

WHAT IS LIFE?

or

$$\alpha + \beta + \omega = \infty$$

ION BĂRA

Summary. From long times, our ancestors asked themselves “**What is life?**” In order to answer this question, we have to establish what the Universe is, how it appeared, and how the material world was formed. Further on, we have to establish how life appeared. These are questions to which, both Religion and Science, represented by many currents tried to answer at. Among this survey, there we present the answer of Professor Ion I. BĂRA at the question “**What is life?**”, and also to the mechanisms that lead to the appearance of first forms of life and their development. The answer to this question can be expressed by the relation $\alpha + \beta + \omega = \infty$, i.e. substance, energy and information.

Key words: life, substance, energy, information.

Rezumat. Întrebarea **Ce este viața?** a fost pusă de strămoșii noștri, din cele mai vechi timpuri. Pentru a răspunde la această întrebare, trebuie să stabilim ce este Universul, cum a apărut el, cum a apărut lumea materială. Iar ulterior, cum a apărut viața. Sunt întrebări la care a căutat să răspundă atât Religia, cât și știința, reprezentată prin diferite curente. În paginile de mai jos, este prezentat răspunsul dat de **Profesorul Ion I. BĂRA**, la întrebarea **Ce este viața?**, precum și la mecanismele care au condus de la apariția primelor forme de viață și la perfecționarea acestora. Răspunsul la întrebarea **Ce este viața?**, poate fi exprimat prin relația $\alpha + \beta + \omega = \infty$, adică substanță, energie și informație.

Cuvinte cheie: viață, substanță, energie, informație.

What is life? This is the trembling question from the past; it deeply influences our present and will always be. It is the interrogation that preoccupies science men and priests, and artists, philosophers, all people that have the gift of thinking. Priests have revelations, science men discover hidden laws of the **Universe**, artists create, and philosophers elaborate fascinating conceptual systems. But, for the time being, no one was till able to give an answer to this long debated question. As Petre Tutea stated (1993): questions like that “*situate the human spirit in the world of questions*”.

Meanwhile, the large number of thinkers that passed on **Earth**, elaborated, simultaneously or successively two categories of hypotheses: **creationism and evolutionism**.

The former category places the issue of life in **God's** matter; the latter, is attributed to the inexorable moves and transformations of universal matter. We have to be more specific. For real, there is no opposition between the two categories, rather a complementary relation, for both are looking for and propose an answer to the same question, but use different methods to do it. On the other side, **the problem of origin of life on Earth** is a false matter, and this is why it is considered so: **Life** is an intrinsic component of **Universe** itself, and **Universe** has no beginning and no end, in time and space. In its turn, **Life** is infinite in time and space, even if it is not permanent in a certain point of the **Universe**. But, as existential structures, nor galaxies, stars or planets are permanent. Everything is continuously transforming in the spatial and temporal infinity of the **Universe**. But, what is **Universe**? The human mind does not have the capacity to accept this notion, for, the human being generally does not accept what it can not explain and imagine. The notion of Infinite too is part of the things that the human being can not imagine. B. Pascal defined **Universe** as a circle, whose center was all over, and whose circumference was nowhere. Interesting and majestic definition this is. For us, **Universe** can have at least two representations, namely: the unique and infinite **Universe**, and the **Universe** that can be known, touched, and which, because of the limits of science is finite. For this definition, there was approved that the **Universe** “began” about 18-20 billions years ago. With all these, the nature of the **Universe** that can be known and is accessible is limited. We are talking here about the *Planck limit*, which was fixed, by calculations at the 10^{-43} sec from its beginning). There is no possibility to reach it beyond, even if by thinking. It is admitted that gravity was so powerful, that space and time, the two fundamental judgments curved at some point. It can not be anything thought about the state of the Universe at the initial moment, the “0” moment. Mihai EMINESCU, in *LUCEAFARUL* elegantly suggests, with his genial capacity, the events that developed at the beginning of the Universe:

“And from the Chaos' vales he sees
How in an immense ring
Round him, as in the World's first day,
Lights from their sources spring;

How, springing, they hem him like an
Ocean that swimming nears...
He flees carried by his desire
Until he disappears.

For that region is boundless and
 Searching regards avoids
 And Time strive vainly there to come
 To life from the dark voids.

'Tis nought. 'Tis, though, thirst that sips him
 And which he cannot shun,
 'Tis depth unknown, comparable
 To blind oblivion."

