Chapter 10

The Meditative Brain - Actinidic Archaea, Digoxin Synthesis and Neanderthalisation - A Biological Theory of Sociopolitical, Spiritual, Sexual and Cultural Identity

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.

Actinidic archaea has been also related to global warming and human diseases especially neuropsychiatric disorder. The growth of endosymbiotic actinidic archaea in relation to climate change and global warming leads to neanderthalisation of the human mind-body system. Neanderthal anthropometry and metabolonomics has been described in neuropsychiatric disorder especially the Warburg phenotype and hyperdigoxinemia. Digoxin produced by archaeal cholesterol catabolism produces Neanderthalisation. Prefrontal cortical atrophy and cerebellar hyperplasia has been related to neuropsychiatric disorder. Digoxin produces intracellular magnesium deficiency and reverse transcriptase inhibition. This blocks retroviral replication and its integration into the genome. This reduces the flexibility and dynamicity of the genome. Endogenous retroviral sequence induced jumping genes contributes to the flexibility and dynamicity of the genome required for generation of synaptic connectivity in the prefrontal cortex. The inhibition of endogenous retroviral expression and integration by digoxin leads to atrophy of the prefrontal cortex. The cerebellum becomes dominant and can be considered as an endosymbiotic archaeal network. The cerebellar dominance leads to more of extrasensory perception, quantal

perception, impulsive behaviour and sense of oneness with the world around us. Cerebellar dominance also leads to dysautonomia with sympathetic hyperactivity and parasympathetic neuropathy in these disorders. Actinidic archaeal related cerebellar dominance leads to changes in brain function. This produces a new sociopolitical, spiritual, sexual and cultural phenotype.[1-16] The data is described in this paper.

Materials and Methods

Fifteen cases, each of normal population undergoing meditative practices, neuropsychiatric disorder and internet addicts were selected for the study. Each case had an age and sex matched control. Neanderthal anthropometric and phenotypic measurements which included protruding supra-orbital ridges, dolichocephalic skull, small mandible, prominent mid face and nose, short upper and lower limbs, prominent trunk, low index finger-ring finger ratio and fair complexion were evaluated in the cases study. Autonomic function tests were done to assess the sympathetic and parasympathetic system in each case. CT scan of the head was done to have a volumetric assessment of the prefrontal cortex and cerebellum. Blood cytochrome F420 activity was assessed by spectrophotometric measurement.

Results

All the case groups studied had higher percentage of Neanderthal anthropometric and phenotypic measurements. There was low index finger-ring finger ratio suggestive of high testosterone levels in all the patient population studied. In all the case groups studied, there also was prefrontal cortex atrophy and cerebellar hyperplasia. Similarly in the all the case groups studied, there

was dysautonomia with sympathetic over activity and parasympathetic neuropathy. Cytochrome F420 was detected in the entire case group studied showing endosymbiotic archaeal overgrowth.

Table 1. *Neanderthal phenotype and systemic disease.*

Disease	Cyt. F420 activity	Neanderthal phenotype	Low index finger-ring finger ratio
Schizophrenia	69%	75%	65%
Autism	80%	75%	72%
Internet users	65%	72%	69%
Meditation	60%	59%	50%

Table 2. *Neanderthal phenotype and brain dysfunction.*

Disease	Dysautonomia	Prefrontal cortex atrophy	Cerebellar hypertrophy
Schizophrenia	65%	60%	70%
Autism	72%	69%	72%
Internet users	74%	84%	82%
Meditation	62%	60%	65%

