

## On the Landscape of Human Possibilities - Tendencies of Homo Sapiens to Become Homo Spiritualis

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### **Abstract**

Human eschatology is an unsettled issue which merits informed intellectual debates. The present paper makes an effort to strike a balance between the pessimistic picture of the human race painted by the mainstream scientists and the bright scenario projected by the accomplished spiritualis. Discussing on various assumptions and bifurcation points, the emphasis has been laid on the tendencies of *Homo sapiens* becoming *Homo spiritualis* over the landscape of limitless human possibilities. Consciousness, nonlocal communication, developmental regulatory genes, information mechanics are considered along with genes and memes in the mechanism of this new speciation.

### **1. Introduction**

There are differences in opinion on future of humanity between mainstream scientists and spiritualis. The former predicts a gloomy picture whereas the latter projects a bright scenario. About fifty years back in 1960, *Science* [1] published the "Doomsday Equation" which predicts that on Friday, November 13, 2026, the world population is going to be infinite. Therefore, the prediction is pessimistic on our survival. During transition of the second to the third millennium, this kind of gloomy picture is also painted on the future of humanity by the intellectuals like, historian Francis Fukuyama in *The End of History and the Last Man* (1992), John Horgan, the editor of *Scientific American* in *The End of Science: Facing the Limits of Knowledge in the Twilight of the Scientific Age* (1997), Richard Dawkins in *The God Delusion* (2006), Christopher Hitchens in *God is Not Great: How Religion Poisons Everything* (2007). On the other hand, the accomplished spiritualis across the length and breadth of religions have an ever-affirming voice on emergence of Divinity in the human body.

Therefore, a great task is in waiting to be taken up by spiritually-inclined-scientists and the science-educated-spiritualis with a view to striking a balance

between the two diverging opinions. This paper explores various predictions on this landscape and emphasizes on the tendency of *Homo sapiens* becoming *Homo spiritualis*.

## **2. The Basis of Prediction of Mainstream Scientists**

The basis of the prediction by mainstream scientists is the assumption that the Darwinian mechanism of evolution is the only mechanism for further evolution of human species! The fact which is ignored is that we are much more to answer than what has been unfolded by natural selection and the theory of survival of the fittest! Interestingly, Charles Darwin himself was conspicuous by his silence on the evolution of human species.

What has been said about evolution of the *Homo sapiens* in the mainstream scientific thought (a) is based on Darwinian principles and is (b) according to the *lineage* which arbitrarily begins from some sub-species of *Australopethicus* → *Homo habilis* (first tool maker) → *Homo erectus* (first fire-user) → Neandertals → anatomic human, which appeared about 100,000 years ago. If we re-run the tape of evolution again, as Stephen J. Gould points out, we might not get human beings. If we run it thousand times, we might get thousand different sets of species.

When one takes into consideration of Darwin's silence on human evolution and various evidence enumerated in the book *Forbidden Archeology* by Michael A. Cremo and Richard L. Thompson<sup>2</sup>, like carved bones and shells, advanced stone tools, human fossils in Argentina, artifacts suggestive of advanced culture, the focus of attention shifts towards extreme antiquity of human species, not merely 100,000 years but minimum of 3 million years and at large 300-600 million years ago. The picture becomes much more complex if we accept and take into account of the cases of UFO, humanoids, aliens and abduction cases for scientific investigations.

*While mainstream scientists paint a gloomy picture, accomplished spiritualists offers a 'divine' scenario of the Humanity.*

## **3. Different Predictions Beyond**

Beyond the Darwinian evolutionary principles, *Homo sapiens* has outgrown all other species because of its language, culture, technology, the ability to control

environmental niche, the ability of intentional genetic manipulation and the ability (may be limited at present) to inherit desired genes. On the backdrop of this, the future of human species has been predicted by futurologists, the human eschatologists of different disciplines, with different hue. It is worthwhile to categorize these futurologists in three groups: gene-based futurologists, information-rooted futurologists and consciousness-rooted futurologists. Each of them has different assumption and different prediction which is on different length of projection.