EMINESCU suggests that the Evening Star (*Luceafărul*) had reached to **God**. But, **God** has *no end and no beginning*. **Universe**, too is has *neither end nor beginning*. Therefore, **God** is **The Universe**, **Universe** is **God**. There is no other possibility. Then, if **God** would be after the **Universe**, then, it means that **Universe** is superior to **God**. And, this is not possible! The, if the **Universe** is **God**, life being a part of it, then it is true and possible that it has been always been and will always be. If **God** created the **Universe**, there is no sense for us to wonder how Life appeared on **Earth**. In a **Universe** that was created, everything else that appears after, as a consequence of some inexorable laws belongs to creation. Punctum!

And then, **what is Life?** Is it just substance? Indubitable, NO! Or, in another way of saying it, not juts substance. Is life substance + energy? Again, NO! If to the two components of life we add another one, which is immaterial, i.e., **Information** we come closer and closer to the essence of life. And, not just that! We shall notice that we are facing some new and fascinating questions, whose answers are incomplete. Lucian Blaga (1990), one of the greatest philosophers of Romanian literature stated that: *there are things that can only be vaguely understood. We, humans are trying to deeply understand them and, sometimes we are finding ourselves that we do not understand them at all.*

So, given this, what is **Information**? How did it appear, how does it accumulate, how is it transmitted? **Information**, as an intrinsic extra material component of the **Universe** must be perceived and analyzed carefully, so that any confusion should be avoided.

In **The Bible**, considered **the book of all books**, in Chapter I from the Holy Gospel after John, in the New Testament, we find the following verse: "At the beginning, there was the **Word**, and the **Word** was at **God**, and **God** was the **Word**!" Thus, at the beginning, there was **the Word**, i.e. **Information**, i.e. **God**! This means that the first was **Information**. Constantin NOICA, another titan of the Romanian Philosophy, stated: "*Liberty is given by the Word!*" Translated in scientific terms, there is a direct correlation between the informational content and the degree of independence of a system. This aspect of this matter will be detailed later on. We must say that there is a clear indetermination between the degrees of liberty of the subsystems of a system, and the quantity of information held by the integrated system. In **The Bible**, referring to the relation **Word = God**: "All things were done by **Him**, and, nothing without **Him**; **Life** was within **Him**, and **Life** was the light of people". In the verses above, **God** is equal to the **Word**, i.e. with the **Information**. As we are going to find out, **Information** is self-creating, it appears without any energy consumption. There can be stated that **Information** appears out of nothing (ex nihil). But, again, what is **Information**?

In a definition, **Information** can be perceived as *a message about the events that happened or are about to happen within a system* (THEODORESCU and GUIASU, 1965). HARKEVICI (1963) considered that **Information** is the subject matter of the stocking, transmitting and processing actions; A. I. BERG (1963) - **Information** characterizes the degree of the organization of the substance or of energy. Norbert WIENER (1963), the father of Cybernetics states that: **Information** is *information; it is not substance or energy*. Mihai DRĂGĂNESCU (1989, 1990) points out: "**Information** is not matter", even if there can not be ignored the relation between information and matter; he also points out that the notion of notion can be considered a primary notion of philosophy and science, and there can be admitted that the unity of the physical forces in the **Universe** has an informational origin. This acknowledges the godly role of the Information. The complexity and mystery of this component of the **Universe** can be suggested by certain examples that reflect enigmatic phenomena. Telepathy and teleportation, the auras of living beings, the ungentropic behavior (for self, but entropic for the surrounding environment) is characteristic for biotic systems; "the memory" of the sub-atomic particles are only a few of the dimensions of the informational component that can be known.

Telepathy, as a reality became interesting in the XIX the century, due to a strange happening. One day, on a street in Paris, a child began to beg that his father be saved from drowning. Later, there was found out that, in those very moments, a few km way, the child's father died drowned in a river. A pair of twins lived in different towns, far away from one another. Suddenly, one of the two brothers fell sick of measles. Simultaneous, the other brother fell sick of measles in the same time, as his twin brother did. Individuals belonging to the water hyacinth have been separately cultivated in two crystal neighboring vases. In one of the two vases, poison was added. Obviously, the plants dried. Concomitantly, the ones in the other vase dried, too.