Discussion

Neanderthal metabolonomics contribute to the generation of a new sociopolitical, spiritual, sexual and cultural phenotype and pathogenesis of schizophrenia/autism. There were Neanderthal phenotypic features in all the case groups studied as well as low index finger-ring finger ratios suggestive of increased testosterone levels. Neanderthalisation of the mind-body system occurs due to increased growth of actinidic archaea as a consequence of global warming. Digoxin produces intracellular magnesium deficiency and reverse transcriptase inhibition. This blocks retroviral replication and its integration into the genome. This reduces the flexibility and dynamicity of the genome. Endogenous retroviral sequence induced jumping genes contributes to the flexibility and dynamicity of the genome required for generation of synaptic

connectivity in the prefrontal cortex. The inhibition of endogenous retroviral expression and integration by digoxin leads to atrophy of the prefrontal cortex. The cerebellum becomes dominant and can be considered as an endosymbiotic archaeal network. The cerebellar dominance leads to more of extrasensory perception, quantal perception, impulsive behaviour and sense of oneness with the world around us. Neanderthalisation of the mind thus leads to cerebellar dominance and prefrontal cortex atrophy. This leads to dysautonomia with parasympathetic neuropathy and sympathetic hyperactivity. This produces a new sociopolitical, spiritual, sexual and cultural phenotype.

Global warming and the ice age produces increased growth of extremophiles. This leads to increased growth of actinidic archaeal endosymbiosis in humans. There is archaeal proliferation in the gut which enters the cerebellum and brain stem by reverse axonal transport via the vagus. The cerebellum and brain stem can be considered as an archaeal colony. The archaea are cholesterol catabolizing and use cholesterol as a carbon and energy source. The actinidic archaea activates the toll receptor HIF alpha inducing the Warburg phenotype resulting in increased glycolysis with generation of glycine as well as pyruvate dehydrogenase suppression. The accumulated pyruvate enters the GABA shunt generating of succinyl CoA and glycine. The archaeal catabolism of cholesterol produces ring oxidation and generation of pyruvate which also enters the GABA shunt scheme producing glycine and succinyl CoA. This leads to increased synthesis of porphyrins. In the setting of digoxin induced sodium potassium ATPase inhibition the dipolar porphyrins produce a pumped phonon system resulting in the Frohlich model Bose-Einstein condensate and quantal perception of low level EMF. Low level EMF pollution is common with internet usage. Perception of low level of EMF leads to neanderthalisation of the brain with prefrontal cortex atrophy and cerebellar hyperplasia. The archaea which reaches the cerebellum from the gut via the vagus nerve proliferates and

makes the cerebellum dominant with resultant suppression and atrophy of the prefrontal cortex. This leads to wide spread autistic and schizophrenic traits in population. The actinidic archaea induces the Warburg phenotype with increased glycolysis, PDH inhibition and mitochondrial suppression. This produces neanderthalisation of the mind-body system. The actinidic archaea secretes RNA viroids which block HERV expression by RNA interference. The HERV suppression contributes to the inhibition of prefrontal cortex development in Neanderthals and cerebellar dominance. Archaeal digoxin produces sodium potassium ATPase inhibition and magnesium depletion causing reverse transcriptase inhibition and decreased generation of HERV. The HERV contributes to the dynamicity of the genome and are required for the development of the prefrontal cortex. The HERV suppression contributes to retroviral resistance in Neanderthals. The actinidic archaea catabolizes cholesterol leading to cholesterol depleted state. Cholesterol depletion also leads to poor synaptic connectivity and decreased development of prefrontal cortex. This is not genetic change but a form of symbiotic change with endosymbiotic actinidic archaeal growth in the body and brain.

The neanderthalic brain had predominant quantal perception and extrasensory communication leading to oneness of society. This contributed to a just and equal society with compassion and altruism. This can be thought of as a beginning of a primitive socialistic or communistic society with equal rights for all and sharing of wealth in the community. The neoneanderthal society had a collective unconscious contributing to an equal, liberal and socialistic society. The archaeal cholesterol metabolism leads to depletion of cholesterol and deficiency of sex hormones. This leads to an asexual state with equality of both males and females or a female dominance. This leads onto androgynous behaviour and new alternate sexual identities. The neoneanderthal society is matriarchal with female leadership and dominance. Matriarchy and feminine

