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Are Lamarckism's and Darwinism's Suggestions About Evolutionary Process a Problem of the Present Day? Is the Evolution Blind or It is Due to Physical Fields as Information Field?

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Editorial

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ABSTRACT

Grounds for theory: Primo Vascular System (PVS) is a new anatomical and primordial system with unexpected morphological special features, body distribution and functional mechanisms which could be involved to the evolutionary processes. We can speculate and suppose that the DNA as a whole and the DNA granules in PVS's microcells in particular, carry not only genetic information but its structure is capable to store and transform the information obtained by environment physical fields. The physicists offer the possibility of converting the information to energy and present their findings as a spiral-staircase. As the bases of the DNA lie horizontally between two spiraling strands, the most important in biology molecule of DNA is a spiral model which is able to convert information into energy and vice versa, energy into information on spiral-staircase DNA structure. We suggest that PVS, as a primordial body system distributing through the entire organisms and its connection from surrounding energy fields and every cell of the body. PVS is capable to bring and store information transforming from environmental fields which permits dramatic and sudden "jump"-changing of the organism's DNA, cells and organisms as a whole. The sudden changing of organisms may explain why there are not enough proofs for intermediate forms between the species and evolution could be logical process due to external signals and influences.

Possible effects of theory: Involving of PVS in the evolutionary process as connection between external energies (as electromagnetic field and even information field) with every small part of living organisms as their DNA molecules can explain why the evolution could be a logical process based on the influence of the different physical fields to every cell by transforming energy to information throughout DNA which permits complex "evolutionary jumping" of the organisms. It is possible vice versa process which is able to provoke changes based on influence of internal signals as products of metabolic processes, as well as bio-electrical, bio-luminous and acoustical signals. The acoustical signals could be products of the movement of the internal organs, the muscles, the tendons, the sphincters and valves, too. All internal physical fields bring information concerning indications about the level of the bioprocesses to the PVS web and the organisms react both to the external and internal normal and pathological changes.

Conclusion: Our speculations lead to conclusion that PVS could be not only primordial anatomical system but PVS lay at the bottom of the evolution of the living organisms.

INTRODUCTION

Is the evolution blind or there are hitherto unknown anatomical systems with some unexpected morphological hallmarks, distribution and functional mechanisms which are able to accept, provide and store information from the environment energies and which could provoke a complexity and sudden jump for developing from one species to another? Yes! There is a new, rediscovered during the last 14 years, anatomical body system which is capable to change our understanding of biology. The Primo Vascular System (PVS) is this anatomical hitherto unknown primordial system which integrates and combines the features of the cardiovascular, the nervous, the immune, and the hormonal systems^[1-7]. With rediscovery of PVS morphological science has a great challenge to offer a new biological hypothesis explaining the possibilities of PVS for involving to the evolutionary processes. PVS's hallmarks could be a good base to develop Lamarck's and Darwin's evolutionary theory mechanisms and to explain some of the unsolved evolutionary questions. Such discoveries in morphology have not been made since the 18th century and the organism's morphology evolution is one of the most important parts of the evolutionary theory and therefore the PVS characteristics need more attention including about their possible role in evolution process.

HISTORY

Lamarck and Darwin have written their theories before knowledge of DNA, genetics and molecular biology. On the other hand, the current evolutionary theory is based on actual scientific data but without knowledge concerning the existence, functional possibilities and mechanisms of one of the very new anatomical body system as PVS. Maybe these are the reasons for lack of full explication of organisms' complex evolution from both Lamarck and Darwin in the past and actual evolutionary science now.

The main problem of the current evolutionary theory is the lack or existence of a few intermediate forms between the species. As Darwin^[8] wrote himself: "If it could be demonstrated that any complex organ existed, which could not possibly have been formed by numerous, successive, slight modifications, my theory would absolutely break down".

Darwin^[9] called previously published Lamarckian mechanism "Pangenesis", and described it as a hypothesis based on the idea that somatic cells would, in response to environmental stimulation, throw off "gemmules" or "pangenes" which traveled around the body but not in the bloodstream (PVS is not part of bloodstream). The "pangenes" are microscopic particles (as microcells with DNA flowing in PVS fluid) that supposedly contained information about the characteristics of their parent cell, and Darwin believed that they eventually accumulated in the germ cells where they could pass on to the next generation the newly acquired characteristics of the parents. Lamarck^[10] asserted that the natural movements of fluids in living organisms drove them toward even greater levels of complexity: "The rapid motion of fluids will etch canals between delicate tissues. Soon their flow will begin to vary, leading to the emergence of distinct organs. The fluids themselves, now more elaborate, will become more complex, engendering a greater variety of secretions and substances composing the organs". PVS has distributed throughout its primo vessels liquor to the entire body (instead "canals between delicate tissues" "etched" by "rapid motion of fluids" as Lamarck wrote) containing microcells with DNA (instead "pangenes" as "particles that supposedly contained information about the characteristics of their parent cell" as Darwin wrote).

What intuitions have these scientists!!! The greatest persons have not only enormous knowledge but greatest intuition, too. How Lamarck and Darwin could prognosticate existence of PVS 150-200 years ago? How they could know that the new system will has exactly the same hallmarks as they described?

