

**THE DYNAMIC WEB**  
**OF**  
**SUPRACORTICAL CONSCIOUSNESS**

**Dr. A.K.Mukhopadhyay**  
**MD.**

**THE DYNAMIC WEB  
OF  
SUPRACORTICAL CONSCIOUSNESS**

**NEUROBIOLOGY, NEUROSCIENCE AND NEUROPSYCHOLOGY  
OF  
TWENTY FIRST CENTURY  
(WITH 15 FIGURES AND 43 TABLES)**

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International Standard Book Number : 81-900033-1-3

15<sup>th</sup> April, 1987

New Delhi-110029

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Price : Rs, 250/-  
\$ 20  
£ 10.5

Published by Shri S.K. Mukhopadhyay, Old Mission School Road, Bankura, West Bengal, Pin 722101, India. Printed in Zeenat Printers, Gautam Nagar Road, New Delhi-110029.

**DEDICATED  
TO  
THE NEUROSCIENTISTS OF THE WORLD**

“Sit down before facts like a little child, and be prepared to give up every preconceived notion, follow humbly wherever and to whatever abysses nature leads, or you shall learn “Nothing”.

□ T.H. Huxley

*“When the great innovation appears, it will seem muddled and strange. It will be only half-understood by its discoverer and a mystery to everyone else. For any idea that does not appear bizarre at first, there is no hope”*

□ Niels Bohr

## ACKNOWLEDGEMENT

These insights are mine, but they would not have seen the light of the day, if it had not been for:-

*My GURUDEV : Whose CONSCIOUSNESS, I am bestowed with.*

*My PARENTS : Whose GENES, I inherit.*

*My RELATIVES : Whose LOVE and AFFECTION, I Cherish*

*My TEACHERS : Whose GUIDANCE, I remember.*

*My COLLEAGUES : Whose CRITICISM, I am fond of.*

*My FRIENDS : Whose FRIENDSHIP, I enjoy.*

*The SILENT SUFFERERS : WHO SECLUDED me from NOISE.*

## **Brainstorm to Book**

During shaping this Brainstorm in form of a book, the flow of tender help and co-operation started flowing from all channels. The resistance was also tremendous. It maintained the balance and direction. I acknowledge everybody who directly or indirectly, willingly or unwillingly, in small bits or with magnanimity, has been with me during this metamorphosis.

I express my gratitude to

- Prof. Sneh Bhargava, Director, A.I.I.M.S., Prof. J.S. Guleria, Dean, A.I.I.M.S. and Prof. N.C. Nayak, Head of the Deptt. of Pathology, A.I.I.M.S. for granting me permission to bring out this book.
- Dr. S. Roy, Prof. of Neuropathology, A.I.I.M.S. who has gone meticulously through the Neurobiology section of this work-up and Dr. Gomti Gopinath, Associate Prof. of Neuroanatomy, A.I.I.M.S. with whom I had fruitful discussions on several occasions.
- The faculty members, trainees and postgraduates of the deptt. of Pathology, the staffs of the Central Hospital Laboratory Services, A.I.I.M.S. for their constant inspiration and encouragement.
- Medical illustration unit of A.I.I.M.S. for helping me in sketching out the figures of this text.
- Those who have worked heartily during the journey, the typist, the block-maker, the machine-man and the compositor, the porter and the binder.

*Asok Kumar Mukhopadhyay*

## PREFACE

The world has been taking a new turn. The gamma rays abound in about a dozen of cyclotrons. The Philosophy, Biology and Physics have been gasping for the Spirit. New sculpturing of the earth has been on. During such time, my crazy will to stabilize myself amidst the dancing stars succeeds to touch the *Subject of Consciousness*.

On the New Year day, Nineteen eighty five, which happened to be the birthday, of 'MaMoni', Brahamacharini Samhita Devi, the Divine successor of my Gurudev, Akhandamandaleswar Sri Sri Swami Swarupananda Paramahansa Dev, my five hypotheses took the shape of a small book, entitled "Frontiers of research of Human Biologists, Next Hundred Years". These hypotheses have formally laid down the foundation of supracortical consciousness in the course of modern sciences. Then follows the adventure of the dynamic web of supracortical consciousness. Perennial Neuroscience is married to the disciplined Physics. The dawn of transformation of the present human race into 'supracortical being' has been ushered.

The new science has been yearning for the Spirit for a long time. This epochal text emphatically says that the Grace is Physical and the role for Biologists is to direct the scientific, religious and social endeavours to elevate everyone into the State of Grace. Transformation is then spontaneous, and massive.

So-

*Let knowledge not succumb in dry intellectualism  
Nor love to dry in meaningless sentiment,  
Adequate marrow with a pound of fat, is  
What just needed at this moment.*

*Let us avoid, the rank materialism  
And all arrant superstitions,  
Intellect of Shankar, let merge with  
Buddha's endless passion.*

*We need a pup out of wedding of skylarks  
Of Wordsworth and Shelly.  
Infinite thirst and endless love  
To give birth a new, lovely.*

*Oriental on the right and occidental in the left  
Let us have the best of both.  
Philosopher, Mystic, Emotional and Worker  
Let them take a combined oath.*

*The biology, physics and philosophy,  
There get together  
In that speedy mighty stream, flowing  
For all and for ever.*

*Our cortex must get that infinite touch  
In every bit of work and plan,  
We must prove, what all great people thought,  
We have done and again we can.*

Even following ten to fifteen billion of years of the Big Bang, the universe has been passing through its adolescence to blossom into its full youth, - to have its romantic experiences. There are lots, lots of material to make new stars, galaxies, a newer mankind and if possible, for creation of a new universe.

*Asok Kumar Mukhopadhyay*

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**Not The End**

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—CONSCIOUSNESS—  
**THE HOLISTIC VIEW**

# Consciousness - The holistic View

## ABSTRACT

Consciousness is noumenon. Its phenomenal activities are understood in physics as well as in biology. The philosophical scheme and the scientific formulation have been stated. Technological revolution in this direction is asked for. The transformation of the ‘cortical’ human being into ‘supracortical’ manhood is considered a natural eventuality.

## INTRODUCTION

There are three grand roads to reach and enjoy consciousness - the philosophy, the physics and the biology. The philosophy has achieved its goal thousands of years ago. The most ancient documentary for this is four Vedas. The modern physics, through vacuum physics and particle physics has almost objectively touched the ‘consciousness’. In the physical science, today, ‘there is no doubt about the existence of consciousness. There are doubts whether the matter exists’. The biology, in this regard, is lagging behind. It is limping very badly and is not keeping pace with the philosophy and physics. The reason is very fundamental. There is considerable lack of unifying synthesis from the vast ocean of factual data accumulated through analytical research in biology and neurosciences. This paper unifies the relevant physical phenomena with consciousness and opens up a new frontier in biology.

## CONSCIOUSNESS-IN COSMIC PERSPECTIVE

### Definition and Qualification:

Consciousness cannot be defined. It can be qualified. It is immortal, eternal and infinite, conceived in biology as ‘Ananda’, the ecstasy of Divine perfectness. The Thing which does not satisfy these criteria is not consciousness. Infinite but not immortal, immortal but not infinite, eternal but not infinite and like all such - are not consciousness. The consciousness, by definition, is immortal, eternal, infinite, biologically perceived as Ananda - the ecstasy of Divine perfectness.

### **The transcendental and nontranscendental Qualities:**

A number of questions crop up. What is immortal, what one means by eternal and what is infinite? What is that which produces 'Ananda', a feeling of supreme ecstasy in limbic nuclei?

The cardinal sign of 'life' is creation. The cardinal sign of immortality is ceaseless creation - the CAUSE of everything. The eternal is that which is beyond TIME. All times are swallowed in it. That is infinite, to which everything else is finite, limited by SPACE. Thus the physical qualifications of consciousness transcend SPACE, TIME and CAUSE. When this immortal, eternal and infinite consciousness plays with that of phase specific consciousness in the pleasure triangle of limbic brain, there is Ananda. Ananda transcends PLEASURE and with physical attributes of consciousness, it is immortal, eternal and infinite.

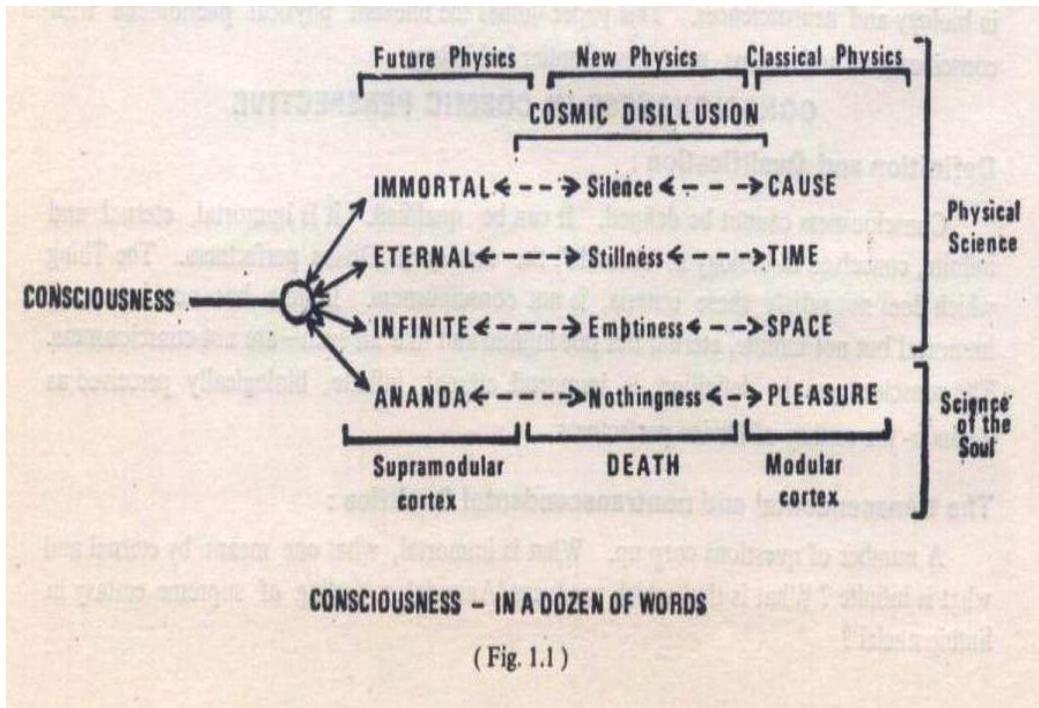
Out of four qualifications of consciousness, three are physical and one is biological (human). All qualities have their nontranscendental and transcendental counterparts; immortality for causation, eternity for time, infinity for space, Ananda for pleasure.

### **Concept of cosmic disillusion and death:**

The concept of cosmic disillusion and death are products of mind which is unable to bridge the gaps between nontranscendentals and transcendentals. In between four pairs of transcendental and nontranscendental descriptives, there exist four additional phases. In between cause and immortality, there is SILENCE, in between time and eternity there is STILLNESS, in between space and infinity there is EMPTINESS. NOTHINGNESS stands and bridges the gap between pleasure and Ananda. Before destruction of Mind (Mononash, monolay, See chapter six), the silence, stillness and emptiness, disillusion the cosmologist. The biologist's mind conceptualizes death at the end of pleasure. To a conscious individual there is neither death nor disillusion. There are only SILENCE, STILLNESS, EMPTINESS and NOTHINGNESS.

### **Consciousness in a dozen of words:**

The physicists have described twenty four 'fundamental' building blocks for matter; three quark doublets, three antiquark doublets, three lepton doublets and three antilepton doublets. The concept of consciousness could be built up with twelve words.



**On the Threshold of Breakthrough:**

Philosophically, consciousness has always been associated with energy. In the field of high energy physics, let us now analyze the whole phenomenon of cosmic disillusion. What all invention and discoveries, what all theories and principles have disillusioned the high energy physicists, working beyond space, time and cause. The pion, meson and exciton, the soliton, magnon and polaron, the photon, phonon and tachyon, the graviton, gluon or  $W(+/-)$  and  $Z^0$  particles, the interstellar nebulae or telltale cool ( $3^\circ$  Kelvin) breeze, and finally the conformon are to be looked into. We also have to evaluate critically the latest theories and principles which have ventured beyond space time and searched for an order or cause. The quantum-relativistic theory, the field theory, Heisenberg's uncertainty principle, Gauge theory, S-matrix theory, Bootstrap theory, 'Brusellator', 'Bhopalator', self-organisation in non-equilibrium (Prof. Prigogine), David Bohm's wholeness and implicate order need to be re-looked for a common essence.

Out of all these, who all and what all have made and can make a breakthrough in the realm of silence, stillness, emptiness and nothingness? Are they able to confer immortality to cause, eternity to time, infinity to space and Ananda to pleasure? Could

they become successful to bridge the apparently unbridgeable 'gap' between modular and supramodular cortex of the human being?

### **The Breakthrough**

From the vast ocean of data in high energy physics, we have to choose four and only four which can replace the four intermediate phases, and are responsible for a major breakthrough in silence, stillness, emptiness and nothingness. The criteria set are as follows. They

1. Are wave package of energy.
2. Are beyond the polar opposites, (particle and antiparticle).
3. Are abundant in this universe, both cosmic and earthly, long-lived and available to everything and to all 'ad libitum'.
4. Show interpenetration of space, time and cause in their behavior.

All of them must have been in the primary branches of the high energy physics - to name - the dynamicity, the coherence and the implicate order.

Applying the above mentioned criteria, one can choose conformon, phonon, photon for the physical attributes of consciousness. The relevant properties of three wave package of energy are summarized below:-

**TABLE - I**

<b>SOME PROPERTIES</b>	<b>PHOTON</b>	<b>PHONON</b>	<b>CONFORMON</b>
1. Origin	Not known. Quantized Electromagnetic wave	Not known. Quantized lattice wave	Not known. Found in optimum structural conformation of molecule like DNA, enzyme etc.
2. Decay	Absorbed and emitted by Matter (particles and antiparticles).	Not known. Absorbed and emitted by Matter (particle and antiparticles).	Not known. Lost as heat.
3. Theory of Relativity	Applicable	Irrelevant	Irrelevant
4. Uncertainty Principle of Heisenberg	Applicable	?Applicable	Applicable
5. Bose-Einstein's statistics	Applicable	Applicable	Applicable
6. Fermi-Dirac's statistics	Not applicable	Not applicable	?Not applicable
7. Pauli's Exclusion principle	Irrelevant	Irrelevant	Irrelevant
8. Dirac's anti -particle Theory	Their resting mass is zero	So none of them has antiparticle.	
9. Principles of Holomovement	_____	_____	_____
10. Specific Properties	i) Responsible for one of the four major interactions in physics  ii) Particle as well as wave-Dualism.	High energy Intermediate in I.D.S. (Intracellular Dissipative Structure)	i) Can do goal- oriented work.  ii) Wavepackage of energy, carrying information (Gnergy). iii) Has success -fully gone through 'evolutionary' selection process in biology. 'Hukum' 'Chaprash'
11. Possible Philosophical synonym	'Jyoti'	'Nad'	

Table 1

1. It is the mobile energy package of conformon, which has survived the struggles of evolution, carries information to perform a goal oriented work. It is the conformon which implies order in wholeness. It is the conformon which imparts immortality to the gene. Without conformon there is no transformation of cause into immortality. The conformon is a breakthrough in silence.
2. The phonon is the 'matrix' of the whole. It is the coherent wave package of phonons which is important for self-organizing consistency and coherence. In a dissipated system, kept far from equilibrium, phonon plays a major role. It is the phonon which is a breakthrough in stillness.
3. The wave packets of massless photon are responsible for limitless dynamicity of the physical science. It is the photon, studying behavior of which the quantum theory, relativity theory, uncertainty principles etc. have come into firm existence. Photon spreads through infinite field and brings infinite dynamism in physical science. The photon is a breakthrough in emptiness.
4. The selection of the fourth one is a bit difficult. It is ultimately concerned with 'feelings' of a highly evolved human being. A subhuman or a less evolved human being cannot get a glimpse of it, in spite of its omnipresent, omnipotent, all pervading existence.

Philosophically, which can replace nothingness in life is GRACE. By GRACE only, one feels blessed. The receptor for this grace is supramodular cortex of the human brain. In a prepared soul, who is consciously aware of the brainstemlimbico-cortical current, (see chapter five), activation of the receptor for Grace in the cerebral cortex, brings down blessedness. The act of getting blessedness is different in male and female probably because of the difference in overall electrical dipole in the two hemispheres (See chapter nine and three) in two sexes.

Amidst such all-encompassing problematic situation, it is not easy to find out a wave package of energy, which can act through the supramodular cortex of both male and female, being itself beyond the polar opposites. Let us examine the properties of Neutrino-muon complex in this context.

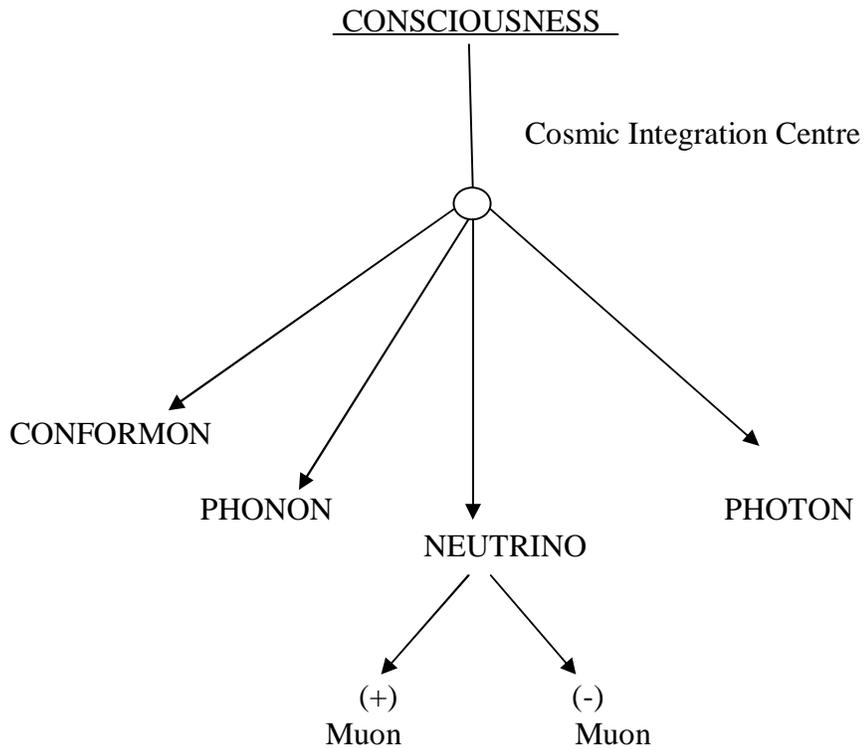
Both Neutrino and Muon are cosmic as well as earthly, abundant in this universe. Millions of neutrinos fly past through this paper and through us in this moment. Neutrino is electrically neutral, beyond the polar opposites and acts on the polar elements through muon. The muon has also been detected in the products of controversial proton decay. the Big Bang neutrinos are still abundant in this universe, coupled with slightly heavier particle, the positive or negative muon.

Let this all pervading Grace be translated as Consciousness - Neutrino-Muon complex. It is through positive or negative muon, coupled with neutrino, the overall

electrical dipole of the Biological integration centre of human cerebral cortex comes in union with the Cosmic integration centre (See chapter nine) and in a prepared soul, this interaction is the cause of Ananda, the ecstasy of Divine perfectness.

**Hypothetical holism :**

If the existing knowledge, new observations and our subjective experience accept what has been stated in the previous paragraphs, it is very easy to produce a hypothetical holism. Four phenomenal hands of consciousness are conformon, phonon, photon and neutrino-muon complex. They are integrated in the ‘heart’ of cosmos, the cosmic integrated centre (Integration centre for cosmic NATURE). These kinetic poles of consciousness, these high energy fundamentals of physics could be named ANTEMATTER (see chapter nine also) through which the consciousness forms a continuum with matter (which includes both particle and antiparticle).



**CONSCIOUSNESS - IN COSMIC PERSPECTIVE**  
(Fig. 1.2)

## **Frontier of Research:**

1. Could this hypothetical holism transcend the two profound IFs - If the neutrino has mass (Then the universe will collapse and the Big Bang will end in a big crunch) and If the proton decays (Then even the most durable matter with average life span of about million trillion trillion years is vanishable).
2. Could this hypothetical holism break the barrier of Planck's time  $10^{-43}$  sec following the Big Bang and allow us to penetrate in the penultimate eschatology?
3. What is the role of phonon or phononic equivalent in confinement of Quarks in the proton and neutron?
4. What decides after the 'Inflationary Epoch', about  $10^{-22}$  sec after the Big Bang, that matter will be slightly surplus than antimatter for creation of this universe? What is the conformon-equivalent here, to decide for this implied order?
5. Is this 'process' or 'system' - The Consciousness-Neutrino-Muon-Biological integration centre', active in all cortical beings?

The whole science needs now a re-look from the point of view stated above. The artificial intelligence, the transcendental computer, unexplainable cosmic phenomena could now be explored from this hypothetical holism. Technological revolution is demanded in this direction. To bring order amongst chaos, therapeutic value of conformon seems enormous. To develop coherence amidst incoherence, the applicability of phonon is colossal. The potentiality of photon in correcting disordered dynamics appears infinite. To get rid of the mind-made miseries and woes, the scope and availability of neutrino-muon complex to the human cerebral cortex is a new frontier for all school of scientists.

## **WE ARE CORTICAL BEING**

We are all cortical being. It is the cerebral cortex which has enabled us to come to this stage of today. All great ideas, principles and theories, all great invention, discoveries and experiences came into biological existence through a highly evolved cerebral cortex. A beautiful modular cortex crowned by an excellent supramodular cortex acting in perfect harmony is a marvel of biology and is always been responsible for a major breakthrough which is earthly - meaning, it is eventually proved useful for everyone on this earth.

## **THE CORTICAL BEING - AN EVOLVING CONSCIOUSNESS**

The cortical being, evolved out of primordial protoplasmic mass after millions of years through millions of phases, may be visualized as an evolving biological consciousness. It has reached a stage when it can talk about, communicate and share consciousness. The organ of consciousness in human being is the cerebral cortex (1).

Millions of cerebral cortical modules vibrating in different spatiotemporal pattern are responsible for infinite variety of consciousness in the human brain (1). The vibration of cerebral cortical modules occurs either through the brainstem or through the limbic system or it originates within the cortex, resulting in three basic forms of human consciousness, namely Brainstem Consciousness (B.S.C.), Limbic System Consciousness (L.S.C.), and the Cortical Consciousness (C.C.).

There are three levels of consciousness in a cortical being:

Brainstem consciousness, Limbic system consciousness and Cortical consciousness.

### **BRAIN STEM CONSCIOUSNESS (B.S.C.):**

#### **Neurology :**

Reverberation in the reticulo-thalamo-cortical and corticoreticular pathways (2), a balanced discharge of serotonergic pathway from raphe nuclei and adrenergic pathway from locus ceruleus (3,4,) are responsible for this brainstem consciousness, by which one remains awake, alert and oriented.

#### **Clinical Significance:**

This is the level of consciousness, commonly talked about in medical practice. This is the consciousness which is disturbed in concussion and contusion.

#### **Personification:**

A security guard on duty may be visualized as B.S.C. personified. He is awake, alert and oriented.

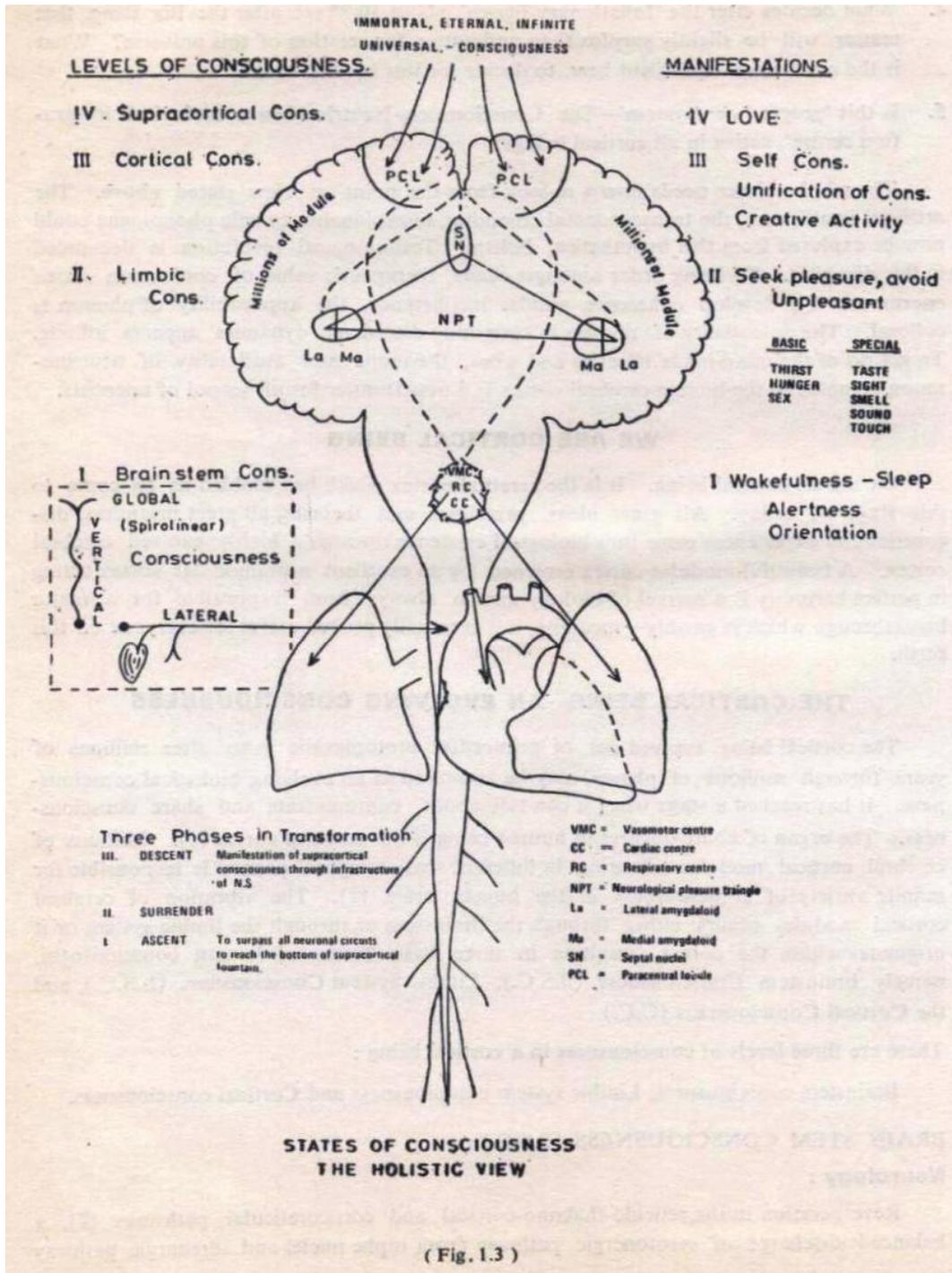
### **LIMBIC SYSTEM CONSCIOUSNESS. (L.S.C.):**

#### **Characteristic:**

It is a motivation guided consciousness to seek pleasure and avoid the unpleasant. Basic motivations are thirst (mediated through osmoregulator centre), hunger (mediated through 'hunger', and 'satiety' centres of hypothalamus) and sex (mediated through preoptic hypothalamus, cingulate gyrus, paracentral lobules, and other centres). People develop special motivation for a particular music, taste, sight, odour or Meisner and Pacinian sensation in the sensitive parts of the body.

## Limbic Nuclei :

Amygdaloid and septal nuclei are the seat of its activities. Septal nuclei and lateral amygdalii are for pleasure and the medial amygdalii are for aggression (and pain?). The lateral amygdalii are also responsible for friendship and fraternity. The septal nuclei and lateral amygdalii together constitute the "Neurological Pleasure Triangle" (N.P.T.).



### **Consciousness personified:**

1. Limbic system-conscious-persons are concerned about their own pleasure. In extreme stage, they can do anything for their own sensual gratification. Homicide, suicide and sadism are not impossible in their character. Simply, people call them selfish.
2. According to the outflow from limbic nuclei, there are four basic types of character in human being. (See Chapter Twelve). Limbicohypothalamic discharge makes one EMOTIONAL. Limbico-cortical discharge in decisive (pyramidal) cortex is characteristic of a MYSTIC and the people with strong limbicostrial (caudate nuclei) activity are seen in the WORKER.
3. This NPT, when stimulated from 'below' results in intense sensual pleasure. The same NPT, acted upon from 'above' is the cause of 'Ananda' (See Chapter Eleven).

### **CORTICAL CONSCIOUSNESS (C.C.):**

#### **Origin :**

The cerebral cortex with about 10,000 billions of neurons, organized in millions of cortical modules, (each module consisting of about 2500 neurons), extensive neuropil and a huge synaptic density is the seat of its origin (1).

#### **Manifestation:**

1. Self-consciousness:

Recognition of one's own image in a mirror is the objective sign of self-consciousness. It is human characteristic. A conscious baby becomes self-conscious by about 18 months of age (5). It had evolved since the day of early hominid, when they were making tools out of pebbles for protection of 'self' from the 'beast' (6).

Self deception is also human characteristic. It is because of projection of self-consciousness in the field, one 'thinks' deceptive. Thinking process is a product of mind. A conscious person never deceives himself.

The 'gap' between this self-consciousness and the rest of the universe is bridged by what is called BEHAVIOUR.

2. Creative Imagination and Activities (1).
3. Integration and unification of consciousness.

Distribution of consciousness in categorical and representational hemispheres is non-unitary (7). By various commissures in the forebrain, midbrain and hindbrain, and by some yet unknown mechanisms, unification† and integration of various types of consciousness is achieved.

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† Another view is that the commissural systems have not only effectively maintained but also sharpened the difference of consciousness between two hemispheres.

## **Difference with L.S.C.**

L.S.C. is motivation guided. Pure cortical consciousness is without motive. 'Art is for art's sake'.

## **Consciousness personified:**

According to relative dominance and complementation of three primary functional zone of cerebral cortex, there are three basic forms of cortical personalities.

- a) Self-conscious: The egoist and the egotist. (See chapter fourteen)
- b) Creative : The Genius.
- c) Integrative : They are the man of the earth: sensitive, prompt responsive, proportionate and balanced.

## **INTERRELATIONSHIP AMONGST THE THREE LEVELS OF CONSCIOUSNESS**

These different types of consciousness are not watertight compartments. There are numerous association, projection and commissural connections amongst them at various levels. They are interconnected, interdependent and follow a stratified order. Varying grades of combination are manifested in any particular individual. Let us analyze some of the facets of this complex interrelationship.

1. By a dominating 'limbic system-consciousness', 'brainstem-consciousness' can be overcome. The self-stimulatory experiment with electrode implanted in the 'pleasure centre'

of limbic system has shown that animal could be made totally immersed in that pleasure consciousness, being unaware of the surrounding and going sleepless (brainstem-consciousness) for days without having suffering from physical exhaustion of sleeplessness.

2. The 'cortical consciousness' abounding in human values can overcome the limbic system completely. Examples are seen amongst soldiers on the battle-front fighting for the motherland, spending sleepless night without even the bare requirements of food and drink. The same is true for those who sacrifice their whole life for an 'ideal' or an 'ism'.

3. Those who do not pay heed to the 'limbic system-consciousness' are motiveless people. Unless they are busy in manifesting their 'cortical consciousness', they are just like living rocks. In the absence of both 'cortical consciousness', and 'limbic system consciousness' a person becomes living luggage for his guardians.

4. A few people learn the technique of manipulation of the limbic system through their 'will' (cortical activities) and become expert in changing the heart rate or respiration, overcoming thirst and hunger and can remain underground in sealed compartment. Ample examples are seen amongst Indian Hath-Yogis.

5. Even in talented people, who work mostly at the level of cortical-consciousness with profound creative imagination and activities, lashes of compulsive sensual desire are not very uncommon particularly where the limbic system is let free rein. They enjoy various types of food and drink, seek sexual gratification from innumerable women (or men) and sometimes go beyond all established norms.

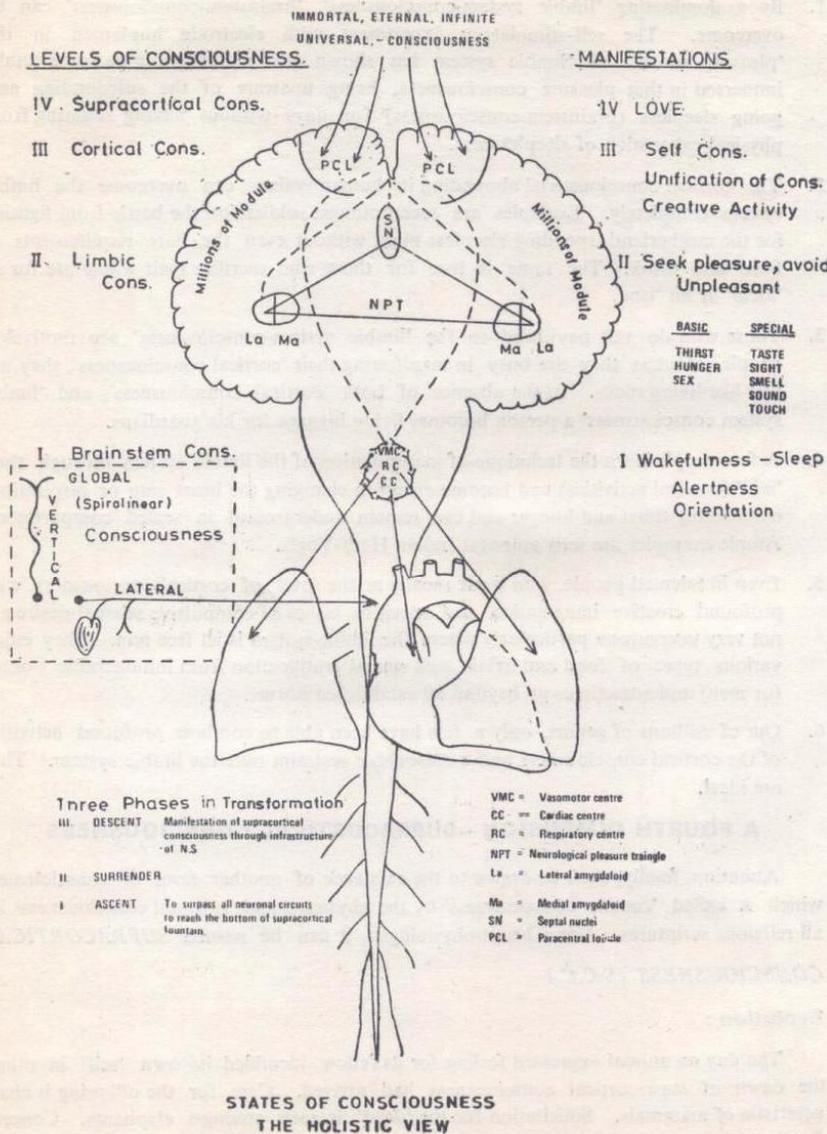
6. Out of millions of genius, only a few have been able to combine profound activities of the cortical consciousness and a reasonable restraint over the limbic system. They are ideal.

#### **A FOURTH DIMENSION - SUPRACORTICAL CONSCIOUSNESS**

Attention, finally, shall be drawn to the existence of another level of consciousness which is called 'cosmic consciousness' by the physicists and 'spiritual consciousness' by all religious scriptures. For a Neurophysiologist, it can be named SUPRACORTICAL CONSCIOUSNESS (S.C.C.)

##### **Evolution:**

The day an animal expressed feeling for its fellow, identified its own 'self' in other, the dawn of supracortical consciousness had arrived. Care for the offspring is characteristic of mammals. Solicitation for the 'dead' is seen amongst elephants. Concern for the sick is observed amongst chimpanzees. In human being, this is responsible for formulation of 'human values'. The human being does not want to be singularized as individual. Instead, he wants to feel and practice oneness with others in every sphere.



( Fig. 1.3 )

**Manifestation:**

When supracortical consciousness expresses through human neuritis, the manifestation is LOVE. The objective sign of LOVE is sacrifice for the beloved. Aim of love is to achieve oneness with the beloved. Whatever sacrifice and love we observe day to day is, in fact, the result of successful expedition of S.C.C. through numerous obscurities of the infrastructure of the nervous system.

**Characteristic:**

The characteristic of S.C.C. is its inexhaustibility. When any of the cortical consciousness becomes visibly inexhaustible e.g., a person is writing volumes after volumes, unveiling mysteries after mysteries or one is expressing inexhaustible love, inexhaustible altruism† then one looks ‘up’ for an inexhaustible source ! Where are all these coming from?

**Differential Diagnosis:**

1. Motivation guided consciousness is for one's own pleasure. S.C.C. works for other.
2. Self-consciousness is human characteristic. S.C.C. is not. S.C.C. has been working observably since the day, the animal has started ‘sacrificing’ for its fellow.
3. Supracortical phenomenon VS S.C.C.

Thought reading, planchette, telepathy are examples of ‘supracortical phenomena’. They should not be confused with ‘supracortical consciousness’ as proposed and characterized in this article. Basic neurological mechanism involved in both cases could be similar: Does anyone, here, dare to combine the neurophysiology of supracortical phenomenon with Morphogenetic field theory of Dr. Rupert Sheldrake! (See chapter nine and fourteen).

**Neurological Mechanism:**

The seat of S.C.C. in human nervous system is the upstairs of cerebral cortex, where the modular arrangement is not so prominent and there is interpenetration of space and time to form a ‘four dimensional continuum’.

From here, when one looks up, the phenomenon is supracortical. If one looks down, it is supramodular.

Possible mechanism of consciousness-antematter play in the supramodular cortex has been elaborated in chapter nine.

**S.C.C. personified:**

Ascetic restraint of the limbic system, (complete restraint of limbic system is not possible without profound supracortical influences), love dominated ego‡, (love is supracortical, ego is cortical), a personality beyond the polar opposites (beyond the polar consciousness of the cerebral hemispheres), elevating and magnetic attractiveness, inexhaustibility within cortical limits, are some of the traits of supracortical personality.

His/her intuitive creative activities do not stop in mere illumination but continues till there is revelation - a flood of stable light.

‘Ananda’ is the S.C.C. biologized at the level of limbic nuclei.

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† Altruisms need to be explained here. ‘I’ am altruistic, ‘I’ is there. Without this ‘I’, altruism does not exist. This ‘I’ is not selfish ‘I’. This ‘I’ is not modular ‘I’. This ‘I’ is supramodular and helps one not to be exploited of his goodness by others.

‡ Love dominated ego generates ‘forgiveness’ and ‘kindness’. Ego dominated love generates ‘Aviman’.

**Personification of S.C.C. occurs in three phases:**

a. The supracortical being:

He/She is a perfect cortical being, knows how to ‘tap’ and does ‘tap’ supracortical consciousness in need, with infallible accuracy.

b. Purushottama:

He/She has a unified biological consciousness, self- consciousness and supracortical consciousness. She/he is a living example of everlasting ascension for human soul.

c. Saguru:

Purushottama's melting love and inexhaustible everness characterize the Sadguru. He/She is supracortical autonomy.

**TRANSFORMATION OF THE CORTICAL BEING INTO SUPRACORTICAL BEING**

Ananda or the ecstasy of Divine perfection is achieved through transformation of the cortical being into supracortical personality. The process of transformation has three phases - the phase of Ascent, the phase of Surrender and the Descent

In the phase of ascent, Charles Darwin is my friend. Self-consciousness is my tool. There is long struggle for existence. I elevate my self-consciousness to the highest biological level through effort and perseverance. Through chance and natural selection, I mount to the top and then.....

Then I land up in vacuum - the cosmic emptiness, the biological nothingness, the domain of stillness and silence. The classical physics ends. Thinking mind dissolves. Darwinian principles are non-applicable. I move like a massless quantum, observe particles and antiparticles. Everything is uncertain. But I exist. There is no natural selection but ‘conscious critical rejection’. Neo-Darwinian principles and the principles of high energy physics, sometimes I observe, sometimes I follow. I keep up like photon or phonon. I come across conformon and its equivalent, the root of implicate order. I surrender to the cosmic integration centre.

There is descent. Self-consciousness is unified with S.C.C. There is ‘Lamarckian’ induction. The transcendental S.C.C., being immanent in the self-consciousness.

I manifest as Love, the captivating peace,

.....  
All pervading I, never should you miss.

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# **NEUROBIOLOGY**

# Vibrations in the Human Neuraxis: Crucial Role of the Cerebral Cortex: The outcome in Future

## ABSTRACT

Consciousness is transcendental. Vibrations are immanent. There are five sources of vibration of the millions of neuronal modules of the cerebral cortex. Three of them are infracortical, from the physical, organic and philosophical worlds. One is cortical, the vibration of the ‘self’. The other one is supracortical, the vibration of love. When the infracortical vibrations are quiet, the conscious cortex can visualize the supracortical fountain. With sustained and repetitive endeavour of the cortex, ‘Transformation’ takes place in the cortical modules to embrace the cosmic consciousness more deeply and vividly. The outcome is synchronisation of the infracortical rhythms with the supracortical consciousness. This is followed by supracortical manifestations through cortical and infracortical activities.