By experiments taken in our laboratories, in order to check the *COMOROSAN effect*, there was possible to notice some strange events that could not be explained. By X-raying with green light, which is known as being non-energetic, a crystalline substance (potassium), which was, then used on other plants, there were noticed stimulating effects for the assimilation and growing processes, that were superior to the ones inducted by the same substance, but without X-rays. We have to mention that the effect can be noticed when X-raying was done at least 5 seconds, or at

least a multiple of 5. According to the laws of Physics, the X-raying with green, non-energetic light should not have an effect at all.

Very interesting, indeed are the experiments taken in modern Physics laboratories. Two sub-atomic particles were put in contact, by collide. Both got deformations. Then, they were separated. There were also noticed that, even separated, when one of the particles suffered different transformations, the other one behaved exactly like the one that was damaged. The conclusion is the two particles have informational memory and stay in contact, one with the other by “unknown mechanisms”, and each of the two still has memories about the other one. DRAGANESCU speaks about the deep information of the matter, and one of the non-Darwinian evolutionist theories, i.e. the theory of self-evolution states that, within the deep information of the matter all there are anticipated all the sequences, and events that the matter will follow in its dynamics, from inorganic to organic, to life (LIMA-DE-FARIA, 1988). But, from the point of view of the constitution of lively systems, it is interesting to find out how hereditary information appeared and developed, under the determination of the specific individual and group qualities of lively systems. Both the matter of transmitting hereditary information, from one generation to another, and the matter of the information characteristic to individuals, more complex than the hereditary one must be debated. **Information** represents a component of the **Universe**, along with substance and energy. Thus, **Universe** can not be reduced to matter. But, **Information** itself is the component of lively systems. Therefore, likewise the **Universe, Information** has three main components. **Life** can not be equaled, nor as a notion nor as a structural reality to **the living matter**. On the other side, taking into consideration that **Life**, as infinity is extremely complex; any attempt to characterize it is extremely difficult.

Information, likewise any component of the **Universe** can be evaluated and measured, too. C.E. SHANON, mathematically basing the notion of “information” established its measure unit, i.e. the **BIT**. In order to comprehend its meaning, under an informational report, a human organism, for example, we must make the following mentions: On a CD-ROM there can be stocked about one million (1000000) books, of an average format. In order to describe the details of the human body, it takes 10^{11} **bits**, i.e. 100 billions **bits** or, 10 CD-ROMS, i.e. 10 million books, of an average format.

But, where does this large amount of information come from? How does it constitute, how does it accumulate and, especially, how does it transmit from one generation to another? Does it exist in every individual? Well, there can be proved that the amount of information that a lively system holds, be it bacteria, plant, animal, human, biocenosis, is created itself, and amplifies with the development of ontogenesis, and of phylogenies. Only the information specific to one species or another and catalogued as hereditary is constant, and is stocked and transmitted codified, from one generation to another. But, hereditary information, likewise the universal **Information** appeared all of a sudden, on the basis of objective causal laws. In order to explain the succession of the processes that lead to the self constitution of specific hereditary information, we need to make an incursion in the *Pythagorean* philosophic system.

According to the *Pythagorean* doctrine, each element of the **Universe** is based on the trinity: “beginning, middle, end”, and each of the element of this trinity corresponds to a symbol that generated all the things. **Monad**, i.e. **1** is the perfect principle, the beginning; **Dyad**, **2** is the unlimited principle and, together with unity it generates the number series that are considered principles of all things in the **Universe**. **Dyad** is the **Universe - Unity** relation, the relation in which the **Infinite** takes part at the finite represented by the **Unity**. **3** and **1** is a prime number couple that limits the indetermination of the Dyad. Analyzing the steps in the formation of a nucleotide, that is a key element in assuring the hereditary determinism, we notice a similar situation with the **monad-dyad-triad** succession, in the way that the nitrogen basis (purinic or pyrimidinic) is the main component with a sematic role within the nucleotide. Or, it is the **Monad**, which unites with pentose and forms **Dyad**. The latter, by uniting with the Phosphoric radical loses its indetermination and forms the **Triad**.

The number **1** and **3** are present in the religions, myths and superstitions of most indo-European peoples. Given this context, the **Vedic Triad**, the **Capitol Trinity**, the **Greek Triads**, **Zeus- Hera- Athens**, or **Zeus- Hera- Dionysus**, the **Holy Trinity** at Christian peoples(**Father, Son, the Holy Ghost**), the **three daughters of Allah (Al Hat, Al Uza and Manat)** at Muslim peoples, the **Six-Cornered Star of David (three times two)**, in Jew religions.

