” he brought homage to gravity, and that homage has been proved strongly motivated. In the second stage of his creation through “Narcissus” and “Adam and Eve” he expressed some concern about gravity. In the third stage by his “Birds” and “Flight” he praised the gravity. Finally, after three decades of creative work, from 1907 to 1937, his “Endless Column” topologically and transcendently defeated gravity. Brancusi proved consequence about gravity, and through gravity all his creation becomes coherent. It seems that Brancusi has felt the gravity of matter with the same skill as Vincent van Gogh has seen nebula in some stars on the night skies. Indeed, all his creation is based on “divine intuition” as Silvia Paun used to say. Intuition means knowledge beyond logic and feeling the *incognoscibilis* without explaining it. It is answering only to existential questions and succeeds there where reason fails. Finally, intuition comes from the soul not mind and always acts spontaneously. For Brancusi “the Column” was the achievement of his life that none in the World succeeded before. It was also his last masterpiece. After completion “the Column” in Targu-Jiu, during the subsequent twenty years, he didn’t create anything else new (Sofronie, 2006; Sofronie, 2012; Sofronie, 2013). The summit was reached. “The Column” has demonstrated that life is not only endless in space, but also everlasting in time.

CONCLUSIONS

The hidden third, chosen at the beginning of this paper, proved to be inspired. Gravity holds indeed the key of life. It is the force that governs the laws of Heaven and Earth. Life is a form of energy, called vital energy, and most of it is produced by motion in the gravitational field. This is why the nature of gravity is still kept top secret by Nature itself. The existing society is not yet prepared to manage the secret of life. Scientists believe, however, that for

decrypting the gravity and controlling this magic force, a new level conscience is strongly necessary. It seems therefore that André Malraux’s bet for the twentieth first century was well motivated and it still remains open.

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