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Magnetic Monopoles and Lenz's Law in Hyperbolic Medicine

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ABSTRACT
We call "Hyperbolic Medicine" the study of the hyperbolic curves that occur in the physiology of a living being, especially in humans, about other hyperbolic curves that may be in nature, such as electromagnetic fields, expansion-contraction systems in movement, circadian rhythms, and space-time relativity. In nature, there is space-time relativity, perpendicular to the axis of movement of an organ, which gives hyperbolic curves. The lines of force of an electromagnetic field act in human physiology through hyperbolic curves. In hyperbolic human physiology, there are dipoles, multipoles, and monopoles. They can be fragmented into smaller elements like a magnet and maintain their same characteristics at smaller scales. When we move the N pole of a magnet away from a conducting wire, an S monopole is generated, since both S and N poles give "hyperbolas moving away". On the other hand, when we approach the S pole of a magnet to a conducting wire, an N monopole is generated, since both S and N poles give "hyperbolas approaching". If the conducting wire is a human organ, we speak of Lenz's Law in hyperbolic medicine.

Keywords: monopole; magnetic; Lenz's Law; medicine; hyperbolic

INTRODUCTION
We call "Hyperbolic Medicine" the study of the hyperbolic curves that occur in the physiology of a living being, especially in humans, about other hyperbolic curves that may be in nature, such as electromagnetic fields, expansion-contraction systems in movement, circadian rhythms, and space-time relativity [1-4].

In a simple magnet and the Earth's magnetic field, there are lines of force that follow a hyperbolic pattern [4-6]. It has been described that the images of nature are hyperbolic because the warped space in which we live is hyperbolic [1,2,4,7-12]. Also, hyperbolic curves are very frequent in human physiology [1,3,4,7,13] (table 1), and biological rhythms can follow these hyperbolic space-time curves [11,12].

TABLE 1: Hyperbolic curves in physiology

- Oxygen saturation for hemoglobin and myoglobin concerning partial oxygen pressure [14-17].
- Sometimes dose-effect relationship curves [18].
- Glucokinase and fructokinase saturation curves [19].
- Aspartate saturation curves [20].
- Insulin sensitivity in oral glucose tolerance test [21,22].
- Heart rate responses during exercise [23].
- Strength-speed ratio of myocardial myosin isoenzymes [24].
- Force-speed ratio of shortening of skeletal muscle fibers [25].
- In aviation, periods of incapacitation in extreme gravitational stress [26].
- Descriptions of the perception of odors in an olfactory space [27].
- The human eye perceives a hyperbolic image of reality [28].

In addition, it is known that the hyperbolic lines of force of electromagnetic fields have effects on human physiology [4,29-33] (Table 2).

TABLE 2: Effects of electromagnetic fields on human physiology

- 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 by modifying the kinetics of activation.
- Electromagnetic fields can regulate the speed and amount of products of biochemical reactions, act on free radicals, and modulate neurotransmitters in the brain.
- Earth's magnetic field also influences the geomagnetic orientation and navigation of some fish, migratory birds, butterflies, and bees.

According to the Theory of Relativity, an object that moves on an X axis, perpendicular to the line of sight of an observer, contracts that length X, and its time dilates, while its dimensions Y and Z perpendicular to that direction of movement, are not altered [34,35]. According to current works, it is different if that object moves perpendicular to the line of sight of an observer or if it moves away or approaches in the same line of sight [1-4,7-10,13,36]. These works indicate that when the object moves away from the observer along the same line of sight, he perceives the dimensions Y and Z perpendicular to the movement of the object, each time smaller, for which he interprets that there is a contraction ("hyperbola moving away"). If that object approaches an observer in the same line of sight, he perceives its height (Y) and width (Z), each time larger. For that, he interprets that those dimensions Y and Z, perpendicular to the axis of movement, have become dilated ("hyperbola approaching") [1-4,7-10,13,36] (Figure.1) (Table 3).