dominance is the hall mark of neoneanderthal society. The dominant extrasensory perception and quantal perception leads to appreciation of the vacancy of the universe and a sense of God. This fulfils the concept of Maya and oneness of everything in the universe according to Hindu philosophy. The vacancy consequent to quantal perception gives a feeling of perception of God. The God concept probably evolved out of this quantal perception. The information stored in the brain functioning as a quantal computer exists as multiple possibilities in multiverse universes. The extinction of one possibility in earth doesn't foreclose the existence of the other possibilities in the quantal state in other universes. This leads to the concept of universal eternal existence and reincarnation described in Hindu philosophy and the illusory nature of death. There is eternal existence in the multiverse quantal universe. This leads onto an extreme spiritual society with a feeling of oneness generated by the collective unconscious consequent to quantal perception. The oneness is also shared with the environment contributing to eco-spirituality and environmental consciousness.

Internet use and low level EMF pollution is common in this century. This results in increased low level EMF perception by the brain by the digoxin-porphyrin mediated pumped phonon system created Bose-Einstein condensates contributing to prefrontal cortex atrophy and cerebellar dominance. Cerebellar dominance leads to schizophrenia and autism. There is an epidemic of autism and schizophrenia in the present day community. The porphyrin mediated extrasensory perception can contributes to communication among Neanderthals. Neanderthals did not have a language and used extrasensory perception as a form of group communication. Because of dominant extrasensory quantal perception, the Neanderthals did not have individual identity but only group identity. Cerebellar dominance results in creativity consequent to quantal perception and group perception. The Neanderthalic traits

contribute to innovation and creativity. Cerebellar dominance results in development of a symbolic language. The Neanderthals used dance and music as a form of communication. Painting as a form of communication was also common in Neanderthals. Neanderthal behaviour was robotic. Robotic behaviour is characteristic of cerebellar dominance. Robotic, symbolic and ritualistic behaviour is common with cerebellar dominance and is seen in autistic traits. The cerebellar dominance in Neanderthals leads to intuitive intelligence and a hypnotic quality to communication. The increased extrasensory quantal perception leads to more communion with nature and a form of eco-spirituality. The increasing use of dance and music as a form of communication and eco-spirituality is common in the modern century along with increased incidence of autism. The cholesterol depletion leads to bile acid deficiency and generation of small social groups in Neanderthals. Bile acid binds to olfactory receptors and contributes to group identity. This can also contributes to the generation of autistic features in Neanderthals.

The Neanderthal population was predominantly autistic and schizophrenic. The modern population is a hybrid of Homo sapiens and Homo neanderthalis. This contributes to 10 to 20 per cent dominant hybrids who tend to have schizophrenic and autistic qualities and contributes to creativity of civilization. This can be called as a schizophrenic or autistic human tribe. The Neanderthals tend to be innovative and chaotic. They tend to be creative in art, literature, dance, spirituality and science. Eighty per cent of less dominant hybrids are stable and contribute to a stabilizing influence leading to growth of civilization. The homo sapiens were stable and non-creative over a long period of their existence. There was a burst of creativity with generation of music, dance, painting, ornaments, the creation of concept of God and compassionate group behaviour around 10,000 years ago in the homo sapiens community. This correlated with the generation of Neanderthal hybrids when the Eurasian

Neanderthal male mated with homo sapiens African females. The extrasensory/quantal perception due to dipolar porphyrins and digoxin induced sodium potassium ATPase inhibition and the generated pumped phonon system mediated quantal perception leads to the globalization phenomena and feeling of the world being a global village. The archaeal cholesterol catabolism leads to increased synthesis of digoxin. Digoxin promotes tryptophan transport over tyrosine. Tyrosine deficiency leads to dopamine deficiency and morphine deficiency. This leads to a morphine deficiency syndrome in Neanderthals. This contributes to addiction traits and creativity. The increased tryptophan levels produce increased alkaloids like LSD contributing to ecstasy and spirituality of Neanderthal population. Addictive, ADHD and autistic features are related to the morphine deficiency state. The ketogenic diet consumed by the meat eating Neanderthals leads on to increased generation of hydroxy butyric acid which produces ecstasy and a dissociative type of anaesthesia contributing to the Neanderthal psychology. The dopamine deficiency leads to decreased melanin synthesis and fairness of the population. This was responsible for the fair colour of the Neanderthals.