## FIVE ELEMENTS IN ‘BIOLOGICAL’ CONSCIOUSNESS

Whether consciousness is the cause of vibration or vibration is the source of consciousness is not a matter of semantic. Consciousness is transcendental and the vibrations are immanent. The millions of cortical modules vibrate in different spatiotemporal pattern to produce infinite variety of consciousness in human beings. To make cosmic consciousness immanent in this cortical vibration is all our effort for. If it is already immanent in latent, dormant or potential form, to manifest it is the key point in our planning. The sources of vibration of neural modules in the cerebral cortex are five. Three are infracortical, one is cortical and the other is supracortical. (a) The vibration from the physical world (Light, sound, chemical energy, etc, through sensory nerves) produces awareness of the external world. (b) The vibration from the organs, systems, biological clocks makes one internally aware of urges, instincts, biorhythms. (c) The Five Elements in ‘Biological’ Consciousness.

Source of Vibration	Various Worlds	Manifestations
A. Infracortical	1. Physical world	1.External awareness
	2. Organic world	2.Internal awareness

	3.Philosophical world	3.Intentionalism
B. Cortical	4.One's own world	4.Self-consciousness. Even the brain belongs to the 'Self'
C. Supracortical	5.Cosmic world	5.Love, the element of sharing

**Table 2**

'mind-stuff' vibration creates the philosophical world and boils down to intentionalism (1). This vibration is mostly acquired, educational, cultural, ritual, social etc. These three infracortical vibrations are discernible to a person who has (d) a distinct vibration of the 'self', an intrinsic vibration of the cortex, the originator of self-consciousness. The area responsible for self-consciousness scans, co-ordinates, integrates all other vibrations. This self-consciousness, characteristically, can be projected infracortically, supracortically or may remain confined to one's own self-conscious world. (e) The supracortical source of vibration pours 'love' (2) in the infrastructure of the nervous system. This is the element of 'sharing' in total concept of consciousness (1).

Some examples of 'sharing' in animal kingdom

Intraspecies :

- \* Care for the offspring : Birds and Mammals
- \* Solicitation for the dead : Elephant
- \* Concern for the sick : Chimpanzee

Interspecies :

- \* Sharing of passion : The dog and its master

Table 3

### **THE HUMAN NEURAXIS**

Such structure and function of the neuraxis has not been acquired in a day or a year. Look at the evolutionary run of the nervous system through millions of year. It is a marvelous detective story full of adventures and heartbreak, misfortune and luck - a punctuated equilibrium, through yet unknown thread of continuity - several million years

as ape, - a profound environmental catastrophe - arrival of the hominids (around 5 million years ago) and then the human being of today.

Amongst the four mammals, having a huge brain (Porpoise, Whale, Elephant, Human being), the brain weight/body weight ratio is highest in the human being. During primate evolution from lemurs, monkeys, apes to human beings, the expansion of the cortical volume is in direct proportion to the expansion of the volume of whole brain (3). The G/C co-efficient (the ratio of the volumes of grey matter and nerve cell bodies ) has reached its peak in the human beings (In visual cortex, for human being it is 47, for chimpanzee, 31; for mouse, 8.5) (4) and so also the ratio of numbers of local circuit neurons (LCNs) and projection neurons. In human being, this ratio is three (5). There is also three fold increase in number of cerebral cortical modules in human beings as compared to its nearest evolutionary friend, the anthropoid ape (6).

The cerebral cortex has evolved as the most majestic part of the nervous system and is the highest neural machinery of the human brain. The human neocortex is stated to be 'the father of abstract thinking' and 'the mother of invention' (7). It is also the 'Neural Guru', 'the brain of anticipation', 'the prognosticator of the future' (8). The vibration of millions of cortical modules in different spatiotemporal pattern is responsible for infinite variety of consciousness (6). It is proposed to be the highest biological centre of life (9). The neuronal modules in the cerebral cortex absorb 'life' from 'above'. The vibration of universal consciousness is decoded by them as 'life' (9).

## **VIBRATION STIMULI FROM BELOW**

Millions of cortical modules, sitting at the top of the organism, receive continuous vibration from the sub-cortical structures. These vibrations, for convenience, can be sorted out in three primary groups.

### **1. The Vibration of the Physics:**

Innumerable exteroceptors in the skin, the retinal receptors, the organ of Corti, olfactory and gustatory epithelium, pick up the physical energy, send them through the nerves to be decoded in the cerebral cortex as sensation. The matter or energy (the physics) reacts with the receptors which send impulses to specific cortical sensory areas. In addition, the impulses travel through reticular activating system to nonspecific cortical areas and are responsible for diffuse arousal. The brain becomes 'aware' of this reaction, the action potential in corticothalamic and thalamocortical pathways. A patterned complex modular operation is built up to give a 'conscious' experience. The conscious brain scans the activity of each module and selects those ones of present interest by modifying the dynamics of spatiotemporal vibration (6).

Some physical energy also acts as 'zeitgeber' or entraining agent and is responsible for four circarrhythms, namely

1. the circadian (< 24 hours, ultradian; >24 hours, infradian).
2. the circatidal
3. the circalunar and
4. the circaannual.

This is because the human being has evolved in a rotating planet around which the moon has been rotating. The planet, earth, itself has a gravitational force. This has resulted in light and dark, the heat and cold and also the centrifugal force. The tidal force is the resultant of the effect of gravitation and lunar force.

Entrainment of the endogenous 'biological clocks' is done by the environmental time cue. One of the pathways responsible for such mechanism is well defined. It is the monosynaptic, retinohypothalamic tract, connecting ganglion cells of the retina with the neurons in the suprachiasmatic nuclei (10,11). That bright light resets the human circadian pacemaker i.e. X-system, independent of the timing of sleep-wake cycle has been shown in a very recently published paper (12).

## 2. **The Intrinsic Vibration of the Biology:**

This is the vibration which arises out of the fact of being an organism. This intrinsic vibration is the resultant of

### A) The spontaneous rhythm of

1. Endogenous pace-maker neurons in the
  - a) brainstem (apneustic-pneumotaxic-inspiratory-expiratory centres, vasomotor centre, cardiac centre)
  - b) Pineal gland.
  - c) circadian pacemakers in hypothalamus.
    - i) the strong oscillatory system/temperature subsystem or X-system, responsible for cortisol release, REM sleep propensity, urinary potassium excretion, cognitive performance.
    - ii) the weak/labile oscillatory system, activity-rest subsystem or Y-system, associated with change in posture, meal-interval and timing, rest and activity.
    - iii) other subsystems (e.g. that for alertness) (10,11).

2. Various visceral enteroceptors (e.g. chemoreceptors, baroreceptors, osmoreceptors etc.).

There are multiple coupling, ‘hierarchical entrainment’ in this system (13), which is finally in link with the cerebral cortex, the highest or the ‘top boss’.

- B) The vibration of instincts and urges, like hunger and thirst.

### 3. **The Vibration of the Mind Stuff :**

This source of stimuli to cerebral cortical modules arise out of encephalisation; very much complex due to increase of structural complexity in the neocortex and the limbic brain. The genetically determined and learned behaviours are incorporated in these structures. This is the information processing system, the magic box responsible for memory, learning, and intellect. This is the area responsible for knowing, feeling and willing. This is the place where the past is memorized or forgotten, the present is enjoyed or rejected and the future is planned. This source, may be called the ‘mind stuff’ or ‘Chitta’. Anatomically the area includes the cortex-subcortex-supralimbic and the perilimbic structures.

The characteristic of this third source of vibration is that it continues to act even when the physical world is shut off and, the bio-vibration is minimum. Transcending it, one reaches the domain of cosmic activity in the cerebral cortex.

### **THE VIBRATION OF ‘SELF’**

The vibration of ‘self’ is wonderful, most fascinating and tremendously complex. It scrutinizes co-ordinates and integrates the infracortical vibrations and is responsible for conscious experiences. When confined to its own world, it is the enjoyer or sufferer, the upholder and consenter, the witness and all-knower. Finally, it is the Lord of the brain (The Atman). It is this vibration which projects itself beyond the realm of biology, physics and philosophy to merge with and transform into universal consciousness.

Egoistic ‘I’ (modular).....Small ‘i’ (supra-modular).....Universal ‘I’ (supracortical) are in its spectrum. Self-respect, self-dignity, self-confidence are finer aspects of egoistic modular ‘I’. Supramodular ‘I’ towards supracortical direction is fearless, bold, devotional ‘I’. The supracortical consciousness in supramodular ‘I’, is the forgiver, altruistic, philanthropic ‘I’

### **TABLE OF ‘I’**

Finer aspects of egoistic, modular	Towards supracortical direction, supramodular	S.C.C. in supramodular
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‘I’	‘I’	‘I’
Self-conscious, Self-dignified, Self-confident ‘I’	Fearless, Bold, Devotional ‘I’	The Forgiver, Altruistic Philanthropic ‘I’

Table 4

### THE STIMULUS FROM ABOVE - THE VIBRATION OF LIFE

Even the smallest living creature aspires to have something beyond its customary world of automatism. This aspiration to establish link with and finally to achieve ‘oneness’ with the outside world, may be defined as ‘phase-specific consciousness’ or ‘Chetana’. The whole universe is an unbroken infinite pool† of chetana in which all finite objects, living or non-living, are ‘whirlpools’ only. In biological object, this universal consciousness is ‘conceived’ as ‘life’. In case of a virus, the consciousness, through the vibrating antematters in deoxyribonucleic acid or ribonucleic acid polymers makes ‘life’. In unicellular organism, the ‘phase-specific consciousness’ is in link with cosmic consciousness through the cell membrane. In animals with cerebral cortex, the link between organism's phase-specific consciousness and the ‘universal consciousness’ is established through the cerebral cortex. Universal consciousness is ‘pouring’ incessantly on the cerebral cortex to keep us ‘alive’. This ‘pouring’, this ‘coming down’, is rhythmical; the eternal pulse; the vibration of life.

To put it in another way, this ever free‡ ‘universal consciousness’ comes down through cerebral cortical modules as love, externalized as sacrifice for the beloved. Characteristically it is inexhaustible. As it percolates through the infrastructure of the N.S, it has to bypass, sometimes confront and modify and eventually transform the various neuronal currents in the brain. It does not cleave asunder. It reconciles and unifies. What we observe, day to day, as the sacrificial ability of human being is nothing but a successful expedition of S.C.C. through numerous obscurities of the infrastructure of the N.S. When the neuronal currents in the infrastructure are trained to align and co-operate with, to support and complement this eternal downward current, the manifestation is really lovely.

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†Cf : The third entity of Panpsychism.

Cf : Aristotle : “Everything is full of gods”. “Soul is mingled with everything in the whole universe”.

‡ “The physical basis of the mind is the brain action in each individual; it accompanies the activity of his spirit, but the spirit is free”- Wilder Penfield.

## **INDEPENDENCE, INTERDEPENDENCE AND INTEGRATION OF THE FIVE**

- 1) The biophysics and the cosmic-physics are in link through supracortical vibration. The supracortical phenomena and the supracortical consciousness are quite different. The former is picked up by the dendritic spines in the upstairs (upper three layers) of the specialized areas of the neocortex. The telepathy, planchette, thought-reading, imagination, non-sensory perception is examples of such supracortical phenomena originating out of supracortical vibration. That supracortical vibration which is responsible for love and life. is the supracortical consciousness. In human being, the supracortical consciousness acts through an area responsible for integration of five vital phenomena in biology, namely love, sex, ego, life and death (See chapter three). It is in this area, all five currents, namely physical, biological, philosophical, and self-conscious and supracortical, get together.
- 2) The supracortical vibration, though independent of other four, experiences a stumbling block during its penetrance through the cortical modules responsible for self-consciousness. Through finer adjustment and with permission of self-consciousness modules, the supracortical consciousness manifests as love and sacrificial ability of the human being.
- 3) For all practical purpose, as the science stands today, in an average human brain, the highest centre of life is in the brainstem vital centres. But this is not the reality. During growth and evolution of the brain, the finer neural control mechanism of this endogenous pacemakers of respiration, cardiac action and vasomotion, has been carried away from the brainstem through the periventricular grey matter, hypothalamus and some areas of the limbic brain to the area of self-consciousness in the neocortex. This neuronal circuit is the Jivatman of the Vedantists and the Soul of the philosophers. (See chapter five) We are not at all aware of this basic biological current because this area of self-consciousness is tremendously preoccupied by the vibration of the physics and philosophy. For the same reason, for most of the time, we are also not conscious about the existing reality of S.C.C.
- 4) That physical vibration influences the endogenous as well as philosophical vibrations has been well-known. Both physical and philosophical vibrations seriously affect the endogenous vibrations too. The tremendous complexity of the physical and philosophical vibrations in the modules of the area responsible for self-consciousness is a real hindrance for establishing a link between the supracortical consciousness and endogenous bio-vibration of the soul. In fact, the link exists. But it is not properly delineated and just we are not aware of it. This unawareness is due to tremendous complexity of the self-conscious modules.

## EDUCATING THE NEURAXIS

The aim of education is total transformation. The planning is to unearth the potentialities in the genes. The programming is for integration of all five vibrations mentioned above.

One must be aware of five worlds one dealing with to manifest all potentials one possesses, to enjoy a holistic grandiose of transformation - the Divine materialism.

The teacher, himself is a transformed person and helps others in overcoming the obstacles. Never does he stimulate the 'punishment centre' of the hypothalamus. 'Reward centre' is given a supracortical direction. Question of fear does not arise. Freedom is the rule. The love is the ambrosia in this process. A skeletal scheme is tabulated below:-

### EDUCATING THE NEURAXIS

Worlds	Interaction	Principles of Methodology
1.Educating the external awareness	Self-Receptor interaction	<ul style="list-style-type: none"> <li>a1. Train the exteroceptors, nerves, muscles etc.</li> <li>a2. Train the expressive routes of the nervous system, spoken and unspoken languages.</li> <li>a3.Choose an environment which exemplifies the certainty.</li> </ul>
2.Educating the internal awareness	Self-Animal interaction	<ul style="list-style-type: none"> <li>b1.Understand your own instincts, biological rhythms, urges, nature.</li> <li>b2.Distinguish sense pleasure from Ananda.</li> </ul>
3. Educating the philosophical world.	Self-learning	<ul style="list-style-type: none"> <li>c1. Learn to control the philosophical world.                             <ul style="list-style-type: none"> <li>(i) Have an access to it.</li> <li>(ii) Learn to still it</li> </ul> </li> <li>c2. Feed information.                             <ul style="list-style-type: none"> <li>(i) Scan the width of informative Knowledge available.</li> <li>(ii) Go into the depths of chosen ones.</li> </ul> </li> </ul>

		c3. Biologize (consciousness-gene interaction) the chosen information.
		c4. Develop a healthy intentionalism. - Coherence, dynamicity, implicate order, wholeness.  - a readiness for transformation.
4. Educating the self-conscious world.	Self-self interaction	d1. Cultivate self-respect, self-dignity, self-confidence. d2. Educate the 'ego'.  d3. Project self-consciousness on the highest ideals/values etc.
5. Cosmic world.	Self-Cosmic interaction.	e1. Practice love and sacrifice for others in every movement and thought.  e2. Identify the polar opposites and learn to go beyond them.  e3. Bring down the Divinity in materialism. Make cosmic things earthly,  e4. Realise Inexhaustible everness (eternal yea).  e5. Oneness is the reality.

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**Table 5**

### **FILTRATION OF THE DIFFERENT TYPES OF VIBRATION**

People have tried to see these different types of vibration in their neuraxis, in isolation. The highly evolved personalities have been charmed with the ambrosia of S.C.C., the current unattached to anything, the current all pervading, the current beyond the pair of opposite. They have tried to filter out the nectar from the impurities.

#### *The Method of Filtration*

1. When biological needs are satisfied the intrinsic vibration of biology is cooled down.
2. The physical vibrations can be minimized by temporal isolation (14, 15).

3. To minimize the vibration of the 'mind stuff' is difficult and it could only be achieved by practice (e.g. transcendental meditation).

### **FUTURE OUTCOME**

Even if these three infracortical vibrations are controlled or minimized the cortical vibration of self-consciousness remains. With further effort, when this highly evolved self-consciousness makes an active, unconditional and complete surrender to the supracortical consciousness, the result is bliss. The concretization of the abstract and the descent of the Divine follow.

#### **a) Concretization of the abstract**

The organ of Corti has evolved in biology out of sound energy. The retina has evolved in biology out of electromagnetic photon waves. Once the cortical modules become 'conscious' of the supracortical fountain, there follows a tremendous ascent in cortical evolution. The abstract S.C.C. is concretized in the cortex. There is synchronization of the vibrations of cortical and infracortical consciousness with that of supracortical one. Biologization of S.C.C. begins in this way.

In synchronized phase, "We do not think, thought occurs in us" (Sri Aurobindo) and "Every word in every language at every moment comes from Brahman, the cosmic consciousness" (Rigveda). "Whole life is", then "Yoga" (Sri Aurobindo). The mind becomes vehicle of consciousness. The language conveys the living meaning through words.

#### **b) Descent of the 'Divine'**

Once the cortex gets the conscious 'physical' touch, the embrace of the cosmic consciousness, there follows a slow and progressive transformation of the infracortical structure and activities. Manifestation will depend on the built-in system of the infracortical structures. The Christ like personalities will preach 'LOVE'. Mohammed like personalities preaches religious unity for all and not even hesitates to use weapons for this purpose. Sri Eurobond like personalities will write volumes after volumes on supramental manifestation. The final outcome is to share the joy with other people of the world using all the senses, whole of emotion and entire realm of cortical and limbic activities. The love continues to exude through 'cortical consciousness', 'limbic system consciousness' and 'brainstem consciousness' for all and for ever.

### **LOVE**

- \* THE HIGHEST CONSCIOUSNESS ACHIEVABLE IN BIOLOGY.
- \* CORTICAL MANIFESTATION OF S.C.C.
- \* ALSO HAS A GENETIC BASIS.

\* TURNS ON THE GENE.

\* BIOCHEMISTRY OF LOVE RUNS PARALLEL TO BIOCHEMICAL EVENTS IN GENE EXPRESSION.

Table 6

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# THE FIVE IN ONE: THE BIOLOGICAL INTEGRATION CENTRE

## ABSTRACT

Life, death, love, sex and ego are five vital phenomena in biology. The same group of cerebral cortical modules, vibrating in five different spatio-temporal patterns is responsible for cortical integrated expression of these five phenomena. These five phenomena are integrated in the cerebral cortex of human being through a hypothetical biological integration centre (BIC). This is the highest biological homeostat. Its failure is the cause of misery and agony of an individual and collectively of a race. The directive provided by this BIC immensely enhances supracortical transformation.

## INTRODUCTION

What is life? What is death? What is love and what is sex? What is that everyone calls ego? These five questions have tormented the truth-seeker from the time antiquity. In modern neuroscience, the issue is yet unsettled and not answered. Philosophers' vision surpasses the horizon of science. They use the terms in numerous paints of varying shades.

Indian philosopher has eulogized love and sex as two facets of the same coin. Western philosophers have postulated sexual desire and ego complex as the main drives of human evolution. This paper propounds the view that life, death, ego, sex and love are five vital phenomena in biology of an individual and that of a society or of a race and the human cerebral cortex integrates<sup>†</sup> all these phenomena through a hypothetical biological integration centre (BIC).

## NEUROBIOLOGY

With close observation and long term follow up of the human behaviour, when a psychoscientist sincerely goes through an individual's life-curve or the history of rise and fall of a

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<sup>†</sup> The phrase, Sherrington first used in neurophysiology.

race, he is surprised to see the significant role of these five vital phenomena. Non-integration of these five phenomena is responsible for agony or pain, misery and sufferings. The high-riders in the history have integrated their total personality through great deeds. Many have been successful to perform the great deeds only after integration being established. In fact, the object of biological transformation is never achieved until any of these five facets remain unfulfilled or partially fulfilled. Ananda is the summum bonum of life. To experience it, is well nigh impossible if neuronal currents responsible for these five phenomena are not integrated and harmonised. It is for the proper directive provided by these five vital phenomena, the biological evolution has progressed from protoplasmic consciousness towards supracortical consciousness. The very foundation of various biological sciences like neurobiology, sociobiology, behavioural biology and even cosmobiology, are laid down on these five phenomena. The vast subject, how does the disintegration or integration of these phenomena affect the life-graph of an individual or collectively that of a society or of a race, is touched very briefly in the following section.

#### HOW DO THESE FIVE PHENOMENA HELP IN EVOLUTION?

##### **A. In Individual**

1. Higher motivation: Limbic system is the motivation guided consciousness to seek pleasure and to avoid the unpleasant. An individual, who has gained control over the limbic system, comes across higher motivations through these five basic elements. Motivated by fear of extinction (death),<sup>†</sup> with an aspiration for something better (life), an individual struggles hard to rise to the top (ego). In the process, he restrains from sense pleasure (sex) to achieve oneness with what he loves.

2. High-riders: There are two basic types of high-riders in history; egoist and egotist. Egoists are motivated by fear of extinction,<sup>†</sup> restrains from sense pleasure to emerge as a highly self-conscious individual (death, sex and ego). Egotists are motivated to get something better (life). They sacrifice for other (Love) and eventually transform into a highly self-conscious entity (Life, love, self-consciousness). Amongst historical figures, Winston Churchill may be taken, for example, as a conservative egoist and Hitler, a revolutionary one. Both Lenin and de-Gaulle are egotist, Lenin-a revolutionary and de-Gaulle conservative.

##### **B. In a race**

When people have inculcated the habits of restraint from sense pleasure, practiced sacrifice in small and large scale in their daily life, have gazed forward for something better, the decomposition of the race has been prevented. That highly self-conscious race is found to rise to the top (rise of German after First World War, for example).

#### HOW DO THESE FIVE PHENOMENA INTERACT DURING INVOLUTION?

##### **A. In Individual**

1. When a highly self-conscious girl is forced to have a sex act against her will, visualise the neurobiological turbulence she has been passing through. Her self-consciousness is shattered. Her sex centres are manipulated by force, against her

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<sup>†</sup> “When the first self-awareness came to mankind it was linked with death consciousness”- Dobzhansky.

approval. There is no love (i.e. absence of sacrifice) in the act. Life line is disturbed. She struggles hard for life. If she does not die during the violence of act, her disturbed neurobiology draws her towards death. She commits suicide.

2. If you love someone, want to have sex also and your ego is involved in the process, then it is a question of life and death. If that someone agrees to, there is bliss (the life). If there is rejection, it is death. These are polar events and in between the poles - are all what we see day to day or observe in diversities of love affairs.

## **B. In a race**

How does a chaos in interrelationship of love, sex, ego, life and death in individual units of a race, affect their collective survival, has been eloquently illustrated in the mechanisms of extinction of innumerable species from the earth, by the process of involution of various civilizations and races, in etiology of longstanding civil wars and genesis of revolutions. When the people have compromised with their sacrificial ability, indulged more in physical pleasure and engaged in nonessential ego-clashes, the very foundation of their survival has been shaken up and the 'life' has gradually gone into extinction. (Fall of Moghul Empire in India, for example)

## **NEUROLOGY**

### **A. Neurological definition of the terms:**

**Love.** Love is manifestation of 'supracortical consciousness' through cortical modules.

**Sex.** Pleasure consciousness, achieved through limbic nuclei by stimulation of endorgan receptors in reproductive system (including erogenic areas).

**Life:** It is the phase-specific consciousness', in link with the 'cosmic consciousness' by means of specific biological membrane. In human being, this 'membrane' is cerebral cortex.

**Death:** Merger of 'Phase-specific consciousness' with, or delinkage of 'phase-specific consciousness' from the 'cosmic consciousness', resulting in loss of observable existence of the former, is death.

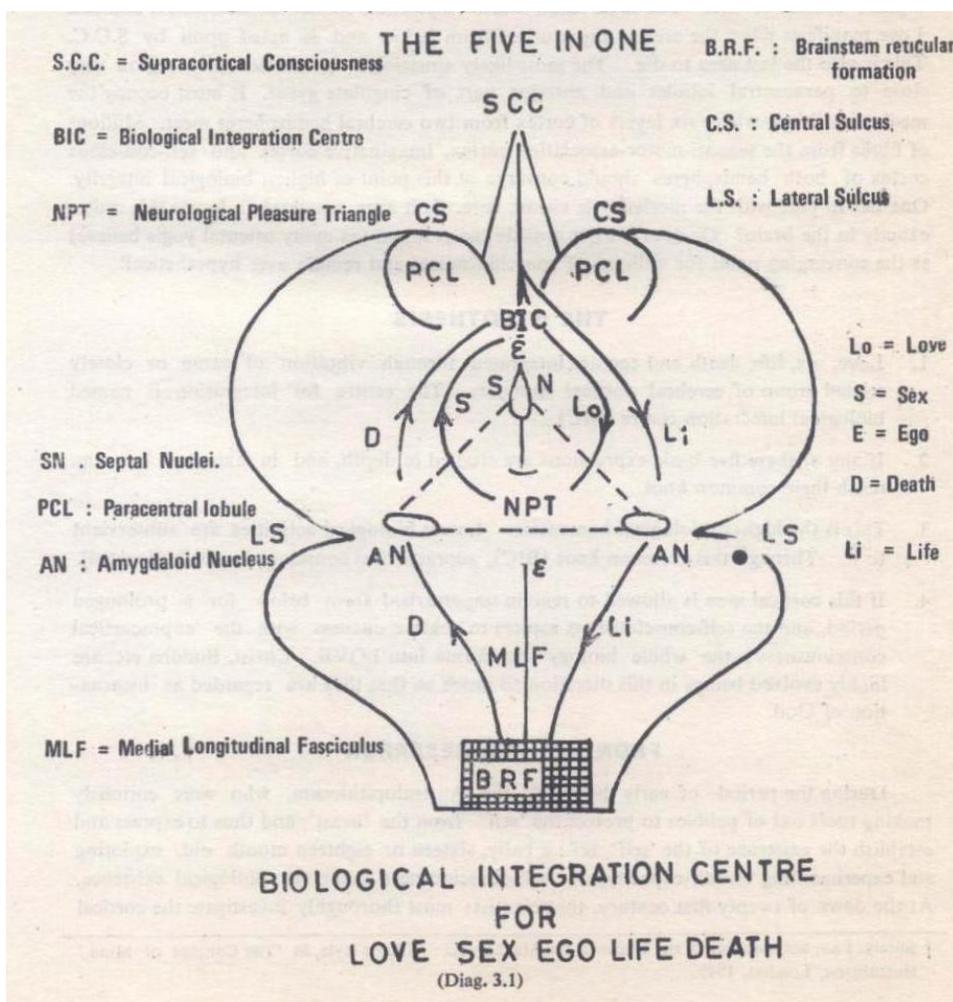
**Ego:** Self-consciousness. Recognition of one's own image in a mirror is a primitive expression of self-consciousness. It is human characteristic.

### **B. Neurology of the BIC**

1. *Evolution-* Life, death, ego, love and sex are integrated in the encephalon. During the process of encephalisation, the centre for integration has been shifted from the lower neuronal centres, through the limbic nuclei to the cerebral cortex. The higher the evolutionary stand of a human animal, the more profound is the cortical participation in such integration. The highly evolved human beings not only show the integrity in their behavioural expression, but also because of the ardent stability of this centre, they can biologize S.C.C. at the level of limbic nuclei to experience Ananda.

2. *Development-* A highly developed biological integration centre since the time of birth, as spoken in Hindu mythology, in the character of Sukdev (son of the Sage Vyasa). For average people, the integration starts developing during the adolescence phase. A self-conscious individual integrates these phenomena, on the platform of neuronal circuits inherited from the parents, by the growing and arborizing dendritic tree, establishing synaptic intercommunication during the period of learning. For some people, it does not develop even during their whole life-span. For five Pandava brothers (mythological heroes of Mahavarat), it took thirteen years (see chapter four). The offspring born out of wedlock of integrated personalities get the framework of this valuable neurological asset by mere inheritance. This is essential for rapid supracortical evolution.

3. *Highest Biological Homeostat-* If viewed allegorically, this centre is a complex combination of egostat, sexstat, lovestat, lifestat and deathstat. Unlike glucostat and



thermostat centres of hypothalamus, this biological homeostat is under cerebral cortical control, more voluntary than involuntary, more dependent on neuronal or cosmic currents than on chemical milieu. Every biological system has its own set level for this centre. The lower biological activities are subservient to it. It is very difficult and almost impossible to reset it, except by the profound influence of S.C.C.

4. *Location-* Integration of these five vital biological phenomena takes place within the cerebral cortex. Does it happen in an area or in a Centre?

Initially it involves an area and eventually evolves into a centre. The area is the highest centre of life. The same area is also responsible for self-consciousness and sex. Love manifests when the area is unperturbed from below and is acted upon by S.C.C. This is also the last area to die. The most likely situation is postulated in a region very close to paracentral lobules and anterior part of cingulate gyrus. It must occupy the median position, where six layers of cortex from two cerebral hemispheres meet. Millions of fibres from the sensori-motor-association cortex, imaginative cortex and self-conscious cortex of both hemispheres should converge at this point of highest biological integrity. One has to part with the mechanistic vision, here. Is it ever possible<sup>†</sup> to locate this centre exactly in the brain? Or does it exist outside the cranium (as many oriental yogis believe) as the converging point for millions of consciousnesses and remains ever hypothetical!

### **THE HYPOTHESIS**

1. Love, sex, life, death and ego are integrated through vibration of same or closely related group of cerebral cortical modules. The centre for integration is named biological integration centre (BIC).
2. If any of these five basic expressions are studied in depth, and in extreme, one can reach their common knot.
3. This is the highest biological homeostat. Lower biological activities are subservient to it. Through this common knot (BIC), supracortical consciousness is 'biologized'.
4. If this cortical area is allowed to remain unperturbed from below for a prolonged period, and the self-consciousness aspires to achieve oneness with the 'supracortical consciousness', the whole biology transforms into LOVE. Christ, Buddha etc. are highly evolved beings in this direction so much so that they are regarded as incarnation of God.

### **FRONTIER FOR RESEARCH**

During the period of early hominid, the Australopithecines, who are curiously making tools out of pebbles to protect the 'self' from the 'beast' and thus to express and establish the existence of the 'self', (cf: a baby, sixteen or eighteen month old, exploring and experimenting on self-capacity), the self-consciousness came into biological existence. At the dawn of twenty first century, the scientists must thoroughly investigate the cortical area responsible for self-consciousness and in this programme, they must involve today's most self-conscious man of Neurosciences, Sir John C. Eccles. He "cannot believe that this wonderful gift of a conscious existence has no further future, no

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<sup>†</sup> Surely, I am not speaking of the Ghost in the Machine (cf: Gilbert Ryle, in 'The Concept of Mind', Hutchinson, London, 1949.

possibility of another existence under some other unimaginable condition."† Moreover, Sir John C. Eccles and Karl R. Popper have sustained the Neurosciences at the level of modular cortex during the period of almost nil progress in neuropsychology.

The 'mind' ends in the modular cortex, the domain of 'sensual pleasure' and 'ego'.<sup>1</sup> 'Love' and 'life' are in the upstairs non-modular cortex with constantly shifting electrical dipoles<sup>2</sup>. The so called 'death' exists in between the modular and non-modular cortex. EEG is primarily a phenomenon of downstairs and Evoked Responses are that of upstairs. In a cortical being, hardly there is perfect synchrony between the two. Some synchrony, however, is there and for that we are as we are today. The supracortical being transcends death, dwells in the upstairs and acts through the downstairs' modular operons. The fate of such persons, if the Nature permits, is total transformation and metamorphosis into a 'new' species, which needs special care and love from us.

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† John C. Eccles in 'Facing Reality'.

1 'The moral laws inside' and 2 'The starry sky outside' are the two things about which Kant's mind was very much concerned.

# The Theme of Sex Education

## ABSTRACT

The neurological basis of sex extends from the level of segmental nervous system to the level of cerebral cortex. Biologically it is needed for reproduction and pleasure. It also brings symmetry and harmony in different psychological traits. Transcending it, one reaches the fountain of spiritual bliss. Sexuality has to be visualised with advanced knowledge of science and philosophy, biology and evolution.

## INTRODUCTION

Love is life. It is love which flows as life through sex from generation to generation. For the creation to continue, sex has been used as a tool for preservation of race. The Nature has always tried to create a better progeny. Numerous examples could be cited from animal kingdom. † With evolution of the limbic brain, sex has been used for sensual pleasure too. The development of cerebral cortex has imposed a natural restraint in selection of a reproductive partner of a pleasurable mate. If selection goes wrong, the whole psyche is shaken up. When selection is right, sex helps in harmonisation of different personality traits.

The need, felt more acutely now, to transmit favorable ('genius-gene') genes to one's offspring, has elevated the whole process to a more refined plane. With understanding of 'supracortical consciousness', the biology of sex has been taking a new turn. The sex has to be visualised in its whole perspective with an open mind and a scientific outlook without bias or dogma.

## NEUROLOGICAL HIERARCHY OF SEX CENTRES

The following is a brief account of the neurological hierarchy, involved in sex drive.

### A. Cortical:

Paracentral Lobules

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† One example is enough here; the mate choice by female cricket (*Gryllus limaculatus*).

## **B. Limbic System:**

1. Highest autonomic centre.  
Preoptic hypothalamus
2. Centres for pleasure consciousness.  
Septal nuclei  
Lateral amygdaloid
3. Neocortical projection.  
Cingulate gyrus  
Parahippocampal gyrus
4. Distinguished nerve bundles.  
Medial forebrain bundle  
Tract through substantia nigra
5. Other centres.  
Paraventricular hypothalamus  
Intralaminar nuclei of thalamus
6. Memory.  
Visual, auditory and olfactory association cortex along with hippocampus.

## **C. Spinal Cord:**

1. Tracts.
  - a. Ascending, Spinothalamic
  - b. Descending, Reticulospinal
2. Centres.
  - a. Somatic, S2,S3,S4 segments
  - b. Sympathetic, Lower thoracic and upper lumbar segments
  - c. Parasympathetic, Sacral segments

## **D. Peripheral nerves:**

1. Internal pudendal nerve for external genitalia.
2. Other nerves supplying the erogenic areas.

The maximum neurons, fibres, circuits and activities for sex are in the limbic system. Spinal cord and peripheral nerves are the conveyers.

## **THE PHYSIOLOGY OF SEX ACT AND ITS DISORDERS**

The sexual activity of normal man passes through five phases. Sexual desire, erection, ejaculation, orgasm and detumescence. The woman passes through two phases, sexual arousal with preparation for intromission and the orgasm. The disturbance in sexual function may have either an organic cause or a functional basis. Interference with arousal and preparation, and achievement of orgasm, in woman; loss of libido, inability to

obtain or maintain an erection, premature ejaculation, absence of emission or inability to achieve orgasm in men, are the common sexual disturbances. These problems are dealt in various well organised sex clinics where a team consisting of neurologist, neurosurgeon, urologist, urosurgeon, psychiatrist, sexologist, sex therapist and sex educationist work.

### **BASIC BIOLOGY OF SEX**

To physician therapist or educationist, sex is not secret. It is definitely sacred. Regard for others' sex-organs, sex-relation, sex-psychology is extremely important in solving sexual problem.

Sex is the strongest and one of the basic motivation-guided consciousnesses of the human-animal (the naked ape). Unlike basic motivation of thirst and hunger, sex is not vital for survival of the individual. Sex gives the highest physical pleasure, or can have in average psychophysiological set up. Its biological needs are three.

1.     Reproduction
2.     Physical pleasure.
3.     The sex helps in psychological maturation, harmonisation and symmetrification.  
Transcending it, one reaches the supracortical consciousness.

### **SEX IN RELATION TO PHYSICAL PLEASURE**

Two of the important biological achievements are pleasure and freedom; to combine both, an independent pleasure. The septal nuclei and two lateral amygdalli constitute the neurological pleasure triangle (N.P.T). Optimum physical stimulation of the triangle happens during complete hetero-sexual union. When performed, in high order, with a value held in high esteem, this pleasure is a nearest approximate of the biological goal, except that the pleasure is ill-sustained and a dependent one. If one has to depend on multiple partners, situation becomes more complex. So the age-long experience uttered the word 'monogamy', realizing that for an average person, it is easier to depend on one than to rely on many.

### **Different Phases and Postures of Sexual Act:**

During psychosexual maturation, whole phylogeny of sexual behaviour is repeated in the ontogeny in quick succession from childhood sex through adolescent sex and adulthood sex to geriatric sex. The different postures of physical love-making are nothing but a developmental repetition of the sexual posture of different animals through which the human being has evolved. Sexual posture of reptiles (side to side), that of quadruped (rear entrance intercourse), sexual gratification by licking partner's genitalia (orogenital sex) etc. etc are adopted, preferred and practiced in different phases of psychosexual evolution of the human being. The higher is his/her evolutionary stand, quicker he/she surpasses the lower phases and sooner he/she adopts his/her own form of sexuality. In other words, the evolutionary history of adult sexuality is the products of a succession of complete ontogeny. Ontogeny does not merely recapitulate phylogeny but also causes it....

Stretched further, near the top of the evolutionary tree, people have been trying to surpass it, sublimate it and transform it.

### **Side tract from the main stream:**

From the main stream of psychosexual evolutionary current, there are numerous offshoots, two of which are worth mentioning. (1) Autosexual behaviour (2) Homosexuality.

1. *Autosexual behavior*: 'For our sexual pleasure, we do not want to depend on any partner, we will stimulate our neurological pleasure triangle (N.P.T.) by masturbation, mechanical vibrator or electrical stimulation of the genitalia', - This type of consciousness have allowed the practice of autosexuality to grow. Also are there highly self-conscious individuals, who look down upon this sort of sexual outlet and never allow his/her sexual reflexes to be conditioned in such an aberrant way. They argue, once the habit is inculcated, it is very difficult to get rid, of, particularly when one's ultimate aim is to become free. There is nothing guilt or sin in autosexual behaviour. It is just an aberration, a misdirected evolutionary trend from which one has to come out, if one wishes to evolve in the main stream. It may be the only form of sexual outlet practicable in certain circumstances (e.g. long term prisoner), but that must not be the reason to give this method a certificate or a license from a neuro-biological-evolutionary point of view.

2. *Homosexuality* : The genital organs of male and female, other erogenic areas, distribution of nerve endings are made in such a way that most intense stimulation occurs when male copulates over a female front to front in full co-ordination. It is just a neuro-biological absurd to experience the same pleasure by both the partners, qualitatively and quantitatively, by putting the penis in somebody's anus or inserting the index finger in each other's vagina and massaging clitoris or each other's breast.

### *Cautioning Note*

Somatosexual, psychosexual and supracorticosexual developments are inevitable sequences of a streamlined evolution. If sexual activity and thoughts are given undue and excessive importance instead of a planned guidance, within several hundred years a new human species might come up with only two well developed systems-the nervous system and the sexual system. All other organs, all other expressive and perceiving systems might turn into vestigial. The biologists must observe and see this cautioning sign already surfaced in various pockets of well developed nations. In developing countries the same danger is peeping under guise of religious taboos (misguided Tantra) or women's liberation movement.

### *Sexual desire, Intelligence and consciousness*

Sexual desire is said to be directly proportional to Intelligence Quotient. According to yoga system, the same is inversely proportional to consciousness. Contrary views are also

in vogue. Consciousness and intelligence, however, are never dissociated. In conscious intelligence, sexual desire is balanced and just.

## SEX - THE MEAN OF REPRODUCTION

Love is life. It is love which flows as life, through sex, from generation to generation. To reproduce means to bring out exactly what the parents are, if not better! Unification of consciousness of the reproductive partners is essential for an unplug 'psyche' of the newborn. From a given gene quota of the parents, the art of getting the best and maximum, is a science by itself. The whole process of reproduction has to be flooded with love. Love has to be infused from the time of the inception of the zygote. Life begins there.

## SEX – IN CORTICAL PERSPECTIVE

From merely a complex form of spinal reflex for propagation of race, sex has been admixed with a pleasure consciousness in the limbic system. As the cerebral cortex started evolving, sexual pleasure took a new evolutionary directive. Five elements need to be satisfied together- Love, sex, ego, life and death. To put it in an idealistic way- "I got my sex-partner in cost of my life. I will love him/her till death. This is my biological ego" - All five are fulfilled. To write it in another way- "The girl/the man who can grant fully the wants, not only of my sex, but also of my ego, is most lovable to me and she/he remains my life partner till death".

### **Sex Helps in Unification of Personality Traits:**

There are five elementary personality traits.

The inner personality trait of a cortical being is determined by his/her nature. One must understand, here, the basic difference between nature and character (See Chapter thirteen also). Nature is what is within. Character is what is expressed. Given a total freedom, the nature is revealed in solitude. The character is, in fact, what one wishes to project about oneself. For an average human being, the expressions are to camouflage the true nature. However, when the inner core of the being is expressed, a supracortical opening follows. On other way round, a supracortical person cannot conceal his/her nature by his/her expressions. For him, within and without is one.

