

# **Ego sentio, ergō sum!**

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## **Introductory section**

The article offered to your attention is, in fact, a series of conceptually connected excerpts from my catchall treatise on the physiological background of pre-cognitive brain functioning and some little-known hidden specifics of the higher nervous regulation. Well and besides, a couple of pages is devoted to the innate structural asymmetry of the hemispheres, and also to the overthrow of the relevance for a human of true free will.

But generally, in his scientific views the author tries to adhere, in principle, to the idea of the subjective reality of emotions and the relative illusory nature of sensations. In its spirit, this position is evidently much closer to Reidian<sup>1</sup> (or differently speaking, to the Scottish Enlightenment's) than to a more recent - the German classical one (the founder is H. von Helmholtz). The latter, me recall, has developed (and by the way, as long as one and a half centuries ago) own theory of perception, whereby subjective images do not resemble the objective qualities of perceived things, but are just their abstract signs (characters). That is, any momentary perception was determined, according to Helmholtz, by the "habitual means" already formed in a given individual, due to which the constancy of the visible world is preserved.

While in this article the link between an object and a corresponding rendered picture - vice versa - is looked rather as a relation of homomorphism between two non-equinumerous sets. However to declare that such homomorphic images of the same object can in total exist an infinite number - this, perhaps, would be the easiest here. That's why we are nolens-volens forced sometimes to turn with the mind's eye to the hierarchical evolution of natural systems (starting from the primary monads) in the context of the progressive development of their psyche.

And as far as surrounding actuality is concerned, the final correct answer about the sought-for type of the mapping would, obviously, first of all hang here upon the spatio-temporal parameters of the Universe and the comprehensive set of quantum characteristics of five (at least) stable elementary particles which have attended even at the origins of being.

## **I. If one look at given problem with the keen gaze of a highly experienced philosopher-cosmist.**

It's no secret that in the ancient Egyptians, yes and among representatives of antic world it was considered the heart to be the seat of spirituality. This, in particular, is all out confirmed in the treatises of Diocles, Aristotle, Praxagoras, as well as their medieval followers Albert Magnus and Avicenna. But, however, in modern epoch either, such recognized luminaries of domestic science as I.E. Ovsinsky, V.F. Voino-Yasenetsky, A.I. Veinik in everyway have attempte to advocate the

cardiocentric version and even to creatively develop it. And though this may look outright savagery and fullest ignorance to some, yet if we remember the fact similar “higher command staffs” of plants and fungi are also located not at the top, but at the very base (i.e. on nearly inaccessible depth), then one inevitably come to the conclusion that not all here is so evident...

But in general, it should at first emphasize that when considering the hidden intimate aspects of *cerebrum humanum* constantly boiling with various learned ideas, we must try to stick anyhow to dialectical-materialist positions. For only, perhaps, clearly starting from that a priori but well-proven worldview foundation, we'll be able in practice to unite such seemingly contrasting and dissimilar facets of productive brain activism, as nerve transmission of encoded electrical signals along afferent communication channels and instantaneous flights of images at the level of inter-genomic ESP – to a certain holistic and, what's most important, formally consistent scheme.

And so, according to the canons of modern philosophy, all manifestations of being are divided into 3 categories: subjective reality, objective reality and synthesized (artificial) reality.

The subreals of different people (born in their consciousness under the influence of neural bio-currents) on intersection give out appearance of objective reality. Although at that neither the firsts nor the seconds can be, alas, counted among the truth. Particularly, even despite every subreal is true from the point of view of the contemplating subject, but the same, for example, hallucinations or dreams are not ones from the positions of a side observer. In turn, any manifestations of objective reality (the items) aren't true at all from the standpoint of cognizable matter itself: most often they simply reflect certain mathematical ratios (associated, as a rule, with form, but sometimes with content), and also main physical & chemical laws. Well and finally, abstractions (i.e. synthesized reality) are created by the invention of the human mind and consequently - objectless: they are non-felt to sense organs.

