Chapter 86

Cosmos-life-consciousness IV

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ABSTRACT
In the INTRODUCTION, comments on his published works are made. The frontier reached so far was the development of a genetic model for the generation of atoms. Some basic concepts are presented for the understanding of what is called “relevant relative information”, a concept of paramount importance for understanding the process of consciousness formation.
In DISCUSSION AND CONCLUSION, admitting the veracity of the genetic model for the generation of atoms, he formulates new very instigating questions, presenting hypotheses to answer them.
Of the hypotheses formulated, the most intriguing is that structures similar to biological RNA and DNA have been formed in the cosmos. Discusses some conditions necessary for their formation and possible consequences arising from them. It shows that the existence of these structures answers some questions still unanswered and finally makes some considerations about the beginning of the cosmos.

Keywords: cosmos, life, consciousness.

1 INTRODUCTION

The search for an answer to the existentialist question that he considers the most important of all, which is “who are we, where do we come from and where are we going?”, compelled the author to choose the theme “cosmos-life-consciousness" for his studies which resulted in several published works. By itself, the subject is quite complex, and even more so when looking for the origins of the cosmos, of life, and of consciousness.

According to Deutsch (1), a better understanding of reality will require knowledge of quantum mechanics and theories of evolution and computation, and I hope that this work will help to show their importance. I believe that “information” is, basically, the basis of all this knowledge.

To have an idea of how this knowledge is mixed, the definition of some very important concepts is presented below: "information", according to Shannon, is the count of the number of possible states of something, and "relative information”, is a measure of the physical correlation between two variables.

According to Rovelli (2), “relative information” is a purely physical and central concept for the description of the physical world, taking into account its quantum structure based on relations and correlations. Like "meaning", relative information unites two different things, but it is not sufficient for understanding, in physical terms, what "meaning" is. In his words: “the world is full of correlations, but the vast majority of them mean nothing”.

With biological evolution, the notions of utility and relevance were clarified, which gave rise to the concept of “relevant relative information” and, in Rovelli's words: “relative in the physical sense (Shannon) and relevant in the biological sense (Darwin)”.

Relevant relative information is a fundamental link in the bridge between the material and mental world and it can be said that its conceptualization allows us to glimpse the emergence of consciousness in both systems, biological and non-biological. Generalizing the concept of relevant relative information for these systems, it can be admitted that, after the formation of the first links between matter and mind, the process has become recursive and general for practically everything related to the systems considered above.

Because biological life has spread quite widely on our planet and considering that: it has started there, the beginning of the cosmos is much more distant in time, bringing even greater difficulties in its approach and that consciousness, whatever it is, is an emergent property of the cosmos and of life, with all this, weighed and placed in the balance, the author began his research initially addressing life, or more specifically, the non-life bridge.

Biological life evolved after its emergence, culminating in the development of the extraordinary brain structure of the species Homo Sapiens. There is not the slightest doubt of the extraordinary power and strength of Darwin's Theory of Evolution that made all this happen, leading the author to consider that this same strength and power together with a non-random selection have been the main driving force in the evolution of the universe since its inception. origin.

With these considerations, he left for times before the appearance of life on earth, even before the Big Bang, suggesting Darwin's Theory of Evolution to explain the evolution of the universe and its universal laws.

Admitting that every structure from a certain complexity can generate a conscience, he suggested the existence of a universal non-biological conscience, with aspects similar to the biological conscience, thus implying that a greater knowledge of this biological conscience would enable a greater knowledge of the universe and its origin, opening unfathomable perspectives.

In previous works (3) and (4), arguments are presented that reinforce the hypothesis that Darwin's Theory of Evolution was the main driving force behind the evolution of the universe, as well as the hypothesis of the existence of a non-biological consciousness similar to human consciousness. biological.

It should be emphasized that there is the possibility of developing consciousness in non-biological and biological beings, especially considering that in both systems the triggering factors of consciousness, the relational and its complexity, are its fundamental characteristics and that consciousness is a property emerging from their complexity.

Admitting the pre-existence of consciousness in the universe and assuming this as a model for the evolution of human consciousness, he admitted the possibility of the existence of a universal code considering that the genetic code of DNA has evolved from it.

