



Mysterious informative control “from above”, trite selection or permanent self-organization of living matter?

(Once again about the true mechanisms of evolution)

¿Misterioso control informativo “desde arriba”, trillada selección o autoorganización permanente de la materia viva?

(Una vez más sobre los verdaderos mecanismos de la evolución)

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Preamble

It's not a secret that currently many of us - conscious representatives of a terrestrial civilization - as if absorbed by mute expectation, are standing at the crossroads, with alarm peering into the future. Some current philosophers explain it by the general anthropocentric directory of species progress, meanwhile, others even hint on relentless approach of a certain fatal point of singularity. In other words, a grand evolutionary leap is about to come, and it seems to be connected to the accumulation of significant changes in the “humanized” nature and in society itself.

However, if you look, similar turning-points in the geological annals of our planet were more than enough. So, it is accepted to mark out usually the following milestones:

- 1) *origin (or safe “inculcation” from space) of a prime planetary life;*
- 2) *the subsequent division of tiny living lumps into autotrophs and heterotrophs;*
- 3) *the occurrence of multi-cellularity (meaning that, for both abovementioned taxa it, took place at different times);*
- 4) *well, and possible (though it is certainly more out of a collective feeling of solidarity) - an arrival of Homo sapiens on historical proscenium.*

Whereas among less significant moments could be named the formation of presumably some new creeping or, for example, flying specie. All these subjects will be comprehensively reviewed in this article, which is committed to the smoothest and pivotal issues of contemporary biology.



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And meanwhile, almost every Darwinist thinker is feverishly fussing in anticipation of their upcoming anniversaries, and advertising them with enviable scope and chic. This paper would like to recall the pages of “INNOVACIENCIA” for analogical round dates imprinted in our memory yet last year. Though which have been celebrated already in the opposite, however, idea camp, i.e. among firm and consistent critics of Darwinism.

So, this is primarily about the very recent bicentennial of the prominent national thinker N.Y. Danilevsky, and the centenary of the publication of two truly significant works: «Nomogenesis, or pattern-based evolution» by L.S. Berg and «The law of homologous series in variation» by N.I. Vavilov ^(1, pp. 47—89); as well as the 50th anniversary of the death of their most famous disciple and spiritual successor A.A. Lubischev ^(2, pp. 455-477), ^(3, pp. 414-430), ^(4, pp. 19-38). And it’s in this matter that we will try not only to figure out the rich and multifaceted creative baggage of our recognized luminaries but also to analyze some modern trends in each area.

1. Informativeness is present in all living things and, of course, it associates with Space!

In 1922, a book by the outstanding Soviet ichthyologist and geographer, Stalin Prize laureate, acad. Lev Semenovich Berg “Nomogenesis, or evolution based on patterns” was published in Petrograd ⁽⁵⁾ with a circulation of 2000 copies. In that work he first acquainted the world scientific community with such a rather bold original hypothesis (see below).

As you know, Darwinism begins its evidential chain of “variability-inheritance-selection” from variability. But what is variability? In the Darwinian imaginary, this is a completely random number of changes in the organism’s structure, i.e., mutations, not caused by either the outward cosmic intelligence or the internal life force. According to this, they can spread on all sides, like sunbeams, and there is no framework for their range. If the mutations are harmful, they disappear in the selection process, and if they are useful, then are preserved. Well, similar statement of the problem really looks quite reasonable, clear, and convincing changes can be any, and the selection itself will take care of preserving those will turn out convenient. However, A.I. Vvedensky in his tutorial “Logics”⁽⁶⁾ unambiguously noted that simplicity is a plus only under the rest equal conditions, and otherwise “simplicity is a natural prejudice”. Whereas in this case, there are no such conditions at all.