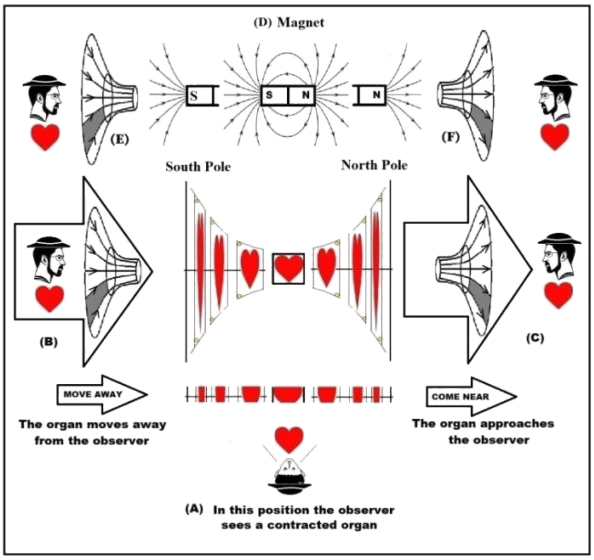

FIGURE 1: When an organ is moving perpendicular to the observer's line of sight, he sees it contracted (A). If the organ moves parallel to its line of sight, the observer sees a hyperbola moving away (B) or approaching (C). It is similar to the lines of force of a magnetic field (D). When that organ moves away from the observer, it follows the hyperbolic lines of force that enter through the south pole S of the magnet (E). If that organ approaches him, it follows the hyperbolic lines of force coming out of the north pole N of the magnet (F).

TABLE 3: The classical theory of relativity and results of a previous study by the author.

Classical theory of Relativity. Object moves perpendicular to the observer's line of sight	Length X parallel to the axis of movement contracts by a factor K= $\sqrt{1-v^2/c^2}$
	Time t_x parallel to the axis of movement dilates by a factor K= $\frac{1}{\sqrt{1-v^2/c^2}}$
Results of a previous study by the author. Object approaches or moves away from the observer in his same line of sight	Lengths Y and Z perpendicular to the axis of movement: * When the organ approaches the observer these lengths dilate by a factor K= $\frac{1}{\sqrt{1-v^2/c^2}}$ * When the organ moves away from the observer these lengths contract by a factor K= $\sqrt{1-v^2/c^2}$
	Times t_y and t_z perpendicular to the axis of movement: * When the organ approaches the observer these times contract by a factor K= $\sqrt{1-v^2/c^2}$ * When the organ moves away from the observer these times dilate by a factor K= $\frac{1}{\sqrt{1-v^2/c^2}}$

In both cases, the observer perceives hyperbolic images, when the organ moves away or when it approaches. It has been pointed out that when an organ moves away from the observer, it does so along the hyperbolic lines of force that enter through the south pole S of a magnet [2,4,7] (Figure 1E). When the organ approaches an observer, it does so along the hyperbolic lines of force that emerge from the north pole N of a magnet [2,4,7] (Figure 1F). If we split hyperbolic human physiology or split a magnet into several fragments, we get similar patterns. In both cases, they repeat their hyperbolic characteristics as if they were fractals [2,4,7] (Figure 2).

In 1864, James Clerk Maxwell pointed out that light, electricity, and magnetism are linked and stated Maxwell's laws [37]. Electric fields have two independent electric charges (positive protons and negative electrons), while magnetic fields have two poles (north N and south S), which are inseparable [38,39]. Even if we cut the magnet, the north pole N can never be isolated from the south pole S. For that reason, we do not see magnetic monopoles, or they do not exist [37,38,40]. The Earth's magnetic field has no magnetic monopoles, or they have not been detected [39].