PYTHAGORAS thought soul was made-up of three elements: reason (**nous**), thought (**phrens**) and passion (**thymos**). **ARISTOTLE** stated that “in the composition of reasoned being, one part is divinity; another is human and another one, the **Pythagoras** way”. The number **3** signifies the triangle, the surface, the width, the masculine, and is considered the starting point in genesis. As we previously stated, the nucleotide (the triad) is the starting point in constituting the hereditary information; at the Chinese people, **3** is a sequence of Creation. **LAO ZI**, for example mentioned that **Dao** is the image of the order principle, the image of a path that is about to be walked upon. **Dao**, the perfect and undifferentiated being gave birth to the **One**, that, in its turn gave birth to **Two** (Heaven and Earth), which also gave birth to the **Three**, of which the 10 thousands beings were born, and carry **Yin** and embrace **Yang**.

For **PYTHAGORAS**, **3** stands for the first impair and asymmetric complete number, the second triangular number in the formulae: $n(n+1)/2$, with the following representation:

Within the Romanian spirituality, number **3** is a very important leitmotif of myths, beliefs and superstitions. In all fairytales, there are, either 3 kings, or 3 daughters, or sons; 3 rivers to pass, 3 forests, 3 mountains; fights last 3 days, 3 years; there are also 3 weddings: silver, gold and platinum; in *Miorita* there were 3 flocks, 3 shepherds, 3 pipes (made of beech tree, of elder tree and made of bone), the sheep spoke for 3 days, and many more. There is Hell, Purgatory and Heaven; Jesus was crucified with 3 needles, he preached for 3 years, he resurrected in the 3rd day, he showed to others 3 days after; Peter denied 3 times(the rooster sang 3 times), there are 3 fates, Christmas and Easter last 3 days each, there are 3 evil hours, the dead is watched for 3 days, weddings lasted 3 days, a long time ago, Voronet Monastery was built in 3 months, 3 weeks and 3 days and many more.

α

1

α

$\alpha \quad \alpha$
 $3 = 1 + 2$

6

α

$\alpha \quad \alpha$
 $\alpha \quad \alpha \quad \alpha$
 $6 = 1 + 2 + 3$

α

$\alpha \quad \alpha$

$\alpha \quad \alpha \quad \alpha$

$\alpha \quad \alpha \quad \alpha \quad \alpha$
 $10 = 1 + 2 + 3 + 4$

It is very interesting that **number 3** is present in the most diverse natural phenomena and processes. It must be mentioned that the essential processes in the becoming of the cognoscible Universe lasted 3 seconds, the radiation of the Universe is of about 3 K, by disintegration, atoms emit radiations, i.e. α , β , γ , the atom is made up of electrons, protons and neutrons, baryons (subatomic particles) are made up of 3 quarks and 3 anti quarks, there are 3 mesons, 3 neutrins, and 3 leptons, the light speed is of 300. 000 km/s, $\pi= 3.14$, insomnia are removed by imagining an immense white 3, on a black board, the force field in the pyramid effect is 6.666, the segregation, in the Mendelian laws is a report of 3:1, in case of a character pair, 9 : 3 : 3 : 1, in case of 2 pairs of characters, 27 : 9 : 9 : 9 : 3 : 3 : 3 : 1, in case of 3 pairs of character.

Analyzing the characteristics of the genetic code, by which, hereditary information is stocked and transmitted, there is noticed the obsessive presence of **number 3**.

Hereditary information, characteristic to every human being is stocked and codified in genes that are made up of codons, which, in their turn are made up of nucleotides. In the specialty terminology, a nucleotide is a code letter, a codon represents a code word, and the gene is a sentence, or even a phrase, representing, in its turn a specific text.

It is a truism the fact that a nucleotide, made up of 3 components (as we previously proved) and not 2, 4 or more. These components are: **the nitrogen base, the pentose and the phosphoric radical**. The RNA molecule contains ribo-nucleotides, which have in their composition the purinic bases, *Adenine* and *Guanine*, and the pyrimidinic bases, *Cytosine* and *Uracile*. The macromolecules of DNA have the same purinic bases, but, as pyrimidinic bases they have *Timine* (instead of *Uracile*), and *Cytosine*. The DNA macromolecules have the two catena assembled in a double propeller, by the hydrogen bridges that form between the *Adenine* and the *Timine* (two bridges), and between the *Guanine* and the *Cytosine* (three bridges). It is interesting to remark that the maxim stability of the double propeller is given by the triple bridges. A codon as it can be noticed in the table below is made up of 3 nucleotides (and not 1, 2 or more); there are 3 STOP codons (**UAA, UAG, UGA**).