In the comprehensive 5-volume monograph, “Flora of Manchuria” (by botanist V.L. Komarov) valuable information is given ⁽⁷⁾, according to which the new species arise because of certain trait changes almost in each individual. While, if it accidentally appears only in a few individuals, this would be immediately eliminated by intraspecies crossing. Similar Komarov’s data is quite eloquent, but by no means exceptional. After all, even a novice dentist is well aware - and this was emphasized by N. Y. Danilevsky ⁽⁸⁾ - that molars’ complication was distinguished by a clear pattern, i.e. without chaotic trials and wandering as required by Darwinism, and most importantly - without a variety of intermediate options. Furthermore, according to the Lamarckian exercising/non-exercising, which Darwin added later into his theory ⁽⁹⁾, ⁽¹⁰⁾, ⁽¹¹⁾. It is also excluded, since teeth are formed under the gums, and this phenomenon is not naturally subject to any “exercises”.

And, by the way, that is a big mystery for biologists and paleontologists. If all was determined only by external circumstances, we’d have one of two: either today there would no longer be (due to the emergence of some new conditions) those simplest organisms which reigned a billion years ago, or – because such organisms successfully continue to live now – the globe should be completely covered with similar protozoa. But you, after all, see perfectly well that neither former nor latter took place and never will!

So, it isn’t accidental when Berg said that the struggle for existence explains de-facto nothing: as there are not the most suitable attributes that survive for Darwinists, but the most durable, i.e. from their standpoint,

the winners in the housing question would become the primitive people's caves dug into the rocks. Besides, if for example, at the age of 10 years, about a million beech trees can grow in an area of one hectare, then in 100 years there will leave a total of no more than 500, which should lead to both a decrease in the number of seeds' variation and the very possibilities of optimal choice among them. As we can see, the expedient here is just the least likely - and therefore life from a scientific point of view is an extremely rare phenomenon that is almost not realizable in practice. But it nevertheless exists, and exists even despite of the second law of thermodynamics. And thus, namely progressive nomogenetic theory, in contrast to the notorious mossy Darwinism, still tries to find an explanation for this paradox, openly acknowledging the presence of live creatures of some internal informativeness being in the direct bilateral link with the analogous entity of a higher level, the cosmic.

In addition, of undoubted interest is the modern interpretation of nomogenesis from a neo-Pythagorean standpoint, i.e., as a mediated homomorphic imaging self-development of outwardly hidden numerical series and functions. However, here one can talk, rather about perfecting a subtly-lepton hull but not a gross physical substrate. After all, as molecular biologists have recently ascertained, the structural composition of nucleotides and chromosomes almost has not an impact on the degree of complexity of individual tissues or an organism overall. It follows that both the differentiation in ontogeny and phylogenetic progress are influenced by other factors. And just in their role here can act permanently improving proteins-computers or - which is much more plausible - some psychic (if we apply theosophical terminology to this case) matter. By the way, comparing N.P. Blavatsky's conception of the root races with modern systematists' evolutionary tree, one willy-nilly comes to the inference that the former quite could serve as a kind of well-adapted soil for the normal "growth" of the latter. That is, at first for a long time the primary bricks of being (in the form of stable atoms and polymer carbonaceous molecules) took shape painstakingly from the ether, the astral, the mental body as well as proton stroma, and then everything already continued according to the familiar school scenario.

But, incidentally, only a rough simplified picture of terrestrial evolution was still drawn above. Because, by and large, these processes went on almost simultaneously with each other; however, at the preparatory stage, the laws of theosophy (or, if you like, astrophysics) "ruled" in it, while hereinafter they have already become predominantly of a biological character. In this regard, the emergence of a habitual phenomenon of life can be somehow discussed, perhaps, from the mark of a success for all of us synthesis of the mental sheath (responsible, as known, for ancestral memory) with the immanent perceptivity of organic rings.

