Chapter 2

Memes, Genes and Cerebellar Function

Genes are self replicators and have produced human evolution. Culture is another mechanism of human evolution. Culture as a mechanism of human evolution is faster than genomic evolution. It can be an idea, a design, a fashion, religion, music, dance, rituals or a language. These are stored as unconscious programmes in the brain. The unit of cultural transmission is called a meme. The unit of imitation is also a meme. Memes are self-replicators. Self-replicators can evolve. Only replicators can evolve. Replicators are blind and selfish. Memes are unconscious and are localized to the cerebellum. This is exemplified by the cerebellar cognitive affective disorder. We have gene machine making the body and meme machine making the culture. Both these machines are blind, selfish replicators. The human consciousness is not meme related and can rebel against the tyranny of replicators.

An idea or a meme can infect the brain by quantal perception or mirror neuron function which serves the purpose of imitation. This can spread from one human brain to another and depending on its fidelity, fecundity and usefulness can be long lasting and survive. Memes can also co-evolve. The idea of God meme has co-evolved with music, dance and rituals. God meme is common to different civilizations as it is a useful unit of culture.

Memes are selfish, ruthless and ideological and unconsciously propagate. Memes are stored in human brain computer and compete for fecundity, storage space and time. Memes dominate and compete for attention of the brain along with other rival memes. They are self-perpetuating ruthless ideas which dominate the unconscious brain. Memes can co-evolve. God meme co-evolve with the blind faith meme, the hell-fire meme, music and dance meme because of its evolutionary advantage and successfully competed and won over other rival memes for computer space. They are called co-adapted meme complexes.

Meme are selected in cultural environment. The gene evolution produces the human brain or computer. The human brain produces brain to brain transmission of memes by imitation behavior and genes have no role in the selection and evolution of meme complexes. Selfish genes and memes are unconscious, blind replicators. Selfish genes and memes have no foresight. The human brain is built as a gene machine and culture as a meme machine. It is human consciousness which can rebel against the tyranny of the selfish replicators.

Memes as unit of culture can get structured as information programmes in synaptic pathways of the brain. This can affect membrane sodium potassium ATPase function and intracellular calcium magnesium ratios modulating reverse transcriptase activity and jumping gene functions. This creates genomic plasticity. Memes when imitated by mirror neurons and quantal perceptive neurons by activity of low level EMF can induce heme oxygenase activity, deplete heme and induce porphyrin synthesis. Porphyrins can intercalate with RNA and DNA modulating genomic function. Thus memes by their imitation can modulate genomic plasticity which can get structured in the human genome so that it is transmitted over generations. Thus memes can produce changes in genomic evolution.

Memes arise from the meme pool and spread from brain to brain by imitation behavior. Imitation behavior is seen in frontal lobe syndrome. In prefrontal atrophy cerebellar dominance takes over and imitation behavior is a feature of cerebellar cognitive function. The cerebellum plays a crucial role in imitation behavior and transmission of memes. Cultural transmission of memes depends on the cerebellum. Cerebellum is the basis of human culture. The meme will literally parasitize the brain like human endogenous retroviruses. The human endogenous retroviruses cannot spread brain to brain. Genes are limited by brains and there is only vertical transmission of genes by the process of

reproduction. Memes by imitation behavior and cerebellar function can have a faster transmission resulting in the creation and transmission of culture.

Memes can also affect genomic transmission. A thought or a meme can produce changes in low level EMF and modulate porphyrin synthesis. Porphyrins can intercalate with nucleic acids modulating gene expression. The memes or thought ideas can alter neuronal firing, inhibiting membrane sodium potassium ATPase and increase intracellular calcium and reduce intracellular magnesium. Magnesium is required for reverse transcriptase activity. Thus memes or thought via membrane sodium potassium ATPase inhibition and altered intracellular calcium/magnesium ratios can modulate HERV expression, jumping genes and the dynamicity of the human genome. Memes can regulate the genes. Cultural transmission of memes can modulate genomic plasticity.

Archaea can control both cultural meme transmission and genomic transmission. The archaeal magnetite is capable of quantal perception and forms the basis of imitation behavior. Imitation behavior is the mechanism by which memes are propagated. The memes get selected from the meme pool depending on its fecundity, copying fidelity, longevity and faster rate of spread. Memes can also evolve as its spreads from brain to brain. Quantal perceptive mediated cerebellar imitative behavior is the basis of cultural transmission of memes. The archaea can also modulate genomic transmission. The archaea secretes RNA particles which functions as RNA viroids. The archaea derived RNA viroids can use the HERV reverse transcriptase and get converted to DNA which is then integrated into the human genome by HERV integrase. Thus the archaeal derived RNA viroids can contribute to jumping genes in the human genome.