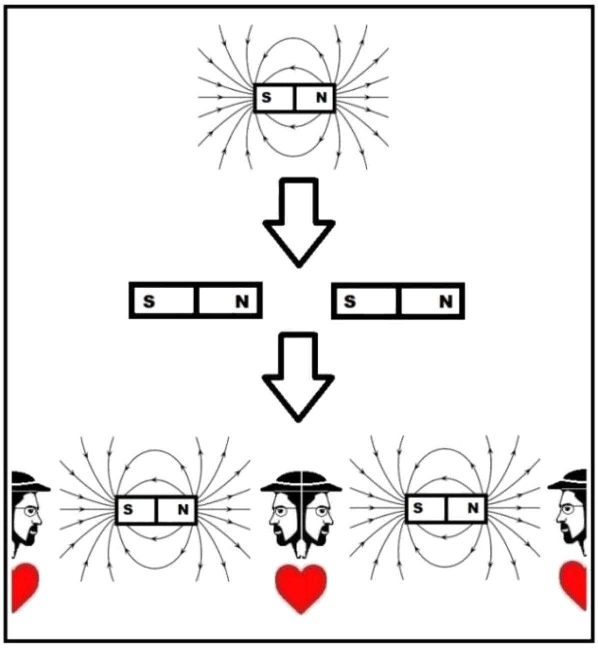

FIGURE 2: Human physiology can be divided like a magnet into smaller ones, retaining the same hyperbolic characteristics.

In 1931, Paul Dirac pointed out the theoretical existence of magnetic monopoles in quantum physics [41,42]. In physics, magnetic monopoles would be elementary particles with a magnetic mass or charge and a single magnetic pole [38,41,42]. The magnetic monopole theory has been extensively studied [43,44]. According to various authors, it is possible to observe analogs to magnetic monopoles in quantum fluids [45]. Attempts have been made to create them with different materials in a state of matter close to absolute zero [40,46,47]. The possibility of reproducing synthetic magnetic monopoles in holmium titanate and dysprosium titanate is described [41]. Also, high-energy particle colliders have been used to create them [38,48].

Three ways of detecting magnetic monopoles have been described [37,49]:

- Try to reproduce them in particle accelerators.
- Look for them in cosmic rays or trap them in certain materials.
- Trace indirect evidence of its existence in different astronomical phenomena.

Regarding humans, the possibility of using their body as a monopole antenna to collect energy in a frequency range of 20-120 Mhz has been studied. For this, the reception power of the human body has been taken into account [50]. In studying the cerebral cortex of rats, dipole and multipole components have been found, as well as unexpected monopolar components. It is thought that the monopoles may be erroneously absorbed in the dipoles [51]. Studying an immune synapse, it has been thought that the endogenous electromagnetic field in the cell is generated by a unique cooperative system between mitochondria and microtubules [52].

Regarding the above, it is of interest in electromagnetism, the right-hand rule (Figure 3) and the left-hand rule (Figure 4). Also important is Lenz's Law, in which the direction of the electromotive force induced in a closed circuit is such that it tends to oppose the cause that produces it [5]. The induced current will circulate in a direction that opposes the change that produces it [6] (Figure 5).

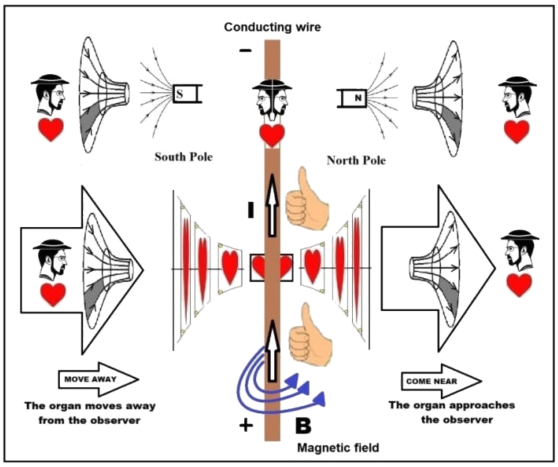

FIGURE 3: "Right-hand rule, Ampère's rule or corkscrew rule": whenever an electric current (I) flows through a conducting wire, a magnetic field (B) is established, whose lines are circumferences located in the plane perpendicular to that conductor. When the thumb points in the direction of conventional current (from positive to negative), the curled fingers will then point in the direction of the magnetic flux lines around the conductor by rotating counterclockwise. The conducting wire represents a human organ, in this case, a heart.

