

## Vortex (Ring) Determinism and Evolution in Living Nature

*Ravil Kalmykov*

The former straightforward determinism interpreted the life of organisms and their interaction with the surrounding world in a completely ugly way. It recognized the existence of only external causal influences and influences and did not allow the existence of internal ones. As a result, the picture of complete subordination of a living organism to the external environment was obtained. Any self-movement, self-development, the presence of specific own goals and objectives were denied, which did not correspond to the observed reality. It is not surprising that the previous flawed model of determinism was not very popular with biologists. Today, the situation can be corrected by the theory of vortex (ring) determinism [1, 3-12], which gives the general doctrine of determinism a healthy completeness and adequacy. Now, special internal causal sources inherent in all individual objects and material formations are entering the arena of philosophical thought.

These sources hidden in the depths of individual objects provide their causal autonomy, which reveals itself in material, energy and force forms. These causal sources manifest themselves especially vividly in the case of living organisms. They provide organisms not only with autonomy from the external environment, but also with the possibility of active behavior, aggressive transformation of the external environment to suit their needs. The internal causal source lays down the law and directs the algorithm of development of each organism. It is responsible for the principle of interaction of the organism with other autonomous objects, organisms and their aggregates. Each organism has its own history from birth through childhood, manhood, aging to death.

Now we can take a different look not only at the life history of an individual organism, but also at the history of the development of a species of organisms. The individual and the species are closely systemically interrelated. The ***Haeckel-Muller biogenetic law*** states: ontogenesis is a brief repetition of phylogeny. The conclusions that we have drawn in relation to a single living individual are obviously also valid for the entire species that includes this individual. That is, a species, like a separate organism, can be considered as a self-organizing system that has its own causal source hidden in systemically united individuals. This allows us to approach the interpretation of the theory of the evolution of species more strictly in the causal relation.

As we have already stated in previous articles, two groups of factors play a key role in the life of each individual natural formation: internal and external. This is most noticeable in the life of an organism and an organic species. At the same time, internal factors act as an initiating, directing and controlling principle. And external factors provide the background, interior and scenery.

The process of interaction of an organism (and its species) with the nearby natural environment has two fundamentally important aspects: self-adjustment (adaptation) of the organism itself to environmental conditions and active subordination of the environment to its needs. The second aspect is especially pronounced in humans. His change of the nearby natural environment for his own benefit and convenience has taken on an unprecedented scale in the animal world.

However, science could not adequately reflect the nuances of the process of this interaction under the domination of the former rectilinear model of determinism. Recall that this flawed

model allowed for the role of only external factors in the development of organisms and the evolution of species. Philosophical objectivism reigned supreme. As a result, Charles Darwin's theory of the evolution of species was established in science, which is accepted today by most biologists and philosophers.

It should be mentioned that the earlier evolutionary concept of J. B. Lamarck called the main driving principle of the evolution of organisms a certain mysterious internal "desire for improvement". But this concept was not accepted by science due to the lack of an appropriate causal justification. Philosophical objectivism did not allow such an inner beginning. Now, with the advent of the theory of *vortex (ring) determinism*, we can assume that such a beginning has been discovered, and Lamarck's concept should receive a second life.

It should be recognized that Darwin's theory of evolution was very progressive for its time, primarily due to its denial of the divine and mystical principle in the process of development of living organisms. Darwin made an attempt to find an explanation of evolution based on the real factors of nature itself. But the mechanism proposed by him turned out to be incorrect due to the flawed model of determinism that prevailed at that time.

Let's focus on some weak points of his concept. According to Darwin, the main driving factor of evolution is natural selection. Random mutations in genes are a source of undirected, random variability, according to his theory. Further, the environmental conditions produce the most severe rejection in the offspring, leaving the most adapted owners of new useful qualities. As a result of selection, an indirect useful fitness allegedly arises. We emphasize that this is not a mechanism of direct action, it works through the destruction of a huge mass of the less adapted.