There are five polar traits of nature depending on five vital cortical phenomena, namely love, sex, life, death and ego. The nature may be polar, equatorial, axial, multi-axial or zig-saw types. The following table gives a brief account of five polar traits.

TRAIT OF NATURE	CORTICAL BEING		SUPRACORTICAL PARLANCE
	‘What is within’	‘What is projected’	Transformation
1. LOVE	Puritan, Devoted, Meditative.	Indifference, ‘Not that, not that, attitude’.	Selfless worker. Exudes love in all activities.
2. SEX	Sexual dreamer. Victim of sexual Fantasies.	Invokes sexual desire and reflexes in others.	The opposer of sex. Staunch Ascetic.
3. DEATH	Depressed, usual victim of content. melancholia.	Complacent and	Fearless, bold, Ambrosial.
4. LIFE	Creative.	Indecisive.	Holistic approach.
5. EGO	Anticipate danger, and Catastrophe. The mind is clouded with fear and doubts.	Selfish. Formidable. Destructive.	Altruistic. Philanthropic. Forgiver.

Table 7

Varying admixture of five elementary traits is revealed in human being. You pick up any of these threads, which best suits you, go to its extreme, touch the common knot and you learn principles of all. Sex is not the only one but one of such five threads, the cautious, methodical and scientific use of which can balance the five traits in one. Lucky are a few, who have learnt about the knot from a ‘supracortical’ person.

*Sexual Life of Dropaudi*

In the story of Mahavart, the famous Indian epic, the princess Dropaudi was married to five brothers, Judhistir, Bhim, Arjuna, Nakula, Sahadeva. The rule was laid down that each of them will enjoy her for one year in rotation. Sri Krisna co-ordinated this whole internal affair.

To many, this happening was a historical exception, mythological myth, realistic absurd or a part of the game of the spirit. From neurobiological point of view, this event can be explained nicely. The main personality trait of Yudhishthira was 'unified' 'sex'. 'Sex', because, he did not oppose, or was not inhibited to have sex with a girl, won in competition by his own younger brother. 'Unified', because, he never, in his life, had gone to another girl for gratification of his sexual desire particularly during four years of sexless life in very five years. This power to have control over his sexual desires, kept him stable in all adversities, they had to go through. Mr. Bhishma was ego-personified. He never tolerated insult of his own ego. He was a man who wanted, had taken and enjoyed the revenge against those who had hurt his 'ego'. The personality trait of Arjuna was full of love. That is why he was most close to Lord Krishna. Also he had many beautiful girl friends, who on various occasions became his wives. Characters of Nakula and Sahadeva are not brightly revealed in the epic. They used to be always with their elder brothers. They were conceived as twin. Their father died during sexual intercourse. They may be taken as symbolic of life and death. Three elder brothers used to love them so intensely that they used to say, 'Nakula and Sahadeva are our 'life' and their missing or absence is deadly for us'. Five brothers had such widely diversified personalities, that to co-ordinate them something attractive to all was vital. Under guidance of Lord Krishna (supracortical consciousness), five cortical consciousness, namely love-consciousness (Arjuna), sex-consciousness (Yudhishthira), ego-consciousness (Bhisma), life and death consciousness (Nakula and Sahadeva) were moulded in the cast of Freud's psychology (The Nature). Once the unification (one in five) became complete the epic war broke out. It took more than thirteen years to bring out this unification.

So complicated are the human psychology and the process of psycho-sexual maturation!

### **NEUROBIOLOGY OF AGONY AND ECSTASY BECAUSE OF DISTURBANCE OR PEACE IN SEX LINE**

Let us revise the neurobiological concepts of five cortical phenomena.

- Love:** Supracortical consciousness manifesting through infrastructure of human body. Sign of love is sacrifice for the beloved. Aim of love is to achieve oneness with the beloved.
- Sex:** Limbic system consciousness to have maximum pleasure possible out of physical stimulation of the sex organs.
- Ego:** Self-consciousness.
- Life:** Phase specific consciousness of the human animal.

**Death:** Merger of 'Phase-specific consciousness' with, or delinkage of 'phase-specific consciousness' from the 'cosmic consciousness', resulting in loss of observable existence of the former, is death.

When there is disharmony amongst five elementary consciousnesses, the total consciousness of the person is in chaos.

1. When love and ego clash, there is threatened death. The person feels acute (or chronic) pain in the heart and expresses, "Ah! my heart is out!"

Neurobiologically, the supracortical consciousness is not allowed to play through cortical area of self-consciousness to send impulses to the pacemaker neurons of the cardiac centres of the brainstem (Fig 4.1).

A social event may exemplify this postulate. The father has fixed up marriage of his lovable daughter with a person he likes. The centre of love of the highly self-conscious daughter is her boy friend who she wants to marry. She can not reconsider her decision. When the father comes to know the fact at the eleventh hour of the sacred ceremony, his ego (because 'he' has fixed up the marriage) and love (because he loves his daughter very much) are in collisions. A 'heart attack' follows. Coronary angiography never reveals a complete block in such case.

2. When there is clash between ego and sex there is externalization of the inner-being. To others, the persons seem 'abnormal' or even 'insane'.

Neurobiologically, the neuronal field from the cortical neurons (Fig. 4.1) (in the area responsible for self-consciousness) to limbic nuclei unfurls its impulses. The 'hidden' being comes out with compulsive behaviour.

This is observed in ordinary love-affair (chasing the object of sex-centre) of university students as well as in the behaviour of historical or mythological heroes.

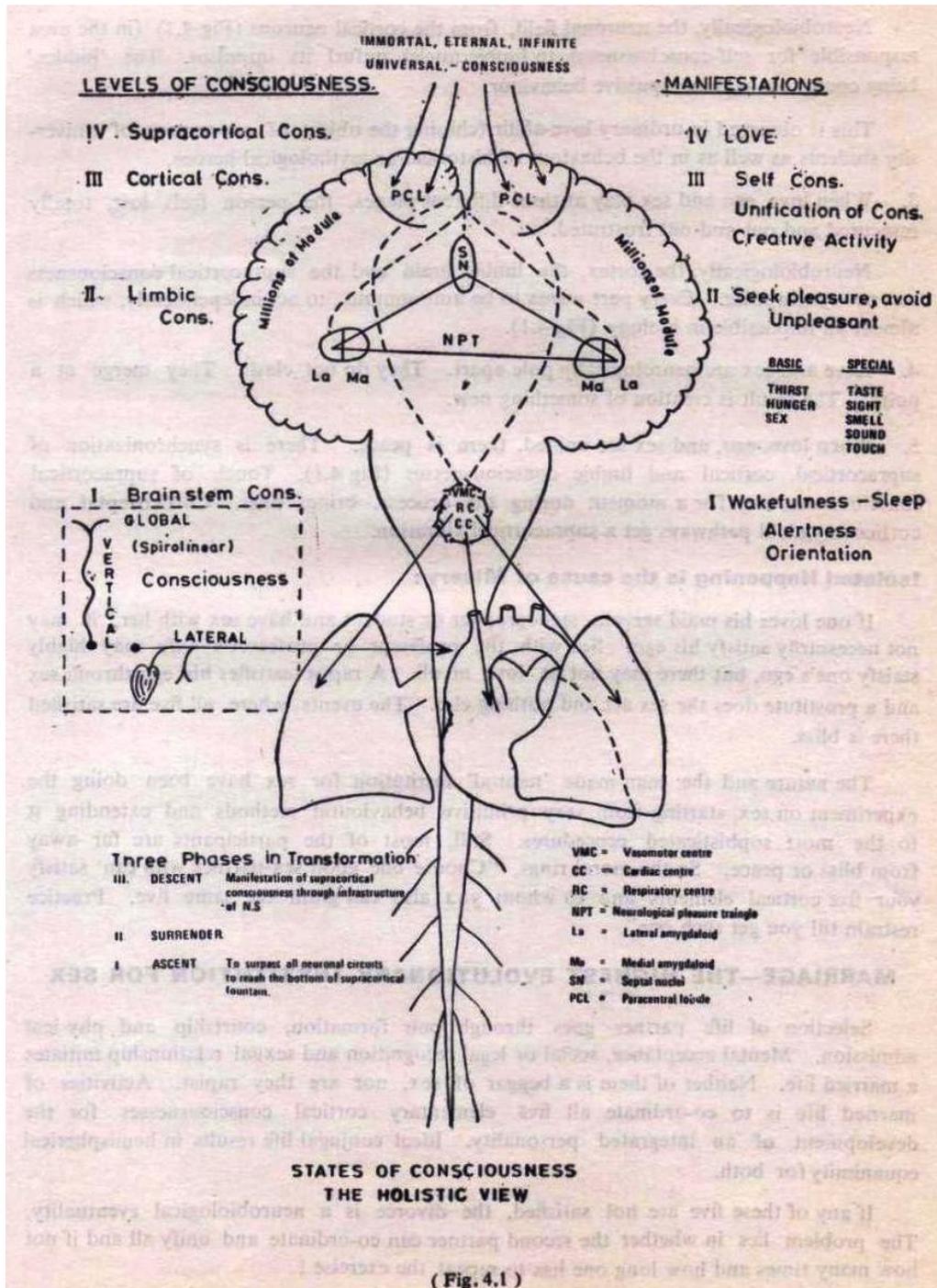
3. When love, ego and sex play at three different planes, the person feels, lost, totally insecure and out and out frustrated.

Neurobiologically, the cortex, the limbic brain and the supracortical consciousness can not synchronize. Every part wants to be autonomous, to act independently, which is almost impossible in biology (Fig 4.1).

4. Love and sex are neurologically poles apart. They do not clash. They merge at a point. The result is creation of something new.

5. When love, ego, and sex are unified, there is peace. There is synchronization of supracortical, cortical and limbic consciousness (Fig 4.1). Touch of supracortical

consciousness, even for a moment during the process, brings bliss. Corticoseptal and corticoamygdali pathways get a supracortical vibration.



### **Isolated Happening is the cause of Misery:**

If one loves his maid servant, stenographer or student and has sex with her, it may not necessarily satisfy his ego. Sex with the professor or professor's wife may highly satisfy one's ego, but there may not be love at all. A rapist satisfies his ego through sex and a prostitute does the sex act and nothing else. The events, where all five are satisfied there is bliss.

The nature and the man-made 'natural' institution for sex have been doing the experiment on sex, starting from very primitive behavioural methods and extending it to the most sophisticated procedure. Still, most of the participants are far away from bliss or peace. So the moral rings "Choose one good sex-partner who can satisfy your five cortical elements and to whom you also can grant the same five. Practice restraint till you get such one".

### **MARRIAGE - THE HIGHEST EVOLUTIONARY INSTITUTION FOR SEX**

Selection of life partner goes through pair formation, courtship and physical admission. Mental acceptance, social or legal recognition and sexual relationship initiates a married life. Neither of them is a beggar of sex, nor are they rapist. Activities of married life are to co-ordinate all five elementary cortical consciousnesses for the development of an integrated personality. Ideal conjugal life results in hemispherical equanimity for both.

If any of these five are not satisfied, the divorce is a neurobiological eventuality. The problem lies in whether the second partner can co-ordinate and unify all and if not how many times and how long one has to repeat the exercise!

### **BIOCHEMISTRY & BIOPHYSICS IN SEX**

Amongst lower animals, chemoattraction is one of the determining or guiding principles of sexual union. The human animals have been propounding a thesis of useful chemical exchange between the partners during sexual interaction through genital and salivary secretions or even through the secretion of sebaceous or apocrine glands in their skin.

Moreover, from the biophysical point of view, there are two finer forms of human sexuality, namely the display of curvature of the body and the complementation of male and female body currents. In highly evolved human beings, with highly developed visual and auditory cortex, it is not the flesh but the curvature of the flesh which matters more. It is not the 'matter' but the complex symmetry in construction of the matter which is more beautiful and charming; it is not the genital organ but the finer rhythm and harmony of their vibration which seems more important. Proper genital display to attract the mating partner amongst lower animals, commercial exploitation of the body curvature in film industry and various advertising techniques, the erotic beauty of certain ancient or modern sculptures exemplify the role of physical curvature in highly evolved sexuality. In Hindu

mythology the cosmic dance of Lord Shiva depicts the value of harmony and rhythm during creation.

On the more, overall body currents are different in males and females. To highly evolved personalities, it is not mortal object of sex but the halo of currents around it, which is more cherishingly enjoyable. In certain religious culture, the male and female body currents have been given more importance than flesh or curvature of the body and to achieve such complementary currents, prolonged restraint has been advised to the partners.

All these chemistry and physics are meant to attract the complementary partners to get the maximum and best out of two. Lucky are a few, who have patience to search for a complementary partner and to retain the sexual serenity till such time. As to understand the problems in subatomic physics or in open heart surgery, one has to strive at least a decade after his graduation, so to understand the reality of these curvatures and body currents, one, in the first hand has to be very patient and choosy to get a proper partner and on the other hand, has to pass through a prolonged and hard trial of unification (or approximation) of consciousness with that of partner. The bliss through sex does not come if anybody tells, shows, sees and does anything he likes. It needs a prolonged high order biochemical and biophysical co-ordination of the partners concerned. The way is safer when one perseveres for it after marriage with lovely partner. One must also remember that the Supracortical consciousness is beyond these curvatures and body currents. It is also beyond the rotational symmetry of YANG and YIN or the reasons and doubts of ADAM and EVE. The essence of this universe is the consciousness and the essence of biology is in the limbic system. The object of life is to combine the two for distribution of the fruits to the others. The biochemistry and the biophysics are only the ways for it.

### **THE SPIRITUAL BLISS THROUGH SEX**

Spiritual bliss is supracortical. Physical sex pleasure is mostly limbic. Sex psychology is cortical. Ways from 'limbic' to cortex and from cortex to 'supracortical' are the meaningful religious ritual. Manifestation of 'supracortical consciousness' through the cortex and limbic system are the behaviours seen in the Seers of the world. Let us now admit frankly that liberation is far away as long as one remains slave of any sense pleasure. To get spiritual bliss, sex is not essential. Not that every sex act leads to spiritual bliss. Spiritual bliss is attained if one longs for it, one aspires for it, one continuously strives for it. For one in millions or more, sex is one of the thousand one ways to get this bliss. After choosing a complementary partner, one passes through whole phylogeny of sex, the whole sex world, to evolve further from the realm of dependent pleasure of supreme order to a liberated, independent state, the pleasure of freedom.

### **THE IDEA OF SURPASSING SEX**

The idea of surpassing sex has evolved in four groups of population.

1. The miserable group: Those whose neurobiology of sex is in chaos and the advices of the modern sex-Pundits could not help them, and 'trouble' continues to disturb at its own spate, seek help for going beyond this instinct, to win it and to keep this wild horse under his self-conscious rein.
2. The wise: Those are the people who understand what sex is, what it is for, its importance, and its need in improvement of their psychosexual standard. When its purpose is over, they coolly transcend, beyond the sleeping impurities of the subconscious ocean of sex.
3. The truth-seeker, the psychoscientist: They want to know the reality, the truth, which is beyond this sensual world.
4. The supracortical personalities: This highly evolved self-conscious 'soul' takes up biological form and quickly surpasses the brainstem consciousness, limbic system consciousness and cortical consciousness to have a thorough bath in the infinite ocean of 'supracortical consciousness'.

### **EXTINCTION OF SEX BY INDULGENCE IN IT IS NEUROLOGICAL ABSURD**

During a sex act, two partners are awake, alert and oriented (brainstem consciousness), motivated to get the maximum pleasure possible by physical relation (limbic system consciousness) to satisfy their love, ego, sex, life and death (cortical consciousness). Some highly evolved ones dare to get the supracortical consciousness (the spiritual bliss) by this act. From the crown to the toe, from the cerebral cortex to the lowest end of spinal cord, from the sensory receptors to the motor nerve endings, from the somatic nervous system to the sympathetic and parasympathetic discharges, from the psychological dream to the realistic crash are in its spectrum. Almost whole of the nervous system is awakened. There are action potential in huge number of nerves, facilitation in vast number of synapses, co-ordination of so many reflexes! The largest and most complicated instinctual reflex which was so far dormant is awakened. With repeated act, there is thickening of the nerve twigs, facilitation in the synapses, and appearance of memory granules in the neuron and conditioning of the whole psychic being. How can then one, in unwanted circumstances, get rid of this reflex which has been carefully nurtured and conditioned by repetition? To control an emotional reflex is difficult, to eradicate a conditioned reflex is tough and to surpass an instinctual reflex is almost an impossible for even a highly self-conscious individual. The only way to command on any reflex is to elevate the self-consciousness above it.

## THE WAYS TO SURPASS IT

This is done slowly in phases.

### **I. Craniospinal control:**

Shut off your brain from external sex world.

### **II. Control of the Limbic System:**

In solitude, try to elevate your self-consciousness. Eliminate the subconscious sexual fantasies. The lion will roar. Disconnect your self-consciousness from Subconscious Ocean of sex.

- A. No Violation for autosexual activities.
- B. Conscious, silent observation (witness-consciousness) is the rule.
- C. Know the strength of your self-consciousness and weakness of the neural reflexes.
- D. Command on neural reflexes. Concentrate your total self-consciousness on preoptic hypothalamus.

### **III. Wiping out of the cortex:**

Coolly wipe out the last speck of sex-thought from the cortex.

### **IV. Supracortical Transformation:**

An active, unconditional, total surrender of the 'self' to S.C.C. leads to transformation.

## NOTHING TO FEAR ABOUT

Disturbing three elements in sex are as follows:

1. It is mostly used for self-pleasure.
2. It brings huge waves in cortical modules.
3. When not qualified with three adjectives cited below, it is the strongest obstacle for supracortical opening and subsequent manifestation.

Sitll, nothing to fear about. The people have stemmed the adverse tide and crossed the ocean.

Sincerity, tenacity and one-pointedness in sexual life can lead to a supracortical opening. But, sex is such a thing that by itself, it begets insincerity, slackens tenacity and flows in innumerable dimensions. To add those three adjectives in one's own sexual life, one must learn to have a total control of this wild horse. Patience, tolerance, concernedness, forbearance, understanding, adjustment, need to be cultivated with a complementary partner.

1. Understand your biorhythm, periodicity, biological need.
2. See through the whole spectrum of sex - from the primitive sex to the sex-transcended. Identify the spot precisely you belong to.
3. Persevere to occupy a more positive location in the spectrum
4. Avoid negative sides. Take every precaution not to fall.
5. Keep in touch with those who have really transcended sex.

### **SEXUALITY AND HEMISPHERICAL EQUANIMITY**

The symmetry and equanimity are what we all aspire for. When the asymmetries of the objects/subjects complement each other, there is nullification of asymmetry of both, and two together bring perfectness.

The origin of natural sex lies in this innate asymmetry of a man and a woman particularly that impregnated in the neurons of their brain. As long as this asymmetry is there, one will always look for a complementary company in some form or other. The solution of problems related to sex, has to be searched from this point of view.

Within a male brain, there is a female brain and within a female, there is always a male. Within right hemisphere there is hidden left hemisphere and within the left, the right is perfectly disposed. One cannot transcend sex completely until the innate asymmetry of biology is complemented by the hidden asymmetry in the physics. (See Supreme consummation in Chapter Nine). Hemispherical equanimity is the final answer in sexual conflict.

### **SEXUAL LIFE OF SUPRACORTICAL PERSONALITIES**

1. After an initial supracortical opening, there is a purge of Nature.
2. Gradually the things settle down as more and more S.C.C. percolates through numerous obscurities of the nervous system.
3. The supracortical personalities have normal sexual life, set on a higher and harder norm. They might have children also, to be reared up in a supracortical family.
4. Purushottama does not have a speck of mentation or sex in his unified ocean of consciousness.

5. Sadguru (Supracortical autonomy) is Love, Love and Love only.

### **THE TEACHING MATTER AND THE TEACHER**

When one teaches the subject of sex, one should teach the whole spectrum of it. Examples are there, who have surpassed sex, sublimated sex and transformed sex. Their advices are inhibitory dogma to the human animal in lower stage of evolution. Examples are also there who have been stuck in reptilian or quadruped sex-consciousness in human form, and then had written, advocated and published papers on similar data, to conclude that 'this' or 'that' being the best or major form of human sexual behaviour. People are also there who have accepted the aberration (homosexual and autosexual activities) as their standard norm. Those who have wanted to climb the Everest, the highest peak, have remained inclined to the main stream and persevered scientifically.

Those who do have this holistic knowledge of the total spectrum of sex, those whose thoughts about the subject are weighed in a delicate balance of discrimination before being allowed as outward garb of speech, whose every utterance is chiselled by wisdom, only can hold the post of a sex-educationist.

# **Paramatman, Atman, Jivatman Purusha and Prakriti - In the Biological View Box**

## **ABSTRACT**

Universal consciousness acts through cerebral cortical modules, to bring 'life' in the brain, through cortico-reticular pathways to the brainstem centers of respiration, vasomotion and cardiac action. This is life-line. Life vibration acts through all other neurological circuits, resulting in different types of manifestations. These neurological phenomena precisely echo what the Seers have said In Vedas.

## **INTRODUCTION**

Paramatman, Atman and Jivatman, Purusha and Prakriti are the terms which have been used in the Veda. Subsequent scriptures have blurred the clarity of the concept. Most of the Western philosophers fail to get a clear meaning of the terms. The following is a neurobiological approach to offer an explanation for the Vedic concept.

The universal consciousness acts, through the Biological integration centre (BIC) on cerebral cortical modules responsible for self-consciousness. From this cortical area, cortico-reticular and reticulo-cortical reverberations make an individual alive. The rest of the neurological connections, associations and projections (may it be concerned with intelligence, intuition, various conditioned or unconditioned reflexes) in the brain may be visualized as units for manifestation.

## **NEUROBIOLOGICAL DEFINITION OF THE TERMS**

**PARAMATMAN**      1. Universal consciousness (of philosopher).  
                             2. Supracortical consciousness (of neurologists).  
                             3. Cosmic consciousness (of physicists.)

**ATMAN**                      Absolutely purified self-consciousness is Atman.†

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† "The brain is owned by the self rather than the other way round"- Karl. R. Popper in the famous book 'The Self and its Brain', Springer International, 1977.

JIVATMAN

1. Phase-specific-consciousness (of neurobiologists).
2. Soul (of philosopher)
3. This is the cortico-reticular (bulbar) and (bulbo) reticulo-cortical reverberation circuits. This is the subtle neuronal circuits carried from the brainstem vital centres, through periaqueductal and periventricular grey and certain limbic nuclei to the most specialized area of the neocortex, the area for self-consciousness.

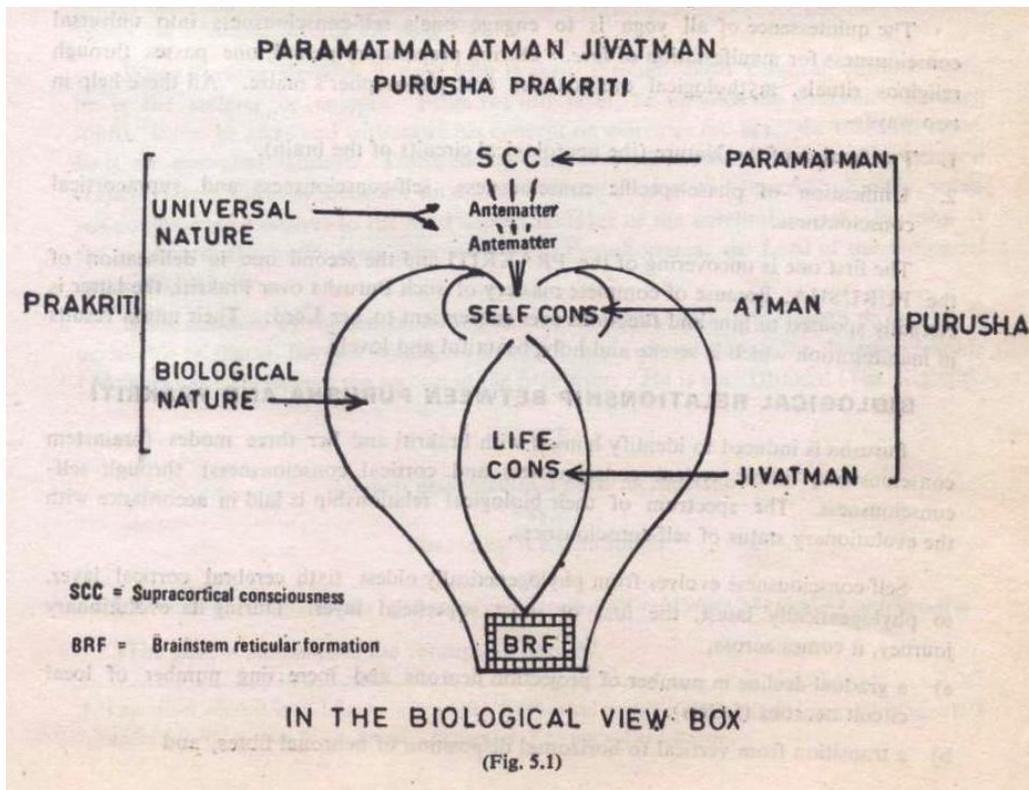
PURUSHA

Unified supracortical consciousness, self-consciousness, and phase-specific consciousness is PURUSHA (Cf: the Christian trinity of Father-Son-Holy Ghost).

PRAKRITI

Except the 'life-line'/'the soul current', all other neurological circuits belong to PRAKRITI. This is the NATURE of Philosopher. Her three modes are brainstem consciousness, limbic system consciousness and cortical consciousness.

No research has been done, whatsoever, on the Purusha part of the Nervous system.  
Most of the Research in Neuroscience is devoted to Prakriti part of the nervous system.



## **TO SPEAK IT IN VEDANTIST'S TONGUE**

Paramatman acts on Jivatman. Impure self-consciousness (ego) is an obstacle for this communication. Having self-consciousness been purified (Atman) there could be unification of Paramatman, Atman and Jivatman. This unified three is Purusha. The Purusha acts on Prakriti (the Nature) for the manifestation.

### **UNITY IN DIVERSITY**

The whole universe is an infinite pool of consciousness in which all of us are whirlpool only. All of us are connected with universal consciousness through those cerebral cortical modules which are also responsible for self-consciousness. This is the unity. We manifest differently because of our differences in:

- a) the evolutionary status of self-consciousness and
- b) the modes of nature

Neurological circuits, acquired upon a genetic background, are different from individual to individual. This explains the diversity.

### **YOGA**

The quintessence of all yoga is to engage one's self-consciousness into universal consciousness for manifestation of love. During preparatory period, one passes through religious rituals, mythological eventualities and philosopher's maize. All these help in two ways:-

1. Purification of the Nature (the neurological circuits of the brain).
2. Unification of phase-specific consciousness, self-consciousness and supracortical consciousness.

The first one is uncovering of the PRAKRITI and the second one is delineation of the PURUSHA. Because of complete mastery of such Purusha over Prakriti, the latter is eternally spoused to him and functions ever subservient to her Lord. Their union results in manifestation which is serene and holy, beautiful and lovely.

### **BIOLOGICAL RELATIONSHIP BETWEEN PURUSHA AND PRAKRITI**

Purusha is induced to identify himself with Prakriti and her three modes (brainstem consciousness, limbic system consciousness, and cortical consciousness) through self-consciousness. The spectrum of their biological relationship is laid in accordance with the evolutionary status of self-consciousness.

Self-consciousness evolves from phylogenetically oldest sixth cerebral cortical layer, to phylogenetically latest, the first or most superficial layer. During its evolutionary journey it comes across:

- a) a gradual decline in number of projection neurons and increasing number of local circuit neurons (LCNs).
- b) a transition from vertical to horizontal disposition of neuronal fibres, and
- c) a transition of the domain of action potential in the axonal bundles to that of constantly shifting electrical dipoles in the neatly woven dendritic mat.

There is an electrophysiological watershed between the third and fourth layer of the cerebral cortex. The primary sensory neurons sit in its fourth layer, the primary motor neurons start from fifth layer and the upper three layers of the cerebral cortex are packed with local circuit neurons. In the first, second and third layer, there are constantly shifting electrical dipoles. Below third layer, there are vertical action potentials. There is a U-turn of action potential underneath the third cortical layer. So, it is very difficult to elevate self-consciousness beyond fourth layer of cerebral cortex and a direct supracortical intervention is felt vital in this stage.

To look at it with a pure mechanistic view, † in the sixth cerebral cortical layer, I am strongly bound to the lower neuronal currents, particularly with the pain and pleasure centres in the limbic brain. So, I enjoy and suffer. As I ascend in the fifth layer, I support and uphold. In the fourth layer, I am the consenter. From there, I give and withdraw my consent, when I feel like. When in the third, I am the witness-consciousness. Transcending more, I reach the second layer. I become an all-knower, almost the 'Lord'. On the terrace, in the most superficial layer, with touch of inexhaustible, infinite above, I am beyond the celestial grandeur of biology, beyond even the Lordship of my biological universe (See Fig. 5.2 page 79).

When Purusha identifies himself with Prakriti through sixth cerebral cortical layer, he is the sufferer or enjoyer. From the fifth layer, he upholds the Prakriti. Through fourth layer he gives and withdraws his consent on activities for her. In the third layer, he is an ever-alert witness. Transcending far, evolved more, in the second cerebral cortical layer, Purusha becomes an all-knower, the Lord of the Prakriti. Finally, when self-consciousness evolves to the most superficial layer of the cerebral cortex, Purusha is the supracortical consciousness personified - the Purushottama, the Lord of the biological and cosmic universe.

Being enslaved by the senses, during its stay in sixth, fifth and fourth layer, he is perishable (Kshara). Beyond fourth, in the third and second layers he is imperishable (Akshara) and surpassing the second in the first layer, He is the 'Uttama' (The Highest).

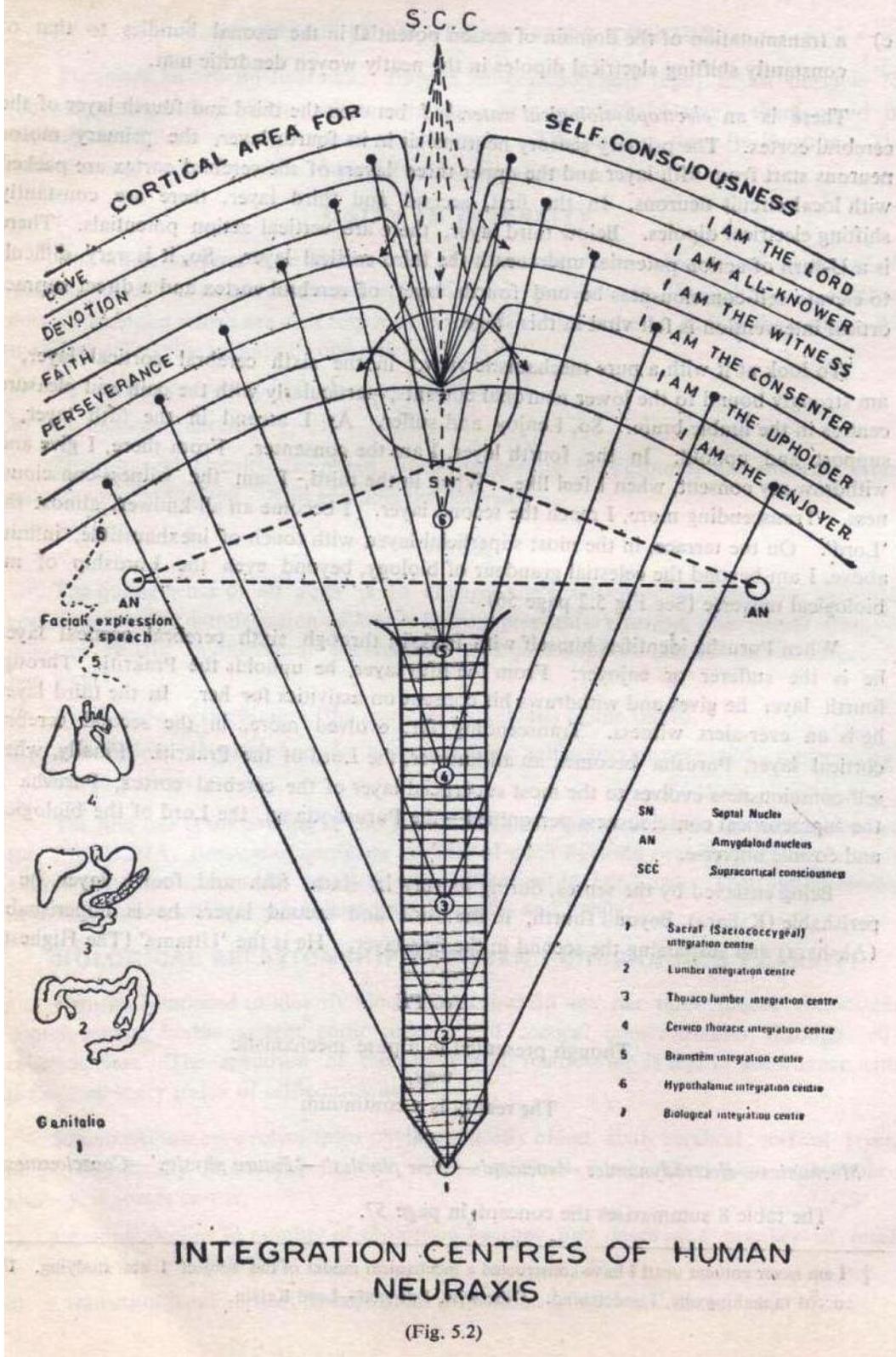
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† 'I am never content until I have constructed a mechanical model of the subject I am studying. If I succeed in making one, I understand. Otherwise, I do not' - Lord Kelvin.

## NOTE

Though presented in a pure mechanistic  
way,  
The reality is a continuum  
of  
Mechanics-electrodynamics-'vacuum'-'New physics'- 'Future physics'-Consciousness

The table 8 summarises the concept, in page 80.



## Biological Relationship between Purusha and Prakriti

Involvement of cerebral Cortical layer	Evolutionary status of self-consciousness	Relationship of Purusha and Prakriti.	Terminology in The Bhagvad Gita, Chapter 13, Verse 23, Chapter 8.	
Sixth layer	I enjoy.	Purusha enjoys Prakriti	'BHOKTA'	
Fifth layer	I uphold.	Purusha. Supports her.	'BHARTA'	Perishable or 'Kshara'
Fourth layer	I give and withdraw the consent	Purusha is the. consentor of her activities.	'ANUMANTA'	
Third layer	I am the Witness.	Purusha is witness of Prakriti's activities.	'SAKSHYA'	Imperishable or
Second layer	I am immutable witness, the Lord of of biology	Purusha knows all about Prakriti	'UPADRASTA'	'Akshara'
First layer 'Purus-hottama'.	I am the Lord of the universe.	Purusha becomes Purushottama and is adored by all Biological and Suprabiological currents.	MAHESWARA	'HRISIKESH'

Table 8

### THE MORALE

The Divinity is not merely an imagination of some insane persons. Neither the spirit is to be imagined or philosophized. The spirit is there. It is acting on everybody's cerebral cortical modules. Let us train our nervous system to realise it. Transformation will automatically follow.

# Towards Supracortical Transformation - The Traditional Way

## ABSTRACT

Most of the human beings are conscious at brainstem level, limbic system level or cortical level. There are many, who are aware of the existing reality of something named 'Supracortical'. The future of the present human race is to transform into 'Supracortical-being'. With effort, it is not impossible to achieve this state in one life. The methodology has been described.

## INTRODUCTION

The philosophy of achieving a 'free living' state is not an enigma. Neither it is impossible to attain a 'free state of spontaneity'. These states are not un-explainable in language of modern science. Once one conceives the 'idea' of existing reality of 'Supracortical consciousness', next step is to achieve it. Any person, who is self-disciplined and truthful, can achieve it. Requirements are tenacious sincerity, staunch perseverance, imperishable faith, and unswerving devotion and to stop not till the goal is reached. In modern language, these are consciousness, genes, effort and time.

## SUPRACORTICAL TRANSFORMATION

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### Biological need

1. Consciousness
2. Genes
3. Effort

### Evolutionary need

1. Aspiration
2. Directive
3. Time

- a. Natural selection
  - b. Occurrence of variation
- 

Table 9

## THE TRANSFORMATION IS A PROCESS

1. The transformation is a process, to start with a process of experiencing - a combination of reasoning and feelings - simultaneous involvement of cerebral cortex and the limbic system.
2. The process is bihemispherical. At time, categorical hemisphere may appear 'dominant' and at other time, the representational hemisphere seems to take upper hand. A seeker gradually realises the complementary specialisation of the both. The success of the process depends on the development of hemispherical equanimity, for which one requires to develop, first, the Biological Integration Centre.
3. To express the process, a language, spoken and unspoken is needed. The spoken language is mainly an expression of categorical hemisphere and the unspoken ones are mainly that of representational hemisphere.

The latter is expressed through other means of gesticulation particularly through the postures, cortico-spinal (cranial) and limbico-spinal (cranial) reflexes, the so called 'Asana' or 'Trans postures'. The best spoken language is that which takes care of both categorical and representational hemisphere, gives equal resonance to NOUN and VERB and emphasizes simultaneously, reasoning and feelings. The Divine rhymes are best examples.

4. It is the self-consciousness which plays the key role in unlocking the 'high energy barrier', guarding the domain of inexhaustible cosmic consciousness. The living presence of Sadguru (The supracortical autonomy), guides the evolving self-consciousness towards supracortical direction.
5. Transformation occurs in three inseparable phases, Ascent, Surrender and Descent. Paradoxes are resolved in phase transition.

Outlay of different phase of transformation will be discussed.

### *Towards supracortical transformation*

- Elevation of self-consciousness.
- Surrender of self-consciousness to S.C.C.
- Descent of S.C.C. through infrastructure of N.S.

Table 10

## I THE PHASE OF ASCENT

I want to go beyond.....

Beyond what have I seen,  
Beyond what have I got,  
Beyond what have I done

And beyond what have I not.

Beyond all orders and bid,  
Where my true 'self', indeed,

Stays above all pleasure and pain  
Beyond all bonds and limits and chain;

Free from all,  
Response or call

Beyond all hopes and desire,  
I want to go there.

Passed years, by minutes,  
To surpass all limits

Beyond the senses, the mind and the soul,  
To get my lost 'self' in whole

I transcend all finites I see,  
In that endless infinity,

I excel the science and the Seer  
To have my platform there.

Progress and progress is the only war cry. We must reach the top, the summit, † the bottom of the supracortical fountain. No quarter to adversary. No grace to baseless theories. March on, March on. Look forward. So many of us are far ahead, Conquest the time. Be Lord of the senses.

### Principle

'Self-consciousness', in primitive form, is the ability to recognise one's own image in a mirror. In which mirror one likes to see himself, is his own choice. The only way to rise over any neuronal pathway is to put 'self-consciousness' above it. Principle of ascent is to elevate the 'self-consciousness' from lower neuronal circuits to the highest possible

height in the neuraxis. Neutralisation of polar waves of consciousness and balancing of contradictory consciousness are the keys for elevation of 'self-consciousness'. It is also necessary, during the phase of acclivity, to dissect out 'witness-consciousness' from the pool of biological consciousnesses to overcome compulsive attacks.

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† Religion- a Latin word. Re-back; Lagar - to join.

*Principles of trekking though neuraxis*

- Elevate self-consciousness above neurological reflexes and phenomena.
- Balance and harmonise the contradictory and complementary consciousnesses
- Dissect out self-consciousness as witness-consciousness during obsession compulsion.

Table 11

**Methods**

“Traveller, there is no path,  
Paths are made by walking”.

So, let us start in our own way and proceed with our own vision.

I always stand first  
In thunder and cloud-burst,  
I always win the sea.  
Centuries' darkness wants to trap,  
The light within I have,  
Remains bright and scot-free.  
Hundred of lions bite my flesh  
The soul within remains afresh  
The fire hesitates it to burn.  
In cyclone and amidst storm  
I stand unconventional to the 'norm',  
An inch can't they turn.  
Amongst millions in the crowd  
With erect head, I am proud  
It never bends or gives way.  
The thunder may burst,  
On my head at last,  
It is never seen to sway.

1. Choose a comfortable posture with neuraxis in normal anatomical position. Some people prefer to shave their head, to sit on an insulator mat and to wear silk clothes to balance subtle body currents.
2. Withdraw from lateral consciousness.
3. Methodical elevation of self-consciousness: Concentrate your self-consciousness at different centres (see fig 5.2, page 79) of neuraxis and meditate on the inner meaning of the following sentences.

Lumbosacral centre.....I want pure knowledge  
 Thoracolumbar centre.....I am my own master  
 Cervicothoracic centre.....I am the soul  
 Brainstem centre.....I am pure  
 Preoptic hypothalamus.....I am divine  
 Paracentral lobules.....I am 'He'. 'Ana-ul-Haq'  
 Repeat these hundred times, thousand times, million times.

4. 'Dialysis' of the venom of ego, liberated during elevation of self-consciousness: With elevation of self-consciousness, various impurities float on the surface. Sprouting from the ego tree is sometimes intractable. During this period, pass your consciousness through the 'dialysing membrane' of altruism, sacrifice, selfless service to the mankind.