By the way, despite that psychic images take shape by neural impulses (which as if emphasize their extreme subjectivity), for now cases of sensory heteromorphism (meaning, say, the replacement of visual perception with auditory or olfactory) are yet unknown in medical practice. In addition, it is difficult to even fancy how with such shuffling their emotional assessment will be carried out. As for the first thesis, one of two things can be assumed: either gross violations in the activity of the “Self” are fully incompatible with life, or Helmholtz's entire current theory is erroneous. And concerning the second - that either emotionally colored “memo-traces” are passed down from generation to generation through the mental, or the ongoing emotional processing of signals occurs in figures, not at the habitual analogues level.

Wherein only the vortex fields can, all appearances, act as the immediate physical background of the subreal. For the spare corpuscular-monadic version looks just a kind of slightly veiled sophistry. And as regards of the sensory coloring of perceived signals, it is provided in accordance with a combined principle yet mainly depends on the specifics of certain involved here genes.

So, summing up, it would be quite reasonable to conclude that the phenomenon of consciousness in practice is due to the circulation of nerve impulses around a closed chain + sufficient energy supplying. Well and opposite: alone informative hypostasis seems, in the author's opinion, very unlikely (not to mention that the priority of the field over the corpuscle, inter alia, inevitably therein comes to the fore).

By the way, from here it directly, in particular, follows that not only you and I, but also most unelaborate natural creature (including nanobes, archaea, lichens, radiolarians, plants, mushrooms, etc.) is capable, it turns out, of realizing own this-worldly being. And even some fairly developed vegetative subsystem of our body (for example, the liver, heart, diaphragm, peritoneum, kidneys, uterus) essentially is endowed with its autonomous apprehension. As the single mandatory criterion for this is, by and large, the presence of an energetically closed circuit, around which the relevant micro-lepton sheath should, per default, consolidate.

## **II. Consciousness & will**

It is methodologically convenient to distinguish 6 functional levels of "Self" in a person. The primary /central/ "Self" is the main neuron of given particular hemisphere, the dominant position of which, according to most of committed preformists and certain extreme neo-Kantians, is defined already in the embryo. In turn, yogis localize the central "Self" in the pineal gland - apparently on the basis that in lower vertebrates it plays the role of the third eye and is thus capable of intensive energy exchange. However, in our opinion, the pineal gland belongs to other important mission, namely - of the cerebral chronometer; so doesn't carry any supplemental burdens connected with volitional activity or clairvoyance. "Self" secondary /thalamic/ is localized in the appropriate visual hillock. "Self" tertiary /primitive/ is built on top by the limbic system. The next level - mammal's "Self" - including the first three sublevels, is limited to the oldish layers of the cortex. The fifth level - the isocortical "Self" - is characteristic of the daily activities of the vast majority of people. Finally, the sixth, highest level is the mature "Self". Each subsequent "Self" embraces all those previous.

In terms of their functions, they differ as follows: the thalamic "Self" is responsible for practically all sensations and imprinting; the limbic "Self" does for emotions, working memory and any instinct-like manifestations; the mammalian "Self" does for elementary (i.e. one might say, animal) logic; the cortical-hemispheric "Self" - for everyday thinking and long-term memory; the higher "Self" - for the formation of a worldview credo, philosophical understanding of being and own place in it. That is, taking into account all of the above, in the future it would be more expedient to distinguish them from psychological positions, namely: 1) "Self" volitional; 2) "Self" sensory; 3) "Self" emotional; 4) "Self" oneiric; 5) "Self" cogitative; 6) "Self" personality /aware/.

In the waking state, the topography of consciousness is determined by the cortical-thalamic connections that are most relevant to the individual, and the area of the covered by consciousness

regions is in inverse proportion to the indicator of the distance of these zones from foremost cell /i.e. "Ego"/. Thus, consciousness is not something that is implied logically, but what is felt and experienced by the inner contemplative essence of the dominant-hemispheric "Self". In other words, here (on this step) per definitionem naught can be unconscious. Though, a true, this primarily regards sensory and partly intellective processes, for all that occurs below – in the brainstem or the spinal cord – naturally not tangible from within. By and large, even at the cortical level, not anybody is really feels autonomic nervous regulation, as well as stereotyped motor acts linked to the use of previously developed skills. But - let me one more time remind - all those aren't perceptions and surely emotions.