If you look at it, in Darwin's theory, the source of evolution is recognized as arbitrary genetic deviations, mutations that actually lead to the appearance of various kinds of individual deformities. The recognition of ugliness as the engine of evolution paints, frankly, a very dubious picture of progress. An increase in the number of mutations, as has been shown in some experiments, only contributes to the littering of the species, without moving it one step along the path of improvement. The hypertrophy of the role of pathologies in the formation of species makes the mechanism of gradual complication of organs and their functions completely unlikely. Meanwhile, some stages of such gradual complication are actually recorded by archeology.

When considering the evolution of organs and systems of organisms, one inevitably comes to the conclusion that useful changes should occur in them simultaneously in several places in a systematic mode. For example, the elongation of the giraffe's neck should have occurred simultaneously with changes in the musculoskeletal complex of the entire body, in the vascular, nervous and other systems. Otherwise, it would have turned out to be an unviable creature. Accidentally born freaks with a long neck and the rest of the body unprepared for this would certainly be doomed to extinction.

There must be not just a random mutation of one organ, but a complex mutation that actually affects the entire body very carefully and in a balanced way in order to make progress. Such a fantastic mutation is even less likely than a simple useful mutation of an organ. It should still be recognized that there is a directed process of adaptive beneficial changes of the entire organism, as system integrity, and not only of each organ individually throughout evolution.

In addition, one inevitably comes to the conclusion about the amazing fact of the appearance of several different types of organisms in each natural niche at the same time, if one follows the logic of the primacy of external conditions. The harsh rejection by nature of less adapted organisms should leave only one most adapted species in each niche according to this logic. The remaining species should become extinct. This conclusion does not fit with the observed reality, with the abundance of different types of organisms in each natural niche.

The universally observed negative attitude of species communities to individuals-freaks also adds to doubts about the truth of Darwin's theory. Freaks can hardly count here not only on a privileged position, but also simply on an equal footing with others. As a rule, freaks become outcasts of communities. Therefore, the calculation for their better survival compared to other individuals looks unconvincing.

You consider the complex intricate structure of some organ of the animal's body and are imbued with the idea that the possibility of generating this miracle through a series of layers of random useful deformities is vanishingly unlikely. Too low a degree of probable reliability is a big minus of Darwin's theory. The probability that a monkey could type a book "The Origin of Species" on the keyboard by accidentally hitting the keys is about the same sort. A more likely consideration suggests that this is achieved by a long-term gradual directed self-improvement of the phenotype from individual to individual.

As we have already emphasized above, the interaction of each individual and each species of living organisms with the surrounding nature proceeds in the form of a two-way process: external influence of the natural environment and internal self-development. In this regard, it seems incorrect to recognize the influence of the external environment as the only factor in the evolution of species. When we observe the development of an individual organism from birth through conditional childhood, youth, maturity, old age, we understand that the initiator, determining here is the internal causal principle that leads the organism according to the internal program, subordinating it to the internal law of development.

Ontogenesis is a brief repetition of phylogenesis: an organism repeats in an accelerated form the history and regularity of the development of a species. This leads to a logical conclusion that the ratio of the internal driving principle and the external corrective environment is probably also true for the development of each species of living organisms. The species is moved from within by a specific causal principle, and it evolves under the influence of this internal force and is simultaneously corrected by the external environment.

The essence of natural selection should be interpreted differently in the light of the above. It should be considered as an external ordering factor that hangs over a multitude of organisms striving for effective survival through a complex of external conditions. Individual organisms in a large species community, showing autonomous individual vital activity, run through life on a parallel course and inevitably *compete* with each other in the struggle for better resources: a more comfortable niche of habitat, better nutrition, a high position in the hierarchy. This encourages them to engage in a *competitive race* for the best key survival rates with the rest of their species. And they manage to achieve these indicators through persistent training of the relevant organs and systems of their body. The result of this training is the growth of useful

*neoplasms* in their body, and this acquisition is then inherited in the form of a useful organic predisposition.