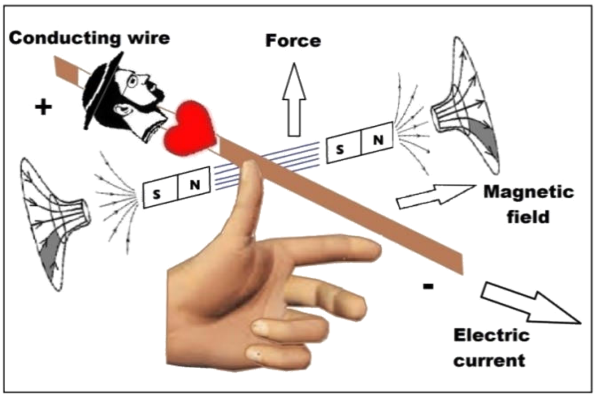

FIGURE 4: The "left-hand rule, or Fleming's rule" determines the movement of a conducting wire immersed in a magnetic field or the direction in which the force is generated within it. The index finger indicates the lines of magnetic flux, the thumb the movement of the conducting wire, and the middle finger the direction of the current. The conducting wire represents a human organ, in this case, a heart.

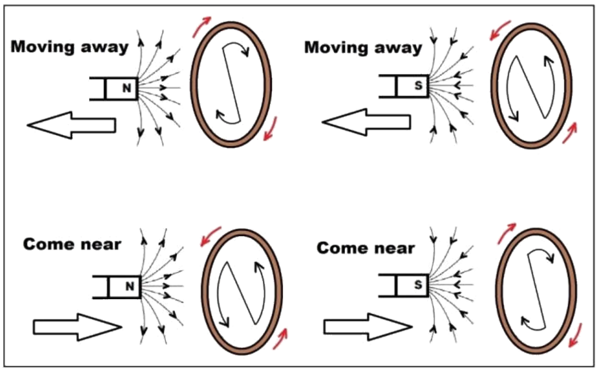

FIGURE 5: Lenz's Law: The north pole N and the south pole S of a magnet induce a current in a conducting wire as they move away from or towards it. That current will circulate in a direction that opposes the change that produces it.

This work aims to approach the magnetic monopoles in human physiology within the concept of hyperbolic medicine.

MATERIAL AND METHODS

In Internet search engines and various databases (Medline, Scielo), a bibliographic review of scientific works related to magnetic monopoles in medicine has been carried out. With the information obtained the possibility of magnetic monopoles in human physiology was studied, and the results were related to hyperbolic medicine.

RESULTS

The results indicate that:

(a) There is a space-time relativity perpendicular to the axis of movement of an organ, which gives hyperbolic curves [1-4,7-10,13,36].

(b) The images in nature are hyperbolas of space-time and exist independently of the longitude and latitude of the Earth where they are observed [2].

(c) The lines of force of the Earth's magnetic field are hyperbolas [2], which can vary over time and even reverse their polarity [53].

(d) Hyperbolic curves are very common in human physiology [1,3,4,7,13-28]. The lines of force of an electromagnetic field act in human physiology [4,29-33], and according to recent papers, they do so through hyperbolic curves [2]. Human circadian rhythms may be in sync with those hyperbolic curves that occur in nature [11,12].

(e) Hyperbolic human physiology can be fragmented into smaller elements like a magnet and maintain its same characteristics at smaller scales [2,4,7]. The electromagnetic component of the cell contains dipoles, multipoles, and monopoles [50-52]. In electromagnetism, the right-hand rule, the left-hand rule, and Lenz's law can be applied [5,6].

DISCUSSION

The concept of hyperbolic medicine encompasses various aspects. Its main characteristic is that the hyperbolic space-time curves found in nature are related to and influence human physiology [1-4,7-10,12,13]. In astronomy, the universe has been described as having a hyperbolic geometry [54-58]. It is visible by looking at the conical perspective of a street. When straight lines reach our eyes, they curve until they become hyperbolas [3].