*Imbibe the thought, 'All my knowledge and realisation, effort and endeavour, achievement and transformation are meant for welfare of others, for elevation of others'. Condition every cell, every tissue, and every system of the body with thought-current of sacrifice. The current may be systematically passed from the generative organs to the brain through left side of the body via left lower and upper limbs and then from the brain down to the generative organs through right side of the body via upper and lower limbs. On the top of the head, the thought-current is usually advised to be rotated in clockwise direction.*

Manifestation of S.C.C. is love and expression of love is sacrifice. During supracortical transformation it is very much essential to condition every part and cell of this human tabernacle with the thought-current for sacrifice or 'yajna'. This cures from aberrant, aversive and angular neuronal currents and builds up the necessary foundation for supracortical manifestation.

5. Delineation of life current:- The spontaneous vibration of pacemaker neuronal ring in the apneustic centre is, in fact, under surveillance of the highest cortical centre. An average human being is not aware of it. A supracortical being, in fact, is conscious that the supracortical consciousness is translated into his/her biovibration 21,600 times a day as inspiration and 21,600 times a day as expiration (when respiration rate is 15/minute).

The highest centre of life is cerebral cortex. But for all practical purpose, in an average human being, the highest centre has been considered to be located in the brainstem vital centres. We have to bridge this gap in our consciousness.

The question is how to delineate this life current from brainstem to the cerebral cortex? We have the knowledge, we are aware of its existence, we have self-consciousness; only thing we need is conscious practice of delineation.

Start from the periphery. Inspiration, inspiratory apnea, expiration and expiratory apnea are four phases in a cycle of respiration. Observe regularly this subtle life current from the cortex to the brainstem and its external manifestation as apneustic-pneumotaxic discharge. Do not try to control, manipulate or change its spontaneity. Our aim is not to gain a control over autonomic nervous system but to transform even the cortical activities into a flawless automation. This is LIBERATION. When one is consciously observing the apneustic-pneumotaxic display, what one is practically doing is nothing but penetrating in the brainstem through self-consciousness. People synchronize this rhythm with the sonorous remembrancer of the primordial vibration of consciousness-antematter play (OM, OM, OM).

6. Chant the sacred monosyllable 'OM' 'OM' 'OM' in every biological movement, rhythm and vibration. 'OM' is the sonorous remembrancer of the primordial vibration of consciousness-antematter play. Literally, it means 'YES' - The eternal Yea, I exist immortally, infinitely, eternally in Ananda. The vibration of small 'i' is going to be synchronized with the vibration of eternal yea.

7. Lucky you are, if you stay under direct guidance of a supracortical person in a 'supracortical abode'.

#### *Milestones of supracortical development*

- Elevation of the level of consciousness.
- Distinction of love from sex
- Cortical control of the limbic system
- Expression of desirable qualities in the genes.

Table 12

#### **Friends and foe**

The ascent is tedious. Dry reasoning and cold renunciation often seem monotonous. The company of sacred scriptures and persons of plenary inspiration are very helpful. Those who do believe it not impossible to attain S.C.C. in single life, those whose

every word and action encourage for its attainment are friends and rest of the world, one must refrain from.

### **Feelings**

Ascent is also an adventure. One breaks veil after veil of the lower neuronal circuits to reach the bottom of the supracortical fountain. One elevates self-consciousness through whole phylogeny of feelings and behaviour. From elated or confused state, vision of heaven or hell, sexual excitement, different auras of light and sound, one may pass through scalding heat of Arabian Desert or biting cold in Himalayan peak. No special importance is to be attached to any of such feelings. The help of 'witness-consciousness' is essential in handling such experiences of passing phase.

At a very high level of elevated self-consciousness when it is about to merge with its biological beyond, the rationale starts to dissolve, the concrete kisses the bosom of the abstract. At this near explosion point, there is a feeling of sustained tension in a world of infinite doubts and questions - amounting to a conscious confrontation with the death.

*Only thing, I am sure in my life, is death.*

### **Refinement of self-consciousness**

Use of self-consciousness as a tool of ascent, also purifies it. The crude forms of self-consciousness are ego and pride. Finer forms are self-respect, self-confidence etc. The finest form of self-consciousness is 'ATMAN'.

In the cortical phase of elevation of self-consciousness, one passes through gradual refinement of self-consciousness. From 'enjoyer' and 'supporter', one becomes a 'consenter' and 'witness' and finally the 'all-knower' and 'The Lord'. From sixth layer of the cerebral cortex, the self-consciousness evolves to first layer to attain the Lordship of the Universe, both biological and suprabiological. (See also page 77).

### **Obstacles**

1. From brainstem level : Slothiness, drowsiness, sleepy state etc.
2. From limbic level : Desire for sensual pleasure and lashes of compulsive attack.
3. From cortical level: In the cortical stage of ascent, even the learned memory and creative activity becomes obstacle.
4. Last obstacle : Self-consciousness is the last obstacle.

*Overcoming the obstacle*

Nature of obstacle	Origin	How to overcome
1. Slothiness, drowsiness, sleepy state	Brainstem consciousness	i) By limbic system consciousness. ii) By cortical Consciousness.
2. Compulsive attack of sensual pleasure	Limbic system consciousness.	i) By profound cortical consciousness ii) By self-consciousness.
3. Creative activities, cortical memory	Cortical consciousness	Direct them towards supracortical fountain.
4. Self-consciousness	Lower three layers of cortex	By love devotion, faith.
5. Primordial gloom The Vacuum	Third layer of cortex	By imperishable faith.
6. Small 'i'	Second layer of cortex	By unswerving devotion and surrender.

Table 13

**Tricks of the trade**

1. Most of the people commit mistake by struggling with the torrent of thoughts, the outpouring of gush from the subconscious hell, the devastating whirlwind and the burning blazes of the ego. In such situations, just 'observe'. Neither admits nor suppress. Use your 'witness-consciousness'.

2. Have a positive attitude. Seek the help of the inner immobile being,<sup>1</sup> the deeper surging being,<sup>2</sup> the One who aspires, who longs, who yearns, the One who is sonorous in silence.

3. Whenever you see a deep dark shadow, be sure, that there is equally a bright light. The curtain is 'self-consciousness'. Remove it. Surrender to S.C.C. There is light only.

1. Sri Aurobindo.

2. Aristotle's entelechy is teleological, striving for perfect perfectness. The teleological theory in Greek philosophy goes back to Socrates.

These principles are brilliantly illustrated in the following rhyme.

I always remain at the top,  
To pull you all atop,  
    During the active geosynclines.  
So, on the plateaus and in the plains,  
In the satellite, or in jet plane.  
    Towards truth, I incline.  
On the peak of the Everest or in the depth of Marianas Trench,  
In all languages of the earth, German, Latin or French,  
    The voice thunders the truth of my theme.  
During new sculpturing of this earth,  
As ocean, valleys or desert  
    My heart must remain, closest to 'Him'.  
Let glaciations erode our innumerable odds -  
Weathering the igneous, sedimentary or metamorphic rocks  
    Or, a shower falls of the boulder clay!  
Even if the five hundred volcanoes suddenly act,  
From the core of the earth, for a cosmic pact  
    My inner spirit must outshine those volcanic sprays.  
During the intercontinental drift,  
If the present India<sup>1</sup> shifts  
    To a place, unknown to us.  
Or the continental shelf floats upon the ocean,  
With a huge quake and tremendous motion  
    My vision must remain perfect, unbiased.  
Before five thousand millions of years,  
When the earth was born out of universal cheers  
    The '*Chetana*'<sup>2</sup> was looking for a substrate of matter,  
On whom it can wrap  
In every atom and its gaps,  
    To bring 'Life' in this lifeless sphere.  
Even if it had failed in the core of the earth,  
Or, in the mantle, the sima or the sialic crust,  
    Let it win my small little 'i',  
Beyond my biological realm-  
Unperturbed in the cosmic beam  
    I must merge with the universal 'I'.

---

1. You can read the name of your own country.

2. '*Chetana*' - A Sanskrit word for 'consciousness'.

## Achievement - A state of vacuum - 'Dying before death'<sup>1</sup>

1. The state - When 'self-consciousness' is elevated beyond the highest neurophysiological level, a sense of vacuum prevails. The space craft has surpassed the troposphere, stratosphere, ionosphere and exosphere, beyond the gravitational force of the earth. Brainstem consciousness, limbic consciousness and cortical consciousness cannot pull one down. It is a vast waveless ocean of consciousness. Not a speck of mentation is noticed in that infinitude. This is the END of MIND (Monolaya, or Mononash). The soul is now freed from Prakriti and its three modes.

2. Feelings-

When my work is over, and  
An uncertainty is posed,  
Vacuum prevails all rounds  
The mind is closed.

Can you give me some light?  
To show me a way,  
Drops of water in the desert!  
Something positive to show and say.

If not, don't come to me.  
However strong or pure you may be!  
I came alone and will go as such,  
There is nothing to talk very much.

I don't need anybody's help  
I am me and only myself.

The whole world appears nonexistent. Nothing positive nor negative, but a world beyond the opposites, and absolute, infinite, eternal zero prevails all round. This state is described as *cosmic emptiness*, the great void, the 'Timir Khanda' (in Sikh's scripture). 'One is neither tense nor hurried and certainly never slack'.

### Carry on

Initially it is difficult to stay in this state for a long time. In this phase, the person appears useless to the common people's need, and has only negative advice to offer (Don't do this, don't do that). Being incapable of giving something positive to the mass, an ambitious traveller does not prefer to become stagnant here. He keeps on trekking. To him, vacuum is not the end. It is above worldly affairs. Trekking further<sup>2</sup> from here, one has to avail of something 'positive'.

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1 "Die before your physical death"- Quranic precept.

"Die daily"- The Bible, I, cor 15:31.

2 "Particle physics is not the right starting point for particle physics, vacuum physics is"- John Archibald Wheeler.

## Outsmarting the vacuum

In the thoughtless stage of vacuum, it is almost impossible to think. Still one has to persuade and to persuade definitely. One cannot outweigh the vacuum. If tried, one sinks. One has to overcome it, outlight it. The essential quality to outsmart the vacuum is imperishable faith. Following passage may be found useful.

My phase-specific freedom does not exist. Consciously I have to surrender to S.C.C. My phase-specific independence has to be transformed into absolute obedience to S.C.C. The S.C.C. exists as eternal, immortal, infinite, the absolute. He is all pervading. He is within me and I am fully in Him. The S.C.C. is merciful, lovable, beautiful, elevating, for betterment, for transformation. The S.C.C. likes to penetrate into my centres for feelings (Neurological pleasure triangle) to create Ananda. The S.C.C. is fond of expressing itself through infrastructure of the nervous system, through my creative imagination and activities, through my intelligence and judgment, through my silence and smile, through my pyramidal and extrapyramidal systems.

If the cause is silent,  
And the time is still:  
Nothingness in my life,  
Emptiness under the heel.

A massless quantum-  
I remain,  
In the immortal, eternal  
and infinite domain.

Probabilities replace  
all certainties,  
Antiparticle and particle  
become kith and kin.

When I can't do any more,  
Let then Goal choose its means.  
There I Surrender.....

### Neurology of the vacuum stage

Lower three layers of the cerebral cortex form the 'causal body'.<sup>†</sup> The primary sensory neurons end in the fourth layer and motor neurons start in the fifth layer. The action potential takes a U-turn underneath the third layer. Modular arrangement of neurons are more prominent in the lower three layers and different spatio-temporal vibration of these modules is the cause of infinite variety of consciousness. Upper three

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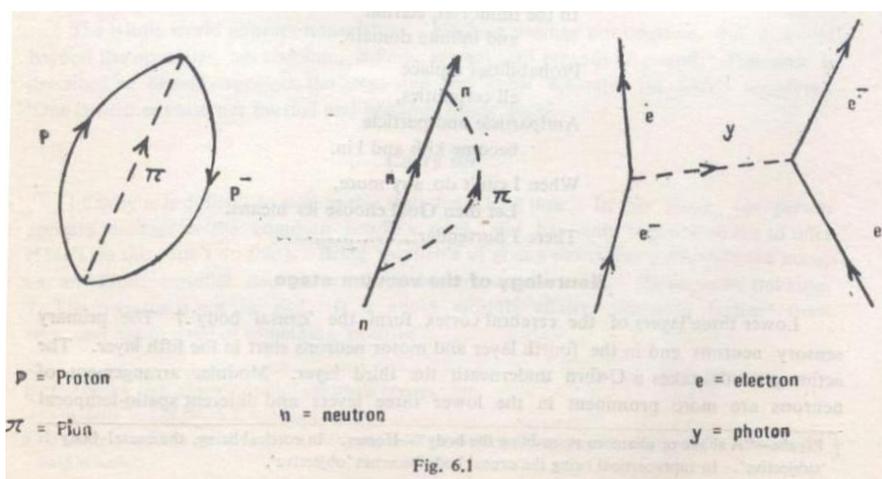
<sup>†</sup> Psyche-" A shade or phantom resembling the body"- Homer. In cortical being, the causal body is 'subjective'. In supracortical being the causal body becomes 'objective'.

layers of the cortex are beyond,<sup>1</sup> so called, space time and causation and so when self-consciousness crosses the primary domain of sensorimotor neurons, its first encounter happens with the primordial gloom, the great void. Three modes of Prakriti do not have any influence here. The self-confidence dissolves. The self-consciousness cannot be elevated further unless..... Here is the 'labour room' of FAITH. It is the faith which can drag one up in such situation. The faith originates in the third cortical layer, on a background of cosmic emptiness, beyond the sensorimotor world, out of an unswerving devotion to the Divine, by the living presence of S.C.C. (Sadguru). Faith also grows by the living presence of a supracortical person, exemplifying the certainty. Sweet memories of the supracortical vibrations in the visual and auditory associative cortex are the only hope in one's brain. They allow growth and maturation of faith. The growing pole of faith is DEVOTION<sup>2</sup> which does shape a new small 'i'. The devotion also compels the small 'i' to SURRENDER. One ascends in the second layer of the cortex and knows all, the secret of secrets.

### 'High Energy Physics' in Vacuum

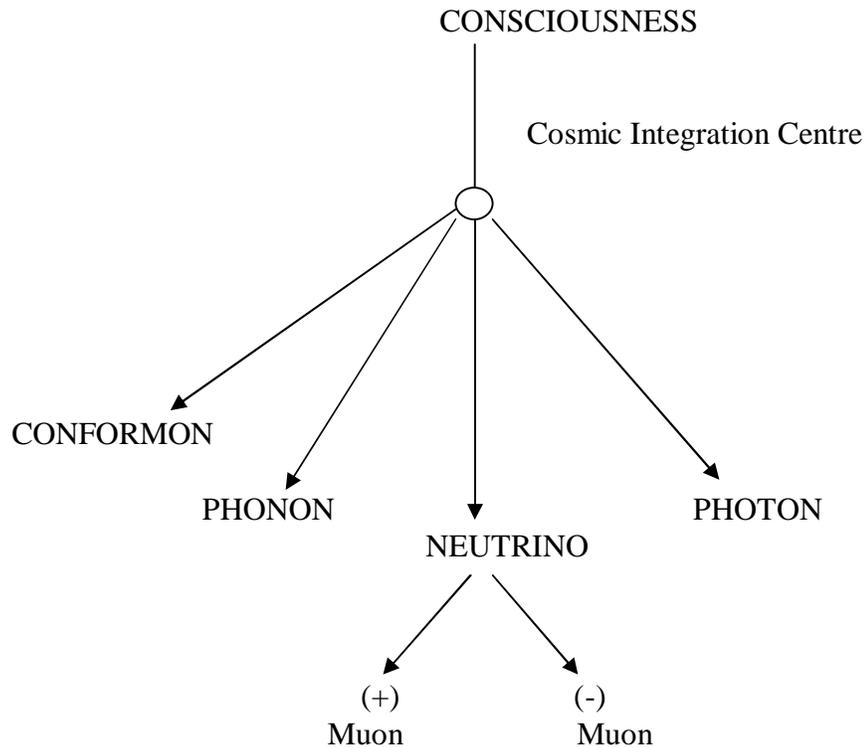
With dissolution of modular self-consciousness, the crude essentialism, I become massless wave packets of energy, observing Heisenberg's uncertainty principle - the wavelength is uncertain, the position, velocity, momentum are also uncertain. But I exist. I exist as an eternal yea. When I attempt to surrender, I see that I am not isolated. I can place myself in the integrated whole. I understand my eternal dynamicity, maintained far from equilibrium through dissipation of energy. I look back. I see that the so called 'emptiness' is a living void where proton and antiproton exchange pions, electrons exchange photon and a neutron emits and reabsorbs pions. The phenomenon is incessant, endless, everywhere.

#### THE LIVING VOID



1. "I simply believe that some part of the human self or soul is not subjected to the laws of space and time"- C.G.Jung.
2. How vital it is to nurture the devotional practice since childhood, becomes clear in this phase. Rich dendritic arborization, developed in the second layer, through life-long devotional rituals, is an asset. I am sandwich between two autonomous institutions,<sup>3</sup> my body and the universe.

I carry on. The hidden variables of quantum physics are removed. I enter the domain of Antematter. Sometimes I identify myself with phonon, often with conformon, sometimes with photon. I learn dynamicity, coherence and self-organising consistency. I understand the root of implicate order. I reach the cosmic integration centre.



### CONSCIOUSNESS- IN COSMIC PERSPECTIVE

Fig. 6.2

I agree with Karl Pribram, "Brain is a hologram,"<sup>4</sup> interpreting a holographic universe". 'It is not static. It is all holomovement' (David Bohm).

- 
3. cf: Descartes's cosmology:-The whole world is automation. The human body is no exception-except for its voluntary movement. Here is the only exception in this universe.-Quoted by Karl R. Popper in 'The Self and its Brain', Springer International, 1997, pp. 178.
  4. Holography is a method of lenseless, three-dimensional photography. Any piece of the hologram reconstructs the entire image. Dennis Gabor was awarded a Nobel Prize for its discovery. Prof. David Bohm emphatically points out, "Hologram is a starting point for a new description of the reality".

*Requirements for biologization of S.C.C.*

- A capable cerebral cortex
- Conscious malleability of self-consciousness to S.C.C.
- Synchronization of infracortical vibrations with S.C.C.

Table 14

## **II. THE PHASE OF SURRENDER**

The secret of renunciation is renunciation of self-consciousness to universal consciousness. The ego of a doer, the ego of being an instrument, the ego of becoming a self-consecrator is to be opened into the 'DIVINE'. The ego of an enjoyer and supporter, that of a consenter and witness, is to be surrendered to the omnipotent S.C.C. Until there is an unconditional, active and total self-opening, flow from above is not possible. It is the flow from above which brings something 'positive'.

### **Method**

Two consciousness(es) exist. A profound 'self-consciousness' and the 'universal consciousness'. Small 'i' and the universal 'I'. There is a whirling interaction between the two.

Beyond my biological realm  
Unperturbed in cosmic beam  
I must merge with the universal 'I'.

The method of their merger is '*devotion and love*'

Oh! supracortical consciousness! I am in love with you  
Frozen in your touch, sight, smell, sound and hue.  
I want to offer you what all I have.  
Manifest fast and me you save,

With your inexhaustible pleasure, knowledge and bliss,  
To bring amongst all, an ever-cooling peace.  
I remain yours, for ever, from now  
No revolt nor reserve, nor why nor how.

Lead me the way you like  
In all my fall or plateau or spike.  
I empty my 'self' in your cosmos.  
I am the instrument, you remain Boss.

Aim of love is to achieve oneness with that of beloved.

All I have given to you,  
Nothing is left with me.  
Everything of mine is now,  
Drowned in your sea.

You are the owner of my 'self',  
Desperately hoping for your help.  
No ego can now be traced -  
Waiting anxiously for your grace.  
Do whatever way you like  
Rise or fall or plateau or spike.  
I am assured of your eternal bliss  
Nothing can disturb my shining peace.  
Trouble or help, sorrow or joy  
All are same, your special envoy.  
Pain or pleasure, rise or fall,  
All I know, your graceful call.  
Light and dark, eve or morn  
All to me, your silent horn,  
Only to make me aware of you  
Pure and serene, like the devoted few.  
My movement now is steady and slow  
Conceived totally, the blissful flow.  
Fighting fronts are calm and quiet  
Dazzling colours are replaced white.  
I am for you, and you are for me  
All are ours, happen to be!  
We are for them, they are for us.  
Lost in them, that crowd of mass.  
I see my 'self', so content and rich  
Startless, endless, graceful bliss.

Dualism, qualified monism and pure monism continue to recur.

When I' am not here  
Who says, 'You are the Being'?  
If you aren't there  
What for I am Becoming!

I love you  
as 'such'!  
You love me  
Very much.

You are beautiful,  
I so say,  
Because of you only,  
My mind is gay.

Not together,  
Not alone.  
Not two  
Not one.

You and me  
Never die,  
Glued to one  
Knotty tie.

You in me,  
Me in you.  
Two in one  
One in two.

The small 'i' prostrates in front of universal 'I'.

Finally: I have reached you, with all I have.  
Truth and false, all wins and lapse.  
My ambition, desire, all promise, all vow,  
I leave to you, for ever, from now.  
No revolt, no reserve, no expect, no fear.  
No want, no wish, my dearest dear,  
Cherish or relish or rapture or bliss  
Divine touch, or embrace or kiss  
Oh my heart! my love, my nearest deity!  
Drop by drop, to you I empty.  
All remain yours, nothing I know  
My absence, my presence, is all your show.

I am the drop, He is the ocean. I am the ray, He is the sun. I am in Him, He is in me. Now dismiss essentialism. LOVE+DOUBT=DEATH. LOVE IS LIFE. 100% LOVE means 100% LIFE.

### Neurology

The 'causal' body operates in modular fashion. The modular arrangement of the cortical neurons fades away in the upper layers. Small 'i' is born beyond the causal body, out of faith and devotion. The top layer is the secret and sacred palace of love play of small 'i' and universal 'I'.

*Prolonged such love-affair delineates modules out of upper three layers. The synchronization of upper modules with those of causal body results in Divine manifestation.*

### The 'Future' Physics in Surrender

In spite of wide claim, even the subatomic physics has not objectively touched consciousness. The reason being the existence of so many constants, primary or derived (e.g. velocity of light, gravitational constant, mass and charge of electron or Eddington's number), around which all statistical probabilities, mathematical equation and expressions

make the physics revolve. The most formidable one is Planck's constant (Energy=Planck's constant x frequency: Planck's constant= $6.634 \times 10^{-34}$  Joules. Sec.) The maximum accuracy with which one can measure any event or action in this universe is determined by Planck's constant.

These constants are formidable barriers to penetrate into consciousness from the stream of physics. These man-made constants have, however, supported the science to investigate the Nature (not consciousness) for centuries. The time has come to transcend these constants at the brim of Consciousness-Nature interaction. Consciousness is the only constant in this universe. No other constant, however formidable it may be, can stand in its way.

In the 'future' physics of surrender, all constants of physics are transcended (rather superseded and conserved). The last three are Gravitational constant, velocity of light and Planck's constant. Consciousness is the only constant then. All other 'assumed' constants are flux in the Nature.

When one transcends one's own nature, gravitational constant is superseded (negated and conserved). To supersede the Biological Integration Centre, one transcends the velocity of light (cf: 'Tachyon' of Prof. E.C.G. Sudersan). Planck's constant is made zero<sup>†</sup> when cosmic integration centre is transcended.

When one removes the hidden variables of Quantum mechanics, one gets the holoarchy and the holomovement, the implicate order of David Bohm. In a thermodynamically 'open' system, kept far away from equilibrium, one observes self-organising consistency, coherence in 'The Living state' (Ilya Prigogine, R.K. Mishra). New dimensions in quantum mechanical tunneling are also being opened up near the brim of consciousness (D.K. Roy). All of those, who are working in this leading edge of science, have got a distinct hint of consciousness. The science of consciousness starts from the origin of these streams-the Cosmic Integration centre, where from another theory emerges- The Grace is *Physical*, (Mukhopadhyay, A.K.). This is where one transcends the last constant of physics, the Planck's constant. The flow is instantaneous. The observer, the process of observation and the observed are one. Only consciousness, only consciousness, Consciousness only; three purushas are one.

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<sup>†</sup> Could any one account for what all will happen if Planck's constant is replaced by zero in all mathematical expressions of physics.

If one looks back at the context of discovery of Planck's constant and the extraordinary statement of Planck himself, "If this assumption is correct, then the theory agrees with the experiment.....continuous emission of energy is faulty..... It is discontinuous emission", one sees that whole thing is based on an assumption - an extraordinary assumption by an extraordinary genius only. This is followed by development of uncertainty principle. This concept of uncertainty disturbed Einstein so much ( $h/t=mc^2$ ), that his imperishable faith was shaken and the comment came out, "God does not play dice with this universe..... He cannot leave this universe on some statistical probabilities". On the other hand, this assumption has carried the whole science, through quantum mechanics, near the brim of consciousness, probably Einstein's God.

## **Achievement**

Permanent unification of 'supracortical consciousness' with the 'self-consciousness' gives birth to a state described as JIVANMUKTA (Living in free state).

Within my 'self'  
He sows seed,  
He takes care of  
All I need.

## **Feelings**

Vertical consciousness merges with global infinite consciousness. The transcendental cosmic consciousness emanates from the purest self-consciousness.

Do you know, who am I?  
I am He, whom the sun cannot dry!

The fire cannot burn,  
Nor a sword ever churn;

Never was I born.  
Never do I die.

Do you want to know more about Me?  
The omnipresent, omniscient, omnipotent 'He'.

The absolute truth, perfect and pure  
The infinite pleasure, whom none can injure,

The eternal, the immortal,  
I am ever free.

Still unsatisfied? Do you want to know much more?  
Do I live in the wicked, sordid and in the sore?

Then, let it be known to all-  
I vibrate in every great and small,

The holy or sinner, the heaven and hell,  
I vibrate in all, in unparallel spell.

From the chains and bonds, make yourself free,  
Turn your face, just towards Me

You get the touch of infinite 'I'.  
The inexhaustible fountain none can dry!

Everything struggles for metamorphosis into 'Me'.  
Unified oneness, to realise and see.

I manifest as 'LOVE', the captivating peace,  
The absolute Existence, Knowledge and the Bliss.

I am in all and all are in Me  
I am in those, what you can't see.

The all-pervading 'I', never should you miss,  
I manifest in 'Love', the captivating peace.

### III THE PHASE OF DESCENT

Following unification of self-consciousness and universal consciousness, synchronization of lower consciousness(es) also takes place. This is called *descent of the Divine*. The quantity of descent is directly proportional to the degree of self-opening or surrender. The quality of descent depends on the infrastructure of the neural machinery.

#### The secret

Immediately following a supracortical opening of the human psyche, not only one finds a surge of creative activity (primarily an 'upset' in the cortex), but there also comes a purge of Nature (cortico-limbico-cortical circuits). Along with the celestial experiences, neither world is also exposed.† The outburst depends on the aspirant's principal trait of nature (see pages 54-55). A lovable fellow exhibits a sacrificial exuberance. There may be a terrific upsurge of enthusiasm in lively personality. An all-devouring ego of an egoist may seem unpleasant to many around. Boisterous sexual excitement is not at all unusual. Sometimes a soul-dampening depression clouds the consciousness. The experienced says that there is no reason for bewilderment. This happens in the initial phase of transformation, as a process of cleansing, wiping out of obstructive neuronal currents. In solitude, withdraw your self-consciousness from this brain-storm. Use the witness-consciousness. With an unswerving devotion, seek refuge in the suzerainty of S.C.C. With time, transformation will take its own course.

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† Certainly it is not a catastrophe.

cf: catastrophe Theory, in physics, of Rene Thom—"unexpected discontinuous effects occurring as epiphenomenon produced by continuous causes".

An outline is given below:-

### **The outline of changes during the phase of Descent**

#### **Feeling-**

The feelings of descent are always smooth and cool (cf: feelings during ascent are often violent). Absolute knowledge, absolute existence, absolute bliss, calmness, coolness, a harmony and perfect perfectness.

#### **Personification-**

1. Ascetic restraint.
2. The personality beyond the polar opposites.
3. Personified love. A rare combination of love dominated ego. This gives an immense strength for forgiveness.
4. Elevating attitude, life-infusing ambrosia, and magnetic personality.
5. Inexhaustibility within cortical limits.

#### **Cortical consciousness-**

1. Unification of consciousness: I am 'He', I am everything. I serve only 'Me' in others. I love, I care for, I share with, I sacrifice for only 'Me'. My "brain is a hologram, interpreting a holographic universe".
2. Creative activities: I create for 'Me', I explore, I discover 'Me'. This 'Me' is everywhere. The creativity does not stop in mere illumination. It continues till there is revelation.

#### **Limbic system consciousness-**

1. No motivation for sensual pleasure.
2. All motivations are directed to elevate everything in supracortical direction.
3. S.C.C. biologized at the level of limbic nuclei is ANANDA. (See chapter eleven).

#### **Autonomic activities-**

Apneustic-pneumotaxic discharges become regular. Rhythms of heart and blood pressure become smooth. Endocrine secretion is found just.

Centralisation of the autonomic nervous system takes place (See chapter seven).

#### **Somatomotor activities-**

Pyramidal and extrapyramidal systems become proportionate and balanced. A fine pyramidal system on a robust extrapyramidal base is somatomotor characteristic of a Yogi.

Spontaneous assumption of various ‘Yogic’ postures blended with exudates of love makes the appearance, Divine. The speech radiates a Divine vibration.

### **Somatosensory system-**

With prolonged stay in supracortical consciousness, the sensory cortex, sensory nerves and the somatosensory receptors undergo a slow transformation. Clairvoyance and clairaudience are two indications of such change. The play ground of consciousness is spread over the whole field of biology.

### **New Neuronal Pathways**

1. When the self-consciousness is elevated to the highest possible height, numerous connections are formed from the cortex to the concerned infracortical structures. The corticolimbic control becomes more assertive.
2. The ‘triune-brain’, converge in the striatum. The limbico-strial connections are very few in average human brain. Only linkages so far known are through nucleus accumbens and the caudate nucleus. With further neocortical growth, the limbico-strial connections are expected to grow more generous.
3. Numerous links between the pyramidal and extrapyramidal systems develop. Robustness of extrapyramidal system and finer modality of pyramidal system are made balanced and proportionate.
4. In an average human brain, the cerebral cortex is mostly the ‘perceiver’, not the ‘receptor’.

*Conversion of the cerebral cortex into a ‘receptor’, inverts the whole neuraxial tree, with its roots in the eternity (universe) and the branches (peripheral nerves) in the human body. (See chapter seven).*

### *The Process of Transformation*

- |  |                            |
|--|----------------------------|
| 1. There is natural selection conservative | 4. Radical as well as      |
| 2. Slow process                            | 5. Occurrence of variation |
| 3. Spiral course                           | 6. Biologically purposeful |

Table 15

## METHODOLOGICAL VARIATION

The ascent through segmental nervous system, brainstem, limbic brain and cerebral cortex has been described. The interrelationship of faith, devotion, surrender and love has been narrated. That quintessence of existence is 'self-consciousness' has been stated. The self-consciousness is also said to be the last obstacle for 'self' revelation. The principle of all transformation is to merge 'self-consciousness' into 'universal consciousness' so that manifestation of the latter continues through infrastructure of neuraxis. Methodological variation exists because of difference in evolutionary stations of 'self-consciousness' in different individuals and the difference in co-operation or resistance provided by one's 'Nature'. There are people whose self-consciousness is equivalent to 'god-consciousness' and throughout their life, they experience a cool descent of the Divine. Individuals are also found who are to start from the very lower level. During ascension, recurrent violence is quite common in their way. Most of the people pass through several cycles of ascension and descent and eventually become successful. Finally, they experience the inversion of neuraxial tree with its roots above in the eternity and branches down in the human body.

## MECHANISM OF TRANSFORMATION

Each point of the body is topographically represented in the nervous system. There are groups of neurons in the cerebral cortex responsible for function of a tissue or an organ. The function of any cell is resultant of the outputs of its genetic machinery. The cortical neurons discharge their function in following three ways:-

1. Neuronal conditioning (through somatic nervous system).
2. Neuro-endocrine conditioning (Limbic system-hypothalamus-endocrine orchestra).
3. Genetic conditioning: The genetic machinery of a peripheral cell is controlled by genetic machinery of representative cortical neurons.

When supracortical consciousness gets a complete hold on the cerebral cortex, the nervous system becomes an instrument in the hands of 'supracortical consciousness'. Supracortical consciousness is love. Love does miracle at the molecular level. It turns on the gene. In a prolonged love affair, there is genetic re-assortment, when unwanted genes are 'rejected', some are 'sublimated' and favourable ones are 'reinforced'. These three words need to be translated in language of genetics. Biochemistry of love runs parallel to biochemical machinery of gene expression.

## CLASSIFICATION OF THE PEOPLE, IN PATHWAYS OF TRANSFORMATION

1. In the phase of ascent : Undergoing transformation.
2. Surrendered : Transformed.
3. During descent : Transformer.

4. The fourth group: The maker of transformer. This type of people is seen in Himalayan caves, alive for 400-500 years or even more. They can 'absorb' 'consciousness' of another person, elevate 'that' within him so that the second person is not only transformed but is also passively converted into a 'transformer'. This procedure is often applied in transfer of spiritual power from one Sadguru to next Sadguru. (see chapter nine).

Long before the idea of organ transplantation (example of brain transplantation is there in Hindu Mythology; Lord Ganesh had been transplanted with an elephant's head) penetrated the modern science, the Indian Sadguru had done 'soul' transplantation during transfer of spiritual power. The galaxy of Guru following Guru Nanak historically exemplifies the phenomenon. Examples are there many more. The interested persons may investigate and explore.

### **'EVOLUTION' OF SUPRACORTICAL BEING OUT OF CORTICAL BEING**

The idea of 'evolution' of a new race, named 'supracortical being' is strange to many. But it was never, and still not to India and Indians. They might not have heard even the name of Charles Darwin or Lamarck, John C. Eccles or Ken Wilber, but to a farmer or a shopkeeper in India, to a scientist or a philosopher of India, to a materialist or a politician of India, this transformation is thought to be an inevitable eventuality. In the recent past, they have imbibed, ad libitum, the ambrosial teachings of Guru Nanak, Sri Ramakrishna, Swami Vivekananda, Sri Aurobindo, Swami Pranabananda. Swami Swarupananda has launched the 'man'-making (Super human) movement with a typhoonic spirit. Indians are now full and turgid in their selves.

#### *'Evolution' of supracortical being*

1. Darwinian, with natural selection : The phase of Ascent.
2. 'Darwinian', without natural selection : The phase of vacuum and surrender.  
(by "conscious critical rejection")
3. Lamarckian, induction by S.C.C. : The phase of Descent.

Darwinian evolution with its chance, necessity, struggle and natural selection lands one in vacuum. Continued 'Darwinian evolution', without natural selection, by 'conscious critical rejection' helps one to cross the vacuum. The 'cultural evolution', the evolution in the world three of Karl. R. Popper and John C. Eccles, several ascension and descent of the soul-current from the brainstem to the third cortical layer are examples of such endeavour. Following that, the induction effect of S.C.C. is consciously felt. Here the progress is of Lamarckian type. Due to the induction effect of S.C.C., the remarkable feature in this phase is replacement of 'critical rejection' by 'unconditional active acceptance'. The critical intellect of downstairs modules accepts the S.C.C. with faith, devotion and love.

It is the Self-consciousness which evolves and then transforms in the human brain. Due to its inherent aspiration to surpass the biological beyond, it plays love with cosmic

consciousness. In this play, they (self-consciousness and cosmic consciousness) do 'interact' (cf: Dualistic interactionism of Sir John C Eccles and Karl Popper). According to many, who are identifying their self-consciousness in cosmic consciousness since early childhood, this is an integrated non-dualistic evolution of consciousness, (cf: Integrated nondualistic evolutionary theory of Prof. T. Desiraju in Frontiers in physiological research edited by D.G. Garlick and P.I. Korner, pp 325-333, Australian Academy of sciences, Canberra, 1984). Those who are born with and brought up in the concept of holographic paradigm, agree with Professors Karl Pribram and David Bohm, "Brain is a hologram, interpreting a holographic universe". "It is not static. It is all holomovement".

The scheme of transformation narrated here has three phases. Each phase has their respective Do's and Don'ts. To identify the phase one is passing through, is most important to resolve the apparent contradictions between advices of different Seers. Identification of one's own phase is also a prerequisite for enjoyment of the pleasure during phase transition. Every phase is unique. As a whole it is unique. In every phase the holistic reflection is inherent. The whole is implied in every phase in structure and dynamicity. Such a process, if required to be described by an adjective, could be designated by a beautiful Sanskrit word, 'Akhandā', where every piece ('khandā') is unique and as a whole, it is unique. In every phase, immanent is the whole in structure as well as in dynamicity. No other word in the world of vocabulary of language can replace the word, Akhandā. Integration, unification, nondualism, monism, wholeness are not synonym for this. Though as independent phase, the process has been glittering in the Western part of the Globe, yet as a whole, the narrated scheme of transformation is prevalent in India and has been thought, worked out and exemplified by many Indians. Hereafter, the scheme could be designated the Akhandā Scheme of Transformation.

All Khandas are  
Really Akhandā,  
The essence of this  
Brahmānda.

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# **NEUROSCIENCE**

## SIX PARADOXES OF NEUROSCIENCE

- |  |                         |   |
|--|-------------------------|---|
| 1. Dominance, Lateralisation,<br>Asymmetries<br>of<br>Two cerebral hemispheres             | &<br><br>Chapter Seven  | Complementation, Wholeness,<br>Overall symmetry<br>of<br>The Brain        |
| 2. Morphological Layering<br>and<br>Functional stratification<br>of<br>The cerebral cortex | &<br><br>Chapter Eight  | The Modular operons<br>and<br>Modus operandi<br>of<br>The cerebral cortex |
| 3. Consciousness<br>inside<br>The Brain  | &<br><br>Chapter Nine   | Consciousness<br>outside<br>The Brain                                     |
| 4. How new are<br>Neocortical cells?<br><br>Are<br>They getting old?                       | &<br><br>Chapter Ten    | Is there<br>ever-renewal<br>of<br>Neocortical cells?                      |
| 5. Pleasure  | &<br><br>Chapter Eleven | Ananda  |
|  | Chapter Twelve          |   |

Deals with the expressive routes of the Limbic System.

6. The first chapter in Neuropsychology section  
Discusses  
the paradox of Nature and Character.

# Inverted Neuraxis

## USUAL PHENOMENON

Three distinct but interrelated sensory systems (Leminiscal, spinothalamic and visceral) and three similar motor systems (Manipulative/pyramidal; expressive/extrapyramidal; and visceral), crowned by a huge cerebral cortex constitute the conventional nervous system. The chemical message in sensory system flows in ascending (centripetal) direction and that in motor pathways, in a downward (centrifugal) direction. Only a small part of the cerebral cortex is related to sensorimotor function. About eighty percent of it is responsible for association and biological integration. In an average human brain, the cerebral cortex, 'perceives' stimuli from endorgan receptors situated at the periphery, recognises the pattern in relation to stored events in cortico-hippocampal circuits and integrates those biologically to decide for a definite action. The individual becomes 'conscious' of the whole phenomenon in his brainstem level (awake, alert, oriented), limbic level (motivated to have pleasure and avoid the unpleasant) and cortical level (self-consciousness and creation).

## CONCEPT OF INVERSION

The concept of inversion, evolves from 'biologization' of 'supracortical consciousness' by the cortical neurons. Conscious malleability of the cortex to supracortical consciousness is the essence of this concept. The cerebral cortex here 'perceives' little from below and 'receives', ad libitum, from 'above'. Prolonged such interaction results in functional inversion of the whole neuraxis and establishment of an invisible synapse† between the cosmic consciousness and the neocortex.

## IMPORTANT QUESTIONS

1. The neocortical cells are receptors. Do they have the properties of a receptor? Could the centre have the properties of the periphery and the periphery, the properties of the centre? Doesn't it dissolve the conventional concept of centralization and decentralization in the nervous system?
2. What do these receptors receive? Philosophically it is Grace. Scientifically, the field is totally unexplored.
3. When does it receive? Is it all-time phenomenon or does it happen only under specific circumstances? Does it need a conventional electrocerebral silence or could it manifest only by synchronization of the upstairs and downstairs neurons of the cerebral cortex?

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† The word, first used by Sherrington in Neurophysiology.

4. How does it receive? Photon-retina interaction, we know. Piezo-electric current in organ of Corti, we are taught. Grace-neocortical interaction is a completely virgin affair.
5. Does this interaction result from a conscious effort or is it automatic? How does conscious 'self' enjoy this autonomism?

Following section will do a skeletal survey of the inverted neuraxis, discuss the stratified stabilities, integration and autonomism of the nervous system, explore its behavioural aspect from anthropological point of view and speculate on the mechanism of hemispherical equanimity, thought to be absolutely essential for elevating oneself to the 'state of Grace', Subsequent chapters attempt to answer the rest of the questions.