The Neanderthals were essentially meat eaters taking a ketogenic diet. The acetoacetic acid is converted to acetyl CoA which enters the TCA cycle. When the Neanderthal hybrids consume a glucogenic diet owing to the spread of settled civilisation it produces pyruvate accumulation owing to PDH suppression in Neanderthals. The increased archaeal growth activates the toll receptor and induces HIF alpha resulting in increased glycolysis, PDH suppression and mitochondrial dysfunction - the Warburg phenotype. The pyruvate enters the GABA shunt pathway producing glutamate, ammonia and porphyrins resulting in neuropathology of autism and schizophrenia. Neanderthals consuming a ketogenic diet produces more of GABA an inhibitory neurotransmitter resulting in the docile quiet nature of the

Neanderthals. There is less production of glutamate the predominant excitatory neurotransmitter of the prefrontal cortex and consciousness pathways. This leads onto dominance of cerebellar function. The Neanderthal hybrids have cerebellar dominance and less of conscious behaviour. Cerebellum is responsible for intuitive, unconscious behaviour as well as creativity and spirituality. The cerebellum is the site of extrasensory perception, magical acts and hypnosis. The predominant homo sapiens had prefrontal cortex dominance over the cerebellum resulting in more of conscious behaviour.

The Neanderthals consuming a glucogenic diet produces increased glycolysis in the setting of PDH inhibition. This produces the Warburg phenotype. The glycolytic intermediate 3-phosphoglycerate is converted to glycine resulting in NMDA excitotoxicity contributing to schizophrenia and autism. Cerebellar dominance is reported in schizophrenia and autism. The cerebellar hyperplasia results in sympathetic hyperactivity and parasympathetic neuropathy. Cerebellar dominance and cerebellar cognitive affective dysfunction can contribute to schizophrenia and autism. The increased porphyrin synthesis resulting from succinyl CoA generated by GABA shunt and glycine generated by glycolysis contributes to increased extrasensory perception important in schizophrenia and autism. The archaeal cholesterol catabolism generates digoxin which produces sodium potassium ATPase inhibition and increase in intracellular calcium and decrease in intracellular magnesium. The increase in intracellular calcium can modulate the neurotransmitter release from presynaptic vesicles. This can modulate neurotransmission. Digoxin induced magnesium depletion can remove the magnesium block on the NMDA receptor resulting in NMDA excitotoxicity. Digoxin can modulate the glutamatergic thalamo-cortico-thalamic pathway and consciousness resulting in schizophrenia and autism. Digoxin induced magnesium depletion can inhibit reverse transcriptase activity and HERV generation modulating the dynamicity of the

genome. This can produce digoxin induced neuro-immuno-endocrine integration. Digoxin functions as a Neanderthal master hormone.

The actinidic archaea are cholesterol catabolizing and leads to low levels of testosterone and estrogen. This leads on to asexual features and low reproductive rates of the Neanderthal population. The Neanderthals consume a low fibre diet with low lignan content. The actinidic archaea has cholesterol catabolizing enzymes generating more of testosterone than estrogens. This contributes to estrogen deficiency and testosterone over activity. The Neanderthal population are hypermales with concommitant right hemispheric dominance and cerebellar dominance. Testosterone suppresses left hemispheric function. The high testosterone levels in Neanderthals contribute to a bigger brain. The Neanderthals males as well as females had a higher level of testosterone contributing to gender equality and gender neutral states. There was group identity and group motherhood with no differences between roles of both males and females. This also resulted in matrilinearity. The higher testosterone levels in males as well as females led to alternate type of sexuality and aberrant behaviour. The homo sapiens eat a high fibre diet with low cholesterol and high lignan content contributing to estrogen dominance, left hemispheric dominance and cerebellar hypoplasia. Homo sapiens had higher reproductive rates and overtook the Neanderthal population resulting in its extinction. The homo sapien population was conservative with normal sexual mores, family values and patriarchal type of behaviour. The role of females the homo sapien community was inferior to males. The increasing generation of Neanderthal hybrids due to climate change mediated archaeal overgrowth leads to gender equality and equidominance of male and female in this century. This is the basis of neoneanderthal matriarchy.