**Gene-based futurologists:**

They assume that genes are the ultimate. Biotechnology, prenatal genetic manipulation and gene therapy could offer humanity a disease-free super-athletic body. They are the *Homo optimum* with genome customized for survival of the fittest. The prediction length covers twenty first century. What they ignore is the role of mind, life and consciousness in evolution.

**Information-rooted futurologists:**

They assume that information is the ultimate and envisage co-evolution of human mind and the expert system and predicts ultimate emergence of *Homo hybridus* and *Homo machinus* (see below). Their projection period covers even next century. What they miss is the role of life and consciousness in evolution.

*The predictions depends on whether the futurologists are rooted in Genes, Information or consciousness.*

Ian Pearson<sup>3</sup> describes following possibilities

- (i) *Robotus primus*: It is merely an expert system, not hominid. Synthetic intelligence is described.
- (ii) *Homo cyberneticus*: When human being develops *interface* with cybernetic silicon chip
- (iii) *Homo hybridus*: A hybrid between human being and the expert system. Thought transmission is possible between them.
- (iv) *Homo machinus*: As the body of homo hybridus dies, the noncorporeal being in the expert system becomes Homo machines
- (v) Human beings who will ignore cybernetics will eventually be ignored in The evolution as *Homo ludditus*.

**Consciousness-rooted futurologists:**

They know consciousness as the ultimate. They use self-consciousness as tool to unify brain-bound consciousness with brain-independent consciousness and predict emergence of *Homo spiritualis*. While information-based futurologist aims at the finest human mind, consciousness-based futurologist goes beyond mind and aims at gaining access to the organizing power of consciousness. Therefore, they do not miss or ignore the role of mind, life, information and consciousness in addition to role of genes in evolution.

**4. The Emphasis is on *Homo spiritualis***

The present paper does not consider consciousness as an epistemological dead end. The proposition is founded on a new worldview where at the initial step, the Power is not with the genes, memes or even self, but with Information, and at the culmination all Power is with consciousness and not with the brain or any information<sup>4</sup>.

The paradigm grows with the view that the human brain has been evolving supracortically within the ocean of nature-consciousness and gaining access to its different nests step by step, and thus affirms that humanity is at the threshold of a new formation, which may also be called as 'on the threshold of a new *speciation*', using the language of evolution<sup>5</sup>.

The primary impulse for this speciation is said to arise out of recognition of brain-independent *consciousness-as-such* by self-consciousness enslaved within the brain-bound consciousness. The principal barrier/impediment of this emergence, on the other hand, is the tunnel of death. This speciation is a death-transcending emergence. Obviously, the successful transcendence of death minimizes chance of extinction and maximizes potential for survival. The necessary and sufficient genetic change is likely to happen in the course of conscious transcendence of death. And that is perhaps the time for a new spurt of stem cell proliferation in the 'brain marrow'! The emergence is of a new ontological level of being, from the present cortical being to supracortical being. This transition may be recognized as the beginning of formation of *Homo spiritualis* from *Homo sapiens*.

Why we call them *Homo spiritualis*? Because, these human beings not only remain aware, but also in advanced phase live within

<p><i>Peace, Holiness and Love are three manifest qualities of spiritual plane</i></p>
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the deeper nests of nature-consciousness. Those who are familiar with the Pentaune Model of nature-consciousness of mine (published in *Science and Spirituality Quest*, 2008, also available in [www.akmukhopadhyayconsciousness.com](http://www.akmukhopadhyayconsciousness.com)) can recall nests IV and V of nature, dwelling in which offers three manifest qualities of spiritual dimension, namely Peace, Holiness (sanctum sanatorium) and Love. Living within the *nature* of consciousness, nests IV and V, is the characteristic of a spiritual being. Of them, who develop a grip on these deeper nests, start behaving like 'instruments' for manifestation of the *nature* of consciousness what has been called Mother Nature. Like essence stick which burns itself till the end with one single goal of spreading the essence around, they keep on creating new information and new ideas from the burnt ashes of their lives. And, it is imaginable how any new information may contribute to create a new ensemble of space and time in the event horizon.

