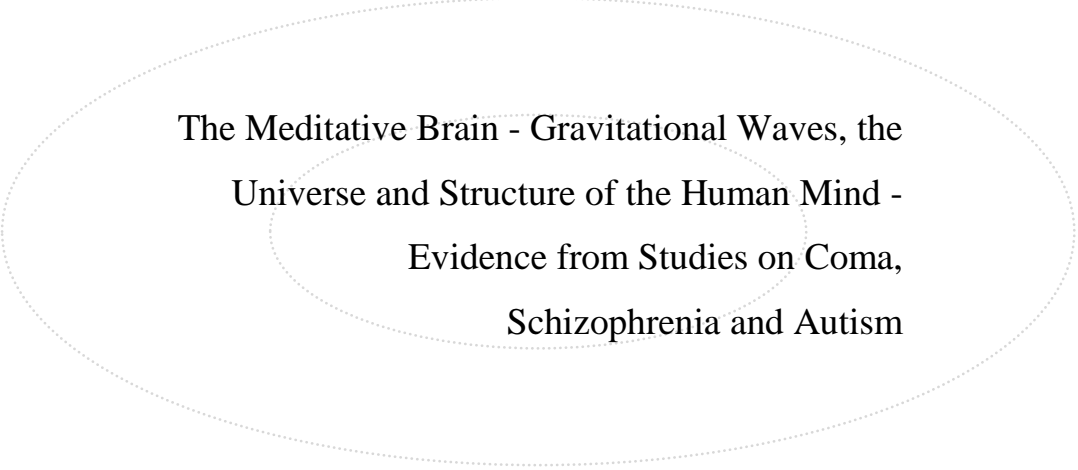


Chapter 13



The Meditative Brain - Gravitational Waves, the
Universe and Structure of the Human Mind -
Evidence from Studies on Coma,
Schizophrenia and Autism

Introduction

Meditation can modulate body metabolonomics and brain function. The mechanism is by induction of the heme oxygenase system. Meditation induced heme oxygenase which converts heme to carbon monoxide and bilirubin. Bilirubin and biliverdin are free radical scavengers and mops up free radicals. Free radicals are required for the function of the NMDA dependent thalamo-cortico-thalamic feedback reverberatory circuit crucial in consciousness. This circuit mediates working memory and focused attention. Free radicals also activate NMDA and by its capacity of diffusing freely through the brain systems can induce NMDA activity, synchronized burst firing of neurons in different parts of sensory areas producing perceptual synchronization. This mediates consciousness. Thus the scavenging of free radicals by heme oxygenase leads to suppression of consciousness and meditative trances. Heme oxygenase induction suppresses ALA synthase. Thus heme is depleted from the system. There is increased porphyrin synthesis leading onto porphyrinuria and porphyria. The stimulus for porphyrin synthesis comes from heme deficiency. Porphyrins can organize into self replicating supramolecular structures called porphyrions which are induced by meditative practices. The porphyrins can self organize to form macromolecular structures which can self replicate to form a porphyrin organism. The photon induced transfer of electrons along the macromolecule can lead to light induced ATP synthesis. The porphyrins can form a template on which RNA and DNA can form generating viroids. The porphyrins can also form a template on which prions can form. They all can join together - RNA viroids, DNA viroids, prions - to form primitive archaea. Thus the archaea are capable of self replication on porphyrin templates. The self replicating archaea can sense gravity which gives rise to consciousness. They can also sense the anti-gravity fields which

gives rise to the unconscious brain. Thus there can be both self replicating archaea and anti-archaea regulating the conscious and unconscious brain. Thus the climate change stress mediated increased porphyrin synthesis leads to prefrontal cortex atrophy, cerebellar dominance, cerebellar cognitive affective disorder, quantal perception and Neanderthalisation of the population. The porphyrions are self replicating supramolecular organisms which forms the precursor template on which the viroids, prions and nanoarchaea originate. Meditative stress induced template directed abiogenesis of porphyrions, prions, viroids and archaea is a continuous process and can contribute to changes in brain structure and behavior as well as disease process.

