

A summation of ideas, resulting from my research, which led to several hypotheses I have developed

My initial idea was that all biota on Earth are subject to geomagnetic and cosmogenic influences.

Over the time, my research documented that the geomagnetic excursions, the solar minima and maxima, and some cosmogenic events, like the supernova explosions, are all generating, because of increased cosmogenic radiation penetrating to the ground, an increase of the atmospheric concentration of C14 isotopes.

In the next step, my research documented the role of the increased concentration of atmospheric C14 isotopes on human neurogenesis.

My research has documented that all changes in human brain functioning are related to changes in brain neural consumption.

However, such changes in neural energetic consumption maneuver neural nonlinear and linear processing.

Thus, the change in the balance of mental processing toward the dominance of one of these two types of neural processing, ultimately produces a significant change in human behaviors and their societal production.

Geophysical and geologic records document all atmospheric increases in the C14 isotopes concentration, which can be associated with the mentioned events. These records can be compared with changes in human behaviors, as they can be investigated and deduced from the analysis of archaeological remains.

In my research I tried to evidentiate the mentioned change in human mental approaches, where the change can be attributed to a switching of the dominance between linear and nonlinear mental interpretation of the natural perceived reality.

As it appears, all biota developed a basic linear processing, characterized by selecting only the “predictable” variable, and where such selection must assure each species survivability.

In the meantime, most species are combining a dominant linear processing with a minor nonlinear mode.

Here, nonlinear processing is mostly based on and emphasizes the optical/visual perceived information, but also some other nonlinear information can be processed by other senses.

During my research I was able to document a switching from a linear dominance processing toward a nonlinear dominance.

As it is documented, a significant increase in the number of neurons constantly developed from 160,000 to around 15,000 years ago or less. Such an increase has been responsible for major raising in neural consumption of all hominin's brains, including the erectus.

In the same era, a major anatomical development occurred inside the sapiens brain that created a great distinction between them and other hominins. This anatomical difference refers to precuneus that gradually evolved in sapiens only, reaching its current shape around 35,000 years ago. The precuneus exceptional development in human skull also caused "globularization" that is not present either in other hominins. No globular skull can be dated 35,000 years ago.

I defined such switching being manifested around 70,000 years ago as a type of abstract interpretation of reality. I based my interpretation on a chain of geomagnetic excursions, named Blake and post-Blake events (between 116,000 to 94,000 years ago, which were followed by a severe climate cooling (that was on par with or even more severe than the Last Glacial Maximum (LGM) from 25,000-20,000 years ago); this cooling developed around 70,000 years ago.

I would assume that these geomagnetic events served well the era of significant increases in the number of neurons, but probably, it also influenced some changes in the brain circuitry, increased neuroplasticity and cognition, facilitating the neurologic accommodation to the climate transition and changes from the last interglacial, named Eemian, to the Last Ice Age (LIA) episode.

This climate event occurred close, in part, to another geomagnetic excursion named the Norwegian-Greenland Sea excursion that is dated about 65,000-57,000 years ago, but which had regional geomagnetic expressions, like in the northwest China (named the Gaotai event) and Bangladesh, where its duration was documented for periods from 80,000 to 70,000 years ago.

This glacial cooling, being developed on a background, where the brain has already turned extremely sensible (increased plasticity that produced only small changes in neural wiring, but these changes made the brain ready for major overhauls), is associated with multiple bursts of neurogenesis caused by increased atmospheric concentration of C14 isotopes that occurred during the mentioned geomagnetic excursions.

For the above reasons and using some archaeological interpretation of that era human behavior, I hypothesized that 70,000 years ago a nonlinear-dominant mental processing developed. It may have produced a change in vocal coherence and meaning, causing a static language that will be nonlinear in essence, because the words will function as symbolizing separated entities and the connection between them was at best sparse. The language was not flowing, like later on it turned to. The time was not flowing either.

It is significant to mention that time start flowing only when the dynamic but “linear” language became the norm of the acoustic communication.

In my research, another stage in our brain consumption have occurred between 40,000 and 30,000 years ago, when the neural circuits opted for an increase in sound/acoustic processing, because sound processing needs less energy to work with, when this is compared to previous dominant optical/visual processing.

The mental processing turned (based on the analysis of the expressions produced by cave painting) from an abstract dominated thinking into an almost totally symbolic mode. In the same direction have evolved the consciousness, where the prevalence of “self” was gradually imposed in human society.

However, the change toward a sound dominant processing inflicted a linear processing, but also it vastly contributed to the development of language that turned from a static one into a dynamic mode. Dynamic language is linear, but also the consciousness is linear, too. So, during this era, the “revolution” in language can be associated with a revolution in extending the conscious processing.