2. Though both Lamarck and Berg are friends to me, Truth, actually is superior!

Unfortunately, to the obvious disadvantages of the Berg's theory, one could, relate that with a strictly obligate approach (i.e., without allowing even the slightest possibility of extra-mutational expediency), it inevitably leads to the practical ascertaining of man as a bauble of nature. Which leads to a deliberately negative answer to the question of the sense of our earthly being. Let's remind that, under nomogenesis means *qua definitio* ⁽¹²⁾ such a clearly regulated evolutionary development, where we, according to our own subjective desire, are no longer able to change anything. That is why the basis of phylogeny should undoubtedly be the Lamarckian principle ⁽¹³⁾. And though similar inference looks quite banal and does not need supporting, we still shall put in here the public opinion on this account of one of the most authoritative domestic geneticists of our time, the laureate of the USSR State Prize V.A. Kordyum ^(14, p. 176 - 177):

"Today it is already completely obvious (with all even former non-recognition) the problem of inheritance of acquired traits is being solved. But we should like to notice that any acquisition of a new feature occurs purely by necessity. And we do not ignore it, but just brush it aside, because we don't believe in nature, and in all sorts of ostentation or "circus". I.e. this is when rats' tails were cut off, allegedly thereby proving that a given attribute (in the kind of a shortened tail) is not inherited. Whereas in the biosphere, similar information

passing occurs massively, ubiquitously, and very effectively. Moreover, the inheritance of beneficial acquired properties (as well as their transient use) is not only an ordinary phenomenon, but also an environmentally reasonable!”

However, even such a convincing and almost commonly recognized fact by no means prohibits individual subjects of the terrestrial biota from bringing to here a certain own “exclusive”. By the by, in his previously published works ⁽¹⁵⁾, ⁽¹⁶⁾, ⁽¹⁷⁾, the author introduced as many as 4 new alternative levers of evolution into consideration: stepping, food, protein and mental (psycho-Lamarckian). The protein pathway was illustrated on birds, the food one on bees, and the stepwise on several different taxa simultaneously. And, in particular, according to the logic of the narrative, it’s necessary to briefly stay on the last of them.

So, the essence of the step-by-step principle is as follows: in order to get tho’ a small qualitative leap (regardless of its size, type of tissue, etc.), it is necessary that at a given place the number of cell divisions be at least one more compared to the preceding generation. If one get interested in the Metazoan kingdom, where the most relevant locus is, of course, the nervous tissue. Here our leading attention point should be mainly the stepwise evolution of the ectoderm (although in some degree the mesoderm too). And besides, spare division can occur, perhaps, only in the womb (since neurons usually do not demonstrate apparent mitosis activity in the light) - which, in turn, could realize unless with a gradual “crumpling” of the prime stages of fetal development. By the way, the option connected with the allegedly longer duration of the lunar decade itself is hardly de-facto applicable here; moreover, if it is possible to explain everything much simpler: say, from the standpoint of a multi-level perception of time.

Thus, the stepwise kind of evolution is, at first glance, a potently fitting vector not only for chordates but for many other current or fossil species involved in the phenomenon of staged development (egg-larva-pupa) as well. The same is, apparently, also regarding plants sprouting from spores or seeds. And if nature did not support this very easy for her and completely, by the by, acceptable algorithm – hence given circumstance owed be interpreted only as an additional strong argument against nomo- and orthogenesis.

While the food route of conveys evolutionarily useful properties, despite its seemed ordinariness and banality, it is no longer so relevant here, because of valuable proteins to a litter can be passed through mother’s milk only immunoglobulins or some similar histamine-like enzymes.

But, apart from everything else, according to our firm conviction, all taxonomic transformations observed around must, by and large, be divided into two polar categories: saltational and truly Darwinian. And if the major macroevolutionary shifts would be, of course, logically attributed to the first group, then just purely adaptive intra- or interspecific changes (due, among the rest, to pedomorphosis, parasitism, neoteny, polyploidy, etc.) – obviously are to the second.