How do the proposed *Homo spiritualis* differ from super human of Western vision? Western concept of super human (e.g. Nietzsche) is based on out of proportion development of one or more physical or even some of the mental acumens. They conceptualize the marvel of the mental being and its manifestation in physical without any higher axiological reorientation beyond mind. The fact which is ignored by them is that axiological reorientation of mind towards consciousness redefines the behavior of the being and it depends on how much the invariant and values of nature's nests IV and V are biologized within. *Homo spiritualis* are those who actualize 'supramental' (Sri Aurobindo), supracortical (Mukhopadhyay), *consciousness-as-such* (Vedanta) in their mental and physical planes.

## **5. About predictors of this consciousness-rooted emergence**

In the last century, three accomplished spiritualis from India expressed unequivocally and independently that further evolution of the present human race is very much on the card. They are Pandit Gopi Krishna from Kashmir, Sri Aurobindo, and my Gurudev, Akhandamandaleswar Sri Sri Swami Swarupananda Paramhansa Dev. All of them had a common point to emphasize; the humanity is at the threshold of a new formation. The present man is a transitional being. The divine potential and possibilities in man are expected to go into actualities through evolution of higher consciousness. All of them thought it to be a natural consequence of the journey of consciousness already *involved* in the matter. This prior involution, according to them, acts as the main driving force of evolution.

From the West, we have heard from Karl Marx<sup>6</sup>, “Religion is the general theory of this world, this encyclopedic compendium, its logic in popular form, its spiritual *point d’honneur*, its enthusiasm, its moral sanction, its solemn complement and its universal basis of consolation and justification. It is the *fantastic realization* of the human essence since the human essence has not acquired any true reality ....” Alfred Russell Wallace<sup>7</sup>, co-founder of the theory of evolution along with Darwin, stated that “The universal teaching of modern spiritualism is that the world and the whole material universe exist for the purpose of developing spiritual beings.” Francis Galton, a cousin of Darwin also predicted a spiritual future for the present human race. We have also heard, Benjamin Disraeli saying, “This is no place to stop – halfway between ape and angel”. It is French paleontologist of Jesuit order, Pierre Teilhard de Chardin<sup>8</sup>, who has unequivocally expressed his conviction that with the Earth now undergoing the *Socialization of compression*, Humanity has entered a period of the Rebound of Evolution and Neo-cerebralization and is evolving "Towards more brain". Ken Wilber<sup>9</sup> from USA has also voiced in favor of this evolution. Recently, Richard R. Ernst, Nobel Laureate in Chemistry from Zurich, Switzerland, said, “Possibly, we become aware that we are involved in an evolutionary process that we might very well adversely influence, but which we cannot stop nor reverse.”<sup>10</sup>. More recently, Pamela J. Peck<sup>11</sup>, a cultural anthropologist writes, “It would be just as arrogant and naïve to think that we are the pinnacle of the evolutionary process. This is just a stage we are going through. .... We are on the verge of an evolutionary leap”. She offers a name for the new species, *Homo sanctus* (sanctus means ‘holy’). “Homo sanctus would be a species who have ceased to see themselves over and against an external world. They would be a species so sensitive to life that what they say would be equal to what they do”.

## 6. The Basis of this Assertion

What could be the basis of all such assertion and affirmation? Accurate prediction is possible when one has precise knowledge of the past which has shaped the present, one also has in the grip the actual mechanism of shaping and the predictor has an imaginative mind to

*The basis of the assertion on new emergence are (i) Reconstruction of the Past and (ii) Projection on the basis of existing knowledge.*

construct the mechanics of new formation. The basis of this assertion on emergence of *Homo spiritualis* are, however, (a) reconstruction of the past, and (b) projection on the basis of existing knowledge.

(a) Reconstruction of the past:

The affirmation of accomplished spiritual visionaries originates from their personal evolutionary experience in life. Theirs could be considered as 'vision' realized, a certain culmination of their personal journey in life. Their assertion is based on reconstruction of what has been achieved in their own life. To remind, Darwinian doctrine of evolution is also a similar reconstruction of the past.