The topography of consciousness in most people is not predetermined by any one organ or cell, being logically conditioned by the holistic activity of the key cerebral structures. Neither the higher parts of the cortex, nor the pituitary & pineal gland, nor the reticulum, nor the limbic system, as a rule, can independently change the domain of consciousness without objective reasons. And this by no means is formalism and certainly bureaucracy, but an essential qualitative criterion of the auto-regulating system where the notion of consciousness is defined axiomatically - as something that works at the moment.

However, for individual people (primarily - men) the central "Self" plays a decisive role in determining the sphere of consciousness. Such people are generally named strong-willed, and the rest are weak-willed. In fact there is no deep border between them. It's just that at the volitional ones, central "Self" functions much more actively, oftener taking the initiative in the distribution and ordering of nerve impulses.

Auth free will is always transcendental for the human mind because it can only be possessed by an all-sufficient relic proto-energy (prāṇa) and perhaps literally a couple-triple of the smallest elementary particles that underlie of being. Though in everyday practice, a stable preference when choosing the sphere of consciousness of certain structures of higher nervous activity over others is usually called "firm will" too. That's why functional dominance in the thalamus of the reticular nucleus is manifested under the guise of the will of divine revelation, whereas a stable connection of the central "Ego" with the higher parts of the cerebral cortex (that are responsible for the formation of self-awareness) is mostly named rational will. It is on the latter nuance that numerous methods of autogenic training and yogic improvement (i.e. in order to achieve enlightenment) are based. However all this naturally cannot serve as an example of the manifestation of true will, since it is caused by a conscious initiative on the part of the cortex. So in the end this choice is determined by external information that the attainment of nirvana is possible and besides it's a great indeed. Therefore, no matter how strange it may seem to some, an ordinary earthly person does not possess the factor of free will.

Latent injuries and all kinds of pathological foci developing in the central "Self" are much more dangerous than, say, haemo-blocking or even forced these cells' removal. This is especially true of strong-willed people, who, with such a turn of events, show clear signs of a severe mental illness,

accompanied, in addition, by numerous somatic disorders. Along with that, for a certain (albeit usually short) period, the functions of the central “Self” can sometimes be transferred to other cells of the thalamus. And it’s this phenomenon which apparently takes place at the yogic immersing into samādhi. when one of the nuclei of the reticular formation becomes guide in their organism.

### **III. Feelings, emotions & memory**

As known, human memory functions on several levels, and primary, being localized in the dominant thalamus, is directly related to sensory imprinting. It’s essentially the involved here monads’ memory. A few seconds later, emotionally colored informational sensations can still be restored in consciousness due to reverberation of nerve impulses along the contour of thalamic nuclei or even on the overlying brain layers (if it is about, for example, the perception of speech, gestures, hieroglyphs and other difficult abstract images). Such memory can be named momentary.

Generally, the limbic structures, including the hippocampus, are able to accept not only targeted orders from the thalamus, but also to catch the emotional background of any symbolically encoded messages which arrive in suitable for assimilation kind from the cortex. Wherein the hippocampus is responsible for the functioning of human working memory too. And the latter, among other things, is mentioned here, in substance, not by chance. Because, it turns out, it’s directly involved in the distinct evolutionary mechanism of eco-adaptation (both at the level of an individual and of a biological species as a whole). With that, I was led to suited theories and inferences in this scientific field, oddly enough, by observing the rouse current rate of qualitative improvement in electronic-computing devices. Particularly, I noticed that RAM-modules<sup>2</sup> in almost every new version of the computer are invading the adjacent functional blocks (processor, hard drive disk, motherboard and at times even data highway) more deeply and effective.

Differently speaking, after comparison of this fact with the peculiarities of the neuro-regulation of progressing species, we nolens-volens come to the conclusion that similar phenomena must certainly take place in live nature. At Corvids, for example, the nidopallium increasingly penetrates into neighboring dorsal sections of the avian telencephalon, and in service dogs, the influence of the hippocampus is gradually extrapolated to the prefrontal region. Wherein from a physiological point of view, the whole secret of this is in he amazing plasticity of cerebral tissue, which in ontogenesis develops as demanded by concrete life circumstances. So there is definitely do some hard thinking about all that – and not only for practicing neurosurgeons but dry armchair academicians too! And generally we will certainly return to this many-sided and promising topic a little later...