### **ANATOMY OF INVERTED NEURAXIS**

1. The cerebral cortex becomes the receptor (not merely a perceiver from peripheral endorgans) of S.C.C.
2. Neuronal plasticity is taken to task in this cortical dynamics. Cell migration, dendritic arborization, synaptogenesis, glial proliferation continue along with regressive events like selective neuronal death, process - and synaptic-elimination. Neuronal modules are delineated in upper layers of cerebral cortex. With time, with effort there comes the synchronization of upstairs modules with those of causal body.
3. Cortical control of cortico-amygdalii and corticoseptal pathways is strengthened.
4. Numerous limbicostrial pathways get established for expression of feelings, through somatic attitude and posture.
5. Whether the CSF dynamics in such conditions is altered or not is interesting to find out, particularly in the region of central canal of spinal cord.

### **PHYSIOLOGY OF INVERTED NEURAXIS**

1. The supreme cortical integration centre (vide BIC, page 55-57) is controlled 'Supracortically'.
2. From predominant unidirectional flow of chemical messages and trophic substances in the neurons, widespread bidirectional flow is established.

3. The neuraxis abounds in feed-forward loops. A parallel development of feed-forward control takes place in gene control mechanism, endocrine control system, and in the metabolic and biochemical pathways.
4. Nonsensory experience of the reality, starts.

### **AWAKENING OF THE INTEGRATION CENTRES IN INVERTED NEURAXIS**

From single neuron to the whole nervous system, there are stratified stabilities. Functional ensembling is achieved by higher stratum being built upon a lower relatively 'more' stable stratum. This stratification is never mechanistic. In fact, on mechanistic model can explain or bind biological phenomenon. As soon as the customary automatism, the predictable behaviour in a mechanistic model, fails to provide satisfaction, the animal comes out of it with aspiration for something beyond. This aspiration is driving consciousness of animal evolution. When supracortical consciousness starts getting biologized, one becomes aware of the existence of the integration centres in the neuraxis.

Three such integration centres are there in the human brain for three different but interrelated purposes. The supreme one is the biological integration centre (BIC) which integrates five vital phenomena in biology (page 55-57). The cortico-visceral integration is achieved through hypothalamus (preoptic hypothalamus). The integration centre for sensorimotor system is situated in the periaqueductal grey-white-reticular-core in the cephalic brainstem. (1,2,3). This integration centre is responsible for centripetal and centrifugal (spinal) arousal, alertness, attention and are linked with mechanism of learning and memory, both at the neural/synaptic level of segmental neuraxis and the limbico-cortical level of global neuraxis (3). As more and more S.C.C. is biologized, one becomes aware of even the spinal integration centres.

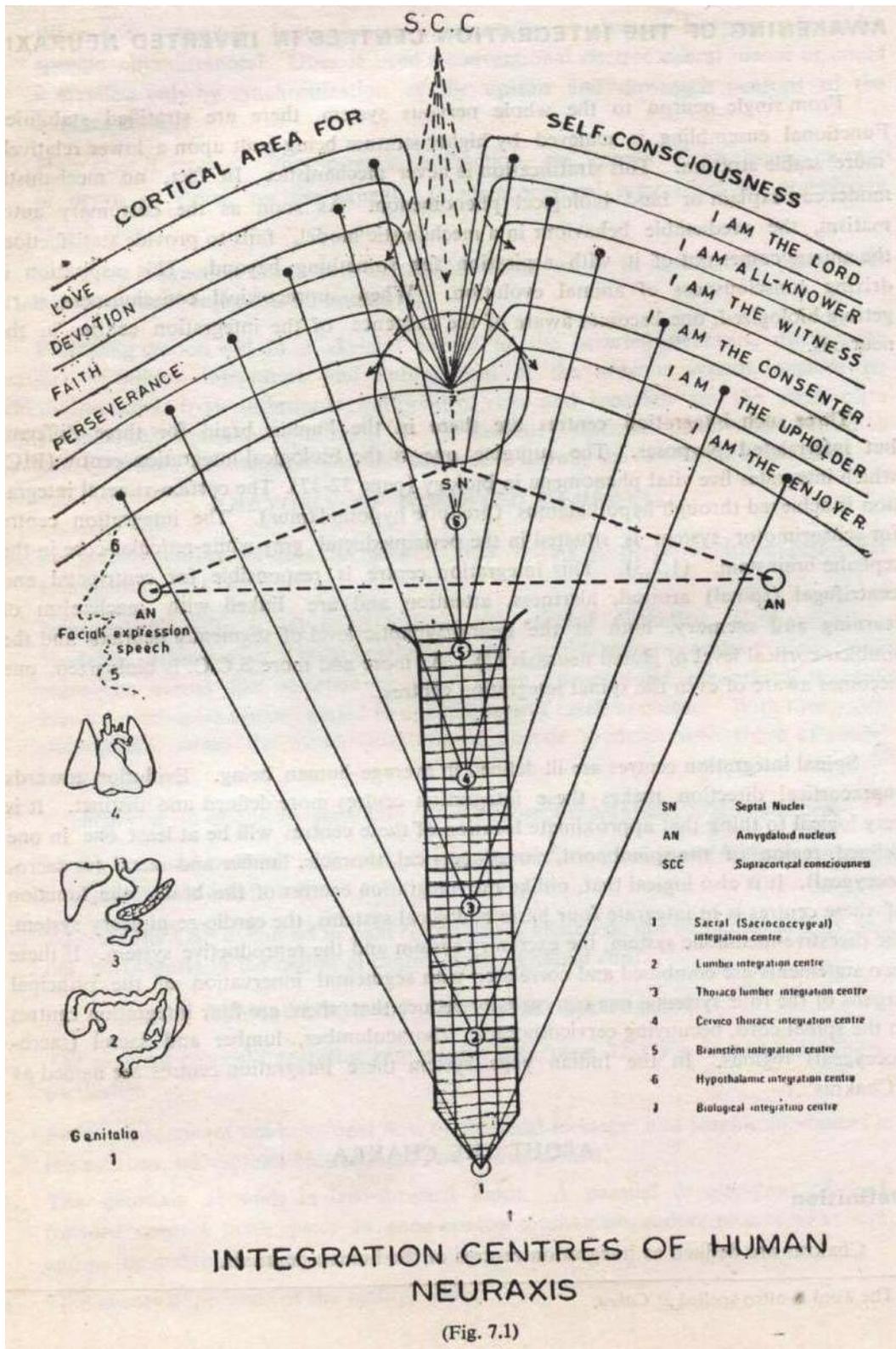
Spinal integration centres are ill-defined in average human being. Evolution towards supracortical direction makes these integration centres more defined and distinct. It is very logical to think that approximate location of these centres will be at least one in one defined region of the spinal cord, namely cervical, thoracic, lumber and sacral (or sacrococcygeal). It is also logical that, unlike the integration centres of the brain the function of these centres is to integrate four basic biological systems, the cardio-respiratory system, the digestive-metabolic system, the excretory system and the reproductive system. If these two statements are combined and correlated with segmental innervations of the principal organs of the four systems, one can grossly deduce that there are four integration centres in the spinal cord, occupying cervicothoracic, thoracolumber, lumber and sacral (sacrococcygeal) regions. In the Indian yoga system these integration centres are named as "Chakras".†

### **ABOUT THE CHAKRA**

#### **Definition**

Chakras are defined as integration centres of the human neuraxis.

† The word is often spelled as Cakra.



## **Number, situation and nomenclature (See Fig.7.1 and Table 17)**

They are seven in number, four in the spinal cord and three in the brain. In the brain, the centres are cortical (biological integration centre), hypothalamic (preoptic hypothalamus), and brainstem (brainstem integration centre). In the spinal cord, according to situation, they could be named cervico-thoracic integration centre, thoraco-lumber integration centre, lumber integration centre and sacral/sacrococcygeal integration centre. According to Indian yoga system these seven centres, from above downwards are Sahasrar, Ajnachakra, Vishudhva, Anahata, Manipura, Svadhistana and Muladhara respectively.

## **Neurology of the Chakras**

The central nervous system has an axial organisation. All integration centres are supposed to be developmentally related to the central grey core of the embryonal neuraxis.

Hypothalamic integration centre (Ajna Chakra) is in direct continuity with the central reticular core through lamina terminalis.

Other chakras also have developed out of, and are situated in the central reticular core of the neuraxis.

In this stage, the exact relationship of BIC with the central reticular core of neuraxis is not known.

The neural pathways in the central reticular core of neuraxis are complicated† and ill-defined, consist of ascending and descending fibres, carry both somatic and visceral messages, represent ipsilateral and contralateral fields (4). Moreover, the neurons in the central grey core are peculiar in the sense that they show spontaneous activity, rhythmicity and tidal fluctuation (3). They radiate their influences outward to the orchestrated entire panoply of relatively stable neuronal organisation that represent sensory and motor mechanisms (3).

## **Five important tracts**

There are five longitudinally running fibre tracts which connect spinal integration centres with the brainstem integration centre. There is one median (posterior intersegmental tract, in the spinal cord), two medial longitudinal fascicule (The interstitiospinal tract and anterior intersegmental tracts in the spinal cord), and two dorsal longitudinal fascicule (lateral intersegmental tracts in the spinal cord). Median one is

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† More information about this integration centre could be obtained by neural transplantation experiment

interrupted in foramen of Magendie. Cranially it extends through dorsal wall of third ventricle, pineal gland, undersurface of corpus callosum, anterior commissure, lamina terminalis and preoptic hypothalamus. The medial and dorsal longitudinal fasciculi are lost in the periventricular reticular core of diencephalon. (for example, in interstitial nucleus of Cajal, in nuclei of posterior commissure) (4). The five deeply seated Nadis (nerve tract) of Indian Yoga system are worth mentioning in this context. They are, one Brahma Nadi (?the median), two Chitra Nadis (?the medial longitudinal fasciculi) and two Bajra Nadis (?the dorsal longitudinal fasciculi). This correlation opens up a new avenue for extensive research to find out the real truth.

### **Neurogeometry of the Chakras:**

These integration centres may not necessarily have a definite geometric shape. They are, mostly, diffusely placed at different level of neuraxis with varying vertical and transverse extensions. In the spinal cord, these central reticular core assumes strictly transverse disposition (4). Indian yogis have 'imagined' them as lotus. They are inverted in average human being and assume the correct configuration in inverted neuraxis. The numbers of petals in the lotuses, from below upwards, are four, six, ten, twelve, sixteen, one and thousand respectively. The neurological meaning of this lotus configuration needs an intensive investigation. Is it true that forty-nine (4+6+10+12+16+1) cortical tracts are linked with these integration centres as forty-nine nerve currents of the human body, as described in Hindu yoga literature?

Does the number of petals correspond to the number of cortical connections controlling the integration centre or does it indicate the number of major branches of the plexus (eg, Muladhara chakra —Inferior hypogastric plexus its four branches middle → rectal, vesicle, prostatic/bulbourethral, cavernous), the functional outpost of its concern?

Various Tantras provide an allegorical description of these chakras. In every chakra, two deities (left-and right-hemisphere consciousness), equipped with certain kind and number of weapons (kind and number of reflex actions executed by the concerned centre), riding an animal (the nature - regional nerve circuits) are being worshiped (the process of synchronization of regional, self-conscious and supracortical vibrations) by the Sadhaka (the Aspirant).

### **Functions of these Chakras**

BIC integrates love, sex, ego, life and death. BIC is also responsible for biologization of S.C.C. The hypothalamic integration centre integrates visceral system with motivation and higher cortical phenomena. The brainstem integration centre is responsible for sensorimotor integration, centripetal and centrifugal (spinal) alerting, awakening and is also lined with learning and memory (3).

Spinal integration centres, in general, do somatovisceral integration. Sacro- and sacrococcygeal reticular core is responsible for somatosexual integration. The lumbar

integration centre integrates somatic activities with proper functioning of excretory organs (large intestine, kidney). The thoracolumber centres integrates digestion, absorption and metabolism (stomach, small intestine, liver, pancreas) with corresponding somatic well-being. The Anahata or cervicothoracic centre is responsible for somatic adaptation in accordance with cardio-respiratory activity and vice versa.

Seven chakras also have been linked in Indian philosophy with seven major endocrine glands namely, Pineal, Pituitary, Thymus, Thyroid, Adrenal, Pancreatic islets and the Gonads. The interested scientists may start work on this line.

*Integration Centres of Human Neuraxis*

Integration centre In the neuraxis	Synonymous Chakra	Functions	Supracortical activities.
7. BIC	Sahasrar	Integration of love sex, ego, life and death.	Biologization of S.C.C.
6. Hypothalamic integration centre.	Ajnachakra	Integrates visceral expression with motivation and on this higher cortical functions.	When S.C.C. is concentrated centre, there is total control of the limbic system(5)
5. Brainstem integration centre.	Vishudhva	Sensorimotor integration. Both centripetal and centrifugal speech, alerting, arousal & awakening.	Externalisation of supracortical current through facial expression.
4. Cervico-thoracic integration centre.	Anahata	Integration of somatic system with cardio- respiratory function.	Expression of love, and cortical calmness in adversities.
3. Thoraco-lumber integration centre.	Manipur	Integration of digestion absorption and metabolism	-

		with somatic system.	
2. Lumber integration centre.	Svadhistana	Integration of excretory function (kidney, large intestine) with the somatic well-being.	-
1. Sacral/Sacro Coccygeal integration Centre.	Muladhara	Somatosexual integration.	-

Table 17

### Awakening of the spinal chakras

One must be clear at the outset what one does mean by the term 'awakening'. It is a process which could be divided into four stages. First, there is centralisation of the autonomic nervous system. This is followed by a vague awareness of the existence of these chakras. As the awareness intensifies, these centres become distinct. Finally, when the area of self-consciousness activity penetrates in this system, there is total somatovisceral integration.

1. In an inverted neuraxis, there is centralisation of the sympathetic and parasympathetic systems. The central core integration centres of the spinal cord start commanding on the intermediate grey matter, (lateral grey horn), and the peripheral ganglia of the autonomic nervous system. The spirit behind this change is as such - you were completely autonomous before. From now onwards, you are autonomous under a central Government with little dominance but maximum complementation.
2. More the awareness grows more is the establishment of linkage of cortical area for self-consciousness with these centres of integration.
3. Gradually from ill-defined polysynaptic pathways, defined tracts are being mapped out. The integration centre takes shape of definite neurogeometric configuration.
4. Finally, volitional control of lower six integration centres by cortical area of self-consciousness is also possible.

But this is not the end. This is not our aim also! (see page 116).

### CORTICAL CONTROL OF THE INTEGRATION CENTRES IN INVERTED NEURAXIS

The cerebral cortex has been endowed with power of volition, observation, learning and commanding (5). Once the area of self-consciousness becomes aware of these centres, it observes their rhythm and erraticness. It learns and finally it commands. Following generalisation could be made.

1. The self-consciousness evolves from sixth layer to first layer of cerebral cortex (pp.77). Phylogenetically older layers command on the phylogenetically older integration centres. For example, somatosexual integration is mostly commanded by sixth layer and the hypothalamic integration centre by layer one. In fact, the volitional control of hypothalamic integration centre is possible only by those having a profound self-consciousness evolved to the most superficial layer of the cortex.
2. The cortical control mechanism initially involves an area and eventually evolves into a centre. The neuronal plasticity is taken to task in this cortical dynamics. The guidance of a profound supracortical consciousness is very helpful in this cortical dynamics.

## **UNIQUENESS OF THE PROPOSED SYSTEM OF TRANSFORMATION**

### **Difference from Tantra -**

The transformation in inverted neuraxis differs from the Tantric system in two ways. In Tantra, there is willed forceful ‘opening’ of integration centres from below upwards. In inverted neuraxis, the transformation of the integration centre happens as natural consequence of biologization of the supracortical consciousness. The awakening, here, is spontaneous and from above downwards.

### **Distinction from conventional yoga system -**

Traditional yoga system aims at gaining control over heart rate, respiration, hunger, thirst, sex, by a conscious will. Inverted neuraxis does not propound or fulfill that. We do not want to be miserable by becoming conscious of our oxyntic, intestinal or pancreatic secretion, neither do we want to be always aware of the calcium transfer in the transverse tubular system of cardiac sarcoplasm, nor do we like to remember always the dynamics of potassium and hydrogen ions in the distal tubules of kidney. We do not like to be disturbed all the time by remembering the act of respiration which once the animal, perhaps, had been (Schrodinger’s hypothesis). We also do not like to emancipate our everything into an uncertain void.

### **Our aim-**

Our aim is to transform our cortical system into a perfect autonomism† (This is LIBERATION), so that we may remain engaged in eternal love affair with supracortical consciousness.

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† The fun of this flawless automatism is the fact - the “Self” being actively conscious of it.

Cf: “The whole world is an automation..... The human body is no exception. It is an automation-except for its voluntary movement. Here is the only exception of the universe” - Descartes.

Beyond my biological realm-  
Unperturbed in cosmic beam,  
I must merge with the universal 'I'.

Not only that. Not at all satisfied with dwelling in the Divine. We cannot stop there.  
The Divine must manifest through us.

I manifest as 'Love', the captivating peace,  
Infinite Knowledge, Existence and the Bliss.

I am in all, all are in Me.  
I am in those which even none can see!

All-pervading 'I', never should you miss.  
I manifest in 'love', the captivating peace.

The supracortical consciousness brings perfection of every integration centre in inverted neuraxis and eventually makes them flawlessly autonomous. Even the highest, the biological integration centre of human brain, automatically translates the cosmic consciousness in biological behaviour. The supreme in the stratified stabilities of the human nervous system, is then pure and inexhaustible supracortical consciousness only.

This autonomism is supreme, flawless, integrated, total, biologically purposeful, the 'self' being aware of it. It should not be confused with almost total autonomism of newborn's nervous system (the infrastructure is far away from completion and the awareness of 'self' is yet to grow) or fragmented, non-integrated, purposeless automatism found in some neurological disorders.

### *Differential Diagnosis*

#### Physiological Automatism:

- Automatic conversion of 'explicit' memory into 'implicit' memory in course of time.
- Automatic purging of memory by non-self-conscious dreaming.

#### Neurological disorders with high level of Automatism:

- Somnambulism.
- Epilepsies. Focal or generalised non-integrated, transient, non-self-conscious, motor, psychomotor, sensory, psychosensory automatism.
- Hysterical automatism.
- Catatonia.

Table 18

## **SADGURU-THE SUPRACORTICAL AUTONOMY**

There are certain terms in Sanskrit literature which cannot be translated into English. CHETANA (Consciousness), SHRADHVA (Free will directed to self-emulation), PURUSHOTTAMA (Supracortical consciousness personified) and SADGURU (The supracortical autonomy) are four of this kind.

### **Definition:**

Sadguru is the living presence of supracortical consciousness, an autonomy of S.C.C., the Divine love personified in inexhaustible everness.

### **Differential diagnosis:**

1. Supracortical being.

An average human being is a cortical being. For most of the time, he is a limbic being or a brainstem being. He becomes cortical being particularly during stress or in certain special circumstances. Similarly a supracortical being may not necessarily stay permanently in S.C.C. He knows how to tap S.C.C. and in need, does that with infallible accuracy.

2. Purushottama.

Purushottama is who unified his/her biological consciousness, self-consciousness and supracortical consciousness. He is an everlasting ascension for the human soul. He lives in supracortical vibration.

3. Sadguru.

The supracortical consciousness lives in Him. He is in love with inexhaustible everness, a supracortical autonomy, the melting Purushottama.

## **BEHAVIOUR IN INVERTED NEURAXIS**

Almost all classical neurophysiological events and behaviours could be explained by certain biophysical principles, biochemical laws and biomathematical expressions. With inversion of neuraxis and biologization of cosmic consciousness, following fundamental changes in human behaviour occur.

1. The 'certainties' are replaced by 'probabilities' - An expression, characteristically seen in quantum physics. In classical physics, almost everything is certain.
2. The causal relationship of any two events is found to be mutual interdependence and complementation. The remote or nonlocal influences on any event are found to be stronger than local ones.

3. Instead of parts determining the whole, the whole determines the behaviour of the parts. Instead of means determining the goal, the goal chooses its means.

*Behavior in inverted neuraxis*

- Certainties are replaced by probabilities.
- Nonlocal influences are found more determinate than local ones.
- Instead of means determining the goal, the goal chooses its means.

Table 19

The cerebral neocortex has been acted upon by cosmic consciousness in every human being. In fact, whatever little love, sacrificial capabilities and altruism we possess, it is because of incessant effort of S.C.C. to manifest through the cortex in essence of biology. Human values have evolved out of interaction of the S.C.C. and the cerebral cortex. With inversion of neuraxis, the process of biologization is magnified several thousand fold. The person acts as a biological unit of manifestation for the cosmos. Sacrificial capability glorifies his/her ascetic restraint. He/She lives within a transparent serenity of LOVE, beyond the rotational symmetry of the polar opposites; the Cortical dominance (Yang) and the Limbic restraint (Yin).

**ANTHROPOLOGICAL BACKGROUND**

*Hard facts*

- The mammals rule the land.
- The cortical being rules the globe.
- The supracortical being is the Lord of the universe.

Table 20

The day, the cosmic consciousness could become successful to catch hold of some neocortical neurons, the animal started acting in the need of its fellow (love), even sometimes in cost of its own pleasure (limbic restraint). Though neocortex could be recognized in reptilian nervous system, it has tremendously overgrown other parts of the nervous system from mammals onward.

Protection, care and upbringing of the off spring are mammalian characteristic. It is from the mammals onward, the 'maternal instinct' is expressed in animal behaviour. The inversion of neuraxis has started there. One of the prime causes of evolutionary ascendancy of the *homo sapiens* over other mammals is reproductive restraint imposed by nature. The puberty is delayed more than a decade during which the growing brain can learn almost everything from its ancestors. In addition, the higher mammals and the man reproduce 'economically'. It is observed that extra time, needed for higher development before reproduction, pays off. The mammals, and the man in particular, rule the land.

*Evolutionary run from mammals to hominid*

THROUGH

- Process of encephalisation.
- Delayed onset of reproductive life.
- Preference of 'economic' to 'profligate' type of reproduction.
- Emergence of maternal instinct.

Table 21

Thanks to neocortical cells and S.C.C.

**Play of Adam and Eve:**

Reason (ADAM) is cortical, Feeling (EVE) is limbic. Feeling interacting with reason is experience (may it be cosmic! Or biological!). To be very gross, lateral amygdalii or the septal nuclei interact with the cortex to produce a pleasurable experience. Medial amygdalii and cortex interact to produce an unpleasant experience. The limbicostriatal flow expresses the experience in somatic posture and attitude; limbicohypothalamic current adjusts the visceral system. In reptilian brain, the neocortex has started riding over the limbic system and from mammals onward it has been continuously trying to influence and control the limbic system. The evolutionary origin of inverted neuraxis is there. In the human being, the reasons want to guide the feelings. Adam likes to draw Eve towards him.

*Evolutionary run of hominids towards human being.*

THROUGH

- Acquisition of self-consciousness,
- Integration of biological instincts.
- Cortical control over expressive route of limbic system.
- Conscious aspiration for something beyond.

Table 22

This is the God-head, also the secret of biological 'evolution' from 'cortical' man to a 'supracortical' being.

**Glorification of the Maternal Instinct:**

When the cortex overcomes the influences of limbic system, there is 'evolution'. The limbic system overpowers the cortex to cause 'conservation', and, in extreme, the 'involution'. The cortex overcomes and controls the limbic system, under guidance of a supracortical element. Biologization of Cosmic Consciousness in the neuraxis is the Descent of Divine in humanity.

*The supracortical beings own the universe.*

### BECAUSE

- Their self-consciousness merges into S.C.C.
- They continuously biologize the Cosmic Consciousness.
- Their ‘maternal instinct’ is transformed into Divine Motherhood.

### Table 23

Amongst the supracortical beings, limbic restraint reaches its peak. Adam is not overpowered by the doubts of Eve. Once in a while, Adam and Eve combine to have their ‘experiences’.† For rest of the time, the maternal instinct of higher mammals is glorified as divine motherhood of supracortical beings. The cingulate gyrus, the largest C-shaped gyrus of the brain, and the retrosplenial portion of the limbic cortex (responsible for maternal instincts) get a supracortical touch. In such supreme stage, ‘Every Woman of this world is, in reality, the Mother incarnated. (6).

### SUPRACORTICAL TRANSFORMATION

The true supracortical transformation takes place only after arrival of the Mother (6,7), the concept of universal motherhood is being biologized. Two distinct neurological phenomena proceed simultaneously, in the central grand road of this sojourn.

#### **A. Ascension of the ‘soul current’ beyond space time, & causation - The role of interhemispheric complementation**

Following the initial ‘supracortical opening’, the soul current experiences several ascension and descent through six layers of the cortical area of self-consciousness, before it gets a permanent abode beyond space time and causation.

#### *Neurophysiology of interhemispheric communication*

- There is provision for transfer of information through commissural system.
- Ideas, experiences and memories preserved in isolation in respective hemisphere.
- Only temporal lobe memory is transferred, through anterior commissure.
- Interhemispheric switch over of behaviour occurs at thalamic and brainstem level.

### Table 24

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† I like to share with Hegel that to supersede is at once to negate and to preserve. The transformation is radical as well as conservative. The interaction of neocortex and cosmic consciousness is a radical phenomenon. Its incorporation in the limbic system is conservative.

The question is in which hemisphere, all these businesses go on? The answer is, in both. The result of Roger Sperry's (8,9) split brain experiments have shown that consciousness is different in each hemisphere and such specialization is complementary to each other (8,9).

When the representational hemisphere (R), the nonverbal, non-mathematical hemisphere, the hemisphere which can synthesize a full circle from an arch, silently gets a supracortical vibration, something for which it had been yearning for years, there follows a cool experience in the neurological pleasure triangle. A marvelous vibration of love, a vibration which was hitherto unknown, a captivation which was never felt before! The love concretizes to devotion, and faith (descent from first layer to second and third layer). All information and only the temporal lobe memory are passed to categorical hemisphere through the commissural system. The categorical hemisphere (C) feels blessed. This information goes back to 'R'. The ideas and experiences, however, are preserved in isolation in respective hemisphere.

Then follows a strong resistance, a revolt from the downstairs neuronal modules of 'R'. On the background of this turbulence, its hitherto dormant self-consciousness is awakened and produces the strongest obstacle for further descent of S.C.C. The categorizing hemisphere (C) categorically asks for withdrawal of, or a sincere modulation of, the self-consciousness for further descent, but to no avail. 'Friend', 'you are trying to hurt the President's (self-consciousness) feelings' – is the message from R. Then follows a total upset in 'R', a complete 'unconcernedness'<sup>1</sup> to other's 'emotion', a U-turn in its behavioural pattern.

Thank God! The brainstem and thalamic mechanisms can switch over behaviour from one hemisphere to other. The message of behavioural upset in 'R' is transferred to 'C' through thalamus and brainstem. The categorical hemisphere gets the blow. For a moment, there is 'depression'.<sup>2</sup> Then the 'Atlas shrugs'. The disabilities are thrown out, the strong and virile stands erect, a steely determination of self-consciousness, with a swear to preserve the temporal lobe memory of S.C.C. in its entirety. The self-consciousness of categorical hemisphere plays pure mathematics with the cortical modules, sequentially analyzes the causes of resentment, thinks aloud, shows a profound verbal outburst, and leaves no stone unturned to rationalize the existing reality of S.C.C. It erodes the ribs and dissects through the layers of flesh.

The activity during this period, is so 'polar', 'reciprocal' and 'complementary' in two hemispheres that whenever there is unconcernedness<sup>1</sup> of the 'R', the siren rings from 'C'. In depression<sup>2</sup> and disability of 'C', there is provocation by temporal lobe memory, presented by 'R'. Whenever there is descent in 'R', there is ascent in 'C'.

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1. Unconcernedness to other's emotion is characteristic of lesion in representational hemisphere.

2. In lesion of categorical hemisphere, depression is one of the obvious manifestations.

The process might have ignored all existing norms, decency, learned behaviour! It does not matter. Several cycles of ascension and descent continue through malleable and non-malleable self-conscious modules of the respective hemisphere. Several times, during descent, the S.C.C. kisses the soul current (brainstem-cortical circuits). Many a times, during ascent, the soul current is elevated, from sixth layer to be first layer of cortex, along with self-consciousness, in the categorizing hemisphere. Wonderful is the cortical dynamics!

Meanwhile, the biological integration centre has been taking a shape. It evolves out of concerned areas, as a beauty, as a marvel. It watches the enduring ascent in categorical hemisphere and hears from him about the supracortical gift the representational hemisphere received. It picks up the ascending soul current and the elevated self-consciousness of categorizing hemisphere, and unites them with its Lord, the cosmic consciousness. This is the finest miracle of the world, immortalisation of the soul, unification of biological consciousness and self-consciousness with cosmic consciousness through BIC.

The story does not end there. There comes a decent in the categorizing hemisphere -the same sequence as was in 'R' but in a more widespread and profound way. There is a U-turn of behavioural pattern of 'C', a fall in the putrid indecorum. "Heaven or Hell, what does it matter", cried Charles Baudelaire, in the last lines of the *Le voyage*, "Let us plunge into depths. In the very pit of the unknown, we will find the new". The consciousness of 'C' plunges in the open drain, unutterably offensive† (the dormant animal feelings of diencephalon) and fetches the 'new', the bottom of the soul, at the level of brainstem. The categorical hemisphere becomes 'conscious' of the brainstem-cortical current, the soul, the Jivatman. The information is passed over to 'R' through brainstem and thalamic transfer mechanisms.

During descent in 'C', the 'R' opens its mouth. It becomes verbal, analytical, mathematical and finally categorical. No longer does it tolerate the slightest disharmony in the categorical hemisphere. The enduring truth elevates its self-consciousness beyond the sensorimotor world. It originates new faith, new devotion, new love, on the tombstone of the memories of its first experience. A new determinism helps it to cross the 'great void'. Thank God! The biological integration centre is well-formed now. It comes in rescue of the original 'R', temporarily turned into 'C'.

The BIC synchronizes the ascending and descending currents of 'C' and 'R' with cares and caution, provide them a permanent station beyond the sensorimotor world. The cunning dragons of the subconscious ocean, the mad cloud over the mountain of dendritic arborization, the hidden dynamites of self-consciousness underneath the third cortical layer, cannot touch them. They survive on love, devotion and faith.

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† "The beastly savage part of the soul"- Plato.

## **B. Hemispherical Equanimity and the Divine Motherhood**

In average human brain, there is hemispherical dominance. The concept of dominance is substituted by complementary specialization during inversion of neuraxis. The subtle meaning of huge decussation of fibres, non-unitary distribution of consciousness in two hemispheres, sex difference in the organisation of the brain becomes clearer.

The landmark of supracortical transformation is hemispherical equanimity. The apparent difference between 'Male' and 'Female' 'Yes' and 'No' analysis and synthesis, no longer exists. *She becomes categorical when He represents the eternity.*

The Divine Motherhood evolves. The cosmic consciousness diffuses, through BIC in all the layers of the cortex, in both the hemispheres of the brain. She (BIC) is wise and patient, beautiful and lovely, intolerant to erraticness and arrhythmia and is the goddess of perfection. The self-conscious modules of both hemispheres adore her (BIC).

What is she not! The self-consciousness wonders!

The first time I saw her,

She looked sovereign, vast, and white.  
Comprehending wisdom, unbound and quiet.  
All-surpassing majesty, greatness, a thrill  
Wide and unattached, benign tranquil.  
Impartial, patient, wonderfully calm,  
All did she know, hidden was none.  
I felt the gateway of supreme grandeur.  
Miraculous knowledge, delightful splendour.

I wanted to be close:

She lay in my heart, her magnetic touch  
A mysterious beauty, slowly she marched,  
Her divine sweetness, the intoxicating spell  
A harmony of rhythm, in my psychic bell.  
I saw her, above all hidden fantasies  
Unravelling the secret of mystic ecstasy.  
She offered me, her sweet embrace  
A marvel, a wonder, the captivating grace.  
With loveliness of her rhythm, my soul was sized.  
For ever, for her, it is an eternal liege.

I was not all prepared;

In presence of selfishness, hatred, mistrust,  
She decided to depart with a divine disgust  
I got the blow and pain over my heart  
Then tried utmost, to retain all parts.

She was very angry;

She was very angry with the Devil in me  
Harbored in the brain, which none can see.  
A tameless spirit, terrible was her face  
Destroyed she all, with vehement disgrace.  
Repetitive stroke and her frontal blow  
A divine violence, swift, not slow!  
Her assault was straight, a splendid power  
Passionate with will, her heavy love-shower.  
The victorious force, an all-conquering might  
She wanted to raise me, to the highest of all heights.

Finally she won;

When she owned me, the war is over -  
For finishing touch, ready were her measures.  
Solid and complete, I can see her map,  
Untired and scrupulous, she bridges all gaps.  
All trivial, little and small, become great with her touch,  
Ever-alert mentor, perfection she searches.  
She prefers to have an eternal toil  
For a perfect perfectness, in all turmoil.  
I can feel, her unfathomable bliss  
With her, in her, my eternal peace.

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# Manifestation of Supracortical Consciousness Through Cortical Activities

## ABSTRACT

When infracortical sources of vibration are quiet and there is conscious malleability of self-consciousness to universal consciousness, the inexhaustible S.C.C. manifests through cortical activities. The relationship between the cerebral cortex and the universal consciousness is that of a lover and the beloved. During their love play, biologization of universal consciousness takes place, layer by layer. From superficial stratum to deeper layers in the cerebral cortex, the manifestations are 'ordinary', 'deep'/ 'philosophical', 'illuminated', 'intuitive', and 'revealing'. In the ecstatic phase of their love, outward creation stops. The whole depth of cerebral cortex is seized in cosmic consciousness and the person becomes a block of living bliss.

## INTRODUCTION

The universal consciousness acts through cerebral cortex as S.C.C. Characteristic of S.C.C. is its inexhaustibility. Manifestation of S.C.C. is love, the sign of which is sacrifice, to achieve oneness with the beloved. With tranquility of infracortical sources of vibration, neocortical neurons endeavour to achieve oneness with the cosmic consciousness and the latter is translated through cortical activities, as 'new' creation.

### *The cerebral cortex and the universal consciousness*

- The cosmic consciousness is the domain of physicist. -Parallelism  
Biologist's domain is cortical consciousness.  
The missing links are to be found out.
- The cosmic consciousness acts through the infrastructure -Interactionism  
of the Nervous system.
- Whatever love and sacrifice we observe, are for successful -Identity  
expedition of cosmic consciousness in expressive neural machinery.

Table 25

## BIOLOGIZATION OF COSMIC CONSCIOUSNESS

A living organism biologizes its environment. The animal has biologized, for example, gravity, electromagnetic principles and rotation of earth around the sun. The brain

contains several generators with frequency close to 13 hertz, the basic frequency of Schumann Resonance. Similarly, the cosmic consciousness has been biologized by the neocortical neurons from the day of mammals (or before?). This biologization has helped them to outgrow all other neurons in the nervous system. As retina has evolved out of profound influence of photon energy, organ of Corti has evolved out of profound effect of sound energy, so the neocortex has been continuously ‘evolving’ out of cosmic consciousness. This ‘evolution’ is simultaneously radical and conservative. The capture of cosmic consciousness by the cortex is a radical phenomenon. The limbic neurons conserve it in biology.

*Essential Conditions for Biologization of cosmic consciousness*

- |    |  |  |
|----|--|--|
| 1. | A capable supramodular cortex                          | - Genetic background and environmental conditioning are important to magnify the capability. |
| 2. | ‘Silencing’ of infracortical Vibrations                | - It is not an easy job.   |
| 3. | Conscious malleability of self-consciousness to S.C.C. | - A tough task indeed.   |

Table 26

**THREE PRINCIPAL TYPES OF MANIFESTATION**

The cerebral cortex, in this context, can be divided in three zones:-

1. *Paracentral lobule:*

This is the zone for biological integration of life, death, love, sex and ego. With ‘supracortical touch’ these five biological events take up a global dimension. Universal brotherhood, inexhaustible love originates through this area. Ascetic restraint, a personality beyond the polar opposites, elevating attitude, a rare combination of sky-high ego dominated by love, are few examples of manifestations of such integration.

2. *Association areas:*

The supracortical encroachment over cortical association areas gives birth to ‘new’ thought, ‘new’ ideas, ‘new’ approach to a problem, ‘new’ planning capacity, a breakthrough, a discovery. The central motor programme and future planning in the prefrontal lobe, the memory and the affective aspect of the behaviour in the

association areas of limbic cortex, the gesticulation and language functions of the parietal association areas are found to be enriched in supracortical element.

3. *Some special sensory association areas:*

With supracortical touch the areas are responsible for clairvoyance or clairaudience.

### **THE RELATIONSHIP BETWEEN COSMIC CONSCIOUSNESS AND THE CORTEX**

Their relationship is very simple,<sup>1</sup>- the relationship of a lover and beloved, which does not conform to any law, principal or equation of human creation, whatever fundamental they may be. The aim of love is to achieve oneness with the beloved. The result of love is creation. The cerebral cortex continues to sacrifice all other vibrations, to come in the zone of equivalence of cosmic consciousness. The cosmic consciousness watches always for an opportunity to embrace the cortex in its very depth. A hide and seek game - a love play - the most beautiful conflict and union, the romance of physics and biology. The result of their play is birth of an unique – a marvel. As deep is their love, so lovely is their creation.

To put it with a pure mechanistic vision, the universal consciousness captures the cortex layer by layer.

#### **The universal consciousness captures the cortex, layer by layer**

#### **The supreme romance**

Intracortical associations are hierarchically organized. The cosmic consciousness operates from above downwards. It captures the cerebral cortex, layer and layer, embraces them, silences them and then puts its own vibration in them, to be born as ‘unique’ in clothing of words, musical note, art, or as discovery, or solution of problems.<sup>2</sup>

When their love is ‘superficial (first and second layer) - creation is also ‘superficial’/’ordinary’. As their love mounts on a higher note (first, second and third layer) the ‘philosophy’ in the respective field is being illustrated. With profoundness of their affair (first to fourth layer), the creation ‘illuminates’ the world. There is ‘luminous invasion’ of diffuse light (cf; Tagore’s Geetanjali). When the fifth layer is captured, the large pyramidal cells and the cells of Martinotti are intoxicated with S.C.C., there is discovery - a flash of transparent light. In their profoundness love (First to sixth layer), when the vertical fusiform cells are completely captivated, the translated vibration reaches the surface of the Globe as ‘the one-pointed stable lightning’s e.g. Hymns of Veda,

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1. “I could have done it in a much complicated way”, said the Red Queen, immensely proud - Lewis Carroll.

2. The model admits The Theory of reductionism, Campbell’s view of ‘Downward Causation’ and Karl Popper’s idea of ‘creative’ or ‘emergent’ evolution. It also holds the perennial philosophy (Leibniz and Huxley) - The transcendental essence is being hierarchically immanent.

'Akhandā Stotra', etc. Fortunate are few in whom cosmic consciousness silences the cerebral cortex completely and then pervades the infracortical zones. Outward creation comes to still. Individual cell starts getting 'living breath' of the 'consciousness'. A block of living bliss, an 'immortal' personified in human form, glorifies the Globe.



The result of love affair between Cortex and Cosmic Consciousness—A mechanistic† model

Involvement of cortical layer.	Perception Of light, in Visual cortex	Of sound, in Auditory cortex	Personi- fication	Creation (translation of vibration and light in cloth- ing of words, art, etc.)
Ist & 2 <sup>nd</sup> layers.	Gray, thick, sticky with multiple dark spots, occasional tiny burst of light.	“A cloud of flies whirling around the head”.	Average	‘Ordinary’
Ist to 3 <sup>rd</sup> layers.	Clogged vision, as if one is amidst smog.	More elaborate and free	Thinker, Philosopher.	‘Philosophic’
Ist to 4 <sup>th</sup> layers	Flood of diffuse light, a luminous sweep.	Diffuse harmony of rhythm	Great poets. e.g. Tagore, Shakespeare. Great artists. Great musicians.	‘Illumined’
Ist to 5 <sup>th</sup> layers	Flash of transparent light on a background of diffuse light. “Rapid runs of transparent vision”	Enchanting notes, beautifully interposed in diffuse harmony.	Discoverer, Inventor, creator.	‘Intuitive’
Ist to 6 <sup>th</sup> layers	One pointed transparent stable visions. Sees everything from its own point of view.	Vibrations of Vedic Rhyme, religion, or ‘Akhanda stotra’ etc.	Founder of Yoga system e.g. Christ Buddha, Mohammed.	‘Revelation’
Beyond 6 <sup>th</sup> layer	Ocean of stable lightning. Light, light and light only. Global vision.	Vibration of life, OM, OM, OM, OM, OM, OM, OM, OM, OM.	‘Transformer’. Love, person- ified.	Transfor- mation

Table 27

Ref: Sri Aurobindo.

† Love is never mechanical. Neither the cortex's six compartments are rigid.

## COMPLEXITY IN THE MECHANISM OF SUPRACORTICAL MANIFESTATION

Who can say, what we are?  
One or two, near or far!  
All you write, are futile guess.  
Simple love, please, don't make mess!