(b) Projection on the basis of existing knowledge:

On the basis of the scientific experience it is possible to extend and project the evolutionary line for the future and construct the actual reality out of numerous possibilities through different bifurcation points. The projection for speciation towards *Homo spiritualis* is based on plasticity of evolving human brain, knowledge of nested hierarchy of nature-consciousness and is also on the basis of existence of the advanced milestones, some of the forerunners, available in this direction exemplifying the near-culmination of these tendencies. These milestones like Jesus Christ, Buddha, Mohammed, Guru Nanak, Sri Chaitanya, Sri Prabhupada, Sri Ramakrishna and Sri Aurobindo and many likes are already available within the bounds of human scrutiny.

## **7. Evidence for this Emergence**

Do we have any evidence supportive of this emergence of a new species? Perhaps yes! Evidences are circumstantial, nevertheless compelling. We could count on two groups of events which are in favor of the argument.

1. The widespread disorder, chaos and discontinuity on the background.

In the course of speciation, a macroevolution which involves both individualistic and group development, there are often 'discontinuity', 'missing links', and 'ontological gaps'. Therefore, in this evolution there is expected to be 'discontinuity' from the mundane, wide gaping from the routine professionalism, a far stretched leap from our present conditioned existence. This discontinuity, gap and the divorce from the predecessor may amount to what is popularly perceived as 'death'.

This is probably what Sri Aurobindo might have comprehended as 'evolutionary crisis', which precedes the 'descent of supermind'<sup>12</sup>. This crisis could be labeled as neither political nor economical, nor even cultural or social. This is clearly an evolutionary crisis at both individual and collective level!

Some of the evidence of this evolutionary crisis is already in manifest. One could notice how our worldly knowledge system having moved through the full circle is incapable to lead us further. Educational, social, legal and political Institutions built up and supported by ideas divorced from Spirit have been gradually crumbling down or losing their credibility. Like the trajectory of fireworks many scientific claims are being discredited in unexpectedly short span of time.

2. Examples of some extraordinary people who in reality have already emerged and started leading the humanity. They are evidence by themselves. We have taken examples of prophets and Sadgurus as *Homo spiritualis*. Beside them, one could spot out from the ocean of population four groups of people who exemplify these tendencies, the emerging trend.

(i) Personalities who could be designated as long term visionary

(ii) Creative people with impeccable axiological integrity

(iii) Meditators who have the experience of going into *samadhi state* repetitively and coming successfully out of the state with freshening newness

(iv) The group of people admixed in the crowds, who have had the experience of *survival* from a protracted death in hospital bed / natural calamity / war disaster, and at present living their life with a changed vision, and with an attitude full of empathy, transparency and open-, and broad-mindedness.

## **8. Looking at the Brain of *Homo spiritualis***

In spite of having so much difference in three categories of futurologists, the common focus for all is on the development and evolution of the brain, the organ where matter, mind and consciousness intermingle in a very complex way with 'life'.

What do we expect in the brain of *Homo spiritualis* at the materialistic neuronal level? The customary parameters which are used to assess the evolution of the human brain<sup>13</sup> are: (i) critical mass of the brain, restricted by thermal constrain and birth-passage constrain (ii) encephalization quotient (iii) change in cranial blood flow pattern related to gate and locomotion including the role of radiator emissary veins (iv) critical grey matter/white matter ratio for best information processing and (v) specialization of existing areas with added sophistication of cerebral cortex (networking and synaptic density).



We cannot explain acquisition of the *new* faculty of knowing (*sapiens* means knowing and the next species will be knowing more) and feeling by the parameters mentioned above since these factors are expected to reach a limit<sup>14</sup> and set irreconcilable constraints on further improving the 'quality' of the brain in terms of its perceptual, receptual (ability to categorize) and conceptual ability. The sixth factor, (vi) the abundance of mirror-neurons in human brain which are supposed to have contributed a lot in the development and spread of culture also look like intelligent dwarfs in individual capacity unless there develops a new integrating centre within the brain. And, therefore the proposition in *The Millennium Bridge* runs like this.