It’s common knowledge that in the course of the epoch-making universal evolution of natural systems, continuity is quite distinctly traced - moreover as in the character itself as in the way of forming sensations and emotions specific to this particular stage. And nonetheless it’s most clearly noticed in the example of memory, for the short-term memory of each subsequent system holds on the

memo-substrate of the previous one. By the by, momentary (reverberative) memory is also apparently present at any step of the evolutionary hierarchy. But it mainly depends on the nature of the imprinting and methods the signals are transmitted, not on the underlying structures, as systems of different levels perceive the passage of time (and hence, the very chronology of events) unequally.

Despite the fact a long-term memory of chordates is based, in principle, on astrocytes, yet it's quite capable of appealing, if necessary, to similar memo-substance of a lower order represented, obviously, by intranuclear (but sometimes, possibly, extracellular too) proteins<sup>3</sup>. However in all people without exception, long-term memory (confined - recall just in case - to the gray matter of the cortex of cerebral hemispheres) is generated from the working one and moreover, as a rule, during minutes of sensory lull, i.e. primarily in the afternoon. At night it only is completed what was not done in daylight hours (and unless in separate short "stripes", seeing that most of the time the brain simply rests).

Though astrocytes (which, as you know, have a much shorter evolutionary "experience") store own data in analog form, and peptides - in digital, both of these functions all the same are selective. Particularly, in the process of the choice of more relevant material, concept-proteins already present in neurons play, for certain, leading role, meanwhile stemo-basal structures are supporting.

In turn, the instant memory (unlike long-duration), being immediately related to apprehension, imbibes totally all sensory information entering the brain and besides saves up forever - without reference to any traumas or ailments. But in everyday life, it's extremely hard to take advantage of it, since for that one need to penetrate in the integrative domain of the central "Ego".

Wherein no less perhaps interesting phenomenon of multifaceted work-capacity (that, on the accepted opinion, such bright and extraordinary figures as Alexander the Great, Julius Caesar, Napoleon and even some of the recent Soviet leaders of the world proletariat were generously endowed by) is directly connected just with hyperplasia of the primary "Self". But still, it would be, indeed, a little premature to claim that the final inference in this concrete case rests with a postmortem examination. And especially considering the fact the intrauterine closure of scattered semi-autonomous "Selves" to a single whole occurs exactly at the field, not the material level! Thus, despite the process of monadic system's formation «in utero matris» proceeds differently in other people, the comprehensive trend here is however quite obvious: the larger new-minted spiritualized substrate (be it an individual neurocyte, the entire thalamus or a supranuclear thalamo-basal cluster) - the more grandiose its extremal potentialities!

But actually it has been fuller discussed this in our previous essay, so if you wish, can look through there the exclusive author's interpretation of given problem.

While for now it would not hurt to add at least a couple words about emotions. In particular, those which accompany evolutionarily significant perceptions are already emerged at the thalamic stage (i.e. simultaneously with the latters). Whereas ones, that require the partnership of the higher shares of telencephalon, slightly lag behind own sensations, what depends on the time it takes for the

nerve impulse to run the distance thalamus-cortex-limbic. Though any emotion manifests itself in us, as a rule, in the form of a resulting evaluative factor of all momentary external signals (often, into the bargain, obscuring the mood and even sometimes overpowering it).