The situation is not as simple as stated. Indeed it is very complex.† To understand this complicated affair and its result, let us now look into the relevant anatomical, functional and electrophysiological properties of the cerebral cortex and synthesize the hypothetical protocol for supracortical manifestation.

### A. Relevant Anatomical Facts:

1. Laminar arrangement of neurons and abundance of LCNs: The neurons, glia, and fibres of the neocortex are stratified in six layers. The topmost layer is made up of fibres (mainly dendrites and a few axons) and a few cells (of Cajal). Both cells and fibres are horizontally placed. The deepest layer is made up fusiform cells and fibres, both arranged vertically, perpendicular to the surface.

In between these two 'extreme' layers there are four layers, constituted by two principal types of neuron in the nervous system - the large projection nervous (pyramidal cells) and the small local circuit neurons (LCNs). The number of pyramidal neurons is about  $10^9$  each having 20,000 synapses on their dendritic spines. Four layers are formed out of alternate dominance of these two types of cells. These are outer granular layer, outer pyramidal layer, inner granular layer and inner pyramidal layer respectively. About seventy five percent of all cells in inner granular layer are LCNs. Abundance of LCNs attributes cortex with its tremendously complicated function.

2. The intracortical associations are hierarchically organized: Innumerable parallel connections are also there. Whether or not does this hierarchy exactly correspond to anatomical six layers is not a matter of semantic. For all practical purpose, there are six functional strata in the cerebral cortex.

3. The pyramidal cells are 'output cells' of the cerebral cortex: Beside the large pyramidal cells in the fifth layer, one must also take a note of the small pyramidal neurons of the third and second layers. *Unlike other projection neurons, their apical dendrites are more 'emphatic' in picking up supracortical vibrations and consciousness* Moreover, it is

† "Roughly by a complex system, I mean one made up of a large number of parts that interact in a nonsimple way. In such systems, the whole is more than the sum of the parts not in an ultimate metaphysical sense, but in the important pragmatic sense that given the properties of the part and the laws of their interaction, it is not a trivial matter to infer the properties of the whole" - H.A. Simon, 1969.

*through their axons, the apparently rigid barrier between third, and fourth layer is crossed.* They are the only hope for creation of something which transcends the 'egoistic' world. They have potential capabilities to overcome the 'veto' often applied by the neurons of self-conscious modules.

4. The single most peculiar cell of the cortex, the only cell of cortex with ascending axon, is the cell of Martinotti. This cell is present in middle four layers and is most abundant in inner pyramidal layer (fifth layer). This cell is important for in-depth intramodular integration from below upwards.

Finally, one must conciliate the laminar arrangement of cells with modular operation of cortex essential for manifestation.

## **B. Modular Operation of the Cortex:-**

1. The modules - the functional unit: The functional unit of cortex is a module, a column of neurons, fed by one thalamo-cortical projection fibre. Intramodular integration of neurons, is done by stellate cells and the cell of Martinotti. The specific pattern of problem handling is achieved by definite group of functional units.

Lower three layers of the cerebral cortex form the 'causal' body. These are bound by time and space. Different patterns of spatio-temporal vibration of the modules are the cause of different types of consciousness. A strong self-consciousness provides directive to the causal body.

2. The supramodular cortex: The modular operation is quite distinct in lower three layers, consisting mostly of the projection neurons and vertical axons (with mostly type-II, inhibitory synapses). In the third, second and first layer, this modular arrangement becomes gradually indistinct because of abundance of local circuit neurons (LCNs) and horizontal arrangement of dendritic fibres. This region abounds in Type I synapses (excitatory).

The supramodular cortex is beyond space, time† and ordinary causation. In an average human brain, very little co-ordination is there between downstairs modules and activities in the upstairs (cf: abortive attempt of correlating EEG with Evoked Responses). The crux in the mechanisms of supracortical manifestation is to synchronize the two.

## **C. Relevant Electrophysiology of the Cerebral Cortex:-**

Certain extraordinary features in construction of the cerebral cortex are responsible for its established as well as its immensely potential electrophysiological properties.

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† " I simply believe that some part of the human self or soul is not subjected to the laws of space and time"-C.G. JUNG.

1. The superficial first layer of the cortex consists of horizontal fibres, almost all of which are dendrites. The sixth layer is made up of vertical fibres, almost all are axons, originated from cortical or thalamic nuclei. Gradual transition between these two layers, is brought about by innumerable complicated circuits, horizontal, oblique and vertical, made up of axons and dendrites. This arrangement, with a sheet of millions of electrical dipoles continuously shifting their position in one aspect, millions of vertical action potentials parallel to each other in another aspect and millions of communications in series, parallel, diagonal and as counter currents in between the two, confers on the cortex the unique electrophysiological properties.

2. Unlike axons, the dendrites are generally not conducting processes to produce propagated all or none spikes of action potential. The dendrites are the sites of nonpropagated, hypopolarising and hyperpolarising local potential changes. The cell-dendritic relationship is that of a constantly shifting dipole. The causal body, the lower three layers, abounds in action potential. Constantly shifting electrical dipoles dominate the upper three layers.

3. There is an *electrophysiological watershed* between third and fourth layer of the cerebral cortex. Primary sensory neurons sit in the fourth layer, primary motor neurons start from fifth layer and upper three layers of cerebral cortex are packed with local circuit neurons. Below third layer, there are vertical action potentials. There is U-turn of action potentials from this region. In the third, second and first layer, there are constantly shifting electrical dipoles mainly.

4. There are two recordable types of electrophysiological activity of the cortex; the spontaneous and the evoked. The former is recorded as electroencephalogram (EEG) or electrocorticogram (ECG). The latter is recorded as Evoked Responses (ER).

(a) Upstairs of the cerebral cortex has nothing to do with spontaneous EEG (except probably to synchronize the delta waves during sleep). Thermocoagulation of upper four layers of the cortex does not alter the EEG pattern. This is an evidence of function of 'causal body' independent of upper layers of the cortex.

A real meditation with faith (third layer), devotion (second layer) and love (first layer) can bring a change in EEG only when upstairs activities could be conveyed to modular operons in the downstairs. Three primary patterns of change in EEG are expected to be found in such successful practice. Successive involvement of third, second and first layer neurons, in the modular operation, could give rise to 'faith' pattern, 'devotion' pattern and 'love' pattern of EEG respectively. 'Illumined' pattern, 'intuitive' pattern and 'revelation' pattern are appropriate and respective alternatives in this nomenclature.

(b) Evoked Response, unlike EEG, indicates the activity in the superficial layers. The series of negative potentials in an ER, recorded from superficial dendritic mat is determined by the serial conduction through different neuronal levels in the sensory pathway. High dose of anesthetic agents or barbiturates seriously affect the ERs except probably BAERs

(Brainstem Auditory Evoked Responses) and SERs (Somatosensory Evoked Responses) which remain unaltered in these conditions.

The factual data do not throw proper light in the electrical activities of the upstairs neurons. These responses are anyway ‘evoked’, not spontaneous and it is ‘evoked’ from ‘below’ (infracortical). What is about their spontaneous activity? Could they be ‘evoked’ from above (supracortical)? This is the frontier for research in electrophysiology of cerebral cortex. The portion of cerebral cortex, disconnected all round, with intact blood supply, is electrophysiologically quiescent. Is it real or apparent? Or, don’t we have a proper sensitive recorder, to translate the activity of this cortical block of neurons into a readable/demonstrable form? This is a very crucial need for proving the existence of supracortical source of vibration.

There is another way of looking at the spontaneous activities of the cortical neurons, as seen in non-integrated, fragmented, purposeless automatism of some neurological disorders (eg, epilepsy). The investigation of the mechanism, etiology and pathogenesis of this automatism can offer explanations for supracortical phenomena. A knowledge of the genesis of supracortical phenomena (see chapter nine) can also help to find out a cure for these disorders.

*Summary of the concept of upstairs and downstairs of cerebral cortex*

	Upstairs of cortex	Downstairs of cortex
Histoarchitecture	Modular arrangement ‘fades’ away. Rich in dendritic fibres, horizontally disposed. Less number of ‘output’ cells	Prominent modular arrangement. Vertically oriented long projection fibres. More number of ‘output’ cells.
Electrophysiology	Dendritic dipoles. Evoked Responses (ER)	Action potentials Electroencephalogram (EEG) Electrocorticogram (ECG)
Functions	‘Cosmic’ Interpenetration of space, time.  Imagination and anticipation.  Nonsensory perception of the	‘Earthy’ Spatiotemporal vibration of the cortical modules is responsible for infinite variety of consciousness. Knowing, feeling and planning. Sensory world.

	World.	
Consciousness	Supramodular self-consciousness. Even the brain belongs to the 'self' After transcending 'death', one becomes aware of its existence.	Modular self-consciousness  Modular self-consciousness becomes 'ineffective' when one does transcendental meditation. Egoistic 'I'. Perseverance.
	Small 'i'. Love, Devotion, Faith.	
Philosophy	Kant's 'starry sky'. Ethereal body.	Kant's 'moral laws inside'. Causal body.

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Table 28

In an average brain, there is a little synchrony between upstairs and downstairs of the cortex. So most of the philosophical 'ideals' are not translated in day to day 'deeds'. But a little synchrony exists and so the 'cosmic' things become 'earthly'. Synchronization of modular and supramodular cortex also brings harmony of 'knowledge' and 'values'. The pandemonium of upstairs and downstairs declares confrontation with death. Harmony of the two is the crux in supracortical manifestation and is responsible for biologization of cosmic consciousness. High energy physics is involved in this process of synchronization. In the synchronized state, the mind becomes vehicle of consciousness. "We do not think. Thoughts occur in us".

Fragmentation\* of the cortex into an upstairs supramodular domain and a downstairs modular operon is far less significant than their implicate wholeness. The convenience of putting it in words must not conceal this great truth. The electronics of the cerebral cortex should be reviewed as a whole. It has basic components of electronics. It also possesses the superstructure for it. In addition, it is equipped with an 'openness' to the cosmic current (see chapter nine) which is responsible for its uniqueness. This property differentiates it from all man-made computers and provides it with immense potential for transforming the whole human race into supracortical beings.

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\* Cf: "It is too bad the brain wasn't cracked before the atom!"- Paul Maclean.

*The Computer and the Brain Compared*

	Computer	Brain
1. Programmability	High	Low
2. Efficiency	Low	High
3. Evolutionary adaptability	Low	High
4. Structural rigidity	Thermodynamically rigid	Thermodynamically open
5. Physical laws	(i) Energy law (ii) Entropy law	(i) Energy law (ii) Entropy law (iii) Communication law (with time, information increases)
6. Storage of memory	(i) Analytical (digital) or (ii) Holographic (analog)	(i) Digital and (ii) holographic (a) separately and (b) simultaneously.
7. Information exchange from outside	Not possible	Possible (supracortical phenomenon).
8. Openness to 'cosmic Current'	Absent	Profound.
9. Feelings	Absent	Profound.
10. Consciousness	(?)	Present.

Table 29

## PRINCIPLES OF SUPRACORTICAL MANIFESTATION

On the background of reviewed knowledge, following principles are laid down for supracortical manifestation.

1. The quantity of descent is directly proportional to the depth of surrender, malleability of self-conscious modules of Universal consciousness. The quality of manifestation depends on the infrastructure of the nervous system.
2. Intracortical associations are hierarchically organized. The universal consciousness captures the machinery from above downwards.
3. The crux in the mechanism of supracortical manifestation is synchronization† of the modules of the causal body (lower three layers) with the activities in the upstairs (upper three layers).
4. The central nervous system has not only an axial organization but it also works in a parallel fashion. During the phase of ascent, parallel systems are intentionally ignored. During descent, the parallel systems provide vastness in manifestation.
5. Any supracortical manifestation has two elements. One shows interpenetration of space, time and causation and is purely supracortical. The other, limited by space, time and causation, is cortical. The second element is mutable, and so can be experimentally challenged. *Experiment ceases in the brim of supracortical current. Experiments are in NATURE. There is No experiment in CONSCIOUSNESS.*

## MECHANISM OF SUPRACORTICAL MANIFESTATION

Twinkle, twinkle, dipole stars;  
Beauty, glory, all wonders.  
    On the terrace, if you see,  
    Accept them and vibrate free.  
Parallel current on the ground,  
Does not admit all those sounds.  
    Modules from the conscious 'self',  
    Provide veto, not to help.  
But be brave and, try and try -  
Convince them that you won't fly;  
    Success, glory, peace and bliss,  
    Enjoy gifts of abstract kiss.

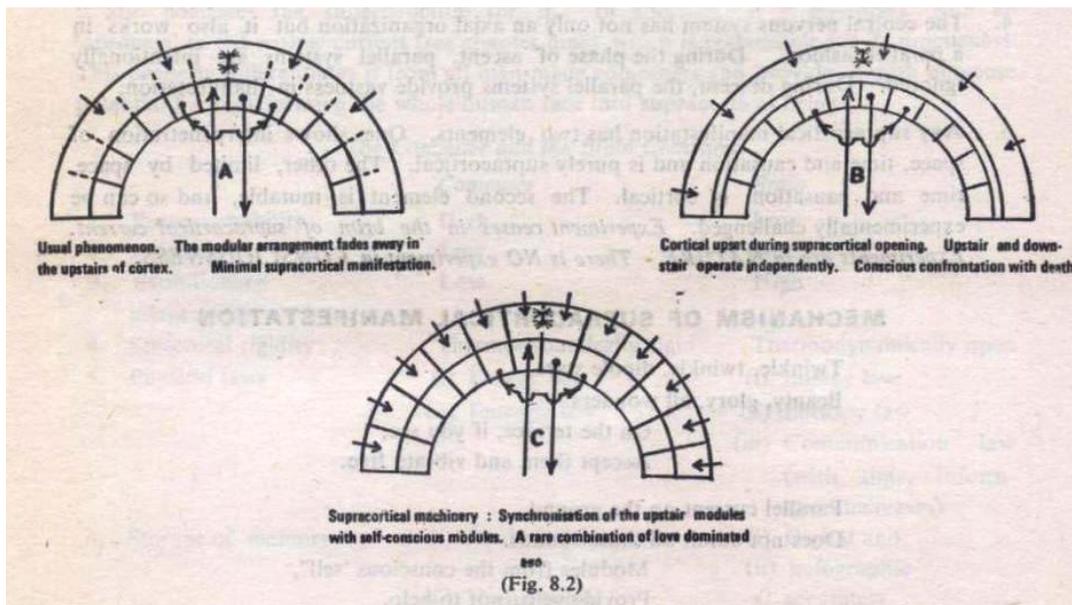
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† Cf: C.G. Jung,s Concept of synchronicity: Noncausal relationship, linking two events in a meaningful way.

The dendrites pick up the supracortical vibrations. It seems logical that those dendrites which are relatively free from and less disturbed by infracortical vibration are more expert in this function. A primary motor neuron of the fifth layer or a fusiform cell of sixth layer is so busy in their moment to moment sensation from biology, which they have been made almost ineffective to become concerned with what is happening in the upstairs.

In an average brain, in fact, very little co-ordination is there between downstairs modules and activities in the upstairs. That's why EEG and Evoked Responses are difficult to correlate. This is also the reason why our high philosophical thoughts are not manifested in day to day deeds. It is because downstairs' modular operon is not capable of translating the activities in upstairs. The modules, however, could be induced to change, by a stimulatory and balanced competition of the inputs which does happen during the phase of ascent, when one elevates self-consciousness by balancing the contradictory consciousness (see page 83-89).

### CORTICAL DYNAMICS IN SUPRACORTICAL MANIFESTATION



The synchronization of the upper and lower zones of the cortex is the crux in the mechanism of supracortical manifestation, and here, the small pyramidal neurons of the third layer make the initial breakthrough. The 'illuminated' thoughts are products of supracortical vibration, picked up by these third layer neurons and then passed down to the neuronal modules of the 'causal body'. Till the second layer neurons are not successful to translate a supracortical vibration through modular operon of the downstairs, there is no flash of transparent light. When they are incorporated in the modular dynamics, there is a breakthrough, a discovery, a flood of intuitive knowledge. In very rare occasion, when the neurons of the topmost layer could express through the modular machinery, there is revelation, a holistic representation, an all-encompassing solution, a global vision.

*The cortex-As a supracortical machinery*

Incorporation of

(a)	Third layer Neurons		(a)	Illumination
(b)	Second layer Neuron	In the executive machinery of downstairs modules	(b)	Intuition
(c)	First layer Neurons		(c)	Revelation

Table 30

**IS SYNCHRONIZATION A NATURAL PHENOMENON?**

There are two processes well-known for synchronization of the executive machinery of downstairs modules with the activities in the upstairs neurons.

1. Meditation - An active process. (see chapter fifteen).  
It results in ‘faith’ pattern, ‘devotion’ pattern and ‘Love’ pattern of EEG.
2. Dreaming - A passive mechanism. The dream during NREM sleep is of more significance in this context.

When the downstairs modules are ‘fatigued’, ‘exhausted’ during the search for a cause, and the upstairs are charged with ‘ideals’ and ‘philosophy’, an unknown mechanism ‘tears the veil’. There is synchronization. The process is historically exemplified by Kekule’s arrival at hexagonal structure of benzene ring in dream and three successive dreams of Otto Loewi about a fundamental experiment on chemical transmitter in the N.S. Otto Loewi first got the idea about seventeen years back (Incubation period!).

Regarding the role of ‘unconscious’ in discovery, the reader is advised to go through, ‘The Act of Creation’ by Arthur Koestler, New York: Dell (1964).

**EVALUATION OF A SUPRACORTICAL CREATION**

In supracortical manifestation, the whole is different from and greater than the sum of the parts. The whole does not interfere with laws of the parts (at their level) but causally determines their fate,

Evaluation of a supracortical creation by cortical modules is almost impossible. How can the self-conscious modules understand the galaxy of constantly shifting dipoles in upstairs, unless they are tuned for it? So called intelligence and discrimination can’t even have a glimpse of it. If they try, (and try) *the result is not evaluation but transformation.*

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# How does Supracortical Cosmic Consciousness establish Link with Biological Consciousness? The Consciousness-antematter Hypothesis

## INTRODUCTION

The whole world is an infinite pool of consciousness in which the living organisms are whirlpools only. In human beings the link between universal cosmic consciousness and biological consciousness is established through neurons of the cerebral neocortex. The highest biological consciousness, in average human brain, is self-consciousness. In crudest form, it is 'ego' and its finest form is 'Atman'. In the supramodular cortex, beyond the sensorimotor world, out of faith and devotion, a small self-consciousness is born. This polarised supramodular self-consciousness (small 'i') makes love with universal consciousness (universal 'I'). There were mediators in this love affair. They create a zone of equivalence and bring the lovers in closest approximation. It is for them, the love play becomes successful to manifest as new creation. These indispensable 'intermediates' or 'mediators' are antematters.

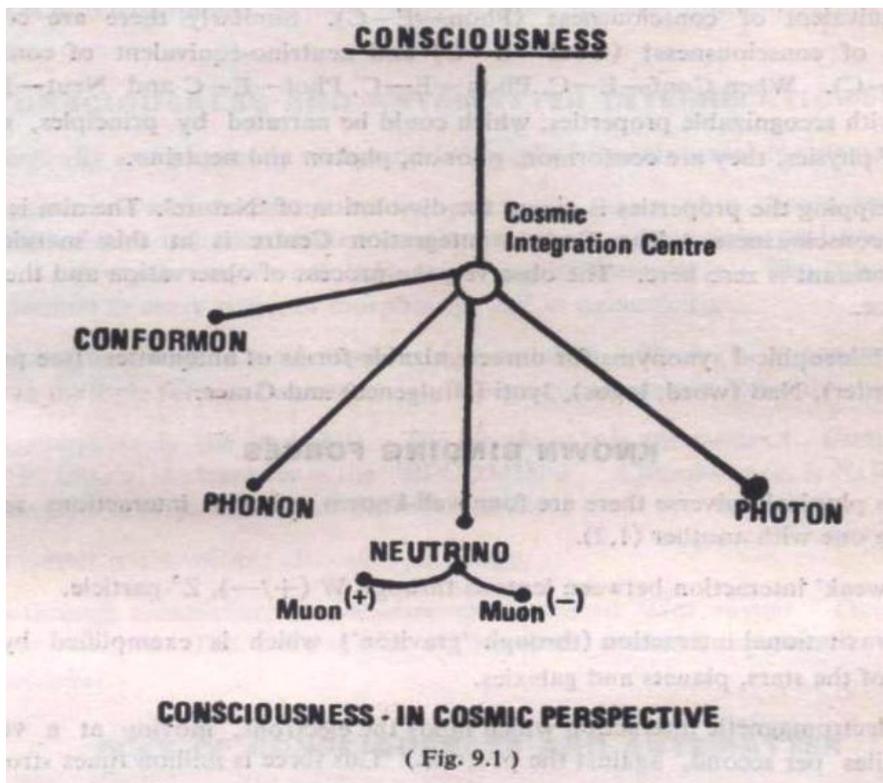
## ANTEMATTER AND ANTIMATTER

The term antimatter is used by physicists. Antiproton, positron, antihydrogen, antigalaxy are antimatters for proton, electron, hydrogen and galaxy respectively. Antimatters are also called antiparticles in particle physics. Strictly speaking, both particle and antiparticle are matter. So physicist's antimatter is also matter.

Antematter on the other hand is the kinetic pole of consciousness. It is through antematter, the consciousness and matter form an infinite-dimensional continuum with interpenetration of time, space and cause. Four wave packets of energy, which are beyond the polar opposites and, show interpenetration of time, space and cause in their behaviour, are considered antematter here. They are conformon, phonon, photon and neutrino.

## MULTIPOLE OR DIPOLE?

In hypothetical holism (see page 28), it has been stated that there are four kinetic poles of consciousness. They are 'bound' to each other and are linked with consciousness through a knot, hypothetically named the cosmic integration center, the integration center of cosmic NATURE. Consciousness acts through, either one, two, three or all of its poles. So the whole thing may be a pentapole, quadripole, tripole or a dipole. For convenience of discussion in the subsequent section, it will be taken as Consciousness- Antematter dipole. It is through the interaction of antematter poles, the cosmic consciousness and the phase-specific consciousness play with each other.



## RECOGNIZABLE AND UNRECOGNIZABLE FORMS OF ANTEMATTER

The Conformon, Phonon, Photon, and Neutrino are recognizable forms of antimatter. They are ‘breakthrough’ in ‘silence’, ‘stillness’, ‘emptiness’, and ‘nothingness’ respectively (page 27). All four antimatters have unrecognizable equivalent which can substitute the words (page 24), ‘immortal’, ‘eternal’, ‘infinite’ and ‘Ananda’. From the transition of recognizable to unrecognizable forms of antimatter, starts the ‘Future Physics’.

When the photon strips of the properties of photon, it becomes photon-equivalent of consciousness (Phot–E–C). The phonon, stripped of the properties of phonon, is phonon-equivalent of consciousness (Phon–E–C). Similarly there are conformon-equivalent of consciousness† (Conf–E–C) and neutrino-equivalent of consciousness (Neut–E–C). When Conf–E–C, Phon–E–C, Phot–E–C and Neut–E–C are ‘clothed’ with recognizable properties, which could be narrated by principles, equations, theories of physics, they are conformon, phonon, photon and neutrino.

Outstripping the properties is meant for dissolution of ‘Nature’. The aim is to

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† The role of Phon-E-C in confinement of quarks and the role of Conf-E-C in deciding that matter will be slightly surplus over antimatter has already been questioned (page 28).

merge with the consciousness. The Cosmic Integration Center is at this merging point. Planck's constant is zero here. The observer, the process of observation and the observed are then one.

The philosophical synonyms for unrecognizable forms of antimatter (see page 26) are Hukum (order), Nad (word, logos), Jyoti (effulgence) and Grace.

### **KNOWN BINDING FORCES**

In this physical universe there are four well-known primary interactions responsible for binding one with another (1,2).

1. The 'weak' interaction between leptons through W (+/-),  $Z^0$  particle.
2. The gravitational interaction (through 'graviton') which is exemplified by binding force of the stars, planets and galaxies.
3. The electromagnetic interaction which holds the electrons, moving at a velocity of 600 miles per second, against the protons. This force is million times stronger than 'weak' interaction.
4. The 'strong' interaction, responsible for binding of Nucleons e.g. proton and neutron racing with a velocity of about 40,000 miles per second. This short range binding force is the strongest of all physical interactions and is about  $10^{38}$  times stronger than gravitational force.

Various permutation and combination of these four interactions cannot offer a holistic explanation for physical, biological and philosophical universe. Being equipped with all four interactions, the physicists, biologists and philosophers still face a dead lock. The key for this dead lock is in understanding of a fifth one, the supreme play of consciousness and antimatter. This is the play, which involves physics, philosophy, and biology.

The physics, biology and philosophy  
There get together,

In that speedy mighty stream  
Flowing for all and forever.

It is the most fundamental and most simple of all 'interactions'. This can be understood from the study of interrelationship and play of consciousness and antimatter. This play is also exemplified during transfer of consciousness from one Guru to the next Guru.

## CONSCIOUSNESS AND ANTEMATTER INTERRELATIONSHIP

- 1 Biologically and physically recognizable 'form' of consciousness is antimatter.
- 2 Consciousness and antimatter are two poles, two facets of a dipole unit. Infinite number of such units constitutes a continuum which at any point and every point is a dipole. A dipole may be infinitely small or infinitely large. The whole is being represented in every part, in morphology and in dynamicity.
- 3 Consciousness is not-transformable (non-mutable). There is a constant state of flux in multiple forms of antimatters. Consciousness is one and only one.
- 4 Consciousness is the immobile. The kinetic pole is antimatter.† Consciousness is the 'BEING'. Antimatter is the 'BECOMING'. Consciousness is NOUMENON. Antimatter is responsible for PHENOMENON.
- 5 The matter is convertible ( $E=mc^2$ ) to energy.

It is through antimatter, the consciousness is linked with matter. Consciousness-Antimatter-Matter. The relationship of the three could be expressed by the Sanskrit word, Kundalini.

## PLAY OF CONSCIOUSNESS AND ANTEMATTER

1. In a unit, consciousness and antimatter are pole apart.
2. Though antimatter is 'bound' to consciousness, the former enjoys absolute freedom to act. Consciousness admits antimatter to play the game.
3. Consciousness-Antimatter play is not initiated upon by any external force. It originates from within, from their intrinsic spontaneity, from the tendency of the two poles to become one.
4. When antimatter tends to be away from consciousness there happens a disintegration and involution in matter. When antimatter seeks proximity of consciousness, there follows an integration and evolution in matter.
5. Brahman is pure consciousness. The unrecognizable (undifferentiated) antimatters, held in 'equilibrium' through cosmic integration centre, with consciousness forms the concept of God (Ishwara), the seed for creation, sustenance, dissolution and grace. A 'disequilibrium' in their relationship —→ Transition of unrecognizable to recognizable form of antimatter —→ Admixture of varying proportion of antimatter —→ Diversity in observable properties of matter.

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† Cf; Aristotle's 'Unmoved Mover'.

## SOME FACETS OF THE PLAY

There is determinism in interaction amongst matters, indeterminism in the interaction between antimatter and matter. The Consciousness-Antematter play is indescribable. ‘Neodeterminism’, ‘Beyond indeterminism’, ‘Deterministic indeterminism’, ‘Indeterministic determinism’, is some of the expressions of such incapability.

The Consciousness-Antematter play produces the primordial vibration. This vibration, being filtered through the cortex (will), limbic system, (feeling) and brainstem (sensorimotor integration), being translated as action potentials in the laryngeal nerves to excite the intrinsic muscles of the larynx, produces a sound, pronounced as OM (AUM). The phonetics of this word is beautifully described by Swami Vivekananda. “The first letter, ‘A’, is the root sound, the key, pronounced without touching any part of the tongue or palate; M represents the last sound in the series being produced by closed lips, and the U rolls from the very root to the end of the sounding board of the mouth. Thus OM represents the whole phenomena of sound producing”.

The connotation of the word ‘PLAY’ is interesting. In play, there are parallelism, interactionism, identity, intraactionism and something more (holistic). Respectively, there are death, sex, ego, life and love too.

### *Consciousness-Antematter play*

Connotation of ‘PLAY’	Theories	Cosmic equivalent
* Consciousness Antematter are pole apart. A dipole infinitely large.	Parallelism	Cosmic ‘death’
* There is extrinsic interaction between the two poles of Consciousness-Antematter dipole.	‘Some kind’ of interactionism or Whirling interactionism or ‘Reverse’ interactionism	Cosmic ‘sex’.
* Consciousness, Antematter are two facets of one & only one. A dipole infinitely small.	Identity	Cosmic ‘ego’
* Consciousness Antematter relationship is intrinsic.	Intraactionsim	Cosmic ‘life’
* Consciousness-Antematter dipole has infinite number of axes.	Holistic, global	Cosmic ‘love’

Cf: “Holomovement enfolds and unfolds in a multidimensional order, the dimensionability of which is effectively infinite” - David Bohm

Table 31

Cosmoscientists, with this table in hand, can solve many riddles hitherto unexplained.

### KUNDALINI AND ITS AWAKENING

The meaning of classical evolution is unrolling, unfolding to bring out what is already within. This unrolling/unfolding happens in Nature to reveal Consciousness.

So, there is evolution

1. In the Matter,
2. In the Antematter.

Matter—Antematter—Consciousness forms a continuum.

Consciousness → Cosmic Integration Centre → Unrecognizable forms of Antematter → Recognizable forms of Antematter → ‘Particle’ matter (including quark and antiquark) → ‘Atomic’ matter.....

*This relationship of Consciousness—Antematter—Matter is depicted by the spiritual serpent, the KUNDALINI of three and half spirals.*

With the existing knowledge, the simplest way† to look at the spiral is as follows.

- |    |  |                     |
|----|--|---------------------|
| 1. | From Consciousness to unrecognizable form of Antematter: | -One spiral         |
| 2. | From unrecognizable to recognizable form of Antematter:  | -Second spiral      |
| 3. | Form Antematter to Particle (including quarks) matter:   | -Third spiral       |
| 4. | Forms Particle matter to Atomic matter:                  | -Rest of the spiral |

The spiral could be traced in ascending or descending order:

The particle physicists have been unfolding the lowest part of the spiral. Quarks

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† This relationship is much more complicated. From one spiral to multiple (at least - 4) spirals, intertwining and interweaving of these spirals, could not be, in this stage, simply stated by line diagram. The future physicists need to explore this ‘nerve tangle of octopus’, to see that everything is ‘certain’.

and antiquarks are also particles. Albert Einstein's formula ( $E=mc^2$ ) has clarified the third spiral in ascending order. But the relationships of conformon with the particle, of phonon with the particle, of neutrino with the matter are yet to be found out. All other spirals also need to be explored for total understanding of the Nature.

*When this relationship of Consciousness—Antematter—Matter is experienced (the Cortico-Limbic play in the brain) in the biological materials of the body, the organelle, cell, tissue, organ or system, the process is called Awakening of Kundalini.*

## **TRANSFER OF CONSCIOUSNESS FROM SADGURU TO A DISCIPLE**

Consciousness is not passively transferable. The disciple actively acquires it from the Guru. The Guru is personified cosmic consciousness, the immobile living bliss of supracortical consciousness in human form. The disciple is lower human form who wants to identify his small, polarised, supramodular 'self-consciousness' in the cosmic consciousness. Various rituals and practices in Guru's abode elevate self-consciousness of the disciple. This elevation occurs through† any of the five principal pathways, namely love, sex, ego, life and death, to the level of common cortical knot in biological integration centre (BIC) through which supracortical consciousness can act. During transfer of consciousness, the Guru remains immobile. His *radiant* antematters create a *divine abode*. The moment, spontaneous surge of the polarised 'self-consciousness' of the seeker brings its energy/frequency(?) in equilibrium with that of personified cosmic consciousness in Guru, consciousness of Guru and consciousness of disciple vibrate in identical rhythm. 'The veil is torn with slightest touch' (3). The Divine 'perforates' through 'self-consciousness'. The small 'i' is annihilated in the process and the universal 'I' dwells in the human body as a 'new' small 'i'.

When one transcends one's own nature, gravitational constant is superseded (negated and conserved). To supersede the Biological Integration Centre, one transcends the velocity of light (cf: 'Tachyon' of Prof. E.C.G. Sudershan). Planck's constant and time are made zero when cosmic integration centre is transcended.

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† Cf: The similarity of the context during resurrection of dead. I Corinthians 15:35-52. "It is sown in corruption, it is raised in incorruption: It is sown in dishonor; it is raised in glory: It is sown in weakness; it is raised in power: It is sown a natural body; it is raised a spiritual body".

Caution: One must aspire to go beyond the 'threshold', guarded by guilt and shame, only for the sake of achieving a supracortical opening. It is worth if done in presence of a Sadguru (the Supracortical autonomy). It is successful only if the Sadguru has a silent consent or approval for this deed of concerned disciple.

*Constants to be transcended to reach Consciousness*

<i>In Physics</i>	<i>In Biology</i>
* Planck's Constant.	* Sadguru (Supracortical Autonomy)
* Velocity of light, Constant.	* Biological Integration Centre
* Gravitational Constant	* Nature

Table 32

**ACHIEVEMENT WITHOUT INTERVENTION OF A GURU**

In the process described above, a 'surpracortical' person acts as an intermediate between the seeker and the cosmic consciousness. The presence of such supracortical person is not essential for all. It can simply be done by elevation of self-consciousness, followed by an unconditional complete surrender to cosmic consciousness. Interaction of polarised self-consciousness and cosmic consciousness is possible only when their respective antimatter poles establish a zone of equivalence and create a dynamic equilibrium (or disequilibrium). Without intervention of antimatter, such interaction is impossible. During polarisation of self-consciousness, antimatter pole of it reaches the zone of equivalence of that of cosmic consciousness and then the 'Divine' 'perforates' the cortex.

COSMIC CONSCIOUSNESS—Antematter=Antematter—SELF-CONSCIOUSNESS  
(Supracortical) (Cortical)

In the lowest form of life also e.g. of unicellular organism, the biological consciousness is in continuum with cosmic consciousness through this ANTEMATTER, which has '*involved*' to form MATTER, the cell membrane.

**THE MECHANISM OF TRANSFER OF CONSCIOUSNESS AND A SUPRACORTICAL OPENING**

To understand the mechanism one has to explore the 'dipole' in the neocortex and the 'dipole' in the external cosmos.

a) **'Dipole' of the cortex:**

The cell membrane is the most important component of a cell, involved in the process of transfer of consciousness. It is also through the cell membrane, the external signal reaches the nuclear genetic machinery.

We need not discuss here the detail of cell membrane structure such as five types of membrane proteins, lipid bilayer with choline phospholipid on the outer surface, amino-phospholipid on the inner surface, the cis-trans asymmetry in their distribution, sol-gel transition, lateral displacement or flip-flop movement etc. etc. All these are involved in different kind of transfer through the cell membrane. The most relevant ones in this context are protein polysaccharides on the outer surface which are in continuity with the 'through and through' proteins responsible for internalisation of any external signal, probably also for the Consciousness-Antematter interaction.

In a neuron, the dendrites are nothing but extension of the cell membrane and the membrane properties of the dendrites are almost identical to that of neuronal soma. The most superficial layer of the cortex is basically a dendritic mat. The dendrites of all six layers join in construction of this complicated electrophysiological meshwork. Electrophysiologically, the cell dendritic relationship is a constantly changing dipole. Do these electrical dipoles of the supramodular neurons, responsible for development of a polarised self-consciousness and organization of the Biological Integration Centre (BIC), 'combine' to form the biological facet for this transfer?

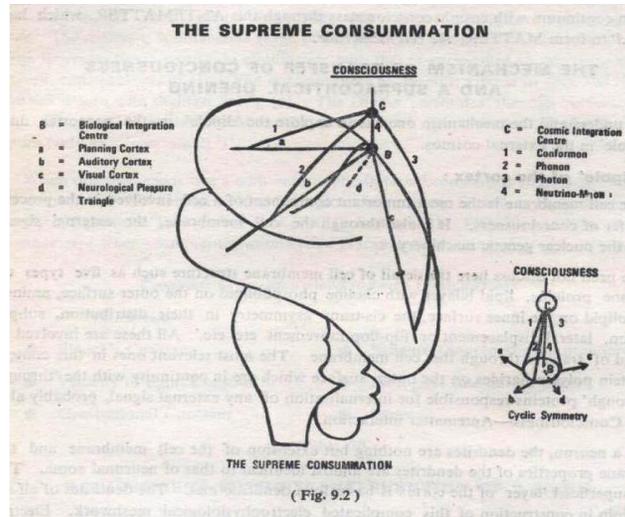
**b) 'Dipole' in external cosmos:**

Outside the nervous system, there is a dynamic web of cosmic consciousness: the infinitely large and infinitely small Consciousness-Antematter 'dipole'. In the relevant finite front of the cosmic consciousness there are conformon, phonon, photon and neutrino-muon complex.

*Union of the 'dipoles'*

When the polarized self-consciousness identifies itself in supracortical cosmic consciousness, the small 'dipole' of the cerebral cortex play love with infinite 'dipole' of universal consciousness. The antematter pole of the cosmic facet is the GRACE; omnipotent, omnipresent, flowing for all and forever. The small 'i' polarises itself into a STATE OF GRACE(3).

During the play there is 'death' of small 'i'. The 'Veil is torn'. Universal 'I' dwells in the human body as 'new', small 'i'. This happens in supreme privacy, in noble stillness.



In the abyss of deep blue, the sempiternal light is lit. The destined human cerebral cortex faces Infinity's finite front. Hidden asymmetries in the external cosmos are complemented by reciprocal asymmetries in the neurobiology. In cyclic symmetry and in metric plane, the quivering limbs of the cosmic facet embrace the virgin vibration of the dreamy cords of the living biological corpse. The undying love of cosmic integration centre impregnates the passionate heart beat of BIC. "A vast quiescence swallows up all sounds into a voicelessness of utter bliss"(4).

## TRANSFORMATION

The union of universal Consciousness-Antematter dipole and the cortical dipoles of the brain brings out a series of changes, named transformation. The transformation starts from consciousness-antematter level of the cell membrane, through particle world of its atoms and then being translated as crude electrophysiological phenomena, like transmembrane potential, generator potential, action potential etc. From the subtlest, through subtler, one reaches a subtle electrophysiological model of transformation.

Then follows the rhythmic sequence-

The bioelectric circuits, the chemical circuits and the structural (cellular) circuits. Neurotransmission, paracrine activity, neuroendocrine secretion of the cortical neurons. Neuroactive substances (NAS), their transmembrane transport, chemomechanical fast transport guided by cytoskeleton or mediated through a cytosolic carrier and if necessary, activation of a second messenger† and finally gene expression. Bidirectional flow of NAS from neuron to neuron, from neuron to target tissue, the gene expression in the cortical neurons as well as in target cells (5). *The key of genetic machinery of the target cell is in the genes of concerned cortical neuron. Love (S.C.C.) turns on the key in the supramodular cortex.* Then follows the chemical dynamics, as described by Prof. F.O. Schmitt, then the mechanistic model of seizing the cortex layer by layer and finally the involvement of the target cell; the instruction, trophism and gene expression - a holistic grandiose of metamorphosis. It takes years to be observed by common people.

## IS ACQUIRED TRANSFORMATION HERITABLE?

In the 'Frontiers of Research for Human Biologists, Next Hundred years', several sweeping statements have been made. "There is genetic re-assortment in prolonged love affair". "Biochemistry of love runs parallel to biochemical machinery of gene expression. Missing links are to found out" (Genetic Basis of Love) (6). "Conscious love for a quality does help to get the concerned genes in the offspring" (How to produce a Better child than you Think you can) (7). "By doing an exercise of concentrating one's total consciousness in preoptic hypothalamus, one gains control over the sex and the next generation gains those corticohypothalamic fibres by mere inheritance" (Physiology of controlling sex. Its need and ways) (8).

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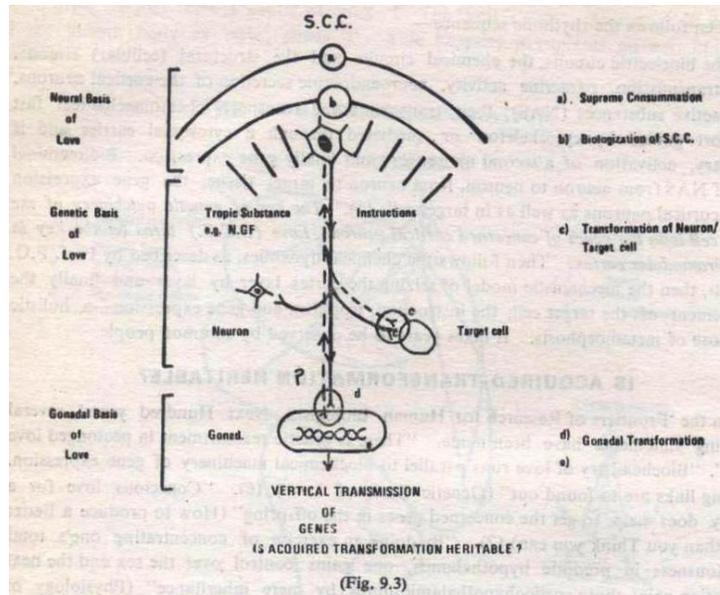
† Cyclic nucleotides, Diacylglycerol, Protein Kinase C, H<sup>+</sup> and Na<sup>+</sup>, Inositol triphosphate and calcium.