Studies on normal conscious individuals, comatose patients and disorders of consciousness like schizophrenia and autism show changes in cerebrospinal fluid archaeal activity as measured by cytochrome F420 assay. Schizophrenia and autism show increased CSF cytochrome F420 activity, normal conscious patients show normal activity and comatose patients with bihemispheric infarction and secondary brain stem compression due to transtentorial herniation had no activity at all. This indicated actinidic archaeal growth in the central nervous system. Actinidic archaea can modulate conscious perception. Actinidic archaea are extremophiles and can grow in extremes of temperature, space and hypergravity situation.^{1,2,3} This led to the plausibility of gravity sensing brain actinidic archaea mediating consciousness and also consciousness as a feature of gravitational forces. Gravity extends as gravitational waves made up of possible gravitons throughout the universe.⁴ Gravitational waves can form pressure waves which can create gravitational sounds. These thought sounds can undergo soni-luminescence creating photons and electromagnetic radiation the basis of the world of matter. Conscious perception involves three factors - perceptual synchronization, focused attention mediated by the reticular thalamic nucleus and the thalamo-cortico-thalamic reticular reverberatory circuit.⁵ These structures are

modulated by gravity as demonstrated by the classical pyramidal syndrome where the tone is more in the anti-gravity groups of muscles. Gravitational attraction by its nature can modulate perceptual binding and focused attention.⁶ Gravitation can also mediate working memory involving a fraction of a second structured in the reticular - thalamo-cortico-thalamic - reticular reverberatory circuit formation. The reticular formation can be considered as a primitive archaeal colony network of hypergravity sensing archaea of possible exobiologic origin.⁷ Gravity can thus function as a thought field permeating the whole universe as gravitational waves made up of possible gravitons which are massless particles travelling at the speed of light. The gravitational waves form the sub-quantal field from which quarks, fermions, bosons, electrons, neutrons, positrons and photons can pop up as particles from their waveforms embedded in the sea of gravitational waves with possible gravitons of the thought field functioning as the ubiquitous observer. Thus the thought field of gravity and the matter is unified. Thought underlies the world of matter.⁸

Studies in our laboratory have demonstrated changes in cerebrospinal fluid cytochrome F420 activity in the cerebrospinal fluid of conscious, comatose patients, schizophrenia and autism. The cerebrospinal fluid was checked for cytochrome F420 activity by spectrophotometry. The activity was increased in schizophrenia and autism, absent in coma and present with low intensity in normal conscious individuals. The activity of cytochrome F420, the methanogenic cytochrome increased with addition of the actinide cerium. This indicated actinide dependent archaeal growth. Actinidic archaea are extremophiles and can grow in extremes of temperature, space and hypergravity situation.¹ Actinides have a role in abiogenesis.² This led to the plausibility of hypergravity sensing brain actinidic archaea mediating consciousness and also consciousness as a feature of gravitational forces. This led to the possibility of

exobiologic actinidic archaea which are paleospermic in origin contributing to the evolution of life on earth including homo sapien brain.³

Materials and Methods

The permission of the ethics committee of the centre and individual consent was obtained for the study. The groups included in the study are normal individuals undergoing meditative practices, normal conscious individuals (undergoing spinal procedures for surgery), persistent vegetative bihemispheric infarction patients and disorders of consciousness like schizophrenia and autism. There were 10 individuals in each group. CSF was used for the study and the experimental protocol was as follows (I) CSF+phosphate buffered saline, (II) same as I+cholesterol substrate, (III) same as II+cerium 0.1 mg/ml, (IV) same as II+ciprofloxacin and doxycycline each in a concentration of 1 mg/ml. Cholesterol substrate was prepared as described by Richmond. Aliquots were withdrawn at zero time immediately after mixing and after incubation at 37 °C for 1 hour. Cytochrome F420 was estimated fluorimetrically (excitation wavelength 420 nm and emission wavelength 520 nm).