Well, and in conclusion of this section, returning to a quite pertinent parallel “human – biorobot”, I’d also like a little to detail some of the previously deduced synergetic patterns, which are applied equally to both animate and artificial objects. For example, such: “The possibilities for adaptation, development and progress are more favorable for that calculating machine (or, respectively, organism, species, taxon) which is ahead of its contestants in the value of the fundamental indicator CASH”. Wherein per definitionem it is measured by the ratio between operant (RAM) and read-only (BIOS  $\vee$  OpenBoot  $\vee$  BootROM) memory of a given robotic system. With that, its universal acceptability is largely ensured namely due to the physical dimensionlessness of the very magnitude CASH<sup>4</sup>. Which in computing is presented as a quotient from the division of bits by bits, however when applied to living creatures - already in the form of a similar masses’ fraction (or at last case - the correlation  $N_{op.} / n_{bas}$ , where is considered the summary number of neurons involved in the memorative cycle). Although generally it was to the full told about this in the extended Russian-language variant of author’s research.

#### **IV. Landlord & Roommate**

In the cranial box of almost every live person and even the simplest mammal there are two different creatures - two Neighbors: the dominant (Master) and the recessive (Lodger). The question of the possibility of their integration into the organic whole among individuals who have unique abilities to contacteering, psychography, and maybe to versatile work-performance, is still enough moot.

It is usually not accepted to highlight separate levels of "Ego" at the Lodger, since himself is very cramped and limited in activities. However some functions are, nevertheless, fulfilled by him: so let's say, it is with his participation most of the nightly dreams are staged; he is responsible, plus to that, for certain involuntary movements of the opposite side of the body; for memorizing revelations inaccessible to our direct perception because of their non-entry into the sphere of consciousness; for jointly coordinated regulation of autonomic nervous system; as well as, perhaps, for some mysterious phenomena connected with the empirical rational of the chiro-doctrine, oneiromancy, divination via cards, dowsing and, for sure, sleepwalking.

Both hemispheres of telencephalon practically belong to the Master, but preference when choosing a program of action, natch, is given to that of them is closer to this particular "Self". Thus, any expressions like “right-hemi's individual” and “left-hemi's man” reflect in some way his inclinations, but are not quite true to the fact in literal meaning of the word.

From a philosophical point of view, the choice between dominance and recessiveness of Neighbors is made axiomatically. Meanwhile from the standpoint of a biologist, we can talk either

about genetic determination or, possibly, situational (linked, for example, to the presence of condensed sexual heterochromatin in the corresponding progenitor ectodermal cell). But this is a purely formal alternative. Really the type of hemisphericity is, of course, set from birth; i.e. there is a full genetic predestination.

Nevertheless, a local gap, damage or loss of the "Y" chromosome in the cells of the dominant thalamus (so called mosaicism) may well lead to incorrect differentiation in men with the development of true homosexuality. While female upper homosexuality that inevitably associated with an impudent, often even delinquent character, is largely due to genes causing such antisocial behavior were passed on daughter from her parents. An interesting fact is only 1% of male cells have female sex chromatin; whereas for women, respectively, the male sex chromatin is revealed 5 times as often (what is clearly discordant to statistics on the number of cases of homosexual deviations among representatives of different genders). Hence, the conclusion about the potential belonging all uncorrectable frigid women to this group involuntarily suggests itself. But, on the other hand, if you look at that through the eyes of a geneticist, the above peculiarity could point, moreover, to the origin of the "Y" chromosome from the "X".

#### **V. Life is, oddly enough, is becoming an anachronism.**

While on the whole, the deep psychological problems touched upon here, in addition to their common scientific importance, may also be of purely worldview interest, for from quite another position reveal the nature of human existence. In particular, notional contrastings that have long been familiar to us like "living - inert" or "animate - insensate" can soon turn out, as surprisingly, anachronistic and even absurd. For actually vivacity is manifested thanks to a favorable combination of high structuring and psyche. At that, in terms of their metaphysical parameters they are by no means equivalent to each other: if the first case implies a sustained laborious process of gradual improvement of matter with the help of informons, then internal subject animativeness (psyche) is a fairly everyday for Universe phenomenon having acquired its rightful place in the immemorial pre-atomic era.

But still, from the postulates of quantum mechanics we all know that these two factors alone may not be enough in practice. So, without proper energy support (let even a one-time), it's unlikely to be possible. And in particular, such a targeted synthesizing impulse is necessary primarily for the closure of low-trim monads into a larger system (i.e. if we talk, for example, about the human fetus - in order to the transfer from fragmentary perception of many semi-autonomous nerve cells to the emergence of the personal "Ego"). Wherein though structuring, by and large, could be combined apparently with life-giving bioenergetics under the joint conceptual heading of "progressive system-forming metabolism", in reality similar very dubious economy is all the same incapable of playing significant role here for better comprehension of the complex hierarchical processes occurring in the world.