The results indicate that hyperbolic curves are very common in medicine and are found in many human physiological processes [14-28]. We know from previous work that electromagnetic fields have effects on human physiology [4,29-33] and the magnetic field that surrounds us warps our space into a curve. If we observe the lines of force of a magnet and the earth's magnetic field, we perceive that they are hyperbolic images [5,6,36]. It is possible to think that human physiology is conditioned by that deformed space in which we live. In this way, the hyperbolic curves we see in medicine could be related to this hyperbolic deformation. There is an adaptation of human physiology to the hyperbolic deformation of the space in which we live. Cellular physiological processes are subject to permanent synchronization [12]. In this way, the cells in the human body synchronize their physiological processes to create hyperbolic curves similar to those occurring in nature.

The human body is adapted to these hyperbolic curves of space-time, as described in figure 1. When a human organ moves away from an observer, it follows the hyperbolic lines of force that enter through the south pole S of a magnet. If that organ approaches the observer, it follows the hyperbolic lines of force coming out of the north pole N of the magnet [2,4,7].

Theoretically, both hyperbolic human physiology and hyperbolic lines of force of a magnet can be divided into fragments, each retaining its same hyperbolic characteristics. In nature, hyperbolas occur between the north pole N and the south pole S consecutively. According to figure 2, a human organ situated in the middle of these poles sees hyperbolic lines approaching from the north pole N ("hyperbola approaching"). And then sees hyperbolic lines moving away from the south pole S ("hyperbola moving away"). It is regardless of where you are.

With microelectrodes, dipoles can be collected in the cerebral cortex of the rat and humans. It has been thought that there are monopoles in neurons as well, but they may be absorbed in dipoles. Likewise, it is thought that when postsynaptic channels open, the extracellular current that is established is not instantaneous. There will be a transient time during which Kirchhoff's laws do not apply, and the postsynaptic region can act as a monopole (51). We are talking about an electric field, although we know it is also associated with a magnetic field. A human organ is an open system exposed to the hyperbolic lines of force of electromagnetic fields and behaves as a conductive element where currents and its magnetic field are generated. According to the "right-hand rule", an electric current generates a transverse magnetic field. According to the "left-hand rule", a moving magnetic field can generate an electric current. Both rules are represented in Figures 3 and 4 within the concept of hyperbolic medicine.

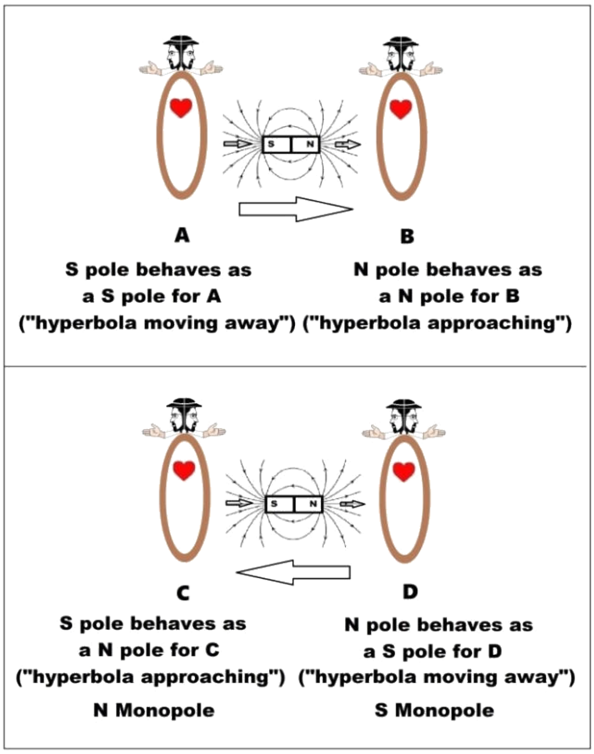

FIGURE 6: Effects of Lenz's law in hyperbolic medicine: An S pole that moves away from an observer gives a "hyperbola moving away" (A), but if it approaches him, it gives a "hyperbola approaching", typical of the N pole (C). An N pole that approaches an observer gives a "hyperbola approaching" (B), but if it moves away from him, it gives a "hyperbola moving away", typical of an S pole (D).

