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Hyperbolic Genetic Mechanism of Human Evolution

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ABSTRACT

The concept of "hyperbolic medicine" covers several aspects. Its main characteristic is that hyperbolic spatiotemporal curves found in nature generate hyperbolic mechanisms that influence human physiology. A bibliographic review of scientific works related to genetic aspects of human evolution and the structure of the genetic code has been carried out. Then, theoretically, the hyperbolic patterns that occur in human physiology and the genetic code have been studied, as a possible hyperbolic mechanism of human evolution. Images in nature are space-time hyperbolas and exist independently of the longitude and latitude of the Earth where they are observed. The lines of force of electromagnetic fields and many curves of processes that occur in human physiology are also hyperbolic curves. Electromagnetic fields have effects on human physiology through hyperbolic curves. The genetic code is shaped like a helix because when a current passes through it, a transverse magnetic field is generated, and its hyperbolic lines of force follow a counterclockwise helical path. The different types of evolution occur according to different mechanisms. The mutation is an evolution mechanism that is related to a stable and heritable alteration of DNA. Nature is hyperbolic, and this conditions human physiology and genetics to make it hyperbolic. The alteration of the genetic code is a mechanism of human evolution. This evolution may be conditioned by a change in the hyperbolic helical structure of the genetic code. The primary mechanism of evolution can be found in an alteration of the hyperbolic component of the genetic code, linked to nature.

Keywords: medicine; hyperbolic; helical; code; genetic; structure; nerve; human; evolution

INTRODUCTION

The concept of "hyperbolic medicine" covers several aspects. Its main characteristic is that hyperbolic spatiotemporal curves found in nature generate hyperbolic mechanisms that influence human physiology [1-23]. Deoxyribonucleic acid (DNA) is shaped like a double helix, like a spiral staircase, where the sides are chains of sugars and phosphates, connected by "steps," which are the nitrogenous bases (Adenine, Thymine, Cytosine, and Guanine) [24-27].

The main characteristic of the structure of DNA, RNA (ribonucleic acid), and proteins is their helical shape. A typical fibrous protein alpha-keratin has an alpha-helical structure. A globular protein is a folded polypeptide chain, but in short lengths, it can also have a helical structure [28]. Many polysaccharides with a helical structure serve as structural elements in cell walls, intercellular spaces, and connective tissue [28]. Helix-shaped structures and hyperbolic patterns are very common in nature. It has been described that the transverse magnetic field of a nerve, and the genetic code, have hyperbolic helical structures [22,23]. In a simple magnet and the Earth's magnetic field, there are lines of force that have a hyperbolic shape [1-23,29,30] (Fig. 1).

Also, the lines of force of electromagnetic fields [1,31-35] and many processes that occur in human physiology are hyperbolic curves [1-5,22,23,36-50] (table 1). It has been indicated that electromagnetic fields have effects on human physiology (table 2), through hyperbolic curves [8]. Likewise, biological rhythms are synchronized with this physiology through hyperbolic curves [6,7].

As described in numerous works, if we divide hyperbolic human physiology into several fragments, all of them repeat their hyperbolic characteristics as if they were fractals [1,4,8,13-21]. This concept of fragmented physiology has been used to study the hyperbolic helical structures of the nerves of the human body and the genetic code [22,23].

Evolution is a process of genetic change that affects a population over time and is transmitted to its offspring [51-54]. "Microevolution" reflects changes in the sequence of the genetic code. On the other hand, "macroevolution" indicates morphological changes in species over time due to the accumulation of changes in the genetic code [51,55,56]. Table 3 shows different types of evolution [51,57,58]. The different evolution mechanisms are in table 4 [51,52,54,57,59-62]. And the evidence of evolution is in table 5 [52,55,63-65].

Changes in the DNA of the genetic code can be beneficial (gives selective advantage) or harmful [51,53]. Table 6 shows some mutations produced throughout evolution [66].

In this work, the mechanisms of evolution related to the genetic code are of interest, as well as the hyperbolic patterns that occur in nature and that have an influence on human physiology.

The aim of this work is to determine if a change over time in the hyperbolic trajectory of the genetic code can be a cause or participate in the process of human evolution.