At this point, a new flow of ideas emerges, which can be summarized as follows: considering that proteins are the fundamental units of all living biological beings and atoms the fundamental units of all existing matter in the universe, he had the intuition of having been the code of DNA copied along the lines of a universal code, thus implying that the code of atoms was similar to the code of DNA.

Based on the above assumptions he developed a model similar to the model of the genetic code of DNA for predicting the composition and atomic weights of atoms. Simulations made considering the elements of the Periodic Table confirmed the developed model. Interested readers can consult works (5) and (6) that present the entire development of the model, results of simulation calculations, and reflections on it.

He believes that, if he had only focused on the wonderful details of the evolution of living beings through Darwin's Theory of Evolution, as masterfully shown by Dawkin (7), perhaps he would not have had the idea to intuit the genetic model for the generation of atoms similar to the code of DNA for protein generation. It would all seem so complex that perhaps I would not have had the necessary ingenuity to let the thoughts flow which resulted in the intuition of the model that, because it is so simple and beautiful, seems to be true.

The fact that he approached the whole question considering consciousness as the link between biological beings and the universe facilitated the correlation that led him to the intuition that the genetic code for the generation of atoms is similar to the DNA code. He says this because it was only after having had the intuition for the development of the genetic code of atoms that he devoted himself more to the study of molecular evolution and only then did he begin to see in greater detail the wonderful sequence of the various processes involved when considering DNA.

Here ends the exposition of the hypotheses formulated and the results obtained and presented since its motivation for the study of the chosen theme.

2 DISCUSSION AND CONCLUSIONS

Admitting the possibility of the existence of the genetic model of atoms, new questions arise, demanding that new hypotheses be formulated to answer them, thus resulting in new searches for evidence and arguments that can support them.

Several reasons encourage the formulation and search for answers to these new questions, and we can mention everyone's curiosity for an answer to the crucial question of existentialism, "where did we come from and how?", which in itself can be considered more than enough to devote a lifetime to trying to answer it.

As it should be clear in the development of this work, the confirmation of just some of the formulated hypotheses could result in knowledge that could bring great benefits to humanity, in particular the knowledge of how our universe and life evolved.

Before formulating new questions, let's see the point reached if the hypotheses formulated so far are considered valid because they seem to belong more to the field of science fiction.

The frontier reached was the development of a model for generating the atom, a model developed based on the hypothesis of the existence of a non-biological consciousness similar to human consciousness. The following are some new issues that I believe deserve consideration.

Did the universe stop evolving after the generation of the genetic code of atoms? How would all the information about it be stored, that of the atom generation code itself, that of all the other structures that compose it, as well as that of the universal laws that managed the formation and control of its structures?

Concerning universal laws, I have the intuition that the universe did not obey any specific law either for its formation or for its performance. Their formation and performance are simply the results of trial and error. The way it was formed and behaves resulted from random selection driven by the selection of more stable structures as well as behaviors that have generated this stability. The laws were nothing more than the norms then obeyed after cessation or adequate spacing of the interval of new experimental attempts, being these the ones that were later discovered by the researchers.

It is reasonable to assume that, having evolved to the point of generating the genetic code of atoms, its evolution has continued following the same evolutionary route at least until the formation of non-biological RNA and DNA structures, similar to RNA's and biological DNA. This hypothesis would answer the question, still unanswered, of how information concerning the universe would have been stored, considering the great capacity of storing information DNA.

Since there is no evidence so far of the existence of intelligent non-biological living beings, perhaps after reaching the stage mentioned above, evolution followed another less arid evolutionary route, in a more fertile environment and richer in opportunities for variation, such as the one that would have been provided by an organic environment formed on planet earth and who knows, also on some other planets.

Biological molecules are made up of proteins which in turn are made up of amino acids and these are made up of the letters of the DNA code.

Similarly, there would be "non-biological molecules", formed basically of atoms which in turn would be formed by the genetic groups constituted by the subatomic particles that could be considered as the letters of the genetic code of the biological DNA. There seems to be a correspondence between the following structures:

Proteins with Atoms.

Amino Acids with Genetic Clusters.

DNA Code Letters with Subatomic Particles.

In biological structures, there is a need to store the necessary information for the generation of proteins and a way to make them available when necessary. In these structures, these functions are performed by DNA. In non-biological systems, there is also this same need for information storage. Considering biological systems as a model and in the absence of another known mechanism to exercise the

information storage function in non-biological systems, it can be assumed, evoking the criterion of similarity between biological and non-biological systems, the existence of a non-biological DNA that would be constituted of atoms formed by the genetic groups that in turn would be formed by the subatomic particles.