Our hypothesis can support some of Lamarck's and Darwin's suggestions basing on the main characteristics of PVS as we described previously^[3-7] and the actual science data of PVS as "optical channel of biophoton emission and DNA may act as a photon store and coherent radiator". Kim et al.^[11] formulated that "property of collagen to interfere with photon-emitting processes facilitates the possibility of tuning photon emission throughout organism". Biophotons could be the electromagnetic signals with a key role of cell development and differentiation. The spontaneous ultra-weak photon emission from cultured cells is mainly involved in the changes of the ploidy number during the proliferative process of the cancer cell line^[12]. The differentiations between the species depend on diverse development of the PVS among the species of Kingdom Animalia, Plantae and Fungi. The close relation of PVS with the immune system can explain the hyper-mutation process occurring of the DNA of B-cells. Since the B-cells pass directly to the offspring from the mother and the whole characteristics of PVS it could explain the special case of Lamarckian mechanism of inheritance. The PVS liquor has a possibility to have higher speed and bring also different "building" materials for constructing the cells. All of these hallmarks could answer the question how is possible the transformation of one species to another by sudden "evolutionary jumping". As there are data that PVS exist in the Kingdom Animalia, Plantae and Fungi^[13,14], it is possible to understand the role of PVS in the organisms' evolution.

Some anatomical and functional hallmarks of Primo Vascular System in short as a base of the hypothesis

We have already made the complete description of PVS as a new morphological and functional system in our previous papers^[3-5]. In this chapter, we shall only briefly mention some of the main characteristics of the PVS in order to use them as a base to explain our new proposal to the Darwin's theory. The PVS is an integrated communicating system between the living organisms and the environment. The PVS is duplicated by the vascular and the nervous systems in the very early embryonic stage^[13,15,16].

That is the reason why the PVS combines the features of the vascular, the nervous, the immune, and the hormonal systems. Today, the PVS in all its aspects has to be understood as a system covering the whole body, regulating and coordinating all the biological life processes. The existing sub-vessels, as parts of the whole primo vessel, have adventitia containing connective tissue. The collagen is the main component of the connective tissue. The data indicated that collagen has properties of interference with photon emission emanating from biomolecular sources. This property of collagen to interfere with photon-emitting processes facilitates the possibility of tuning photon emission throughout organism^[11]. That supported the hypothesis concerning the PVS as an optical channel of biophoton emission and DNA may act as a photon store and coherent radiator^[1]. Biophotons could be the electromagnetic signals with a key role of cell development and differentiation. The spontaneous ultra-weak photon emission from cultured cells is mainly involved in the changes of the ploidy number during the proliferative process of the cancer cell line^[12].

There are 1-2 μm microcells with granules with DNA into PVS fluid^[17,18]. As the PVS could be optical channels for photon emission, electromagnetic field which goes throughout the PVS to its DNA granules could be influential to the whole body systems with transforming of environmental physical fields to information stored in PVS microcells' DNA spiral-staircase structure. Based on previous hypothesis concerning DNA as coherent radiator we consider that the functions of the PVS as optical channel are closely related with the DNA in the PVS. We suppose that the DNA carries not only genetic information but its structure is capable to store non-genetic information obtained by environment physical fields as electromagnetic in their spiral structure. We can add that these electromagnetic waves could be transformed to information and this information is stored in DNA granules of PVS fluid distributing to whole body.

How can we support this idea?

As we previously described^[5], recently the physicists offer the possibility of converting the information to energy and present their findings as a spiral-staircase. The authors, basing on the Szilard's^[19] idea of equivalence between energy and information, suggest a new principle for converting information into energy. As the bases of the DNA lies horizontally between two spiraling strands, the molecule of DNA is a spiral model which needs more attention concerning converting of information into energy or energy into information with the light electromagnetic participation. Christian Van den Broeck^[20] describes Toybe's et al. results^[21] as "a direct verification of information-to-energy conversion". As Hawking^[22] says, the "electromagnetism is the basis for life itself", we can add that the PVS is the system which has all characteristics to provide the electromagnetic waves to every part of the body. The electromagnetic waves from the environment are bringing by PVS and are storing into the DNA molecule containing into the PVS microcells. DNA may carry out low-frequency collective motion. Low-frequency collective motion in DNA refers to the application of statistical thermodynamics to understand low-frequency vibrations in bio-molecules. The concept of low-frequency phonons in proteins was made by Chou and Chen^[23] in order to solve the perplexing "free-energy deficit" problem in protein binding. The phonons have a modified relation between wavelength and energy and are able to transfer energy, too. The combinations of all DNA characteristics we mentioned here make this molecule a powerful candidate to serve as a store of transforming from electromagnetic energy information.