We expect to find in them formation of a new structure, a new brain, the *brain* of a brain, which as the organ of new faculty of knowing and feeling is responsible for (i) integration of sensory, extrasensory and nonsensory perceptions (ii) integration of surface, elementary and depth phenomenology and (iii) integration of cognitive, psychomotor and affective brains. The six parameters, as mentioned above, used in measuring the evolutionary leap could fall down the line of this new structure formation.

This urgency for speciation calls on the special property of neural plasticity of the brain. In response to this clarion call for a new speciation, the population of mirror-neurons which have contributed significantly for development of culture perhaps longs for an informational integration with a higher brain centre. For a change which is so radical, one may think of a possible contribution of stem cells from the 'brain marrow' towards this realization within the brain with formation of a new structure over the vortex of the cerebral hemispheres, as the *brain* of a brain!<sup>15</sup>

## **9. Successive Milestones following this Emergence**

We envisage four successive milestones of 'being' following this emergence; cortico-supracortical being, supracortical being, supracortical godhead and supracortical autonomy. The salient features of behavioral characteristics of them are as under. Supracortical autonomy (*Sadguru*) is on the highest rung of the ladder. Eternal yea, melting love and pure disinterested altruism are three important behavioral characteristic of such being. Supracortical Godhead represents an ever-ascending personality with magnetic charm. Supracortical being ushers the expression in

*The sine-qua-non of emergence of Homo spiritualis is to develop the brain of a brain*

their behavior the triad of creativity, love and inexhaustibility within cortical limits. In this great nest of beings, the 'higher' includes the characteristics of the 'lower' and not vice versa.

*The Time-frame for this emergence is 300 years, over nine human generations.*

Cortico-supracortical being, referred as the first rung in this ladder, could be the transitional being in the early formative stage of this dynamic non-equilibrium, which we have referred to in the chapter of "Integrated Cracked Brain Syndrome" in *Conquering the Brain*.<sup>16</sup>

## 10. Time Frame for this new speciation

What could be the time frame for this accomplishment to be observable? If microbial life evolved around 3.5 billion years ago, multicellular organisms came into existence about 2.5 billion years ago, the primate 60 million years, hominid, 3-4 million years and anatomical modern man 50-150 thousand years ago (as per the findings documented by Michael A. Cremo this could be several millions, even half a billion years), what could be the time period required for this transition of *Homo sapiens* to *Homo spiritualis*?

One unambiguous assertion is available from an extraordinary visionary from India. It is a prediction by an astounding Supracortical Autonomy, the prediction of Akhandamandaleshwar Sri Sri Swami Swarupananda Dev, who used to say, "I am working for three centuries ahead. ....To follow the beaten tract is not my way". He said that this emergence of *Divine-Human* would be explicit within a time frame of 300 years over the span of nine human generations! Why did he say so? Probably, the preparation of the genetic infrastructure for complete biologization of supracortical consciousness requires nine vertical transmissions! And, how did he say so? Not from a position of God but from the position of an accomplished human being who having experienced the complete journey engaged self in uplifting of the fellow beings.

It is also reported that when her followers repeatedly asked the Mother of Sri Aurobindo Ashram at Pondicherry about this time frame, she also came out with a similar answer of three hundred years! This was in the latter half of twentieth century.

This scheme of three hundred years is in complete consonance with three bifurcations. The first bifurcation has already occurred at the dawn of twenty first

century towards the direction as predicted by information-based futurologists. The next bifurcation is expected around the dawn of twenty second century.

### **11. Time frame of 300 years could not be explained by existing theories of Evolution**

Evolution is a very slow process. In Darwinian scale, the average life span of a species on earth is a few million years. It perhaps remains slow to allow 'time' for linked genes to become stable and establish the corresponding phenotype. If one considers only the genetic cause, as in drosophila, the population diverges only at a rate of 0.08 percent per generation. However, there is other equally important cause like natural selection by which genetically ill-equipped organisms are wiped out in struggle for existence. The other equally important cause is population drift and migration. However, taking all three together we cannot explain why *Homo erectus* (500,000 years ago) took so much time to evolve into Neanderthal (?75,000 years) while the cranial capacity changed from 900 ml in *Homo erectus* to 1400 ml in Neanderthals.