Thus, it is important to distinguish two components in the phenomenon of natural selection: the corrective influence of the external environment and the *live competition of individuals*.

Competition generates a desire for individual self-improvement on the substrate of the species. The result of this improvement and useful training is *organic neoplasms* in the body of an individual: strengthened muscles, trained organs and systems, developed neural networks and synaptic connections in the brain. These neoplasms acquired by the body, according to Lamarckism, do not disappear without a trace for posterity, but are transmitted to offspring in some way that has not yet been studied in the form of a hereditary predisposition. According to this hypothesis, the offspring of an individual should have hereditary consolidation of acquired useful and advanced traits and qualities, which should give him advantages in competition with other individuals of the species and thereby increase the survival of the family line.

At the same time, species that demonstrate a better ability to accumulate and inherit useful traits gain advantages in *interspecific competition* and have a better chance of survival.

So, we state the importance of two factors for the evolution of species. Without any of these factors, the phenomenon of natural selection loses its essence. The subordinating influence of the external environment does not generate competition in the stagnant nature and therefore does not lead there to the effect of species improvement. The absence of specific external limiting and subordinating factors also does not lead to competition in the substrate of the species and generates only a simple duplication of individuals against the background of an extensive expansion of its distribution area.

It is important to understand that the forces and conditions of external nature produce only a *regulating* effect on the evolution of species. The *initiating*, pushing, driving influence on evolution is still exerted by the "built – in" property of individual organisms-the biological desire to successfully survive, master and develop in the conditions of this natural niche. The interaction of these two factors leads to the *generating effect* of intraspecific competition.

In the light of this, two principles of evolution named by Lamarck become possible for further development: the principle of *gradations* and the principle of *direct adaptation to environmental conditions*. At the same time, the principle of gradations receives an important correction: the desire to increase the organization of the species, instead of a mysterious "innate" mechanism, receives an understandable mechanism of intraspecific competition. It is the competition of individuals that acts as an engine of progress for each organic species. The fact of direct adaptation of each individual to specific environmental conditions is generally indisputable; it remains only to unravel in detail the mechanism of hereditary transfer of trained and educated qualities.

Regarding Lamarck's hypothesis about "gradations", it is worth adding the following. Man is a finite being in space and time. Therefore, the activity of a person, the expenditure of his attention, effort, energy and substance has a limited volume in a fixed period of time. And this activity is distributed in total to the entire body. It turns out that for each organ, system and subsystem of the body, a certain average norm of the total normalized activity (power) of the body can be spent. And there is a certain competition between organs and subsystems for a large

share of attention, expended activity (power) and material resources. It is clear that more actively used organs and subsystems take more energy and material resources for themselves, and less active ones remain less. Accordingly, the first train-develop, and the second weaken-degrade. Lamarck's hypothesis looks very reasonable given this particular *competition within the body*.

Recently, a fairly large amount of material has been accumulated in genetics, indicating the presence of a mechanism for the hereditary transmission of acquired qualities that is not directly related to gene combinations. We are talking about *epigenetics*. As it turned out, a set of genes is only a pile of building material for the body, from which the internal program of the body builds the necessary structure through biochemical regulation. This program activates the necessary genes at each individual moment of time and neutralizes-suppresses others, setting the right direction for the development of the cell and the body. The desired mechanism of hereditary transmission of acquired qualities may well be hidden here.

In addition, it should be noted that the generation of a new individual occurs directly from the mother cell in the process of reproduction of organisms. A newly born organism begins its life from a *trained* mother cell with the father's genetic information added to it. Thus, between the mother and the child, there should be a continuity of the cellular structure and intracellular substance with all the organelles contained in it. Interesting should be recognized the fact of the transfer of acquired skills by inheritance on the maternal side, found in experiments on defective mice in this regard [2].