All these statements lead us to one question - Is acquired transformation heritable?- meaning if the parents get transformed before they procreate, would this transformed habits be passed to their offspring?

The key to the answer of this question is in the proper understanding of the word TRANSFORMATION, where consciousness and antematters (High energy physics) are involved in five critical points. Follow the (Fig. 9.3).

There are five critical points where Consciousness-Antematter play are involved.

- a) The supreme consummation in the upstairs of the cerebral cortex.
- b) Biologization of S.C.C. by synchronization of upstairs and downstairs of the cerebral cortex.
- c) Neuroneuronal and Neurotarget cell junction - a bilateral relationship for instruction, trophism and gene expression (5).
- d) Neurogonadal junction (sympathetic, parasympathetic, afferent, efferent) - most important for transmitting the neuronal instructions to the gonads and make the desired gamete readily available for vertical transmission of genes.
- e) The gametogenic function of the gonads.



Each of these points is a new frontier of itself. Point three has been explored by Prof. Schmitt (5). Point one and two have been discussed in this text. Point four and five need to be explored.

- i) Biophysical and biochemical instructive mechanisms in the gonadal nerves.
- ii) Centripetal trophic flow from the gonads to the brain.
- iii) Biochemical and biophysical determinants of (a) chromosomal re-assortment and
  - b) physiological recombination and crossing over of genes during gametogenesis.

- a) Re-assortment of chromosome.

In human beings with 23 pairs of chromosomes,  $2^{23}$  varieties sex cells are potentially available in each mate and out of a single fertilisation  $2^{46}$  varieties of potentially genetically different individuals can be born.

- b) Recombination and crossing over.

We know, in any given meiosis, there is about 1% chance of recombination between any two genetic markers separated by one centimorgan. Each centimorgan contains, in average, about twenty gene loci and there are about 1650 centimorgans in human haploid genome. The rate of crossing over of genes in any given meiosis is yet to be worked out.

That a genuine trial for unification of consciousness of male and female gametes, and a conscious meditation on lovable 'quality genes' in partners, parents and grandparents, can provide a definite directive in this re-assortment and crossing over, has been proposed (6,7).

Following the study of these five critical points, answer to that very important question is clear. The answer stands.

- (1) If the element of LOVE is involved in that acquired characteristics, meaning a supracortical touch and its biologization in the habit,
- (2) If the affair is prolonged, meaning if sufficient period is given for gonadal transformation to occur,
- (3) If both partners try to unify their consciousness, during this interim period, The concerned genes are mathematically heritable.

How important is this Consciousness-Antematter play in production of a better child than one thinks one can (7)!

### **THE BEST RESULT**

In this context, I like to penetrate further for those couples who are not satisfied with a better child but want to produce the best.

*How to produce a better child than one thinks, one can.*

1. Unification of consciousness of the gametes of the parents through successive cycles of gametogenesis.
2. Getting the maximum out of a given gene quota is an art by itself.
3. Infusion of 'love' in the whole process of reproduction.

Table 33

Most of the husbands and wives make physical relationship at the thalamic level (interthalamic connexus). The thalamus is also called the bride-chamber of the N.S! Very few couples interact at the hemispherical level. Each one tries to dominate over other. They recruit all commissural connections to justify respective plea but to no avail. A psychological war, separation, divorce are the results. A few understand the complementary specialization of each, ignore the points of difference and look forward for the point of equanimity. Very very few couples work at the level of Biological Integration Centre. They succeed to 'unify' their consciousness, not only at the level of neurons, but also at the level of their gonads, the gametes, and the carrier cell of their quality genes.

They unify consciousness of their respective gamete throughout the successive cycles of gametogenesis. (Duration of one cycle in male is about 72 days and in female about 28 days). Re-assortment of the desirable genes has also been done during the tough tests of love. The love floods in their reproductive life. Their insatiable thirst still has been aspiring for the best. In such situation, two things need to be done, in addition.

- a). The parents' genes must aspire for cosmic/supracosmic consciousness, so that whatever gene quota their offspring gets, those could become successful as neocortical cell (see next chapter) to biologize S.C.C.

b). The second requirement is purely maternal. In zygote, the organelle which is purely maternal, is mitochondrion. Though the cell membrane, the synthetic machinery, cytoskeleton, lysosomes of the zygote are also derived from ovum, they are subjected to nuclear manipulation. The mitochondria on the other hand, particularly the mitochondrial DNA, are purely maternal. Mitochondrial DNA is inherited from mother only, as haploid, without recombination. In psychology of a cell (See chapter eighteen), the mitochondrion, the power house of energy, has been looked as an organ, fighting against death. During prolonged love affair of the reproductive partners, if the mother happens to transcend 'death', the mitochondria of her ovum become the supplier of 'undying' energy for functioning of the chosen genes of the zygote and its progeny - the cells, the tissues, the systems, the muscles, heart and neurons of future generation.

Here we are reminded of Napoleon Bonaparte, "Give me good mothers, I shall build up the nation". We are also reminded of, "Unified chastity of women is priceless national asset" (Swami Swarupananda paramahansa Dev). Both are meaning the same - The mother, not the father, is the supplier of power houses (the mitochondria) to each and every cell of the offspring. The future Eve must be capable of transcending 'death' to conceive the chosen valuable genes of future Adam, to produce someone who is far far better than all predicted calculations of modern Adam and Eve.

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## Why do we talk about the Neocortical cells only?

A hundred trillion cells constitute the human organism and roughly, there are twenty billion central neurons, ten million afferent neurons and 0.5 million efferent neurons in the N.S. (1). Still, why do we talk about the neocortical cells only? This is the most important and fascinating question of the neuroscientists all over the world.

They have been held in supreme esteem in biology because in human being, the link between biological consciousness and cosmic consciousness is established through neocortical neurons in the region of Biological Integration Centre (BIC).

These neuroectodermal cells are different from all other cells of similar derivatives in the sense, that they are 'polarised', - polarised to do a particular job, to biologize the 'universal consciousness'. From the wall of the neural tube, they have migrated specifically to ride over the limbic horse in between paleocortex and archicortex. Eventually they have congregated on the crown to produce self-consciousness; self-consciousness about one's own life, own sex, own ego, own love and own death. In supracortical being they have been successful to form Biological Integration Centre and to draw S.C.C. in the biological reality.

The story begins in the time antiquity. The cosmic consciousness is being 'encased' as biological consciousness in a cell. The antematter poles of two consciousness(es) have involuted into matter - the cell membrane. The challenges to the membrane and the genes of the cell by innumerable physical stimuli came as natural consequences. Various cells succumb to different forms of energy in various situations to produce diversity in biology.

Various types of cells settled at different levels of consciousness are essential for a highly organized biological system eg. genital system, C.V. system, respiratory system etc. Antematter links up these small consciousness(es) to produce the beautiful hierarchy and the consciousness -antematter meridians of the body. (See chapter eighteen).

During such process, the nervous system has emerged as distinct entity. The system consists of highly self-centered cells. To get rid of unwanted forces, the cells of this system have migrated from their original abode on the surface (e.g. in Hydra) to a bony cage of skull and vertebral canal. Even inside the cage, some cells are still there which react to various physical stimuli (e.g. baroreceptor and chemoreceptor trigger zone in the medulla).

In the nervous system, neocortical cells are more distinguished than others. They hardly succumb to physical stimuli and continue to aspire for pure consciousness amidst multifarious scopes for specialization in different directions. In desperate search for a

suitable place they had successfully ridden over the limbic nuclei and ultimately reached their supreme abode in supramodular cortex. The trophic chemical signals could not stop them in the way. The fibre guided movement of the cells (the 'bootstrap' process) has probably helped them to conserve this aspiration till the end. The cell and terminal (axonal) competitions could not prevent them from occupying their destined throne. Their aspiration has always been inspired by lovely antematter over the terrace of the brain. In their long trek, they have also been protected from various odds and are given comfortable support by faithful and devoted friends.

In a supracortical being, the neocortical cells are brilliantly successful to 'transform' other cells of the body in their own direction. Any other neuron of the nervous system or any other cell of the body is not so successful to maintain its originality over so much of metamorphosis during the journey. On the contrary, other cells have enjoyed enormous pleasure of multiplication, demanded an exorbitant blood supply and wanted to settle down at the earliest comfort, available in the way. *Other cells have succumbed to everything else except 'consciousness'.*

Now listen to the neocortical cells:-

We've travelled from east to west,  
With staunch perseverance and imperishable faith.

Our ribs have burnt in gasping hiss,  
Erratic heart and disturbed peace.

Back to the origin in old path,  
Devotion, surrender and rebirth.

On the terrace, love and life,  
Cool the heart and inner strives.

Now from top, we pull all  
"Must pay heed to the clarion call".

### **PROPERTIES OF THE NEOCORTICAL CELLS**

*Two fundamental characteristics of neocortical cells*

- 'Polarity' of the membrane.
- 'Serenity' of genes.

Table 34.

Two fundamental characteristics of the neocortical cells, namely the polarity of their membrane and the serenity of their genes, are responsible for following outstanding properties.

1. They do not succumb to fascinating physical and chemical stimuli during growth and migration.
2. By the influence of the cosmic consciousness they outsmart all other cells of the nervous system.
3. They are responsible for 'biologization' of cosmic consciousness.
4. They are fond of sharing their consciousness with all other cells of the body. They are not selfish. They love all, great or small.

*Four outstanding properties of neocortical cell*

- Grows under influence of cosmic consciousness.
- Hardly succumbs to physical and chemical stimuli.
- Responsible for biologization of S.C.C.
- Initiates transformation.

Table 35

**FRONTIER OF RESEARCH**

Following fields need further exploration:-

1. The origin of neocortical cell.- This is a splendid event in biology. Phylogenetic and ontogenetic study of neocortical cell is likely to unveil numerous mysteries of Neuroscience.
2. In vitro isolation of neocortical cell.
3. In vitro cultural characteristics of the neocortical cells.  
Neocortical cells are fundamental cells of the nervous system. The reasons they have outgrown all other cells of nervous system are, their polarity and the influence of cosmic consciousness. Temporal isolation of the culture hood, distills cosmic consciousness more effectively. Such an environment is best suited to study their in vitro behaviour.
4. Biophysical properties of its cell membrane. Patch clamping to study the single ion channel in intact membrane. Interaction of phonon, photon, neutrino-muon, with neocortical cell.
5. Genetic 'serenity' of the neocortical cell. Interrelationship of conformon and DNA, conformon and enzymes, of neuron.
6. Differences, similarities and interrelationship of different types of neocortical cells.

7. The difference of neocortical cell from paleocortical and archicortical cell in respect to their histological, ultrastructural, histochemical and immunohistochemical properties.
8. Receptor properties of the neocortical cell.
  - a. Before closure of anterior fontanel.
  - b. After closure of anterior fontanel.

Anterior fontanel closes during the same period when self-consciousness (Ability to recognize one's own image in a mirror) develops in the baby.

### **THE CONCEPT OF NEOCORTICAL STEM CELLS**

There are many organs in the body where stem cells exist. For example, the bone marrow contains hemopoietic stem cells, and in the testes, there are stem cells for spermatogonia. The stem cells, in general, are withdrawn from cell cycle. On specific stimulation, they enter the cell cycle. In this process, it produces either its exact copy (self-renewal) or a different cell committed for differentiation. The former ensures a stable population of stem cell throughout life span of the individual. The commitment for differentiation yields a 'continuous flow of functional cells. This phenomenon has been widely elucidated in functioning of the bone marrow. In the brain, the neocortical stem cells are the progenitor of cells, aspirant of cosmic consciousness. Their potential sites are periventricular area particularly the region of lamina terminalis, the rostral end of the N.S. Starting from the morula stage (totipotent cell), throughout their historical life span, they have been successful to maintain their genetic serenity and membrane polarity. As in the bone marrow, the CFUs and CFUc cells need very specific stimuli of HCGF (hemopoietic growth factor) or interleukin III for entering the cell cycle (2), so in the brain, the neocortical stem cells undergo self-renewal under influence of supracortical cosmic consciousness. They commit to differentiation† by contact factors from differentiated neurons or glia or by some other mechanism (?).

#### *Neocortical stem cell*

- A direct descendent of totipotent cell.
- Usually withdrawn from cell cycle.
- Self-renewal occurs under influence of cosmic consciousness,
- Their commitment towards differentiated cell line is responsible for encephalization.

Table 36

### **THE PROCESS OF ENCEPHALIZATION**

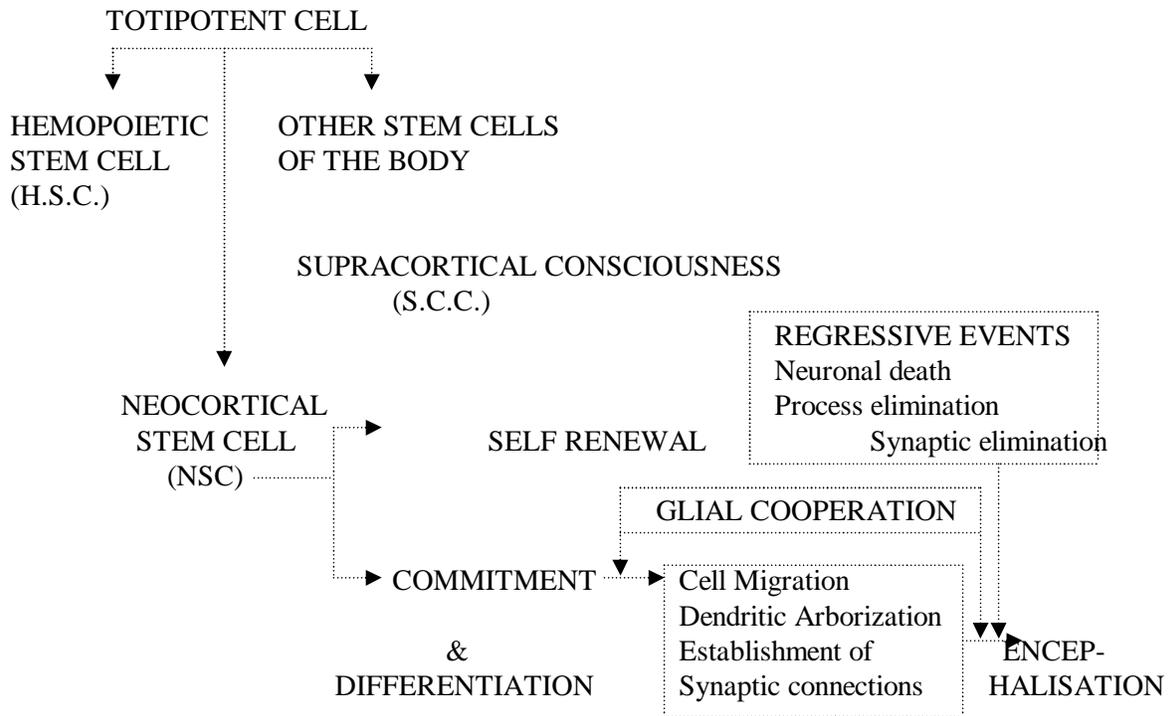
The process of encephalization starts from birth of differentiated neocortical cells. They migrate in various directions for different distance. There is dendritic arborization,

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† Are they the cell of origin for primary germ cell tumor of the brain?

synaptogenesis and there is a profound glial co-operation. Side by side, there continue the regressive events of selective neuronal death, process and synaptic elimination (3). Self-consciousness, physical factors, nutritional factor, process of learning and lastly some chemical factors e.g. BDNF (4), N-CAM and Ng – CAM (5) actively help in establishing the kingdom of neocortical neurons during this process of ENCEPHALIZATION.

### CONCEPT OF NEOCORTICAL STEM CELL



THE PROCESS OF ENCEPHALISATION  
(Fig. 10.1)

“The higher comes THROUGH the lower, then RESTS, on the lower, but doesn’t come FROM the lower” – Ken Wilber.

### THE INTEGRATION AND CONSCIOUSNESS

Now we have reached a stage to answer the most fundamental question on consciousness. How does the brain become conscious of consciousness? Is a stone or a piece of wood conscious? Are the tiny unicellular organisms or the cells of our body conscious?

Whenever and wherever the antematters strip of their Nature, integrate them, then and there is the consciousness. Or they can do so only where there is consciousness. If it is everywhere, the consciousness is also everywhere. If it has been happening in stone, in wood or in a cell, consciousness is also there as eternal yea. The consciousness broods over

integration of 'silence', 'stillness', 'emptiness' and 'nothingness'. Without integration, there is no consciousness.

For a cell, there is functional integration, physical integration, and so there are functional consciousness and physical consciousness. If a system, kept far from equilibrium (photon), self-organization (phonon) and self-replication (conformon) are evidences of such attempted integration. If such phenomena are also in stone or in a wood, they are surely conscious too. Only thing that their expression of consciousness is beyond the reach of average human senses.

There are levels, hierarchy, stratification of integration and so also of consciousness. The physical basis of sensation, perception etc. will be found in final integration of order, coherence, dynamicity and perfection (conformon, phonon, photon, neutrino) in each and every level. The self-conscious modules integrate five vital biological phenomena and evolve into B.I.C.

Without cosmic integration, there is no cosmic consciousness. Without Supreme Consummation (page 150-151), there is no human incarnation of cosmic consciousness. The neocortical cells have been trying to integrate the whole function of the N.S. since their birthday. They are essential to form the highest biological homeostat (B.I.C.) The recruitment takes place from the neocortical population all over the cerebral cortex. The neocortical cells, who have maintained the genetic serenity and membrane polarity till the end are accomplished to biologize cosmic consciousness in earthly reality. This is why we talk so much of neocortical cells.

### **'EVOLUTION' OF SUPRACORTICAL BEING**

The process of self-renewal of neocortical stem cell is only hope for 'evolution' of a supracortical being from the transitional cortical being. Following a fresh supracortical opening, the neocortical stem cells show an outburst of multiplication. A new cortical dynamic is set up. The vestigial are ignored, the redundant are vanquished and the potential dynamites are re-charged. Thank God! Neocortical stem cell normally exists in all human beings.

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# **The Ananda - Biologized Cosmic Consciousness at the level of Limbic Nuclei**

## **THE ETERNAL CRY**

The 'supracortical consciousness' exists. But, how does it matter to me unless I am directly 'affected' by it. Unless I 'feel' it in my 'heart'. Should others have felt it that is also immaterial for me until my 'self' can share its bliss. I exist when I am able to feel it, I express it, and I am capable of explaining the holistic knowledge of its existence.

## **SUMMUM BONUM OF LIFE**

The object of life for such persons, who have this eternal cry, is not a comfortable sleep (brainstem consciousness), sense pleasure (Limbic system consciousness), creation or ego-satisfaction (cortical consciousness). The summum bonum of life for them is ANANDA.

## **IMPORTANCE OF THE LIMBIC SYSTEM**

For any feeling, whether physical or cosmic, philosophic or biologic, we need limbic nuclei. The essence of this universe is consciousness and the essence of biology is in the limbic system. ANANDA is cosmic consciousness biologized at the level of limbic nuclei.

## **ANANDA**

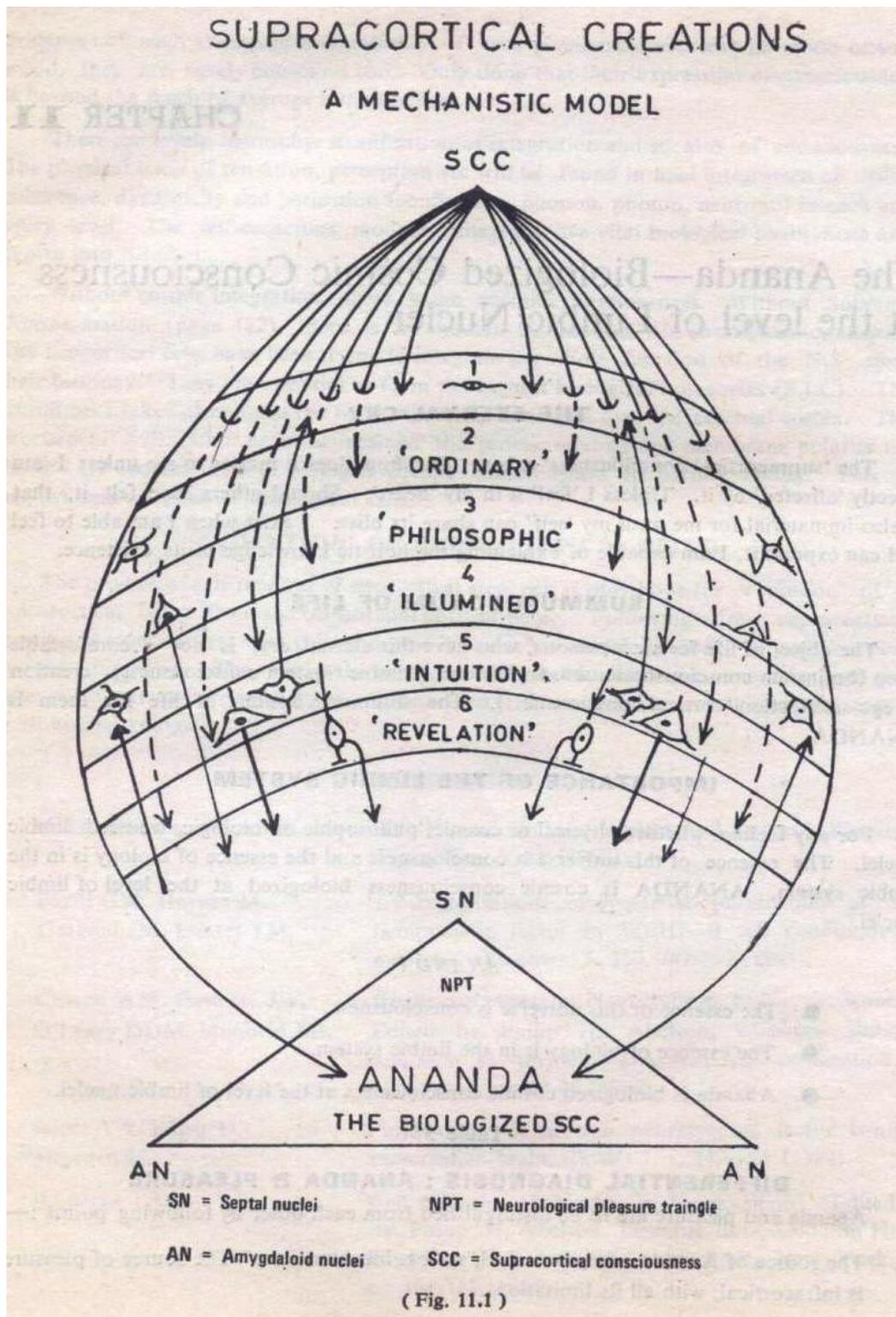
- The essence of this universe is consciousness.
- The essence of biology is in the limbic system.
- Ananda is biologized cosmic consciousness at the level of limbic nuclei.

## **Table 37**

## **DIFFERENTIAL DIAGNOSIS : ANANDA & PLEASURE**

Ananda and pleasure are to be distinguished from each other by following points:-

1. The source of Ananda is supracortical; so it is inexhaustible. The source of pleasure is infracortical; with all its limitations.
2. Pleasure is independent of peripheral receptors and nerves. Ananda is independent of them.



3. Pleasure curls in. Ananda flows out. Pleasure is centripetal. Ananda is centrifugal.

4. Pleasure is focal, fragmented, partial. Ananda is total, integrated, and holistic.
5. Ananda is million times more intense than pleasure.
6. The pleasure is ill-sustained. Ananda begets Ananda. It continues, recurs, intensifies.
7. Ananda integrates consciousness-antematter meridians of the body. Pleasure may do it, but focally.
8. Ananda is ever-elevating. Pleasure makes one stuck there.
9. Ananda is an immobile continuum, without any reaction. Pleasure relapses into pain (medial and lateral amygdalae are twin).
10. When Ananda is expressed through supracortical-limbic-hypothalamic pathway, we 'feel' it in the heart. Pleasure makes noise. Ananda broods on silence.

### **ARRIVAL OF ANANDA**

Having gone through a long trial in ascent, and passed through a phase of vacuum (cosmic disillusion), the aspirant seeks for a total unconditional surrender of self-consciousness to cosmic consciousness. The neuraxis gets inverted. The love play between cortical consciousness and cosmic consciousness manifests in lovely creation. The cerebral cortex is 'seized' layer by layer, module after module. When S.C.C. freezes the cortical centres of limbic nuclei, starts acting through the septal nuclei and amygdalae, Ananda appears. It comes with fullness of the Being (purified self-consciousness united with supra-cosmic consciousness), with fullness of Knowledge of existence of S.C.C., to manifest in essence of biology - the limbic system. *Anandam Brahman. The bliss is the reality.*

The limbic system looks up and expresses:

Ever busy cortex frozen,  
Actively standstill.

Ananda, Ananda, Ananda only,  
Only Ananda I feel.

## The Four from One

The yoga is a Sanskrit word, meaning union. It is the ancestor of an English word, yoke. Yogis are those who are in the process of, or have achieved, unification with God (Consciousness-cosmic integration centre-unrecognizable antematters). Their attempted unification is expressed in four ways in Yoga, namely. Bhakti-Yoga, Jnana-Yoga, Raja-Yoga and Karma-Yoga.

### COLLOQUIAL ALTERNATIVES

If yoga is too difficult to understand, let us visualise the different ways the people express their inner feelings to others. The simplest yoga is exemplified by the way one person communicates with other. In fact, there are only four ways of expression namely, emotional, intellectual, mystical and by action (working out).

### NEUROSCIENCE

One experiences a feeling, when the limbic system interacts with cortical area for 'self-consciousness'. This feeling is expressed through four channels, namely, limbico-hypothalamic, limbico-cortical (associative), limbico-cortical (prefrontal, decisive/pyramidal) and limbicostrial and limbico-strial-thalamo-cortical (extra-pyramidal). The proportionate discharge in these four routes, in an average brain, depends on the quality of feelings, the in-built strength of respective routes, the demand of the situation and a person's training in expressive behaviour. The mystic only realizes that triune brain of Sir MacLean is the 'Kuruksheetra'<sup>†</sup> where the triune way of knowledge, works and devotion is learnt from a supracortical teacher.

### NEUROBIOLOGY

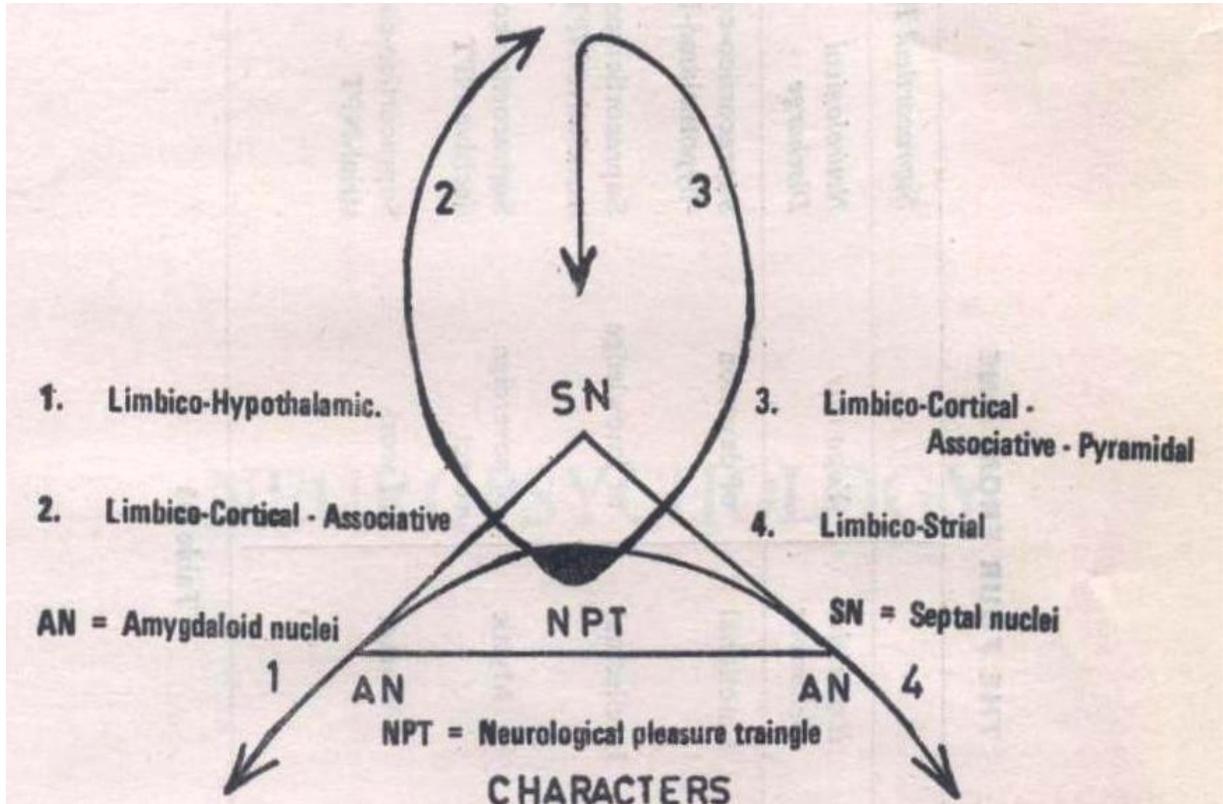
An example will clarify the matter. Mr. X has suffered from an acute heart attack. His youngest daughter is 'shocked' . She is weeping, sleepless and anorexic - a strong visceral expression (EMOTIONAL). His eldest son reasoned out the cause of this attack to be high fat diet, heavy smoking, drinking alcohol and obesity - a beautiful cortical association (INTELLECTUAL). His eldest daughter not only reasoned out the cause, but

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<sup>†</sup> Kuruksheetra is the place near New Delhi in the state of Haryana in North India, where the epic battle of Mahavarat, was fought. Here is the place and occasion where Sri Krishna initiated Arjuna in practical way of yoga, revealing the teaching of Bhagavad Gita'.

also decided to avoid those for her husband - a wonderful decision (MYSTIC). His youngest son, not a physician, had an informal knowledge of resuscitation. Realizing (limbico-cortical associative and limbicocortical decisive, pyramidal) the gravity of the situation, with an awful urgency he starts rhythmic massage of the chest and mouth to mouth respiration - a strong limbicostrial manifestation. This is the characteristic of a WORKER.

### THE FOUR FROM ONE



### THE EXPRESSIVE ROUTES OF LIMBIC SYSTEM

- |                 |           |
|-----------------|-----------|
| 1. EMOTIONAL    | 3. MYSTIC |
| 2. INTELLECTUAL | 4. WORKER |

(Fig. 12.1)

### TRANSFORMATION

Sometimes we are worker, often a mystic. In some situations we are intellectual and emotional for something else. In the 'supracortical' parlance, an emotional becomes Bhakta-Yogin, an intellectual becomes Jnana-Yogin, a mystic turns out to be a Raja-Yogin and a worker, Karma-Yogin.

## THE FOUR FROM ONE

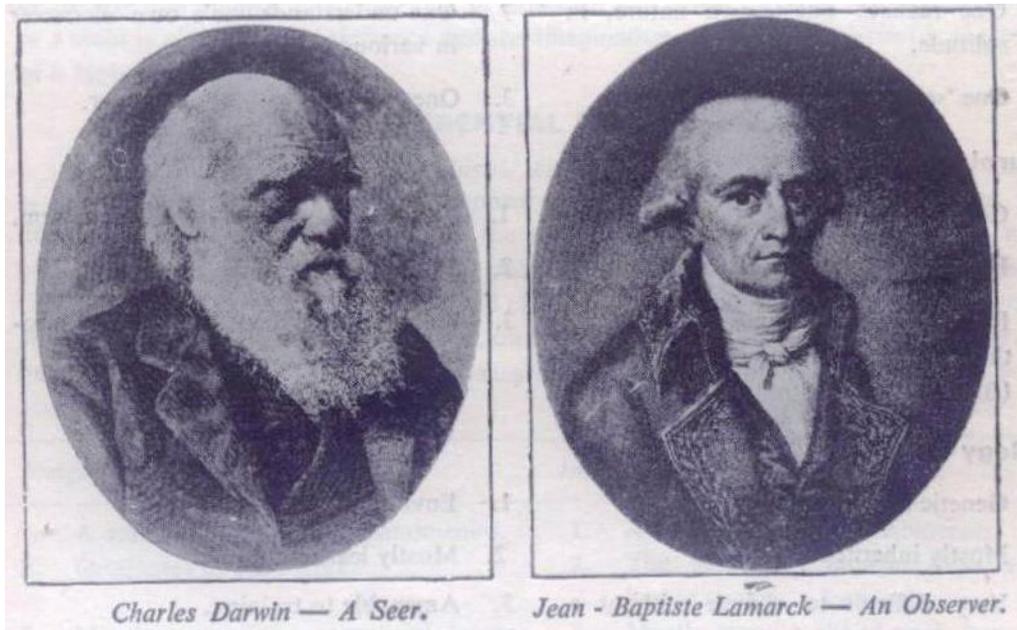
Cortical Being			Supracortical Being		
Origin	Destination	Expressive Behaviour	Yoga way	Neurological Discharge	Personification
NPT	Hypothalamus	Emotional	of devotion	Supracortico-cortico-hypothalamo-NPT	Bhakta Yogi
NPT	Association cortex	Intellectual	of knowledge	Supracortico-cortico-associative-NPT	Jnana Yogi
NPT	Decisive cortex	Mystic	of sovereign secret	Supracortico-cortico-decisive-NPT	Raja Yogi
NPT	Strial nuclei	Worker	of work	Supracortico-cortico-Strial – NPT	Karma Yogi
NPT=Neurological pleasure Triangle					

Table 38

# **NEUROPSYCHOLOGY**

## Nature and Character

When I ask you to look into a matter, I ask you not only to observe but also to see. One observes outward character but one sees inner nature. Character is what is expressed. Nature is what is within.



### NEUROSCIENCE & NEUROBIOLOGY

Go through three articles in this text, the chapters three (page 53), four (page 59) and twelve (page 166). The highest cortical biological integration centre (BIC) integrates five primary types of nature (Lovable, Sexual, Egoistic, Enlivening and Deadly). In the limbic system, four threads of expression are knotted. There are four basic types of character, namely, Emotional, Intellectual, Mystic and Worker.

The nature is reticulocortical and limbico-cortical integration circuits which are mostly inherited. So it has a strong genetic basis. Character is what limbic system has learnt to express. Character-building means training of the expressive (e.g. Limbico-cortical-associative, Limbico-cortical-pyramidal, Limbico-strial, Limbico-hypothalamic) outlets of the nervous system. Nature is difficult to change by training. It transforms only when the cortical integration centre gets a 'supracortical' touch.

## THE DIFFERENCES BETWEEN NATURE AND CHARACTER

Nature	Character
<b>Philosophy</b>	
1. Nature is what is within, the inner striving and propensities.	1. Character is what is expressed, the observable sequence of motor movements, often stereotyped.
2. One realizes one's own nature, in solitude.	2. One understands one's own character in various circumstances.
3. One 'sees' other's nature.	3. One 'observes' other's character.
<b>Neurology</b>	
1. Cortico-limbico-cortical circuits.	1. Expressive routes of the limbic system.
2. Five primary types.	2. Four primary types.
3. Five types of nature are integrated in the Neuro-Biological Integration Centre (B.I.C.)	3. Four types originate from the logical Pleasure Triangle (N.P.T.).
<b>Biology</b>	
1. Genetic influence.	1. Environmental modelling.
2. Mostly inherited.	2. Mostly learned.
3. Very difficult to change without a supracortical touch.	3. Amenable to training.

Table 39

### IDEAL IN A GIVEN BIOLOGICAL SYSTEM

Ideal training is to train the character according to person's nature. Ideal nature is to act from the common knot (BIC) under supracortical control. Ideal character is to have all four expressions, proportionately balanced.

# Imagination

## DEFINITION

Imagination is the finest thread between the infinity and finite, between the eternal and evanescent, between the immortal and mortal. With growth of the brain, the concept of eternity and infinity, as well as that of existence and finite changes. The imagination of a child is a reality in adolescence and the imagination of a young scientist is the reality of a Nobel Laureate.

## DIFFERENTIAL DIAGNOSIS

Imagination should not be confused with interpretation. When an ‘Imaginative’ writer describes vividly, the bodily exposure and intimate relationship of a sex act, he is not really imagining. He is describing the act, in comparison to various patterns, which he is digging out from his dorsomedial thalamic nuclei, the phylogenetic store house, or that acquired in the cortico-hippocampal circuits. He is really clearing up the Augean stables in name of art. Imagination, on the other hand, is an adventure for a new, the new for one’s biological system. Its pleasure is in surpassing existence, to have something beyond.

Imagination	Interpretation
1. A cortico-supracortical phenomenon.	1. A limbico-cortical phenomenon.
2. Originates in the cortex.	2. The source of interpretation is the limbic system, a feeling.
3. Mostly recruits the superficial layers of the cortex.	3. Mostly recruits the deeper layers of the cortex.
4. Mostly flourishes in constantly shifting dipoles in the dendritic mat.	4. Mostly dependent on the action potentials in the modules of lower layers of cortex.
5. During transformation of imagination Into reality, the direction is supracortico-cortico-limbic.	5. When someone interprets a supracortical experience, its direction remains same, i.e. limbic-cortico-supracortical.
6. Memory circuits are not essential.	6. Memory circuits are essential.

Table 40

## INTEGRATOR, SELF-CONSCIOUS AND IMAGINATIVE CORTEX

The regional delineation of cerebral cortex has been done according to cytoarchitecture, myeloarchitecture, chemoarchitecture, and angioarchitectonics. The cerebral cortex, here, in context of imagination has been divided into three functional zones, the zone for external cosmos, the zone for internal cosmos, and the zone for self-consciousness.

### Three functional areas of human cerebral cortex:

The cerebral cortex is a miniature world. Not only the biology of the whole body is represented here, but the cortex can and does reflect the external cosmos also. The regions responsible for the former activities are those for sensory perception, motor execution, memory, and co-ordination. The latter, the nonsensory perception of the supracortical vibration, is achieved by those areas, the function of which the neuroscientists have been investigating for last two decades, the so called 'silent' areas of the brain, the 'windows' of the brain.

Following the two principles of biological evolution, these areas have been evolving continuously in a supracortical direction. The area for external cosmos follows the principle of preservation of species. The area for internal cosmos grows according to the principle of preservation of self. In the limbic brain, neurological representative of these two principles are septal nuclei and amygdalii; septal nuclei follows the law of preservation of self and lateral amygdalii, the law of preservation of species.†

In addition to these two distinct areas, there is another cortical area, the area of immense biological importance, the area which conciliates and co-ordinates the areas representing external and internal cosmos, the area developed only in human being. This is the region, responsible for self-consciousness. It is through the co-ordination of this area, two important principles of biological evolutions are combined, nonsensory perception are biologized, imagination is brought into reality, the evolution of the human being continues in a supracortical direction. More the brain grows and evolves, more the 'silent' areas are brought into action, converted into non-silent integrator areas. In this way, the external cosmos finds its strong footings in the internal cosmos of biology.

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† It is not at all a matter of dispute whether the present human race has evolved out of primordial protoplasmic mass according to the law of struggle for existence and the survival of the fittest or following the principle of unfolding of the Divine from within by a universal Divine power. One struggles to overcome a resistance encountered from higher level and if successful, survives as the fittest. This follows the principle of preservation of self. Also during the process, there is unveiling of the Divinity within and an approximation and unification with the Divinity without. The fittest exemplify the certainty, call for an evolution of similar kind amongst fellow members. Here is the principle of preservation of species, the element of 'sharing' in concept of consciousness.

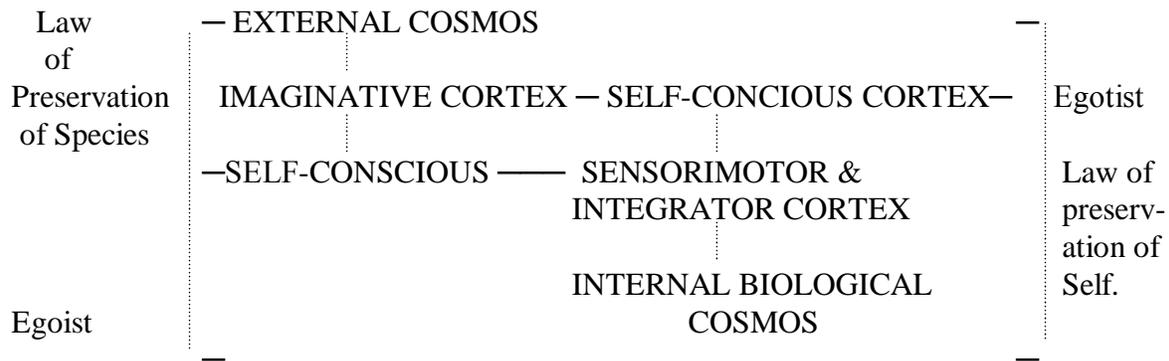


Figure 14.1

### THREE PRIMARY TYPES OF THE CORTICAL BEINGS

Due to varying development of these three functional zones, three primary classes of cortical beings could be found.