MATERIAL AND METHODS

In Internet search engines and various databases (Medline, Google Academic, Researchgate, Scielo), a bibliographic review of scientific works related to genetic aspects of human evolution and the structure of the genetic code has been carried out. Then, theoretically, the hyperbolic patterns that occur in human physiology and the genetic code have been studied, as a possible hyperbolic mechanism of human evolution.

RESULTS

From the bibliographic study carried out we have obtained:
A.- Images in nature are space-time hyperbolas and exist independently of the longitude and latitude of the Earth where they are observed [1-23]. The lines of force of electromagnetic fields [1,31-35] and many curves of processes that occur in human physiology are also hyperbolic curves [1-5,22,23,36-50] (table 1). Electromagnetic fields have effects on human physiology (table 2) through hyperbolic curves [8].

B.- The genetic code stored in DNA and RNA [24-27], proteins [24-26,28,67,68], and many polysaccharides that serve as structural elements in cells [28] have helical structures. A nerve fragment is an electrical current-conducting wire that generates a corkscrew-shaped transverse magnetic field, and its hyperbolic lines of force follow a counterclockwise helical path [22]. As in a nerve, the genetic code is shaped like a helix because when a current passes through it, a transverse magnetic field is generated, and its hyperbolic lines of force follow a counterclockwise helical path [23] (Fig. 1).

C.- The different types of evolution (table 3) occur according to different mechanisms (table 4). The mutation is an evolution mechanism that is related to a stable and heritable alteration of DNA [51-54,57-62].

DISCUSSION

Nobody doubts the evolutionary fact. What is discussed is how it occurs, what the causes are, and how it has developed over time (slowly, gradually, or in sudden leaps) [59]. The standard genetic code is universal among existing life forms, although deviations exist in organelles and prokaryotes with small genomes [69]. Molecular genetics suggest that all living things descend from a single organism known as LUCA (Last Ultimate Common Ancestor), which could be a bacteria [52,63,70,71]. Life began from simple organic molecules, like tiny droplets of coacervate. A set of chemical components store information in their composition that can be duplicated and transmitted to their descendants. The possibility of evolution arose when this metabolic information could be stored and transmitted, as happens with nucleotide polymers (RNA and DNA) [72]. Evolution is a process of an "evolutionary unit." Each evolutionary unit would have its own time. It is an evolutionary time [56].

Biodiversity growth follows a hyperbolic pattern as observed when studying marine and continental growth biodiversity [73].

The growth of the hominid skull over three million years has not been gradual, but has evolved in leaps [74] (Fig.2). The curve of its evolution over time is hyperbolic.

In nature, the usual shape is the curve. The straight line is just one part of that curve. If we observe the lines of force of a magnet and the Earth's magnetic field, we perceive that they are hyperbolic images [12,29,30]. The results indicate that the lines of force of the electromagnetic fields are hyperbolic curves [1,31-35], and these are in turn very common in many human physiological processes [1-5,22,23,36-50] (Table 1).

We know that electromagnetic fields have effects on human physiology [1,31-35] (table 2), through hyperbolic lines of force [8]. We must think that the helical curves of the genetic code and proteins are adapted and synchronized with similar hyperbolic curves that occur in nature. In this way, cellular physiological processes are subject to permanent synchronization [7].

According to previous work, when an electric current passes through a nerve, acting as a conductor, a transverse magnetic field is generated and its hyperbolic lines of force follow a helical path (fig. 1). The hyperbolic lines of force that emerge from the north pole N in each nerve fragment rotate like a helix counterclockwise. And then they enter through the south pole S of the next nerve fragment. In this way, these hyperbolic lines of force follow a helical trajectory, counterclockwise [22]. As with a nerve, a fragment of the genetic code can be considered as a wire conducting electrical current that generates a transverse magnetic field in the shape of a corkscrew, whose lines of force follow a helical path in a counterclockwise direction [23] (Fig. 1).

The permanent alteration of the genetic code is a mechanism of human evolution that is hereditary. In turn, the genetic code has a helical structure that is hyperbolic, like many processes that occur in human physiology and nature. If something changes in the genetic code to evolve, it must do so following the patterns that mark its hyperbolic structure. Evolution happens by altering the genetic code, but this code is conditioned and adapted to the hyperbolic pattern of the nature in which it is immersed.

CONCLUSIONS

A.- Nature is hyperbolic, and this conditions human physiology and genetics to make it hyperbolic.