At that, the rightness and timeliness of this approach is essential in didactic terms as well. After all, it is no secret that perhaps the most frequently asked question in different philosophical debates are like this: why and how could our wisest full-loving Lord in his humane project access a person to be eaten from the inside by some nasty worms?! And, meanwhile, the answer here is elementarily trite: since, it turns out, no one originally was going to design those notorious parasites; moreover, the forced simplification of the form or body by itself does not require any preliminary calculations at all! Even, say, from the point of view of classical molecular biology or genetics.

3. When conceptual unity is not an obstacle to manifold.

In contrast to that, almost all progressive natural macro-shifts (such as the transformation of scales into feathers, and fins into limbs; the creation of collective mind in ants and bees; radical rejection of the tail, and preparation of the articulatory apparatus for meaningful speech among prehistoric apes) are more-less connected with external interference, an adequate justification of which the author devoted a separate

book in his time ⁽¹⁸⁾. So, in this abridged version of the article, it makes sense to dwell only on quite obvious circumstances of the everyday (albeit maybe unnoticeable) adaptive perfection of organisms.

In the modern scientific community, the opinion has somehow been tacitly established that all of them occur allegedly due to selective DNA methylation (if psycho-Lamarckian ideas are not considered here). Well, for most earthly species, this seems to be the case. But for cnidarians, comb jellies, and some other invertebrates, the decisive factor in their successful survival might be the scattering of the radial nervous net able to retranslate to the gonads the information about the main events that were fixed (for passing the accumulated experience to offspring). Echinoderms tend to multiply through the regeneration of the full body from one segment, and this, likely, also leads to the preservation of the acquired parenting qualities for the descendants. As for the type of arthropods, none of the organisms has such a complex and refined control over the entire living system from the side of the primary chromosome. Let's recall, at least in this regard, extremely punctual and in their way wise social insects. And hence, they personify a certain vector of evolutionary development, having managed at the same time to penetrate almost to the very top. Finally, it's known that episomal-plasmid recombination of genetic material among members of a population or strain is an essential importance in prokaryotes' life. So, it can be hypothesized ⁽¹⁹⁾ that in higher plant taxa, similar adaptive-hereditary gene transfer will be fixed too. After all, just settling of qualitatively different chloro- & chromoplasts /on the one hand/ and mitochondrial symbiont-bacteria /on the other/ in separate cells, has played a decisive role in terms of processes of cardinal divergence between plants and animals. Akin to plasmid shuttling also the phenomenon of transductional integration of genomes, whose protagonists are retroviruses that live and reproduce thanks to peaceful coexistence with more developed organisms.

Well, and on the whole despite the phylogenetic development of complex multicellular organisms has, naturally, certain characteristics for each species, however, it was carried out according to a single principle - based on the given genome that earlier (i.e., at the previous, so to speak, "archaic" stages of its formation) had already lost the ability for self-improvement. Thus, let's clarify here several important cornerstone points on which the author relies, arguing their view about the course of organismic evolution.

- *Theoretically, a valid possibility of significant outwardly visible changes at the level of an individual – along with a strict karyotypic constancy in all its foreseeable ancestors.*
- *The dominant role of factors of internal self-development and selection as the principal driving arms of progress.*
- *The complete autonomy of the above evolutionary postulates from blind mutational entropy, i.e., the conceptual independence of these two routes from each other.*

SUMMARY

Thus, according to the author, although self-developing matter relies on the general orderly character of motion, it certainly would not be able to pass from some abstract formulas to concrete hylic realities without targeted support from outside. Moreover, at the human level, the approving creation role of this highest organizing principle is noticeably manifested in three evolutionarily significant hypostases: sacred (the spirit), informative (by way of the subtle psycho-Lamarckian entity that accumulates the useful worldly experience), and structural-framework (due to what different material sheathes get the opportunity to unite within one body). Well and, of course, all the taxonomic transformations observed around should be divided into two polar categories: saltational and Darwinian (i.e., simply put, inertial).

But still the most important is fact very soon another (and, apparently, the last) global leap comes, that - nota bene! - will touch upon precisely the notorious "master of nature".

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