Similarly, non-biological DNA would contain information necessary for the generation and monitoring of existing structures in the universe. It should be remembered that this possibility does not fail to bring up the theory of panpsychism, addressed by several researchers.

Would RNAs have been formed before non-biological DNAs were formed? Would non-biological RNA and DNA have structures similar to those existing in biological beings? Perhaps the best thing is to wait for new evidence to guide the formulation of new hypotheses.

Francis Crick claimed that the genetic code is a "frozen accident", meaning that once it was established, it would be difficult or impossible to change. With this consideration, this code could not have evolved by a process that used Darwin's non-random natural selection. This would reinforce the idea that the Genetic Code of DNA was somehow copied from the Genetic Code of atoms, which transfers the problem mentioned above to the generation of the latter, the genetic code of atoms is the problem of the catastrophic ruin of any structure that used it persisted with the change of a single subatomic particle in the non-biological DNA code.

If this is the case, one also has to admit the appearance of this code as a “frozen accident”, which would maintain the problem of the impossibility of the non-random selection of Darwin's Theory of Evolution. Perhaps it can be admitted that for the Genetic Code of Atoms, this problem did not exist, supposing that a change in the composition of some atom does not cause the catastrophic destruction of any structure already created with the previously generated atoms, perhaps causing at most, some small structural change in the previously formed structure, this not preventing Darwin's law of non-random natural selection from playing a relevant role in the process of generating the genetic code of atoms.

In previous work, the hypothesis of the transfer of DNA information from a possible non-biological consciousness to biological beings existing on planet Earth was suggested. This could not have happened, the DNA code having developed independently in biological beings. However, considering the impossibility of Darwin's law of non-random natural selection, it seems that the hypothesis of information transfer between systems would be the most acceptable. Bearing in mind, however, that once non-biological RNA and DNA have been developed, the latter incorporates, as in biological DNA, all the information necessary for their generation and that these would be present in all atoms just as the DNA of biological systems are present in all cells, the need to transfer any information for the generation of proteins in biological systems is completely abolished. In this case, the existence of a single atom in a given biological system would imply knowledge of the entire generation code for them, which would eliminate the need to transfer information between non-biological and biological systems.

It should also be noted that the generation of non-biological RNA and DNA would only have been possible if self-replicating structures had formed before them, which would be admissible considering the computational capacity of the universe and the possibility, as shown by Wiener (8), the generation of these structures by computational algorithms already developed.

Since no copying process is perfect, the population would inevitably end up containing some variety, and if there are variants in a replicated population, those that have what it takes to be successful will inevitably come to predominate. This is natural selection.

When considering algorithms, the use of those that function only locally should not be neglected, such as those probably used by starlings in their wonderful choreographies in the airspace as well as perhaps in some stages of the embryonic development of living beings. There would probably be something similar to this in the cosmos, algorithms with local scope and others commanded by the transfer of information at a distance. This transfer of information at a distance in the cosmos can be done in various ways such as transfer by electromagnetic waves, quantum entanglement, and others.

Long before the emergence of the genetic code of atoms, there was probably competition to define the processes that resulted in the emergence of physical laws and universal constants. One might think that everything was impelled by non-random natural selection with the motivation to obtain more stable and long-lasting structures, among these after a certain geological time has elapsed, the atoms themselves.

In continuation, one could also assume the existence of clusters of non-biological cells containing sensors that would be functionally responsible for processing information for creating and managing the structures of the universe.

Among the innumerable questions still to be asked, a crucial one is how it all started. Would it have been from events that perhaps are passages from one universe to another as the Big Bang could be considered? However, even accepting that the Big Bang is an event in the history of the universe, in any case, this would still entail the problem of the very beginning of everything, this beginning before the first passing event that may have occurred, a problem that I consider much more important. difficult to be imagined and solved.

Several formulated hypotheses were suggested after the genetic model of atoms was confirmed by simulation with the elements of the Periodic Table.

Nothing is known about the existence or not, throughout the universe, of non-biological beings similar to humans. What can be affirmed without any doubt is that the generation of a living biological being was a fact that occurred and that this being evolved, giving rise to one of its evolutionary routes to our species.

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