Results

CSF of normal subjects showed increased levels of the cytochrome F420 after incubation for 1 hour and addition of cholesterol substrate resulted in still further significant increase in these parameters. The CSF of patients of schizophrenia and autism showed similar results but the extent of increase was more when compared to normal conscious individuals. The CSF of normal conscious individuals showed decreased intensity of cytochrome F420 as compared to CSF of schizophrenia and autism patients. The CSF of comatose

patients showed no activity at all. The addition of antibiotics to the normal conscious patient CSF caused a decrease in cytochrome F420 activity while addition of cerium increased its activity. The addition of antibiotics to the schizophrenia and autism CSF caused a decrease in cytochrome F420 activity while the addition of cerium increased its activity but the extent of change was more in patient's sera as compared to normal conscious individuals. The CSF of comatose patients showed no activity of cytochrome F420 at all in the normal state as well as after addition of antibiotics and cerium. The results are expressed as percentage change in the parameters after 1 hour incubation as compared to the values at zero time.

Table 1. Effect of cerium and antibiotics on cytochrome F420.

Group	CYT F420 % (Increase with Cerium)		CYT F420 % (Decrease with Doxy+Cipro)	
	Mean	±SD	Mean	±SD
Normal	4.48	0.15	18.24	0.66
Comatose	Zero activity		Zero activity	
Schizophrenia	23.24	2.01	58.72	7.08
Autism	21.68	1.90	57.93	9.64
Meditation	31.48	1.29	42.28	9.23
F value	306.749		130.054	
P value	< 0.001		< 0.001	

Discussion

The patients admitted with bilateral middle cerebral artery stem occlusion after recovery from the acute stroke developed double hemiplegia, spasticity and pseudobulbar palsy. They go into the persistent vegetative state with loss of conscious perception. The limbs are kept in a posture of flexed upper limbs and extended lower limbs. The tone is more in the anti-gravity group of muscles - the flexors of the upper limb and extensors of lower limb. This is classical of

spasticity and pyramidal syndrome. Gravity has an effect on muscle tone. The spasticity is produced by involvement of the extrapyramidal tracts, the dorsal reticulospinal and ventral reticulospinal. The reticular formation is an extensive primitive network of the brain in the brainstem projecting to the prefrontal cerebral cortex, cerebellum and the spinal cord. It forms long loop formations extending from the caudal to the cephalic part of the central nervous system. The inhibition of the dorsal reticulospinal tract in pyramidal lesions results in hypertonia and hyper-reflexia and inhibition of the ventral reticulospinal tract produces the Babinski sign. The cerebellum is concerned with motor programming and memory and robotic acts which do not reach conscious function. The cerebellum is concerned with cognition. The cerebellum plays a role in unconscious motor acts, extrasensory perception and quantal perception. The prefrontal cortex is concerned with executive memory, logic, reasoning and judgment. Thus the reticular formation forms the bridge between the conscious and unconscious parts of the brain. Reticular formation is a primitive neural network. The dendrites and axons forming the bridges of the neural network can be compared to a bacterial flagella based on the symbiotic theory of Margulis on cell evolution.⁷ Margulis postulated that bacteria like spirochetes contributes to the cytoskeleton and axodendritic tree of the brain. Studies from this laboratory have demonstrated archaeal cytochrome F420 activity in the cerebrospinal fluid and blood. The brain reticular formation can be compared to a primitive archaeal bacterial colony network inhabiting the CNS from one end to other. The archaea being extremophiles would have evolved in the outer space in hypergravity situations and reached the earth by meteoric impacts producing the seeding of life on earth. The reticular formation and its connections form the basis of gravitational action in the brain.

Bacteria can grow in hypergravity as in the case of extremophilic archaea.^{2,3} Gravity may thus involved in bacterial panspermia and exobiology with