Today conscious processing still is a mere 5% or less vs. unconscious/nonlinear (95% of total processing), and assumable in the eras before the mentioned language revolution (archaeologically documented around 30,000 years ago), it was in the range of 1-2% or even less.

The linearity in thinking gradually evolved from 30,000-13,000 years ago and implied a neural development toward a Frontoparietal Synthesis as a dominant processing that is responsible, among other things, for the Gravettian’s tool “revolution.”

However, the Frontoparietal Synthesis is intimately connected to precuneus exceptional development in humans.

As the previous climate cooling eras indicate, the cooling generated by the Younger Dryas 1,200 years long episode that overlapped in the terminal part the Gothenburg geomagnetic excursion and other cosmogenic events (a couple of supernovae events) generated another switching in our brain neural consumption, generating a hybrid state of the mind

that manifested with domestication of animals and plants and evolved into the Megalithic Culture.

This stage ended around 5,000 years ago, when the Solovki geomagnetic excursion (7500-4500 years before present) influence ended. Thus, 5,000 years ago the last major switching of our neuronal consumption occurred, producing an advanced “linearization,” increased consciousness processing, and created our “material” society and civilization.

However, the last geomagnetic excursion (2700-2500 years ago), named Etrussia, had a somehow strange result that was generated during its short-one-hundred-years duration. It brought the decisive separation between Western and Eastern cultures, where the first one developed advanced “linearization” and paved the way toward further “quantification,” logic thinking, and social “individualization,” while the second one succeeded in preserving an inherited nonlinearly dominant thinking, where the dialectics, contextual, complex interpretation of reality dominates.

The premises of the mentioned separation appeared earlier, when 4,000 years ago Mesopotamia and the Indus valley made the first steps toward “material society.” It is said that the boundary between these two cultures could be drawn somewhere in the western Iran (Persia).

In this last stage, the “linearization” manifested by gradual increase in “quantifying” all previously emotionally defined “qualities.”

In this last stage, still active today, also occurred during a row of solar minima being developed from XIV to XIX centuries AD, a chain of revolutions like the art, the banking and monetary revolutions, the scientific and industrial revolutions.

Much more recently, or during the era of Atomic Bomb atmospheric experimentation (1955-1962), a major increase in C14 isotopes occurred that was even higher than the highest one on record manifested during Las Champ excursion (41,000 years ago); I described it as responsible for current “technical revolutions,” which developed since 1955 and continue today with digitalization and AI.

The last part of my work makes an association of the ancient hybrid state of the mind and the Spiritual Society it generated and current transition toward an Information Trade Society, where also a “spiritual society” will flourish.

The tendency is called 4.0 Industry, and its role must be to gradually replace most of the raw materials in manufacturing with “information products,” which are not material but imply a huge amount of energy to manufacture them.

My hypothesis about a new stage of a novel hybrid state of the mind is based on two assumptions:

- the first assumption regards a major increase of visual/optical perceived information vs. traditional acoustic information used by a dominant language approach; it will significantly diminish verbal output contribution to the totality of human communication.

- the second assumption refers to changes in the manmade ambient, which develop at exponential level, and where the number of new while radically different products exponential increase require major increases in brain plasticity, formation of new skills, adaptation to sensory change, which all, as during the severe cooling of the Last Ice Age (LIA) episodes, require new neural connections, the reorganization of the existing ones, and which all imply increased metabolic demands; the increased vastness of the details which populate the manmade environment will need long-term memory improvements, which require new proteins to build new synaptic connections or to improve the existing ones.

An information that I used intensively in my work refers to several research papers, which experimentally demonstrated that the human brain reduction of energy consumption is regulated, too, by slowing down the speed of all senses perceived information. The perceived information is transmitted as a signal (optic, vibration, and acoustic) inside some neural fiber tracts, which connect various areas of the brain. The diminishing of the speed of such signals reduces the energy needed to transmit them.

Now, this mentioned effect has immense implications: the normal high speed of signal transmission makes the neurons to be overwhelmed by a quantity of information that is beyond their processing capacity. Hence, a good part of the transmitted perceptual information is inhibited and then ignored. Such slowing-down is called “latency.” I compared various data, and I observed that a speaking person has a “latency” of over 2,000 ms compared to a chimpanzee 50-100 ms. Hence, our “latency” has increased at least 20 times, meaning that we can “see” 20-times more “unseen” information than a chimpanzee.

However, this “normally unseen information” represents what we call “discoveries,” but in fact, this processing always refers to events of reality, which are already consumed but ignored by a high-speed processing.

These elements of reality are the past not the future. **The future of every complexity that inhabits the molecular world is the “emergent.” The rest of everything else is about some interacting components, where their interaction produces the “emergent” result.**

The last edition (6th Edition) of my book *The Making, the Rise, and the Future of the Speakingman*” contains several chapters dedicated to this transformation.