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DUMITRU CONSTANTIN-DULCAN

THE INTELLIGENCE OF MATTER

Translated by
Vasile Andreica

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Cluj-Napoca, 2021

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He is the lead author of 11 monographs, 4 university courses in the professional field, and over 300 scientific papers published in print or just communicated.

He published 8 volumes of essays or philosophy of science for which he received various distinctions: the Romanian Academy Prize (1992), the Romanian Academy of Scientists Award (2011), the Belgian Prize for Literary Criticism on the work of Maurice Carême (2003), the Goldability Medal of Excellence for promoting the science of spirituality (2014).

He has been awarded the National Order “Star of Romania” in the rank of Commander and the Order of “Sanitary Merit” in the rank of Officer.

He has participated in 6 international clinical trials.

He has 4 patents of inventions granted by OSIM (1975, 1977).

He is mentioned in 4 biographical dictionaries.

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AUTHOR'S FOREWORD TO THE ENGLISH EDITION

The present English version is based upon the fourth Romanian edition of my book *The Intelligence of Matter*.

The first edition, published in 1981, was an exceptional editorial event, both in the country and for the Romanians living abroad who had the opportunity to read it.

Each new edition has been updated with new information on the material exposted in the previous editions.

As I said in the Introduction to the third edition of the book, the phrase *intelligence of matter* ennobled the Universe with an attribute that academic science and ideological censorship in Romania in the 1980s had vehemently denied. Both the title and content of the book proved to be challenging for that era. I have presented in more detail the history of the conception and publication of this book in the autobiographical volume titled *Meeting with Destiny* (Eikon Publishing, 2008). I will only summarize in part what I wrote there, trying to be as succinct as possible, without ignoring the essential elements for understanding the odyssey of this book that had upset the ideological thinking in Romania at the time.

If man destroys the Earth that created him and feeds him, it means that he either wants to commit suicide or the truths he holds about himself and nature are false.

Our thoughts invite you in search of these forgotten truths.

The Author

The Universe is just physics. A physics of energy balances in the multitude of existing forms. It's an assertion accepted by science. We would only complement it with the idea of the intervention of intelligence in this play of energies.

Chapter I

MATTER AND LIFE

BEGINNINGS...

Was there a beginning?

From the dawn of his existence, man seeks an answer to the unsettling questions regarding the meaning of life, its origin, and the Universe in which it is located.

A perceptive eye can distinguish in the richness of myths, symbolic images, and sometimes innocent explanations, inherent in their era, the thrill of a deeply human turmoil, a search for meanings, and, not rarely, an ineffable intuition.

The image of a beginning, of a primordial substance, outlines the idea of the world's oneness, an idea that ancient Greek thinking would later reach by treading a rational path. But in an age when thought could not yet become an advanced science, given mankind's stage of development, it was difficult to imagine a superposable response to reality.

After five millennia of evolution of culture and civilization, man tries to formulate an answer based on scientific data about his origin and that of the Universe.

Essentially, two cosmogonic theories dispute the right of "citizenship" in current science: the theory of the stationary universe and the theory of the expansive universe. One believes that the Universe does not have a single moment of appearance, has always existed, and is inextensible (Finlay, etc.). The other, on the contrary, attributes to it an age, a starting moment, from which it would be in a continuous expansion (George Gamow, etc.).

Arno Allan Penzias and Robert Woodrow Wilson (1965) incidentally detect the presence of background, universal, continuous, and equal (isotropic) radiation in all directions.

It is interesting to point out that George Gamow, like Ralph A. Alpher and Robert C. Herman, elaborating the Big Bang theory to explain the origin of the Universe, assumed the existence of this fundamental cosmic radiation long before it was discovered.

It is now assessed that the presence of background radiation is evidence for the expansion of the Universe. Moreover, some consequences were also attributed. We can admire the stars because, with the extension of the Universe, the background radiation has shifted at the same time, moving from the visible register to the invisible register of microwaves. The presence of the same radiation is also considered an argument for the existence of a beginning for the present Universe (153).

A light pierces the darkness

According to the concept of the expanding universe, at first, there would have been only an explosion that filled space with particles, a sudden light in the cold, dark void.

This initial explosion, which occurred about 14 billion years ago, would have led to a temperature rise by hundreds of thousands of millions of degrees Celsius, allowing the formation of an as yet unstructured proto-matter, being only in the particle stage. This moment is not exactly zero hour of the Universe but is 10^{-43} seconds away in time. So we are not at the moment when the "logos", the "word", came out. This moment, of the beginning, still remains a space of mythology. But let's go further with the "genesis" scenario imagined by scientists. "Light fills the void, dispels darkness, and spreads matter," says Lancelot Herrisman (84). It is hard to see with the eyes of the mind the whole of the world existing in this primary energy. And yet, from this first unit, from this grain of light results, following a long evolution, the entire Universe with all that exists.