actinidic archaea as the prime example.³ Studies on effects of low gravity in space show drastic effects in human brain. Nerve cells need gravity to grow and function properly. The lack of gravity affects neuronal migration and produces microcephaly. The dendritic tree in the absence of gravity looks like as if it has been stripped off all branches. Gravity structures the brain. Gravity can modulate the pyramidal and extrapyramidal syndrome. Rigidity is more in the muscles acting on gravity. Gravity can modulate cerebellar hypotonia. Gravity can also affect conscious perception. The syndrome of G-LOC is described in fighter pilots exposed to high gravity field chambers. They have features of near-death experience with godly visions, meeting dead relatives, seeing hallucinatory lights and tunneling effect. Cortical and cerebellar lesions produce different clinical signs. Cortical lesions lead to spasticity and anti-gravity effects. Cerebral cortex is the basis of conscious perception. When the cerebral cortex is damaged anti-gravity effects take over. An anti-gravity force opposed to gravity in the universe has been described. Cerebellar lesions lead onto hypotonia, ataxia and a levitationary effect which can be considered as anti-gravity. Gravity structures the brain and can be considered to be a thought field which forms the basis of consciousness and creation of matter. Gravitational waves unite mind and matter and form the substratum of it.

Consciousness depends on three parameters - working memory, perceptual synchronization and focused attention.⁵ This theory was put forward by Crick who localized consciousness into the reticular - thalamo-cortico-thalamic - reticular pathway. Gravity would form the basis of consciousness. Perceptual synchronization and focused attention would depend upon gravitational attraction which are ideal forces to create these two phenomena. This also would create a form of working memory in the flow of nerve impulses in the reticular - thalamo-cortico-thalamic - reticular reverberatory circuit. The brain functions as a quantum computer and we sense the multitudinal quantal

possibilities in the world. The dipolar archaeal magnetite in the setting of endogenous digoxin induced membrane sodium potassium ATPase inhibition can create a pumped phonon system mediating quantal perception. When one of the possibilities reaches one graviton criteria it reaches conscious perception. Gravity thus can be considered as a thought field or consciousness field permeating throughout the whole universe. Gravitational waves can form pressure waves which can create gravitational sounds. These thought sounds can undergo soni-luminescence creating photons and electromagnetic radiation the basis of the world of matter. Soni-luminescence can create matter out of gravitational sounds. Thus the thought field can create the matter. Mind and matter can be unified.

Gravity is a vector force that has magnitude and direction at each point of space. Gravity loading is directed towards the centre of the earth. The theory of gravity says that every object in the universe attracts every other object with a force proportional to its mass. Gravitational force exists throughout the universe and is formed of gravitational waves. The gravitational waves are made up of possible particles called gravitons and travels with the speed of light. Gravity plays an important role in the creation of the universe as described by Stephen Hawking.⁴ Hawking postulated that if the total energy of the universe must always remain zero and it costs energy to create a body the whole universe cannot be created out of nothing. That is why there should be a law like gravity. Because gravity is attractive gravitational energy is negative. One has to do work to separate gravitationally bound systems like earth and moon. This negative energy can balance the positivity energy needed to create matter. On the scale of the entire universe the positive energy of matter can be balanced by negative gravitational energy and so there is no restriction on the creation of the whole universe. Gravity is described by Hawking as a curvature in space-time. Le Sage in his theory of gravity describes it as gravitational waves formed of ultima munda corpuscles

which impinge on matter and penetrate it.⁶ Matter shields each other against gravity producing an attraction force. Gravitational waves and particles penetrate all matter and interact with the sub-atomic particles. Quantum gravitational waves is possibly the sub-quantal potential of Bohm from which all the particles like electron, neutrons, positrons come out and go as pertubations. The mass of a particle depends upon its interaction with the Higg's field and exchange of Bosons with it. Gravitons are a form of Bosons with reverse spin. They can be considered as extending throughout the universe and are mass less. Gravity and light travel with the same speed as thought. Gravity can form the basis of human thought. Human thought fields according to Bohm underlies the sub-quantal potential from which all particles emanate.⁸

The gravitational waves or thought fields are structured in the brain by the reticular formation actinidic archaeal network. The gravitational waves can thus function as a thought field or sub-quantal field on which the particles like neutrons, electrons, bosons, quarks, fermions can pop in and out from waves to particles. The thought field of gravity functions as the universal observer and brings the particulate world of matter into existence. Gravitational waves can form pressure waves which can create gravitational sounds. These thought sounds can undergo soni-luminescence creating photons and electromagnetic radiation the basis of the world of matter. Thus the thought field of gravity and the matter is unified. Thought underlies the world of matter.⁸

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