B.- The alteration of the genetic code is a mechanism of human evolution. This evolution may be conditioned by a change in the hyperbolic helical structure of the genetic code.

C.- The primary mechanism of evolution can be found in an alteration of the hyperbolic component of the genetic code, linked to nature.

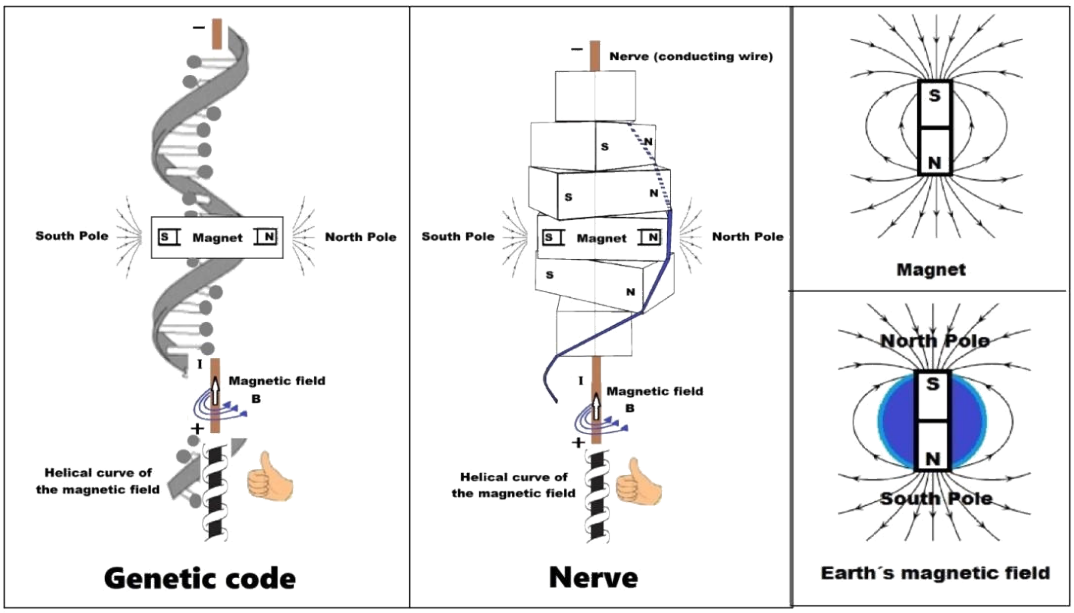

FIGURE 1: In nature, the magnetic field of a nerve, the genetic code, a magnet, and the Earth's magnetic field has a hyperbolic shape.

TABLE 1: Hyperbolic curves in physiology.

- Lines of force of the helical magnetic field of a nerve [22].
- Lines of force of the helical magnetic field of genetic code [23].
- Oxygen saturation for hemoglobin and myoglobin about the partial pressure of oxygen [36-39].
- Sometimes dose-effect relationship curves [40].
- Glucokinase and fructokinase saturation curves [41].
- Aspartate saturation curves [42].
- Insulin sensitivity in the oral glucose tolerance test [43,44].
- Heart rate responses during exercise [45].
- Force-velocity relationship of myocardial myosin isoenzymes [46].
- Force-velocity relationship of shortening of skeletal muscle fibers [47].
- In aviation, periods of incapacitation are in extreme gravitational stress [48].
- Descriptions of the perception of odors in an olfactory space [49].
- -The human eye perceives a hyperbolic image of reality [50].

TABLE 2: Effects of hyperbolic curves of electromagnetic fields on human physiology [31-35].

- There are effects on nerves, cardiac tissue, skeletal muscle, sleep electrophysiology, melatonin secretion, and other body tissues.
- Some cells move toward the cathode (fibroblasts, keratinocytes, chondrocytes, epithelial cells) and others towards the anode (corneal endothelial cells, granulocytes, vascular endothelial cells), but this depends on the animal species.
- Some molecules produce permanent dipoles that align with the applied electric field.
- In the cell membrane, ion channels and receptors can be altered, modifying the activation kinetics.
- Electromagnetic fields can regulate the speed and quantity of products of biochemical reactions, act on free radicals, and modulate neurotransmitters in the brain.
- - The Earth's magnetic field also influences the geomagnetic orientation and navigation of some fish, migratory birds, butterflies, and bees.