Potentially we already existed, therefore, in the first wave of light.

The first three minutes of the world

The journey from light to man is as long and arduous as the road from man to the light of spirit. From this "initial point of light", from which cold photons would still circulate in space today, the essential particles of

matter – *protons, neutrons, and electrons* – are formed by lowering the temperature and through a chain of nuclear reactions. They will be the primordial matrix for the atoms of the elements from which evolution has come to the existing world.

According to this theory, at first, the Universe would have been like a giant star, constantly expanding and born in exactly three minutes and three quarters, as estimated by Steven Weinberg (1988). These would therefore be the first minutes of the world! From the association of a proton with an electron, the first element – *hydrogen* – is formed. With the simplest atomic structure, hydrogen becomes the serial head for all discovered elements that have been reached by nuclear reactions. Of these, 52 elements were identified in the structure of living matter.

Questions... We cannot help but wonder, however, whether these cosmogonic hypotheses provide a satisfactory answer for the origins of the world. Steven Weinberg himself confesses: “I can’t deny a sense of the unreal when I write about the first three minutes as if we really know what it was all about.”

The idea of the standard model for the Universe remains only a hypothetical beginning. Subsequent research brings other theoretical and experimental arguments. Discoveries such as the existence of “gaps” in the distribution of matter, as well as giant groups of galaxies, contradict the cosmological principle that postulates the existence of a homogeneous and isotropic cosmos and require the revision of current theories about the Universe.

We have no sufficient arguments for the existence of a closed Universe which, upon reaching a cosmic density greater than the critical density, would cease its expansion and begin an accelerated contraction until it becomes again an incandescent mass like in the beginning, nor for an open Universe which, having a cosmic density lower than the critical density, would expand to infinity, eventually extinguishing itself into the cold and still darkness of infinite silence.

Back to mythology? Given the observation that all phenomena in the Universe have a cyclical evolution, the concept of a cyclical, pulsating universe described in Hindu thinking may be the most acceptable. Everything in the Universe would be in a perpetual cyclical alternation: evolution – involution. After the end of a cycle, matter would resume its evolution from point Zero without any information transgressing from one universe to another, according to some views, and others presume that the seeds of the future universe would lie in the previous one.

Jean E. Charon (1985) also talks about the existence of a cyclical universe lasting 104 billion years, inferred by the theory of complex relativity.

Evolution... We believe that regardless of the accepted theory – a beginningless universe, an expanding universe, or even a pulsating universe, which expands and contracts rhythmically – the evolution of matter from

simple to complex, from non-living to living remains certain.

None of the proposed scientific theories tell us what was there at moment zero, at the beginning. Even the standard model “starts the world” 10^{-43} seconds later, as we have seen.

Viewed through discursive thinking, the world in which we live cannot be conceived outside the categories of Space, Time, Cause. Admitting that in the surrounding universe everything happens as the effect of a cause at a certain point of space, at a certain moment, and extending these criteria until the root cause is found, we come to an impasse of thought. You can't imagine what it would have been if it wasn't for what it is, nor how the uncreated could have created the world.

...and history

The different age of the astral bodies suggests that the Universe could not be created entirely at once and that matter is subjected to continuous transformations and evolutions that science, like mere observation, reveals to be cyclical. All the structural elements of the Universe have therefore a history - they appear, evolve, and transform against the background of the eternal movement. From the elementary particles we reach hydrogen, and from here the adventures of evolution lead us to man - who is nothing but an integrated assembly of particles, atoms, elements. Man and the Universe have only one and the same source

of origin, one and the same fundamental structure. Nothing that is present in us is absent in the Universe, because the Universe and life are bound by the same threads woven by the evolution of moving matter.

The Big Bang theory today

The Big Bang theory is just a working hypothesis, an attempt to explain the genesis of the Universe, without meaning that it can answer all the questions generated by our metaphysical anguish: What was there at the beginning of the Universe? Does the Universe make sense or is it just an accident? Where does it extend to if there are no edges of the Universe? If the Universe is made up of incandescent matter, how could it generate a consciousness capable of realizing its existence?

When asked whether the Universe has a meaning or is just an accident, ancient civilizations intuitively attributed a meaning to it, imagining a mythology of genesis in which even human existence found a reason. Astrophysicists, however, exclude the idea of creative intent through an artifice of speculative thinking. What was it in the beginning, before the Zero moment of the Universe? Nothing, they answer. Time and Space started then and so there was nothing else before. It's a way of “cutting the Gordian knot”, avoiding an answer that, in my opinion, cannot be avoided.