The RNA Genetic Code

The first nucleotide of the codon	The second nucleotide of the codon				The third nucleotide of the codon
	U	C	A	G	
U	UUU	UCU	UAU	UGU	U
	UUC	UCC	UAC	UGC	C
	UUA	UCA	UAA	UGA	A
	UUG	UCG	UAG	UGG	G
C	CUU	CCU	CAU	CGU	U
	CUC	CCC	CAC	CGC	C
	CUA	CCA	CAA	CGA	A
	CUG	CCG	CAG	CGG	G
A	AUU	ACU	AAU	AGU	U
	AUC	ACC	AAC	AGC	C
	AUA	ACA	AAA	AGA	A
	AUG	ACG	AAG	AGG	G
G	GUU	GCU	GAU	GGU	U
	GUG	GCC	GAC	GGC	C
	GUA	GCA	GAA	GGA	A
	GUG	GCG	GAG	GGG	G

By the genetic code, the hereditary information, specific to each individual biotic system is stocked and codified in genes, which are billeted on chromosomes. During the ontogenetic development, by transcription and translation processes, the characters stoked and codified in genes are phenotype like. It is interesting that, during phenotype process (i.e. the decoding of the hereditary information), we notice the existence of **3** components: **DNA (the gene)**, **RNA**, and **Protein**; in the transcription and translation processes there are involved **3** types of ribonucleic acids, namely: **RNA-m**, **RNA-t** and **RNA-r**. More than that, biosynthesis process has **3** mechanism of self adjustment: **induction**, **gene repression**, and **enzymatic retro-inhibition**. The operon, on the other side is made up of **3** main components: **promoter**, **operator**, and **structural genes**. Recently, after elaborate laboratory experiments; it was obtained the assembly of **tri-catena RNA**, with special implications, both theoretical, and practical. The reversed transcription, which is a possible explanation for the processes that evolved at the beginning of life, also implies **3** sequences of circulation, namely: **RNA-DNA- RNA**.

Therefore, for the constitution and functionality of the hereditary information, **number 3** is determinant. Although in the constitution of the **DNA** there are 4 nucleotides (**A, G, T** and **C**), which represent the same number of code letters, codons are made up of **3** code letters and not **1, 2, 4** or more. Mathematic calculations prove that this is the optimum relation that can establish between an amino acid (of the 20 ones existent in nature), and a codon which has a minimum number of letters. If a codon had just one letter, there would have been only 4 (**U, C, A, G**), and only 4 amino acids could have been specified. If a codon had two letters, there resulted 4^2 (16 combinations), and only 16 protein amino acids of the 20 could have been specified. In this latter situation, the codons would have been, as it follows:

UU	CU	AU	GU
UC	CC	AC	GC
UA	CA	AA	GA
UG	CG	AG	GG

















Obviously, the next chance was of e letters/codon, i.e. a combination of **3** nucleotides, in order to specify one amino acid. But, given this situation, there results 4^3 codons, meaning 64 different codons for only 20 protein amino acids. This difference was “solved” by the lack of parity of the relation **codon - amino acid**, on one side, and, on the other by the “specialization” of the **3** triplets (codons), in order to stop the transcription process of hereditary information on the DNA macromolecule in the one of the messenger **RNA (RNA_m)**. The genetic code like any reality in the cognoscible **Universe** allows forming infinite informational entities diversity. In other words, the genetic code allows forming 4^N different sequences of **DNA**, where N is the number of letters in a sequence. For example, a bacterium contains genes made up of 1500 nucleotides (or, made up of 1500 letters). But, according to the formulae 4^N , the potential number of different genes (having the mentioned size) is of about 4^{1500} , a higher value than the total number of genes that appeared on Earth, 3.8 billion years ago. On the other side, the formation and assembly of codons in genes (in a certain number and order), are processes that evolved independently on the quantity of substance or energy, to which it correlated. It is obvious that the 4 nucleotides transmit a certain informational message, when being in the order **AGTC**, another one, when being in the order **GATC** and so on. The material support is remains the same, the order is still independent and does not require an energetic consumption. Therefore, the **information** is self creating, it appears out of nothing.