Everything suggests that science is already on the way to unraveling the real mechanism of heredity in all its complexity. The task of philosophy is to assist geneticists in a healthy worldview design and orientation of their research.

It is generally believed that the evolution of man has stopped in our era according to Darwin. Medicine saves everyone in a row, there is no rejection by natural selection, and not only the freaks survive who are advanced by profitable mutational jumps, but also everyone else. However, the evolution of Lamarck has not stopped, it continues. The segments of the population, hungry for new sensations and new types of benefits, encourage entrepreneurs and inventors to search, create and offer new and more sophisticated options and forms of their satisfaction. People's lives are filled with new and more complex devices and conditions, which the rest of humanity also has to master involuntarily in order not to fall too far behind, to keep up with the times. People have to train the brain and other organs and systems of the body in a special way more and more intricately when mastering new conditions and devices. And the acquired skill is then transmitted to the offspring in the form of a special organic predisposition to successful activity in such conditions, according to Lamarckism. It becomes easier for children with inherited neoplasms to get used to the new changed conditions than for parents. It turns out that a person forces himself to evolve, organically adapt to the new living conditions that he himself creates. Evolution is non-stop.

## References:

1. Ravil Kalmykov. Closed Circuit with a Circulating Causal Factor is the Creator of All the Phenomena of Self-Organization, Autopoiesis, Synergy, Emergence, Subjectivity and Independence.  
[https://www.researchgate.net/publication/353119462\\_Closed\\_Circuit\\_with\\_a\\_Circulating\\_Causal\\_Factor\\_is\\_the\\_Creator\\_of\\_All\\_the\\_Phenomena\\_of\\_Self-Organization\\_Autopoiesis\\_Synergy\\_Emergence\\_Subjectivity\\_and\\_Independence](https://www.researchgate.net/publication/353119462_Closed_Circuit_with_a_Circulating_Causal_Factor_is_the_Creator_of_All_the_Phenomena_of_Self-Organization_Autopoiesis_Synergy_Emergence_Subjectivity_and_Independence)
2. Feig L. et al. Transgenerational rescue of a genetic defect in long-term potentiation and memory formation by juvenile enrichment. The Journal of Neuroscience. № 29 (5). 4 Feb. 2009. P. 1496-1502.
3. Ravil Kalmykov. Sir Isaac Newton and the Three Laws of Determinism.  
<https://www.gsjournal.net/Science-Journals/Research%20Papers/View/2419>
4. Ravil Kalmykov. Ring Determinism: Solving the Problems of Scientific Materialism.  
<https://www.gsjournal.net/Science-Journals/Research%20Papers/View/2417>
5. Ravil Kalmykov. Polyhedral Monism as Inquest of a Ring Determinism.  
<http://scipeople.ru/publication/102360/>
6. Ravil Kalmykov. About Free Will with System Accuracy.doc.  
<http://scipeople.ru/publication/102361/>
7. Ravil Kalmykov. The Idea of God is not Topical Henceforth.  
<http://scipeople.ru/publication/102362/>
8. Ravil Kalmykov. Anatomy of Freedom.  
<http://cdn.scipeople.ru/materials/34032/ANATOMY%20OF%20FREEDOM.pdf>
9. Ravil Kalmykov. Ring Determinism and Science about a Person and His Knowledge  
<http://scipeople.ru/publication/129514/>
10. Ravil Kalmykov. About the Mind-Body problem.  
<http://cdn.scipeople.ru/materials/34032/About%20the%20Mind-Body%20problem.doc>
11. Ravil Kalmykov. Synthesizing Realism: Time to collect the Philosopher's Stones.  
<http://scipeople.ru/publication/129515/>
12. Ravil Kalmykov. Synthesizing Realism: Healthy interpretation of Expediency.  
<http://scipeople.ru/publication/129517/>

Other works on this topic are awaiting translation from Russian into English, in particular "On both sides of human Experience" and "The Systemic World of Consciousness".