There are 1-2 μm microcells with granules with DNA into PVS fluid^[17,18]. A hypothesis exists that the DNA may act as a photon store and coherent radiator and could be optical channels for photon emission^[1]. Electromagnetic field which goes throughout the PVS to its DNA granules could be influential to the whole body systems. Based on previous data we consider that the functions of the PVS as optical channel are closely related with the DNA in the PVS. We suppose that the DNA carries not only genetic information but its structure is capable to store the information obtained by environment physical fields as electromagnetic due to Toybe's et al.^[21] data concerning possibility of converting the information to energy and present their findings as a spiral-staircase. The combinations of all DNA characteristics as the bases of the DNA which lies horizontally between two spiraling strands, as Toybe's et al.^[21] spiral model, the molecule of DNA is such spiral model which needs more attention concerning converting of information into energy or energy into information with the light electromagnetic participation.

The PVS obtains external and internal signals^[3-5]. The external signals come from environment as electromagnetic waves. The internal signals are products of metabolic processes and arise as bio-electrical, bio-luminous and acoustical. The acoustical signals could be products of the movement of the internal organs, the muscles, the tendons, the sphincters and valves, too. The whole of these internal physical fields bring information concerning indications about the level of the bioprocesses to the PVS web and the organisms react both to the external and internal normal and pathological changes.

We suggest that PVS, as a primordial body system which exists until very early embryologic stages^[13,16] and distributing through the entire organisms, is capable to bring and store information transforming from electromagnetic environmental fields which permits dramatic and sudden "jump"-changing of the organism's DNA, cells and organisms as a whole. The sudden changing of organisms may explain why there are not enough proofs for intermediate forms between the species. The environmental influence of the DNA through the PVS can be realized not only to individuals but to groups of individuals simultaneously in the large regions due to the specific environmental characteristics. That permits transmission of the changes which are successful for the population on large amount of organisms to the next generation. The simultaneous influence of environmental physical fields through PVS on the large number of organisms could explain the symbiosis, co-evolution and co-operation in whole biology including also animal kingdom. Many cases of mutually beneficial interactions between species have evolved between the fungi and plants, between organisms from the different species, as well as between the organisms from the same species as bees,

termites and ants. Our hypothesis is different from the “quantum theory” with exception of the possibility that rapid changes appear in every taxonomic level such as families, orders, and classes. As the rate of combination in genetic hitchhiking is too slow, as two events per chromosome per generation, our theory for fast jumping from one organism to another suggests a better way for explaining the evolution. The mutation rates are too slow. The storing of information of DNA permits sudden and complex genetic and somatic changes of the entire body of the individuals and to the groups of individuals which permit to solve the good changes to the next generations of the species and to increase evolutionary fitness.

Applying the new hypothesis on well-known and already proofed until now evolutionary mechanisms

Natural selection depends on group selection more than on the individual one. The chance to occur equal individual selection in the same time throughout the large group of alleles is very difficult. That is too difficult to believe that it is easy to find in the same time, in the same region male and female with the same changing of their DNA which will able to become couples in order to create new generation with completely new but common characteristics. The possibilities of PVS to provide and store information from environment to the DNA until correct time for appearance of the changes could facilitate and explain this process which is significant for the evolutionary force in the nature. The main principle of the evolutionary theory is that the construction of the phenotype is made possible by chemically stored information. The genotype is subject to changes which lead to random changes in the information stored. We suggest that the information stored in DNA is not only by chemical components but from information transformed from the environmental energy throughout the PVS, too. Thus, the natural selection could be not blind or random but it is due to the information coming from the changing conditions of the environment and this information is stored in DNA, and it corresponds to the right adaptation of the future organism's forms to the environment.

According to the evolutionary theory, mutations in the genetic code occur because of radiation, chemical or chance event. There is a criticism that the mutations cannot introduce any new genetic data into the organisms' DNA. The positive and simultaneous changing of DNA which is capable to produce a new species could be possible throughout the PVS according to its possibilities to provide and transform energy to information and to store the information on the spiral-staircase structure of DNA. Maybe one of the functions of the “DNA-junk” is to transform and store non-genetic information but information obtained by environmental field.

When there is a critical mass of environmental information in DNA, it leads to sudden and complex changes of the living cells, respectively to the entire body and to large group of organisms, too. That gives possibility to the organisms to obtain very different genetic and somatic information from the originate organism's forms.

As the mutations have not useful effect to the organism and less to the population of organisms, only involving and participation of new kind of mechanisms which are capable to transforms the specific information to the next generations will be successful for evolution with respect to obtain new cell's DNA, new organs, new organisms, and finally, populations strong for surviving. As there are difficulties to find evidences for graduate evolution in fossil records and life has usually appeared suddenly and fully formed, and species appear abruptly, only new body system with specific function as PVS could be capable to explain the life itself.

CONCLUSION

The morphological existence, special hallmarks and functional possibilities of PVS as a relation between information field and living organisms are a very good base to give another direction of evolutionary theory and do not permit to postulate that the evolution is blind, random and depends only by the chance, or will, or desire. The involving of PVS in the evolutionary process can explain why the evolution is based on the influence of the different environmental physical fields (as information field) to every cell by transforming energy to information throughout DNA which permits a complex “evolutionary jumping” of the organisms. Our speculations lead to conclusion that PVS could be not only primordial anatomical system but PVS lay at the bottom of the evolution of the living organisms.

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