On the other hand, evolution rate has become faster following attainment of the size of the brain because of language, culture and the ability of intentional genetic manipulation and the capacity of human being to comprehend the evolutionary mechanism (unique ability of human brain). In the light of this, when we assess the vision statement on evolution of *Homo sapiens* to *Homo spiritualis* which is going to surface on this earth within 300 years, probably we require certain amendment/extension of the existing laws of evolution and we may add certain unique new factors contributing to the process of speciation.

### **12. If existing theories on Evolution cannot explain this New Emergence, what amendments and/or new additions do we need to consider?**

*"I am working for three centuries ahead. ....To follow the beaten tract is not my way"*  
– Sri Sri Swami Swarupananda  
*Paramahansa Dev*

Existing Synthetic Theory of Evolution stands on the pillars of Reproductive success, Natural selection and the Model of Population Genetics. This explains well 'within species', I mean micro-evolution,

that propounds 'survival of the fittest' and fails considerably to explain new emergence of species, i.e. *arrival* of the fittest. Supracortical evolution is one of the examples of the arrival of the fittest. The synthetic theory of evolution is inadequate to account for this. For explanation of this supracortical evolution, we like to make three amendments (rather extensions) in the existing theory and introduce three new or additional factors in the process of evolution.

**Three suggested Amendments, which rather might be called extension:**

*1. Not simply Genes but Information Memes and Genes*

So far, the Synthetic theory of Evolution, has accounted for the reproductive success of genes. The Darwin wars<sup>17</sup> between Gouldians (Stephen Jay Gould) and Dawkinsians (Richard Dawkins)

is what succeeds the selection pressure better, Genes or Memes? However, we take the view that information is more fundamental than memes and genes. Information could alter composition, structure and function of both memes and genes.

*Three Amendments for and three additional factors over and above the Synthetic Theory of Evolution have been suggested for supracortical evolution.*

*2. Extending natural selection process through all nests of Nature*

The theory of Natural selection is an incredible success since it is based on evidence from (i) Biogeography (spatial distribution of creatures on this planet), (ii) Paleontology (temporal distribution of creatures on this earth), (iii) Embryology (a small natural laboratory where ontogeny recapitulates phylogeny), and (iv) Morphology (the pattern of analogous, homologous and vestigial organs).

It would be fair to emphasize that Darwin's concept of Natural selection is confined merely to classical nest of Nature. It does not include the whole spectrum of nature as presented in the Pentaune Model. Further, Darwin himself was not depending exclusively on natural selection. He said, "I am convinced that natural selection has been the most important but not the exclusive means of modification." It is possible to extend the selection process of nature in quantum nest, elemental nest and the selection by Mother Nature. Because of a more complex axiology of value system, this selection process at the deeper recess of nature is likely to be more stringent than that in the classical nest of Nature.

3. *Isolation may be 'voluntary' and often consciously chosen for a Purpose*

The phenomenon of 'isolation', population migration, and 'genetic drift' could well be applicable in supracortical evolution too, may be with minor modification. In supracortical parlance, this could be effected by long term imprisonment of the person in evolution (Sri Aurobindo got enlightenment in prison), long term isolation of the concerned subject from the mainstream power politics (e.g. as happened in case of Nelson Mandela for more than twenty seven years) or, this may be accepted as voluntary and conscious engagement (e.g. in cases of yogis and rishis) to accomplish a chosen goal.

**Three Additional Factors:**

1. *Consciousness:*

Supracortical evolution will be different from all other evolutionary processes we know of in the sense that it is an *Informed* and *Conscious* Evolution.

It is unlikely that even during struggle for existence and natural selection, consciousness does not play any role. However, the subject is not aware of what all is happening for its evolution. The situation is different in supracortical evolution. *Homo sapiens* is the unique species which has learnt the laws of evolution. Instead of being driven by its rules, the members are trying to manipulate the rules in their own favor. Here, the brain has been informed about the existence of brain-independent consciousness and the brain's evolutionary effort is, therefore, consciously directed to harmonize its own consciousness with that in the outside. The motivation comes from within, reinforced by observation of the evolutionary progress of the fellow beings.