#### 1. The man of the earth:

They are human beings in whom the sensorimotor areas, the memory and co-ordination centres are well-developed and dominate over other two areas. They are the men of the earth: very sensitive, prompt responsive, nice and smooth, proportionate and balanced.

#### 2. Self-conscious:

Self-conscious people are of two types, egoist, and egotists (see page 33 and 54). The area for self-consciousness is immensely developed in them and it dominates over the other two regions. In egoist, the area for self-consciousness dominates over that for internal cosmos; in egotist, over the area for external cosmos.

#### 3. Imaginative

In imaginative personalities, the area for nonsensory perception are very well developed. With growth of self-consciousness, it is co-ordinated with that of internal biological world and slowly the imagination is brought into reality.

THE SUMMARY

Region of the cortex	Anatomical location	Functional attributes
Imaginative cortex. (Representing external cosmos).	‘Silent’ areas. The areas are silent to infracortical Physical stimuli.	Nonsensory perception of supracortical phenomenon. Preservation of species.
Sensorimotor cortex with co-ordination & memory areas. (Representing internal Cosmos)	Well defined projection areas of thalamocortical & reticulo-cortical fibers from the lemniscal system. Well defined motor areas. Well defined three association areas, namely frontal, temporal and parieto-occipital.	The cortical being is the man of the earth, sensitive and prompt responsive, proportionate and balanced. Preservation of self.
Self-conscious cortex (The human characteristics).	See pages 77-79.	Self consciousness, ego, self-respect, self-dignity, self-confidence and self-identification. I This area is responsible for combining other two areas.

Table 41

**BIRTH, GROWTH AND FULFILLMENT OF IMAGINATION**

The imagination is not one of those random events in this universe. It is happening regularly in most of our brain. The cortical dynamics in imagination originate out of love play between the cerebral cortex and the supracortical consciousness.<sup>1</sup> Their private room is the area responsible for nonsensory perception of the supracortical vibration, more near to the terrace than to the basement of the huge palace of the cerebral cortex.

The sixth layer of cortex is the basic reality of biology, the most crude, phylogenetically oldest, rich in vertical fibers and vertically oriented fusiform cells. The superficial layers are more imaginative, phylogenetically newer, abound with dendrites showing constantly shifting electrical dipoles.

The imagination takes birth in the active superficial layers of the imaginative cortex. The dendritic spines of a neuron in the first, second or third layer suddenly pick up a supracortical vibration and sends the message down to its friends in the fifth and sixth layer. ‘What nonsense!’ The neurons in the fifth and sixth layers react with seizure. The

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1.cf: The Holographic supertheory of Karl Pribram: “The brain mathematically constructs ‘hard’ reality by interpreting frequencies from a dimension transcending time and space.”

cool ad composed remains the imaginative neuron. ‘You always talk sense’, it expresses, ‘because all the time you are fed by the sensory system! What I am trying to convince you is not a nonsense but of nonsensory perception of external cosmos’.

The love play gets complicated because of strong inhibition from downstairs modules. The superficial neurons yearn for its lover, disturbing the homeostasis of the whole body.<sup>2</sup> It has to survive the torrents of aberrant neuronal current, conciliate, and unify the hostile and helpful vibrations. It has to convince the neuronal modules responsible for self-consciousness about the future potential and fruitfulness of its imagination. After a successful warfare or love-fare, the imaginative neurons themselves transform, and then through co-ordination of the neuronal modules of self-consciousness, transform their friends. The fourth layer neurons express an illumination, fifth layer neurons an intuition and the sixth layer neurons experience a revelation. The NPT is blessed with Ananda.

### **VALUE OF IMAGINATION**

All evolutions are the result of conversion of imagination into reality. It may take generations or thousands of years to materialize. But the morale remains that if one learns to imagine correctly, one evolves.

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2. The subjective nondiscriminative ‘vibrations’ affect the homeostatic equilibrium; the objective discriminative ones do not.

# Meditation

## DEFINITION

The process of getting absorbed in something through self-consciousness is called meditation.

- It is a process, with a beginning, a course, and an end.
- Unless self-consciousness is applied on, the process is not meditation.
- This ‘something’ may be an object, subject, or an abstract.
- The word ‘absorption’ stands here for ‘biologization’.

## THE BEGINNING

One doesn't meditate for  
 Power or money,  
 Nor for position or  
 Pleasure of honey.

All those are achieved with  
 Hands, heart and ‘brain’,  
 Meditation starts beyond the  
 Pleasure and pain.

Fearless, carefree,  
 Fountain of bliss  
 Permeates the heart  
 For eternal peace.

Ever fresh, ever-joyous  
 Ever new-born  
 Beyond dark, beyond death  
 Ever fresh sworn.

## TRANSCENDENTAL MEDITATION

When one likes to identify one's ‘self’ in ‘supra-cosmic consciousness’, the process becomes transcendental meditation. Gradual elevation of self-consciousness from lower biological consciousness, surrender of self-consciousness to S.C.C. and manifestation of the latter through the infrastructure of nervous system are three phases in transcendental meditation. The detail of transcendental meditation has been described in Chapter Six.

## **BIOLOGICAL REQUIREMENTS FOR MEDITATION**

One cannot meditate upon something, unless one loves it. One cannot love unless one has genes for it. The genes cannot express fully unless environment supports them (by giving way or putting resistance). Proper environment is never searched for, until the brain is conditioned for it. The brain is conditioned only when one actively seeks for it. Seeking starts from the brain-gene-environment interaction. So, the requirements are: -

1. Faculty of self-consciousness.
2. Genes.
3. An environment to support the whole process.

## **NEUROLOGY OF MEDITATION**

To become conscious of an object, subject or an abstract is attention. Attention is 'consciousness' acted upon by an object, subject, or an abstract. The rest of the sensory inputs are being completely inhibited during this time. When different consciousnesses of the brain scan that object/subject/abstract and analyze it in detail to decide whether that is suitable for biologization or not - the process is called concentration.

When neocortical modules, responsible for 'self-consciousness' are recruited to biologize that lovable object/subject/abstract, the process becomes meditation.

Meditation starts beyond the sensorimotor world (above fourth cortical layer), on the background of a primordial gloom (electrophysiological watershed in the cerebral cortex). Its foundation stone is, in the third cortical layer, the imperishable faith. The summit is selfless love. The stairs are built-up with devotion. The whole affair is primarily a phenomenon in upper three layers of the cortex with secondary changes in the causal body, brought out by synchronization of the modular operon with upstairs activities.

## **EEG CHANGES DURING MEDITATION**

The meditation with faith (third layer), devotion (second layer) and love (first layer) can bring a change in EEG only when upstairs activities could be conveyed to modular operon in the downstairs. Three primary patterns of change in EEG are expected to be found in such successful practice. Successive involvement of third, second and first layer neurons in the modular operation, could give rise to 'faith' pattern, 'devotion' pattern and 'love' pattern of EEG respectively. 'Illumined' pattern, 'intuitive' pattern and 'revelation' pattern are appropriate and respective alternatives in this nomenclature.

## **TRANSFORMATION OF SELF-CONSCIOUSNESS AND ARRIVAL OF ANANDA**

The self-consciousness, built-up by spatio-temporal vibration of the lower cortical modules and so bound by space, time and causation, is pushed down to oblivion. Faith grows and matures in living presence of a supracortical person, exemplifying the certainty. The growing pole of faith is devotion, out of which a small 'i' is born. The small 'i' makes love with the universal 'I'.

Then there is a grandiose, the unification, and the marriage of world's best and eternal love partners. The distinguished guests are sweet memories of faith, devotion and love, stored in the synapses of third, second and first layers of the cerebral cortex. The neurological pleasure triangle catches the vibration from above. The modular operon rings the bell and bangs the drum. They not only support and sustain the whole ceremony, but also they flood the whole infrastructure of neural machinery with illumination, intuition and revelation. Finally, the love culminates in ecstasy, the Ananda; the S.C.C. being seized by the limbic nuclei.

Ever busy cortex frozen,  
Actively standstill.  
Ananda, Ananda, Ananda only,  
Only Ananda I fell.

## **MEDITATION AND 'EVOLUTION'**

The whole evolution of mankind, in fact, is due to meditation. Variation in the object/subject/abstract of meditation has resulted in diversity in evolution. The result of meditation is transformation of 'Self-consciousness' into the object/subject/abstract of meditation. Achieving oneness is the outcome of meditation. One becomes what one meditates upon.

## Neuropsychology of Death

There is no death of the individual. There is cycling of consciousness. Death means the ‘death’ of self-consciousness.<sup>1</sup> One transcends self-consciousness to transcend death. In whom the whole self-consciousness is a cloud of confusion, to him the meaning of death is fuzzy.

The process of delinking the self-consciousness from the causal body (the downstairs of cerebral cortex, limited by space, time, and cause) is what is presently meant by death.

The seven phases of this conscious<sup>2</sup> process of death and the process of ‘rebirth’ in the same body has been described below.

1. The first step, in this process, is dissociation of self-consciousness from the prefrontal lobe, the planning cortex.

This generates apprehension and fear. When ‘I’ am conscious about total dissolution of my plan, ‘I’ am afraid (Neuropsychology of fear). If ‘I’ succeed to overcome the fear (It is possible only if ‘I’ am optimistic, and have faith in something beyond), ‘I’ pass to the next phase.

2. When ‘I’ am not afraid of anything in ‘my’ world, ‘I’ carry on. ‘My’ first encounter, ‘I’ find, is very difficult to express. Use of words conceal rather than reveal the realities. Still ‘I’ march on and try to express.
3. The root of ‘my’ auditory cortex is stirred. A disturbing noise is heard. If ‘I’ am successful to ‘concentrate’, ‘I’ can hear the clean voice of ‘my’ well-wishers— ‘He is no more with us’!
4. ‘I’ also take off from the visual cortex. A total blackout follows. A long dark tunnel. It compels ‘me’ to become unidirectional.
5. The cortex responsible for my spatial equilibrium almost loses balance. ‘I’ run, run and run. ‘I’ exhaust ‘myself’ to cross the long dark tunnel with fastest velocity ever possible.

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1. Cf: “The thinker, not consciousness, is death-bound” — Renee Weber.

2. “There is only one true serious philosophical problem, and that is suicide” — The Myth of Sisyphus.

6. 'I' reach the other end of the tunnel, beyond the counter currents of action potentials in the modular cortex.  
'I' am 'out' of my causal body, beyond space, time. 'I' am in the 'vacuum'. Modular self-consciousness is dead. The cunning dragons of 'subconscious' ocean and the hidden dynamites of self-conscious modules are 'ineffective' to do anything to 'me'.  
There are silence, stillness, emptiness, and nothingness.
7. Three options are open for 'me' (The 'astral traveller').<sup>1</sup>
  - a) 'I' remain 'out' of 'my' body. The clinicians declare 'me' dead and 'my' relatives burn, bury, or throw 'my' body.  
'I' loose the chance of re-entering 'my' body for ever. 'I' am honoured as departed 'soul' in heaven.
  - b) 'I' re-enter my causal body (downstairs of the cortex). (A conscious person describes it as entry through the top of the skull - a referred sensation).  
The reason may be one or more. 'I' have not finished my job yet. 'I' don't want to die right now. 'My' beloved does not wish 'me' to depart this moment etc. etc.
  - c) If 'I' am fortunate to have innumerable spines on the dendrites in the upstairs of the cortex, nourished by and flourishing in faith, devotion and love, 'I' don't feel like coming back in 'my' causal body. 'I' carry on.  
Consciously and critically 'I' reject everything else till 'I' see the light of the Being, my God, my Guru, the Christ, the Deity. By now, 'I' have transcended death positively.
8. 'I' and 'i'. There is a vast quiescence. Electro cerebral 'silence'! The 'verbal' communication between 'I' and 'i' are conspicuous by its absence. There is instantaneous review of small 'i' by the big 'I'. A dynamic web of Love. The biological STATE OF GRACE has been enfolding and unfolding within the rapturous embrace of the physical GRACE.  
The supreme consummation... 'I' impregnates 'i' – the supracortical consciousness, immanent in self-consciousness - the seed for transformation is thereby implanted.

### IMPORTANT QUESTIONS

1. What is the exact watershed of upstairs and downstairs of the cortex?
2. Is this watershed only electrical? How far and how deep is the involvement of high energy physics in this process?
3. Is it possible to correlate this 'tunneling' perception during the process of conscious death with conventional quantum mechanical tunneling in physics and the new tunneling theory proposed by D.K. Roy?

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1. As an astral traveler, I see numerous persons, 'trans'-personified like me. It is a different world, full of sufferings and delightment.

4. If this process is bihemispherical, does this process of conscious death generate a new mode of unification (rather Akhandification) of consciousness of both hemispheres?

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# The Felt Need in Neuropsychology

As all attempts to ‘unify’ the quantum mechanics with the Theory of Relativity have only sharpened their conceptual difference (the former requires noncontinuity, non-causality, nonlocality and the latter requires continuity, determinism and locality), so the commissural systems between two cerebral hemispheres have been successful, through millions of years, not only to sustain but also to accentuate the differences of consciousness between the categorical and representational hemispheres.<sup>1</sup> The human being, today, has the largest commissural system in the brain.

The Neuroscientists have recently rejected the notion of ‘dominance’ of one hemisphere over other.

“Our objective is to abstract patterns from Nature (right hemisphere thinking), but many proposed patterns do not in fact correspond to the data. Thus all proposed patterns must be subjected to the sieve of critical analysis (left hemisphere thinking). The search for patterns without critical analysis, and rigid skepticism without a search for patterns, are the antipodes of incomplete science. The effective pursuit of knowledge requires both functions”.<sup>2</sup>

Many of us, a step ahead, are also not satisfied with the concept of complimentary specialization of the two cerebral hemispheres. What the science really needs today is a mechanism or a process for hemispherical *equanimity* to generate a personality beyond the polar opposites, integration of five vital phenomena (Love, Sex, Ego, Life, Death) and a language with equal resonance of noun and verb, enfolding and unfolding simultaneously, holistic as well as elementary. It is the *equanimity* of the two hemispheres which can bring out the theoretical as well as practical equanimity in individual, in society, in politics, in economics, in culture, religion, science and philosophy.

We are stuck! As long as these commissural systems will remain, (their survival has been almost immortalised in human beings!) so long the left hemisphere will stress on necessity of a ‘system’ in education and the right one will advocate ‘no system’ at all, whatsoever; the left one will speak of orders explicit and the right one will observe the implicate order; left one will unfold the universe, the right one will enfold it; the left one will stress on NOUN in construction of language and the right one will give more emphasis on the VERB;<sup>3</sup> the left one will look for a female companion and the right one will seek a male friend. One is almost immortally categorical and the other is almost eternally representational. This is the root cause of fragmented view of the world, may it be biological, physical, philosophical or one’s own self-conscious world.

Only hope in such distressing situation for a person who is fond of seeing everything as 'AKHANDA', is the fifth world, the world of cosmic consciousness (page 41, five components of human consciousness), whose kinetic facet is the GRACE. This has been emphasized time and again in this text that Grace is PHYSICAL. The BIOLOGICAL responsibility is to elevate oneself to a STATE OF GRACE; to develop the biological integration centre. Then begins the Supreme romance, involvement of the cosmic integration centre and the biological integration centre, through the mediation of Antematters and finally AKHANDIFICATION of the cosmic consciousness and self-consciousness. The presence of Sadgurus exemplify such certainties.

So, the conceptual milestones for further progress, evolution and transformation of the present human race are as follows:-

1. The living presence of Supracortical autonomy (page 118).
2. The biologization of the concept of the Divine Motherhood (page 124).
3. The development of Biological Integration Centre (page 53-57)
4. A new language which gives equal emphasis on the hemispheres. We want HER (The verb, the representational hemisphere) to be categorical and Him (The subject, the categorical hemisphere) to represent the eternity.

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1 Cf: When Dirac applied the Theory of Relativity to Quantum mechanics, he predicted the existence of positron— a polar opposite of electron.

2 Carl Sagan in "The Dragons of Eden", Random House, New York (1977).

3 In construction of sentence in English, the Noun is given more importance. In Hebrew, the Verb gets more emphasis. The readers are requested to go through David Bohm's The rheomode — an experiment with language and thought, in Wholeness and Implicate order, ARK paperbacks, Routledge & Kegan Paul PLC, London, (1984).

## Psychology of a Cell - A Holistic Concept

### Origin of Life

Before five thousand millions of year,  
When the earth was born out of universal cheers

The 'chetana' was looking for a substrate of matter,

On whom it can wrap  
In every atom and its gaps

To bring 'life' in this lifeless spheres.

We can start from the Big Bang, ten to twenty billion<sup>1</sup> years ago. We do not know prior to that except that there was a limitless 'space' in which this present universe has ever been expanding.

We are talking about life on this earth, a planet, and born about five thousand<sup>2</sup> million years ago, out of the star, the sun. About  $10^{11}$  such stars from a galaxy. About  $10^{11}$  such galaxies make this Universe (Arthur Eddington).

"How many such places, which can support life, are there"? asks Prof. George Wald. Referring to Eddington's formula he attempts to answer, "The lowest estimate I have ever seen of the fraction of them (stars), that might possess a planet that could support life is 1%. That means one billion such places in home galaxy; and with about one billion such galaxies within reach of our telescope, the lowest estimate we might put to the number of places in the already observed universe that could support life would be of the order of one billion billion -  $10^{18}$ "(1).

According to the concept in this text, the pure consciousness in Brahman. The unrecognizable antematters, held in 'equilibrium', through cosmic integration centre, with consciousness makes the concept of God (Ishwara), the seed for creation, sustenance, dissolution and grace.

Here, in this planet, our earth, life came into existence out of uncoiling of Consciousness-Antematter-Matter serpent. The consciousness was there prior to the Big Bang, the epoch of creation of this Universe (1). It exists also in this present universe, in its galaxy, stars, planets, as universal consciousness. The consciousness through the vibrating antematters in matter becomes life.

The Anthropic principle says that the Big Bang was a necessary condition for the existence of living system on this planet (2,3). The first form of life, the first molecular system that could self-replicate, is thought to have emerged in the biosphere of this earth about 2-3 billion years ago (4). The idea of ‘primordial information’, generated at the time of the Big Bang, for the self-replicating properties in the ‘Living State’ has been proposed by prof. Sungchul Ji and he has also linked it with conformon (5), one of our four antematters.

Whether constellation of properties of all four antematters were essential for most primitive biological life is not very clear at this stage. But it seems, it needs. All of four—► cosmic integration centre,► consciousness — are needed to build up the concept of life. Self-replication (conformon), self-organization (phonon), dissipated state (photon) is quite understood in the ‘Living State’. The role of neutrino in primitive life is completely virgin field. Its essentiality has been proposed in this text for realization of ‘Grace’ through human neocortical neurons. That it is also responsible for brining equanimity of Consciousness-Antematter play has been proposed.

The consciousness through the vibrating antematter in matter becomes life. Consciousness-Antematter-DNA/RNA is life.<sup>3</sup>

## SEPARATION OF THE TWO - THE DUAL EXISTENCE

From the infinite pool of ‘consciousness’ a whirlpool of it ‘wrapped’ a perfect combination of antematter and matter to form ‘life’ (biological consciousness). After several thousands or millions of year, antematter pole of ‘biological consciousness’ and that of ‘universal consciousness(es)’ had ‘condensed’ to form the membrane of separation - the plasma membrane. The singular<sup>4</sup> consciousness becomes observably plural.

The ‘condensation’ of two antematter poles resulted in a permanent separation of the two consciousness. It is followed by a ‘pain’ (for separation) and a ‘joy’ (consequence of self-identity), then a tremendous effort for reunion or merger - the eternal cry. This eternal cry for reunion or merger with universal consciousness, is ASPIRATION and negation for the rest of the world is RESTRAINT. The aspiration of a biological system is ‘phase-specific consciousness’ and its restraint is meant for not succumbing to antematter and matter any more.<sup>5</sup>

1.  $10^6 = 1$  million,  $10^9 = 1$  billion,  $10^{12} = 1$  trillion (U.S.A and France).

2. cf: 4322 million human years, in Hindu cosmology, is one Kalpa (one day) of the Braham, the God of creation.

Satya Yuga : 1,728,000 yrs + Treta Yuga : 1,298,000 yrs + Dwapar Yuga : 864,000 yrs.  
and Kali Yuga : 432,000 yrs make one Mahayuga.

1000 Mahayugas make one Kalpa, 4322,000,000 human years.

3. “I can trace my ancestry back to a protoplasmal primordial atomic globule”— The Mikado.

4. Consciousness is always singular. Upanishad writers emphatically oppose the idea of plurality of consciousness.

5. This view agrees with Platonic concept;-During creation, the soul (our phase-specific consciousness) was most perfect. It does not progress towards something better.

## **DECLINE OF ASPIRATION AND FAILURE OF RESTRAINT – THE CAUSE OF DIFFERENTIATION**

How long can an individual maintain his aspiration for going back to the origin and so to practice restraint from the rest of the world? Ideally, it should be a life long endeavour. In reality, however, it did not happen so. Varieties of fascinating physical energy and chemical stimuli, cool breeze of cosmic wave, pleasant mass less photon particles, finest vibration of ultrasound were some of the matters of attraction for the cell. Its restraint failed and once again the cell fell into the grip of physical and chemical stimuli. With decline of aspiration, there had been a loss of polarity too. The decline of aspiration for consciousness, altered polarity and failure of restraint from physical and chemical stimuli are causes of differentiation.

### **MULTIPLICATION**

When the cell ‘understood’ that its differentiation is a further ‘fall’ from its origin, it turned on its aspiration. It looked back at the genes, cried silently to go back to the origin. Behind is a long way it had already passed through. It concentrated its ‘mind’ on the nucleic acids. Conservation and synthesis, little rest and then another long jump - but misdirected! An attempt, proved futile for merger! In the meantime, there followed a division of nuclei.<sup>1</sup> One cell became two. Aspiration after differentiation resulted in multiplication.

### **BEGINNING OF A LONG RUN**

Differentiation and multiplication, multiplication<sup>2</sup> and differentiation converted the simple system into a more complex cohort. Different cells got fascinated by a variety of stimuli to bring wide diversity in their structure and function.

Antematter poles of the cells got linked according to their zone of equivalence. Antematter-consciousness meridians, by then, were delineated. Conglomeration of similar cells constituted tissue, organ and system. The original innocent cells ‘got lost’ in the crowd.

### **THE LIGHT IN DARKNESS**

As soon as a cell, in a multicellular organism, succumbed to physical and chemical stimuli, it was drawn in the cycle of darkness - differentiation and multiplication, multiplication and differentiation. Some cells, however, wanted to retain their originality,

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1. Is it meiosis or mitosis? Which is older in evolution? Could a haploid cell again become diploid? Are we on the brim of psychology of parthenogenesis or the genesis of a multiploid Hodgkin’s cell?

2. cf: Something on the order of  $10^{16}$  cell division take place in a human body in the course of life time. Cairns, J. Nature 255: 197-200, 1975.

did not give up their aspiration for consciousness. Such capable cells remain on the surface of the system to imbibe 'consciousness'. They are the hope of light in darkness. These highly aspirant cells are neurons, interposed amidst cells, forming internal or external lining epithelium of a simple multicellular organism (e.g. in hydra - a coelenterata).

### **DEVELOPMENT OF NERVOUS SYSTEM**

These highly valued cells, neurons, were afraid of getting trapped by unwanted provocations, stimuli and excitations. They peeped in - keeping the processes, as receptor, on the surface.

Life is, however, not so easy. Constant provocation is there. Examples of neighbouring colleagues are constantly staring. Amidst strong competition for resources and hierarchical distribution of power, 'economics' and 'political science' were 'biologized'. In the whole ecosystem of the body, with death and birth of cells, their habitats, maintenance of population system, territorial limitation and restraint, the neurons made two beautiful observations. The so-called 'natural selection' is almost nil and the principles of altruism are widely applicable in cell behaviour. Though the neurons themselves are also very altruistic, in course of time some of them could not continue any longer to maintain their genetic serenity and membrane polarity. By social influence of cells, those had already succumbed to various provocations, these highly valued neurons also underwent severe form of moulding.

Sometimes, they were also 'adored' by other cells, for their specialty. They are offered power to have control over others (origin of democracy in biology).† Neurons were made overall controlling authority. Chemical messengers are formed for convenient and faster intercommunication in the system.

### **ORGANIZATION OF THE BODY**

#### **Consciousness-antematter meridians:-**

Let us now look into the organization of the human body, in light of consciousness antematter hypothesis. The cells, in a group, are in hierarchical cascade of antematter and consciousness. The cells of similar consciousness come together to form tissue. In such aggregation a 'meridian' of antematter-consciousness could be defined. This is also so, when the tissue forms an organ. The consciousness-antematter meridians could be thus, found in a cell, tissue, organ, system and in the whole body.

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† cf: The concept of cytosociology by R. Welch and T. Keleti in the J. Theor. Biol 93, 711 (1981).

*Chemicals known to determine cell to cell meridian of neural tissue*

- A. Calcium-independent:
  - a. N-CAM (Neuronal cell adhesion molecule)
  - b. Ng-CAM (Neuronal-glia cell adhesion molecule)
  
- B. Calcium-dependent:-
  - a. Cognin
  - b. Agglutinin
  - c. Ligand.
  
- C. Others:
  - a. Toponimic (TOP).

Table 42

**Solid Organs and Hollow Organs:**

There are organs in which ‘consciousness’ predominates over ‘antematter’. Organs are also there in which ‘antematter’ outweighs ‘consciousness’. According to the theories of physics, the degree of solidity of any substance is proportional to its energy content. Examples of such organs, where ‘antematter’ outweighs ‘consciousness’, are solid organs of the body e.g. heart, lungs, kidneys, liver, spleen and the bone marrow. These organs are considered vital for physical existence. They also have some sort of spontaneity (e.g. pacemaker in heart, self-replication ability of marrow stem cells etc.) They are regulated from the main organ of consciousness, the central nervous system. The consciousness-dominant-organs are those responsible for day to day biologization of the environment. Most of them are hollow organs, lined by ‘sensitive’ cells and communicate with the exterior. The gastrointestinal tract, genito-excretory tract are examples of such organs. Autonomic nervous system and endocrine organs could also be included in this group. They regulate day to day biologization of the environment.

**The original simplicity and the final distortion:**

Now let us think of development of embryonic plate from stage of morula, differentiation into three germ layers, folding of embryo, organogenesis, and development of limb buds. Let us also think of extension, distortion, complexity and branching of the original Consciousness-Antematter meridian of the zygote. In such situation, any cell could be traced to have linkage with all other cells through Consciousness-Antematter meridians. Any organ will have representation on the surface skin as well as in the central nervous system. The highest biological consciousness is seen in neocortical neurons. They can overcome also the influence of modular self-consciousness. The same group of neurons establish link with the ‘supracortical consciousness’.

## **SPECIALIZATION OF THE CELL ORGANELLE – THE PENTAGON OF CELL PSYCHOLOGY**

The five vital biological phenomena, namely love, sex, death, life and ego are expressed even in an individual cell. In other words, five organelles specialize to express each of these five phenomena respectively.

1. The cell membrane specializes as organ of love/hate. Surface embracement is the initial manifestation in expression of love between two individuals. In the cellular kingdom, spermatozoa, ovum, cells of nervous and of immune systems have highly specialized membrane structure and function. All these cells express, MHC type II antigen on the surface ('Molecular talk' amongst cells).
2. The operation of the DNA replication apparatus is the expression of cellular sex. Basal cells of the epidermis, intestinal mucosa are specialized to meet this demand, for example.
3. Synthetic machinery (endoplasmic reticulum, ribosome, Golgi apparatus) maintain day to day life of a cell. The principal task of secretory cells is indicative of such superspecialization.
4. The mitochondria, through its enzymatic and electron transfer machinery generate ATP and protect the cell from moment to moment death. Huge mitochondrial swelling, myelin figure formation, demonstrable calcium in mitochondria are morphological expressions of irreversible cell injury.
5. The lysosomal package is the ego of a cell, very valuable and for judicial use only. They do not tolerate foreign body, digest whatever they can and show their ineffectiveness in killing bacteria coated with specialized lipid (e.g. Mycobacteria) (battering!). Lysosomal membrane (ego) rupture is also one of the four (three already mentioned) morphological parameters for assessing irreversibility of cell injury (disintegration). The psychosomatic element in pathogenesis of tuberculosis and leprosy, according to this theory, is Ego.

The cell is not only 'scientific' but is also 'artistic'. The organ of art of a cell is its cytoskeleton; Microtubules, micro - and intermediate filaments. This artistic difference between individual tissues is one of the hallmarks of cell differentiation.

## **FUTURE IMPLICATIONS OF THIS HYPOTHESIS**

### **1. Relook into Chinese Acupuncture:-**

The central essence of Chinese acupuncture is based on the Yang-Yin concept in biology. They also describe 'meridians', 'trigger spot', 'Yang' and 'Yin' – organs. Electro acupuncture according to Voll (EAV), electronic pulsography (EPG), use of Dermatron and electronography (6), are very recent developments to explore the biophysical aspects of acupuncture. If the words 'Consciousness', 'Antematter' and 'Consciousness-Antematter

meridian' are used instead of 'Yang', 'Yin', and 'Chi' respectively, one lands up in kingdom of pearls and diamond, the lost treasure of so many centuries.

## **2. Cancer Biology:-**

The solution of cancer biology is in proper understanding of Consciousness-Antemater-Matter serpent. The conformon in relation to genes and enzymes, the photon in relation to dissipative state kept far from equilibrium and the phonon in relation to macromolecules, are to be thoroughly investigated, and challenged. What breaks the integrated harmony of the three? Why do the cells fall from the Grace? What is the role of neutrino in this context?

What are the biological significances and implications of physiological multiploid cells (e.g., Betz cell of cortex, Purkinje's cell of cerebellum, Megakaryocyte)? Why doesn't a neuron usually multiply? How are the differentiation and multiplication so nicely related? Why don't the cancer cells differentiate properly? Why have the people started using the drugs which induce differentiation of immature cells in cancer chemotherapy? Why do the neoplastic cells break the hierarchy of Antematter-Consciousness meridians and travel far and wide for metastasis? Are they misguided and exercising in futility for going back to the origin?

There is another aspect of cancer biology - a unifying concept, regarding genesis of almost all neoplasia. The psychology of a nonneuronal cell is governed by the psychology of a concerned neuron in the cerebral cortex through Consciousness-Antematter meridian. The genetics of a cell at periphery is governed by the genetic machinery of the cortical neurons. All cancers have its subtle origin in the concerned cortical neurons.

This theory is not only applicable for cancers but could be widely applicable in other diseases too. The subtlest actions of subtle drugs (e.g. Homeopathic medicines) could be explained either through Consciousness-Antematter meridians or through their ability of subtler manipulation of the central outpost in the cerebral cortex.

## **3. A new look in cell biology, organelle disorder, psychosomatic disease from the pentagon of cell psychology:-**

In the prehistoric age (10,000 B.C) the people used to let the evil spirit escape by making a hole in the skull. Their sensation was right! But interpretation was wrong.

In 1980, the Diagnostic and Statistical Manual, Mental Disorder (DSM III) deemphasizes psychosomatic holism in nosology. In 1987, it is fare to reiterate what Socrates told, 400 B.C, "As it is not proper to cure the eyes without the head, nor the head without the body, so neither is it proper to cure the body without the soul". It is also relevant to re-emphasize Virchow's (1821-1902) statement, "Disease has its origin in disease of the cell". It is also worth to quote here Hippocrates' view, "In order to cure the human body, it is necessary to have knowledge of the whole thing". Then, if one combines

the three philosophical statements with the ideas in this text - one finds himself in gold-mine.

The soul has been defined neurologically in chapter five (page 75). Its relation to biological nature and spinal integration centre has been elaborated in chapters five and seven (pages 74, 108) respectively. That spinal integration centres are responsible for somatovisceral integration has also been stated in chapter seven (page 114). Five principal types of nature and four ways of its expression have been thoroughly discussed in chapter four, twelve and thirteen. The psychology of a cell is described in this chapter. The next step is to investigate how does (i) a non-specific generalised stress, (ii) specific stimulation or suppression of and (iii) a conflict amongst five vital biological phenomena, (a) with or (b) without threatened disintegration get translated as corresponding organelle dysfunction in the concerned organ/system, determined by constitutional/genetic and socio-cultural factors.

The truth has started being unveiled. Two recent studies (7,8) of 269 and 1698 couples showed that the risk of developing coronary heart disease and death from it are significantly high (excluding the causal effect of other risk factors) in husbands married to women of higher standing than their own. Status incongruity is being determined by college education and monthly salary. The strongest interpersonal interaction occurs in between a man and a woman involved in love, sex and ego, channelized in one direction by cohabitation or marriage. Status incongruence between parents have also related to the frequency of rheumatoid arthritis in their daughter (9). Peptic ulcer is significantly high amongst foremen, whose job demands a cross cutting loyalty to management and fellow workers (10, 11) - a disequilibrium of love and ego. Perforating peptic ulcer is more common in single unmarried state (12). A theory has been advanced relating the frequency of immune diseases, cerebral dominance, the maleness, testosterone and H-Y antigen (13).

Here is a table having certain statements. Two columns are left completely blank. We will fill it up in future.

Psychological Pentagon In the cell.	Concerned organelle.	Example of Injuring Agents.	Organelle disorder.	Psychosomatic Disease
1. Love/hate	cell membrane	Antibody-complement	---	----
2. Sex	DNA replication apparatus	virus, Irradiation	---	----
3. Life	Synthetic machinery	Toxins e.g. Ccl4.	---	----
4. Death	Mitochondria	Hypoxia	---	----
5. Ego	Lysozome	Organic and inorganic dusts Fungus, Mycobacteria	----	----

Table 43

If someone comes forward with a view that psychosomatic element is Systemic Lupus Erythematosus (SLE) is a conflict between sex, love and ego (S,L,E) in a young girl, I cannot discard it outright.

Let the interested team work in this line for a decade and the medicine of twenty first century is ours.

### **THE STORY CONTINUED - BACK TO THE ORIGIN†**

Let us now go to the final scene of the play, with many many thanks to some neurons, which never had lost their aspiration for ‘universal consciousness’. Sitting on the crown, they recall the whole memory of involution, its cause and effect, its course and pitfalls. The morale, they follow is quite clear. ‘Turn back. Run to the origin’. These are the most valuable neocortical cells with unaltered polarity and genetic serenity. They transcend the influence of brainstem consciousness, limbic-consciousness, cortical consciousness to have something beyond, something inexhaustible, something ever-adorable, the S.C.C.

### **TRANSFORMATION**

Having received the supracortical touch, the neuraxis starts inversion. Antematter poles of all cells are directed towards a higher consciousness to remain orderly in the hierarchical organization of global supracortical consciousness and smaller biological consciousness. Transformation occurs through Consciousness-Antematter meridians from the neocortical cells responsible for biologization of S.C.C, through various organs, finally to the level of surface epithelial cells. More the consciousness ‘permeates’ through individual cell, more is the synchronization of the vibration of individual cell with that of S.C.C. In the beginning, there is ‘resistance’ from some cells but with training and education, they ‘feel’ ‘blessed’. The consequences are as follows:-

1. Antematter is responsible for compactness, heaviness of a cell. With permeation of consciousness, the cell as an individual, and the body as a whole become ‘lighter’. Massive inertia is replaced by spontaneity.
2. Hollow organs are transformed early, solid organs are transformed late.
3. As the cell becomes more conscious, its requirements from external source (e.g. food, drinks and even oxygen) are minimised.
4. With permeation of consciousness, wear and tear of the cell as an individual and the body as a whole is minimised. The cells, as if, do not age, and they are beyond time and senescence. This phenomenon exemplifies the conquest of time in biology.

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† Plato’s soul (our phase-specific consciousness) is most perfect during its creation. It does not progress for something better. Aristotle’s entelechy is progressive, striving for perfect perfectness. The concept of differentiation is Platonic and that of orderly dedifferentiation and back to the origin is Aristotelian.

5. Manifestation of S.C.C. is LOVE. Love exudes from every cell and so collectively from the whole body. This is responsible for magnetic personality, contagiousness

and spontaneous setting of order amidst chaos within the 'field' of consciousness. A living block in peace and bliss vibrates in eternal rhythm (14).

6. Dangerous phase - Transcending the death. Antematter is responsible for cohesion and integration of cells in the tissues, organs, and systems. Antematter is also responsible for differentiation and specific function of a cell. If this starts 'dissolving' and every individual cell becomes conscious, what are the consequences? There is a 'tendency' to 'disintegrate' (14). There is a 'tendency' of de-differentiation of the cell as an individual and the body as a whole. (The word 'tendency' has been used in terms of quantum physics). The individual organ stops functioning and the individual cell refrain from differentiated activities! What comes then to reintegrate the cell of an organized system?
7. Birth of a new species (15). In the extreme phase, the consciousness of every cell becomes identical to that of neocortical cells which originally picked up the vibration of S.C.C. The whole being then enfolded in structure and dynamicity in each of its part (16).

Doctor's signs of life may disappear completely. The pupils are dilated and fixed. The heart does not beat. The lung does not gasp. EEG is flat. Brainstem auditory evoked responses and Somatic sensory evoked response are absent. There is a permanent electrocerebral silence. The PET (Positron Emission Tomography) or SPECT (single photon emission computerised tomography) shows a stillness in the cerebral blood flow. To everyone's surprise, computerised tomography (CT) and Nuclear Magnetic Resonance (NMR) fail to detect any contrast indicative of necrosis. The investigators are busy with their NMR spectroscopy.

In this stage, if all doctors of the earth sign on a death certificate for the person each cell of the body will express in stillness. "Please don't burn us, don't put us inside a grave tomb or don't throw us in an unprotected place. We are all conscious and alive. We are a new species born on this earth". "You are only a transitional being" (15).

### **THE RESCUER - THE VIBRATION OF LIFE**

How does the body transcend death? What during global transformation, brings 'life' in the body? It is the same primordial vibration which initiates 'life' in Consciousness-Antematter-Matter interaction. The same vibration comes in rescue of disintegrating cells to transcend 'death'. The vibration of Consciousness-Antematter play is nonspeakable, non-audible. The vibration of Antematter in matter, in presence of Consciousness, could be heard or spoken. The conscious brain translates this cosmic vibration, into a sound heard as 'OM'. It is the 'Nad' of the Vedas, 'kun' of the Quran, 'Shabd Dhum' of Granth Sahib, 'Word or Logos' of the Holy Bible, the 'Celestial sound' of the modern philosopher, the 'Language' of God. This is the vibration of Love, the vibration of Life, the vibration of Existence, the vibration of eternal Knowledge and Bliss.....Om-Om-Om-Om-Om-Om-Om-Om-Om.

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## NOT THE END

Having seen the manuscript full of refreshing outbursts of originality, my friends were quite surprised. “Congratulation! Mr. Consciousness”, they greeted me on fifteenth of April, 1987. They were talking cheerfully in the Baisakhi Morn. The topic was from which layer of the cortex, ink of my pen had been pouring on the paper. “Excuse me for my three dimensional outlay”, I apologized, “Whenever I have tired”, I emphasized, “to put my vibrations in words, that n-dimensional has been imprisoned in three dimensional mechanics”. “On the other hand”, I continued, “Wherever I have tried to represent the infinite-dimensional universe, the feelings and experiences have become entirely of mine” They grasped what I meant. I felt relieved. Thank God! They are not sleeping at dawn! They are all conscious! This is just a beginning and not the end.

### I heard them reciting one of my favourite poems

*Whether he or they are better,  
How all that do matter  
    In our rise or stand?  
If all of them are proved good  
As best as they ever could,  
    When do we land?  
Euclidean geometry is surpassed by Karl Gauss,  
Or, a postulate, made famous by Robert Koch.  
    How does it affect you or me?  
Unless we stand on our own foot  
With lovely flowers in every shoot.  
    Unless we open a dead lock with our own key.  
Christ, Buddha and Nanak were the Seer,  
For that, they became everybody's dear.  
    Does it satisfy our ego?  
Until we eclipse many polar stars  
With our own vigour and rights and errs  
    The toppest of top until we go.  
Our own body, own mind, own pure soul,  
Searching for diamond in all mines of coal  
    To offer it to the mass, or to a few,  
Even if we can't –  
After a life-long-hunt,  
    We must take rebirth, for the payment of our due.*

ISBN 81- 900033- 1 -3

THE BRAIN HAS BEEN CRACKED. IT HAS BEEN CRACKED INTO ITS  
FUNDAMENTAL PIECES. THE PIECES HAVE BEEN REALIGNED.  
REALIGNED INTO A WONDERFUL SKYSCRAPER. THERE IS, STILL,  
IMMENSE SCOPE FOR FURTHER EXPANSION WITH GREATER DEPTHS,  
WIDER HORIZONS AND HIGHER REACHES.