Well and returning to our traditional contrastings of “living - inert” and “animate - insensate”, it would perhaps be noted that they have more of a mundane than a strictly scientific implication. This is particularly true for the first of them: after all, “dead” (rotting and decaying) is, you must agree, by no means an inert but from an entropic point of view, unfortunately, something much worse. In turn, natural belowground crystals are roughly in the middle between two the above extremes. And therefore, it is hardly possible to judge peremptorily whether they are animated or not (and especially taking into account the binding character of the supplementary energetic stimulus). Incidentally, such far-famed outlandish phenomena as the self-resurrection of the deceased, enslaving zombification, the imperishability of holy relics etc., also belong to this interjacent category. And while we may boldly assert the fact all artificially created now robots are soulless, then that thing already cannot be, alack, said of the notorious zombies or the departed righteous...

### **Closing summary**

In this theoretical study, a qualitatively new concept of human consciousness and memory, based on the principles of neo-vitalism, psycho-Lamarckism and system-evolutionary hierarchy, was comprehensively examined. According to it, any manifestations of the mental activity are possible only thanks to our reduction predecessors, i.e. with an eye on the monads’ analogous properties. In particular, external energy-supply, defensive reflex and even libido have some of own virtual stencils, where concrete material images from surrounding us world are inserted during ontogenesis. So that spirituatedness (along with sensations and emotions, surely) as a blanket cosmic category ought, no doubt, inhere in everybody up to the most primitive natural forms!

And on the whole, the content of given work could be reproduced in 7 short theses:

- a) *Consciousness, being an immanent intrinsic side of the psyche, per definitionem is manifested in one way or another at almost all terrestrial creatures.*
  - b) *If sensations arise first go - as an mirror reaction to an object, then emotions do only after checking with hereditary memory, that is, a little are quasi delayed. As for the specific "drawing" the adequate type of sensitivity, it is realized downright at the level of the congruous thalamic nuclei - without even reaching "Self-substratum".*
  - c) *Human memory functions in several hypostases, and primary, which inherent to the dominating thalamus, is immediately conditioned by the current perception (or, say, early childhood imprinting).*
  - d) *In the process of long-term memory formation, the principal role is given by the author to particular highly-basic proteins and astrocytes, not to the network architectonics of the brain (as most of purblind western naturalists mistakenly suppose).*
  - e) *Astrocytes are capable of acting in this case only as passive memory keepers, and besides, carry apparently an analog, not a digital code (i.e. are something like a pocket-book for a lecturer or museum exhibits for a historian).*
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*f) The age-old scientific problem of pinpoint identifying "Self" would, in our opinion, be resolved dialectically. That is, if in most ordinary Homines sapientis its range is limited, as a rule, to just one neuron spontaneously chosen while still in the womb, along with them there are also some unique earthly individuals, whose "Self-substratum" swings shut on a higher, thalamic level. Which, in turn, must certainly have impact on their perceptual superpowers and corresponding creative talents too!*

*g) Finally, regarding the genuine free will, then it, as already mentioned, isn't a subject of logical comprehension at all, for represents the inalienable, i.e. intrinsic attribute of auto-sufficient relic proto-energy (prāṇa). And thus, the vast majority of people, not possessing free will from birth, are ipso facto similar to banal biorobots in own behavior.*

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<sup>1</sup> In this case, we are naturally referring to Presbyterian pastor Thomas Reid - the generally recognized founder of the influential philosophical school SCSR.

<sup>2</sup> RAM = "random access memory".

<sup>3</sup> However, it's not excluded that professional magicians and wonderworkers might even turn to amino-groups for the necessary information, and also to smaller relatively stable particles from lepton family (as if plunging into the truly bottomless mnemo-storage of downward systems).

<sup>4</sup> By the way, this indicator literally means "Coefficient of Ashursky".