2. *Genetic factors:*

Evolution is a heritable change. It is an irreversible process. Therefore, genetic changes form its basis. Also the heritable genes seem to be the final accomplishment in the infrastructure for perpetuation of the evolved species. Heritable genetic changes could be achieved from (a) development regulatory genes and (b) the ability to manipulate the genes for desired inheritance.

The Present scenario

The scientists have tried to explain the arrival of a new species by means of genetic mutation. This may be true for bacterial life and also for some other lower life-forms. However, mutation in genes of higher life-forms is not very common. When mutation happens in higher life-form, it is retrogressive and transmitted in recessive manner. Mutation

*Information is more fundamental than memes and genes. Information could alter composition, structure and function of both memes and genes.*

or Recombination within a somatic structural gene has so far been recognized to produce a disease or an anomaly. Therefore, it is worth remembering Werner Arber's<sup>18</sup> statement of caution, "Evolution does not occur on the basis of errors, accidents or the action of selfish genes." The genetic engineering of nature that could be responsible for emergence of a new species (speciation) in the kingdom of animals, therefore, is yet to be discovered.

At present, there are five known genetic mechanisms which are said to add on the process of evolution: (i) Acquisition of new genes (ii) Rearrangement of existing genes (iii) Lateral or horizontal gene transfer (iv) Transposition of noncoding DNA and (v) Gene expression pattern.

Three emerging mechanisms

(a) Epigenetic factors

Waddington<sup>19</sup> coined the term and notion of epigenetic combining epigenesis with genetics. Epigenetic inheritance is ascribed to heritable changes in gene functions without any change in the sequence of DNA. Common epigenetic mechanisms are DNA-methylation (x-chromosome inactivation by methylation), histone modification, gene silencing, position effect and reprogramming, maternal effects etc. Of the environmental factors which are relevant in epigenesis are specific information which could alter gene function acting locally or nonlocally (see below). The epigenetic manipulation which occurs during development would be more relevant in this context.

(b) Developmental Regulatory genes

Evolution happens when the developmental changes become heritable. Developmental process is mediation between genotype and phenotype; the relationship between the two is never 1:1. This is not linear either. One genotype could give rise to several phenotypes according to developmental processes.

"Man appeared as a result of a one-sided, but not total, improvement of organism, by joining not so such adult apes, but rather their unevenly developed fetuses. From the purely natural historical point of view, it would be possible to recognize man as an apes 'monster' with an enormously developed brain, face and hands."

- Elie Metchnikoff, 1891

We are yet to know what determines the direction of flow of morphogenetic information. However, in consonance with the current Evo-Devo excitement

around, it is possible to take the cue from Developmental Genetics<sup>20</sup> and strike the appropriate chord for initiating research on supracortical evolution where the predictable likely changes perhaps be demonstrated not in any structural genes but in *developmental regulatory gene* involving the neurons in general<sup>21</sup> and neocortical neurons in particular.

The desired genetic changes happen most likely,

- (i) in the early embryonic stage of intrauterine life.
- (ii) in course of conscious transcending of death in adult which could usher literally a new 'embryonic' life within the individual's brain.

For the brain two other equivalents of death transcending process are one, the practice of getting into 'Samadhi state' regularly and second, the practice of volitional unconditional and complete surrender of individual's brain-bound consciousness to brain-independent consciousness.

The change in the *developmental regulatory* genes might lead to a unique networking, with formation of the *brain* of a brain as the highest biological homeostatic center. The *emergenetic* mechanism where multiple fundamental traits are tossed out to recombine for a new emergence may also play a crucial role.

- (c) Ability of genetic manipulation for desired inheritance

The human being has the ability to manipulate the desired genes to be active in the offspring. This ability is unique to *Homo-sapiens*.