To the same question, the philosopher Jean Guilton (82) tells us that before Zero Time, also called Planck's Time, it was only a reign of timeless Totality with absolute symmetry. Only the Primordial

Principle was there, in nothingness, the infinite force, without beginning and without end. There was then a “sigh” of the Void, a fluctuation of the vacuum in a fantastic instant (82).

Three arguments were put forward in the substantiation of the Standard Model of the Universe:

1. The age of the stars coincides with that of the Universe.

2. The light emitted by galaxies calls for increasing the distance between them, meaning that they were all together once.

3. The presence of cosmic background radiation would be evidence of the expansion of the Universe because by displacement it also moves this radiation from the visible to the invisible range of microwaves.

Another theory is that of the Universe in inflation, which postulates the formation of multiple universes, connected to each other like islands spread in the ocean (153).

The void The cosmic void is not itself a cosmic vacuum, but, as Stanislav Grof (80) puts it, it is a plenum in which everything is present, but in a virtual form of potentiality. It contains all the Realities from which our mind materializes only one.

In this “metaphysical vacuum,” continues Stanislav Grof, in a provocative note for reductionist science, lies the ultimate source of existence.

In other words, we can say that we were *in nuce* long before we were a being. You’re getting a human

thrill where you understand that you were there, in the early germs of the Universe, and that it took a billion-year odyssey until we were able to say, “Here I am!” Perhaps, as Basarab Nicolescu (134) says, our purpose is precisely to find and make sense of Reality.

From the perspective of modern physics, the Void is the site of perpetual quantum fluctuations that generate pairs of particles and virtual antiparticles annihilated by each other.

The Big Bang itself could be the result of a “giant fluctuation” in the energy of the Void, Basarab Nicolescu tells us, quoting Heinz Pagels (134). It has been calculated that the Void energy is 10^{120} times greater than the dark energy, which in turn would be 3 times greater than all matter (153).

The chaos theory

The obsession with the beginnings of the Universe continues to concern us, as it happened to our ancient predecessors. As “there were no skilled people and no mind to understand it”, as our brilliant poet Mihai Eminescu puts it (66), apart from indirect arguments, one can only make assumptions. One of these is that of chaos.

Starting from the observation of forms that occur spontaneously in nature, it has been hypothesized that even in chaos there is an order dictated by intrinsic laws; in other words, starting from the initial chaos, the Universe could self-organize in increasingly complex forms, which were called *fractals* (Benoît Mandelbrot, 1975). Examples of fractals are the movement of a

flock of birds, shoals of fish, the formation of sand dunes, waves in the seas and oceans, the column of smoke, the roots and branches of trees, networks of the nervous system and blood vessels, etc.

From this infinite creation of forms, only those that generate viable structures by connecting with others would be preserved. The similarity with the role of chance and natural selection in Charles Darwin's theory of species evolution is surprising.

Jean Guilton (82) suggests the intervention of an "organizing principle". Benard's experiment is cited. Warming a liquid causes the molecules to be ordered into hexagonal forms. From here, Ilya Prigogine (154) assumes that it would be possible for the same principle to hold true in chemistry and biology. For example, the same phenomena of self-structuring of life could have occurred in the primitive "soup". It could be a continuous dynamic that unites inert pre-living matter with living matter, says Ilya Prigogine, talking further about the strange, intelligent behavior of molecules in a non-living physical system. "It is amazing that every molecule *knows* what other molecules will do at the same time, even though they are located at macroscopic distances. Our experiments show how molecules communicate. Everyone accepts this property in living systems, but it is at least unexpected in non-living systems." (154)

Obtaining virtual images through computer processing suggested the possibility that the human being itself was created in this way, evolving step by step to the present form.

There are, no doubt, many more perplexities.

If the Universe and life emerged through evolution from simple to complex forms thanks to "intrinsic laws", can we eliminate the suggestion of intelligence, either intrinsic or extrinsic to matter? Doesn't the Universe look more like a big thought, a big mind, as it was actually said for that matter? (93) And if it is true, as Darwin says, that living forms, phylogenetically superior, occur by chance and natural selection, why does "happening" only work in one sense, that of progress, and not in regression, if it is not intelligent? When we say "law", "rule", is it not a suggestion to achieve an effect through self-control (feedback), by **noting** a relationship of determination between the elements involved in an endeavor?

Dark matter and dark energy There is currently talk of a *dark matter* that does not emit light and has an unknown nature. Dark matter is a new type of matter. It is called like this because it is not visible to the naked eye or instruments. It is estimated that there would be five times more dark matter than classically known matter. It would be designed to maintain the cohesive force of galaxies through gravity.

It is believed that even our body contains dark matter (153).

Dark energy would be used to accelerate the expansion of the Universe.

The following proportions (153) are mentioned:
- dark energy about 75%;