TABLE 3: Types of evolution.

A. Divergent: over time one species separates into two. For example: birds that migrate to different territories give rise to different species.
B. Convergent: similar circumstances condition different species and they evolve closer. For example: flying insects and birds have developed wings to fly.
C. Parallel: the same character evolves independently in two different lineages of a close phylogenetic group.
D. Reticulated: formation of a new species by sexual reproduction between two different species. Example: the "leopón" (cross between a male leopard and a lioness).
E. Coevolution: two or more species affect each other and evolve together. Includes symbiosis between species.

TABLE 4: Mechanisms of evolution.

A.	Mutation: it is a stable and heritable change in the genetic material due to DNA alteration.
B.	Genetic drift: if a characteristic is not useful, it is lost in successive generations.
C.	Migration: the migration of individuals causes gene exchange between populations.
D.	Natural selection (Darwin's Theory): better-adapted individuals are more likely to survive, reproduce, and transmit their characteristics to their descendants.

TABLE 5: Evidence of evolution.

A) Anatomy:
- Homologous organs: they have the same embryonic origin, and anatomical similarities, but different functions. Example: upper limbs of vertebrates.
- Analogous organs: they have different embryonic origins and anatomy but with the same functions. Example: the wings of birds and insects.
- Vestigial organs: they are atrophied organs with no apparent function. Example: the appendix of the human intestine, which is useful in herbivores.
- Embryological similarities: embryos of fish, amphibians, reptiles, birds, and mammals are similar, although as adults they are different.

B) Molecular biology: comparing DNA sequences it is observed that there are related species. Example: Homo sapiens share almost 99% of genes with the chimpanzee.
C) Biogeography: the geographical distribution of species reflects evolutionary change.
D) Fossils: current species are related to fossils of extinct species.
E) Direct observation: evolution can be observed directly in organisms with short life cycles. Example: insects resistant to pesticides.

TABLE 6: Characteristics according to the mutated gene.

Evolving Features	Mutated Gene
• More blood to the brain	RNF213
• Primate division	ASPM, ARHGAP11B
• More glucose for the brain	SLC2A1, SLC2A4
• More skillful hands	HACNS1
• Weaker jaws leave more room for the brain	MYH16
• More brain connections	SRGAP2
• A gene for language	FOXP2
• Reinforced saliva to eat carbohydrates	AMY1

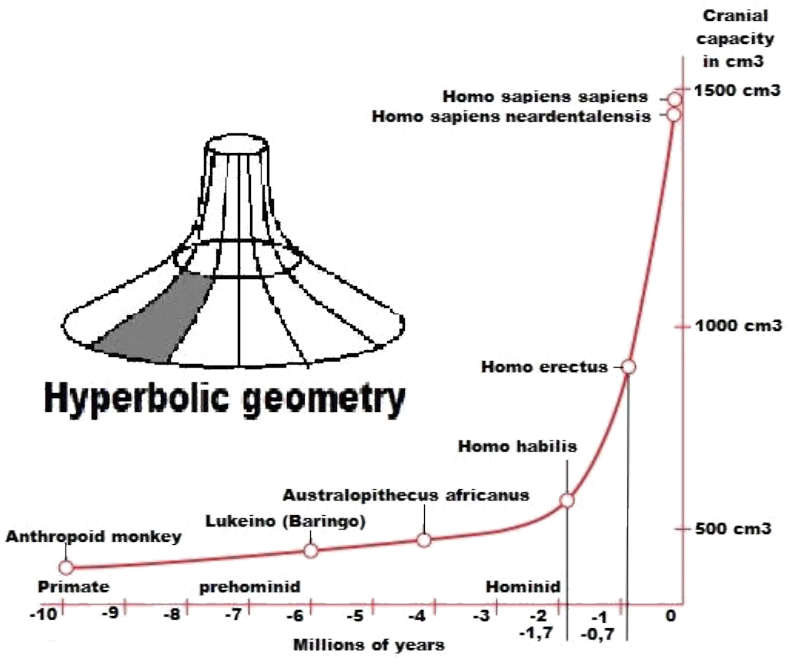

FIGURE 2: The evolution of the hominid skull over time is a hyperbolic curve.

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