It is interesting and worthy to be mentioned the following fact. The existence of triplets as a possibility to code the hereditary information was discovered and commented upon recently. Thousands years ago, the Chinese proved that, by trigrams (combinations of **3** moving lines) there existed 64 different combinations, meaning there existed, too 64 human characteristics. We are dealing here with the **I CHING oracle**, the oldest and most relevant system of describing and foreseeing the destiny of humans.

Morse allows transmitting unlimited amount of information, by repeating combinations of a line, dot and the spaces between them (we are dealing with **3** elements, again).

No doubt, the genetic code reveals only an aspect of the constitution and accumulation of individual information. But, as we stated previously an individual, at the peak of is ontogenesis has a larger amount of information than the one determined by the genetic code and the one transmitted on hereditary ways. More than that, it was proved that living systems have an anti entropic behavior, in comparison with the rest of systems in the **Universe**. Where there is life, the amount of entropy increases, as well. Calculations proved that the **Universe** directs to a thermal death, in the way that, in time the “chaos” in the **Universe** will come at its peak and as a consequence, the temperature will uniform, gradients will disappear and everything will collapse. In spite of this somber perspective, there is a **paradox, the Life Paradox**, which seems to gain, on and on in organization and informational content. On the other side, a biologic system has a larger amount of information, than the sum of the component systems, in spite of the fact that these, by interacting lose their degree of freedom, and even their information. Given this situation, where does this large amount of information come from? Calculations were made and it was proved that additional information is self creating, appears as the result of the organizational interactions that establish between the subsystems of a system. Here is an important example.

The I CHING Oracle

Triagrams								
	1	11	34	5	26	9	14	43
	12	2	16	8	23	20	35	45
	25	24	51	3	27	42	21	17
	6	7	40	29	4	59	64	47
	33	15	62	39	52	53	56	31
	44	46	32	48	18	57	50	28
	13	36	55	63	22	37	30	49
	10	19	54	60	41	61	38	58

Phosphoric acid, pentose (ribose or deoxyribose) and nitrogen bases (purinic or pyrimidinic) have an amount of information, as well as some degrees of freedom. If a nitrogen base interacts with a pentose and forms a nucleoside, both the base and pentose have lost a degree of freedom, each. But, the information held by the nucleoside is superior to the information of the nitrogen base and pentose. When the nucleoside reacts with the phosphoric acid, each of them loses a degree of freedom, but the information of the nucleotide is superior to the information of the nucleoside and phosphoric acid. The nucleotide is the first semantic element, one of the letters characteristic to the genetic code. Then, nucleotides form the codons, which, in their turn form the genes. The zygote heirs the necessary hereditary content for self development (it represents half of the legacy of one parent, and half legacy of the other). But, after the first cell division, the dyad has more information than the double zygotic information, i.e. the information resulted from the interactions established between the two cell results. This piece of information determines a certain behavior of the nucleons of the two cells (rotations in different senses), which induce successive divisions on different plans. In its turn, this process lead to the creation of certain structures (organizations) that lead to informational increase. This way, the information determines organization, which, in its turn develops information, and so on. One creates the other, the result being self development, self information and self evolution of biologic systems.

More frequent, we hear that the **Universe** remains constant, just like the sum of substance and energy, but it continuously gains **Information**, by the informational contribution of biotic systems. **Universe is an integrating supra-system, whose intelligence self accumulates.** But, **Universe** is a circle, with its center everywhere, and circumference, nowhere. What about **Life**? What is **Life**? We can define it scientifically, such as: **Life** is a component of the **Universe**, and which has a history, information, self regulation, programs, self organization, self reproduction, and self evolution, dynamic equilibrium, anti entropic behavior, integrality and self maintenance. We can define **Life** in a poetical way: according to VLAHUȚĂ, life is "a second between two eternities". COȘBUC, in *Death of Thunder* stated: "Lady, love your life/ do not seek for the world law/ do not seek these laws/ for you are mad to understand them". REINER MARIA RILKE wrote, in 1963: "Do not try to understand life/ When you do, it is a celebration/ Start your day/ Like a child on a path/ Who gets the flower/ Of the years going by".

Many feared at the beginning of a new millennium, thinking **Apocalypse** is now! **We are in the 3rd Millennium! Fear no more! Life is an experiment of the Universe. With Life, the Universe enriches, from an informational point of view. And, we know the Universe has no beginning, and no end. LIFE...**