Thus global warming and increased endosymbiotic actinidic archaeal growth leads to cholesterol catabolism and generation of the Warburg phenotype resulting in increased porphyrin synthesis, extrasensory low EMF perception, prefrontal cortex atrophy, insulin resistance and cerebellar dominance. This leads on to neanderthalisation of the body and brain. This produces a new sociopolitical, spiritual, sexual and cultural phenotype.

References

[1] Weaver TD, Hublin JJ. Neandertal Birth Canal Shape and the Evolution of Human Childbirth. *Proc. Natl. Acad. Sci. USA* 2009; 106: 8151-8156.

[2] Kurup RA, Kurup PA. Endosymbiotic Actinidic Archaeal Mediated Warburg Phenotype Mediates Human Disease State. *Advances in Natural Science* 2012; 5(1): 81-84.

[3] Morgan E. The Neanderthal theory of autism, Asperger and ADHD; 2007, www.rdos.net/eng/asperger.htm.

[4] Graves P. New Models and Metaphors for the Neanderthal Debate. *Current Anthropology* 1991; 32(5): 513-541.

[5] Sawyer GJ, Maley B. Neanderthal Reconstructed. The Anatomical Record Part B: *The New Anatomist* 2005; 283B(1): 23-31.

[6] Bastir M, O'Higgins P, Rosas A. Facial Ontogeny in Neanderthals and Modern Humans. *Proc. Biol. Sci.* 2007; 274: 1125-1132.

[7] Neubauer S, Gunz P, Hublin JJ. Endocranial Shape Changes during Growth in Chimpanzees and Humans: A Morphometric Analysis of Unique and Shared Aspects. *J. Hum. Evol.* 2010; 59: 555-566.

[8] Courchesne E, Pierce K. Brain Overgrowth in Autism during a Critical Time in Development: Implications for Frontal Pyramidal Neuron and Interneuron Development and Connectivity. *Int. J. Dev. Neurosci*. 2005; 23: 153-170.

[9] Green RE, Krause J, Briggs AW, Maricic T, Stenzel U, Kircher M, Patterson N, Li H, Zhai W, *et al*. A Draft Sequence of the Neandertal Genome. *Science* 2010; 328: 710-722.

[10] Mithen SJ. *The Singing Neanderthals: The Origins of Music, Language, Mind and Body*; 2005, ISBN 0-297-64317-7.

[11] Bruner E, Manzi G, Arsuaga JL. Encephalization and Allometric Trajectories in the Genus Homo: Evidence from the Neandertal and Modern Lineages. *Proc. Natl. Acad. Sci. USA* 2003; 100: 15335-15340.

[12] Gooch S. *The Dream Culture of the Neanderthals: Guardians of the Ancient Wisdom.* Inner Traditions, Wildwood House, London; 2006.

[13] Gooch S. *The Neanderthal Legacy: Reawakening Our Genetic and Cultural Origins.* Inner Traditions, Wildwood House, London; 2008.

[14] Kurtén B. *Den Svarta Tigern*, ALBA Publishing, Stockholm, Sweden; 1978.

[15] Spikins P. Autism, the Integrations of 'Difference' and the Origins of Modern Human Behaviour. *Cambridge Archaeological Journal* 2009; 19(2): 179-201.

[16] Eswaran V, Harpending H, Rogers AR. Genomics Refutes an Exclusively African Origin of Humans. *Journal of Human Evolution* 2005; 49(1): 1-18.