### 3. *Nonlocal Communication:*

No evolutionist has ever thought or considered the role of nonlocal communication by the system/organism under evolution. The issue has been discussed in one of my earlier paper<sup>22</sup> published in 2002 (also available in the web [www.scimednet.org/Leadarts/Mukho\\_nonlocality.htm](http://www.scimednet.org/Leadarts/Mukho_nonlocality.htm)). It is not known what sets the program of evolution of new properties to replace the old ones in a system under evolution? Also not known what makes the system choose a program far ahead of time to beat others in the competition? Relevant also what makes this process happen simultaneously on different regions of the earth/cosmos, even when the regions are geopolitically different? The possibility of various nonlocal communications coming into play could be explored here. It can be said that *Evolution is a mechanism where non-locality and locality unite*. In other words, a *system that can act locally and has the ability to communicate non-locally reserves chances to evolve*.

<p><i>A system that can act locally and has the ability to communicate non-locally reserves chances to evolve.</i></p>
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### **13. Mechanics of this Transition**

We have suggested three amendments for and three additional factors over and above the synthetic theory of evolution to explain the transition of *Homo sapiens* to *Homo spiritualis*. How much each of these six factors contributes would be our next step of investigation.

There are six more processes to add up in this complex mechanism of supracortical evolution. (i) There is radical change in informational content of 'self'. (ii) There is shift of 'power center' from the brain to consciousness resulting in radical change in the Governance of brain (Inverted Neuraxis). (iii) Because of opening up of brain to information pool of cosmos there are drastic changes in neuro-informatics within the brain. (iv) Then, there are topological changes in the cortical neurons in conformity with the informational geometry in neural manifold. (v) There is also suggestion of the mechanism of renewal of cortical neurons from stem cell pool in the 'brain-marrow'. (vi) Finally, there is a possibility of contagious transformation (Precept to disciple). Contagiousness is characteristic of nest IV, the nest of Mother Nature. Here information itself transforms and transforms the being.

### **14. The complexity of Evolutionary Trajectory**

Evolutionary trajectory for speciation involving the individual as well as the group is complex. But what do we mean by the term 'complex'? It means that (i) There are several players (components) in the process. (ii) Each of the players has a specific mechanics. (iii) And, the mechanics is modified as well by other mechanics in action. (iv) Information network which governs the team of players has a crucial role for the goal in choosing its means. (v) There exists a hierarchy of goals set by interaction between nature of consciousness within the system and the nature of consciousness outside the system. Therefore, the determinants in axiology (in the language of science these are 'invariants') which emanates from its ontology approves the phenomenology in quantum and/or classical way of happening or not happening of any event.

The process of this sciencing, therefore, would be a long process. However, we have made a beginning in this paper by (i) identifying the players, (ii) their supposed mechanics of action and (iii) certainly setting a goal.

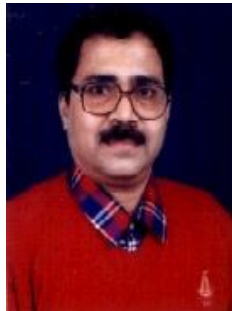


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#### **About the Author**



Dr. A.K. Mukhopadhyay has been the key-note speaker in Science and Spirituality Quests since 2006. He is a medical graduate from the University of Calcutta (1977), a graduate (MD) from All India Institute of Medical Sciences (1981), joined the Faculty of AIIMS in 1985. At present he is Professor & Head, Department of Laboratory Medicine at AIIMS.

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He coined the term and concept of supracortical consciousness in 1985 and developed further this idea integrating Science, Humanity and Spirit. His keen desire to develop a Science for Consciousness has given birth to four worthy documents. (i) *Frontiers of Research for Human Biologists* (1985), (ii) *The Dynamic Web of Supracortical Consciousness* (1987), (iii) *Conquering the Brain* (1995) and (iv) *The Millennium Bridge* (2000).

A new Paradigm is, therefore, on the making, which the author calls the Akhanda

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Paradigm. The Akhanda is an individual indivisible from the Whole. The Akhanda Paradigm is a Paradigm which deals with the divisions of the Indivisible holding Consciousness-Mother Nature as irreducible and inviolable constant.  
Website: <http://www.akmukhopadhyayconsciousness.com>.