In Figure 6 we take into account Lenz's Law in hyperbolic medicine. An observer or human organ acts as a current-conducting wire. Following the direction of movement marked in the diagram, when the S pole moves away from observer A, he sees a typical "hyperbola moving away" of the S pole. If the N pole approaches observer B, he sees a typical "hyperbola approaching" of the N pole. In opposite motion, when the S pole approaches observer C, he sees a typical "hyperbola approaching" of the pole N (a great contradiction, because it is the S pole). If the pole N moves away from observer D, he sees a typical "hyperbola moving away" of the S pole (another great contradiction, because it is the N pole). We speak of contradiction when the "hyperbola approaching" (typical of the N pole) behaves for a human organ (observer D) as a "hyperbola moving away" (typical of the S pole). It is an S monopole. And also, when the "hyperbola moving away" (typical of the pole S), behaves for a human organ (observer C) as a "hyperbola approaching" (typical of the N pole). It is an N monopole.

In figure 7 we have two fragments of hyperbolic human physiology, which behave like two fragments of a magnet, whose N and S poles attract each other. An observer or human organ is in the middle of these fragments and acts as a current conducting wire. If we move both fragments away from that observer (fig.7A) the N pole behaves like an S pole, giving a "hyperbola moving away" (S monopole), while the S pole behaves like an S pole, giving a "hyperbola moving away". On the contrary, if we approach both fragments to that observer (fig.7B) the N pole behaves like an N pole, giving a "hyperbola approaching", while the S pole behaves like an N pole, giving a "hyperbola approaching" (N monopole).

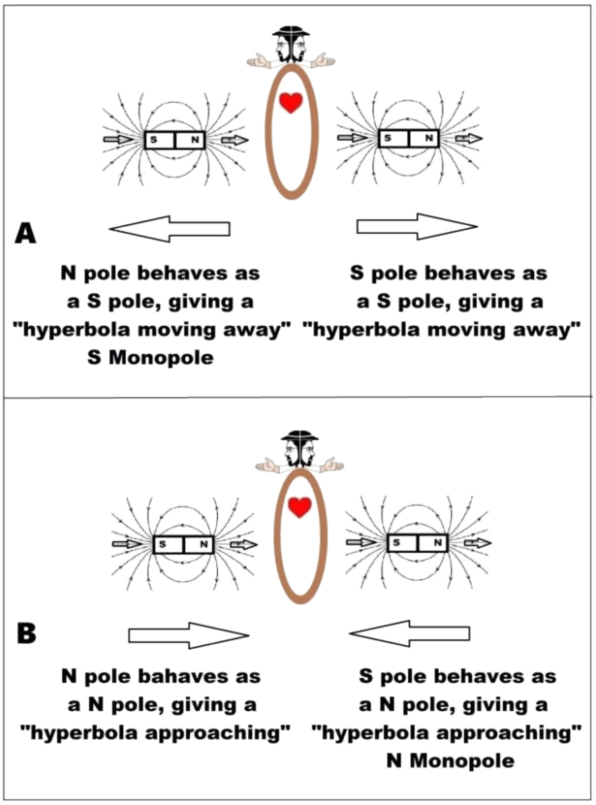

FIGURE 7: Consecutive hyperbolic fragments of N and S poles attract each other. Traction to move them away (A). Traction to approximate them (B).

In Figure 8 we have two fragments of this hyperbolic human physiology that behave like two pieces of a magnet, whose N-N poles and S-S poles repel each other. If we move both fragments away from that observer, who acts as a conducting wire, the N poles behave like S poles giving a "hyperbola moving away" (S monopole) (Figure 8A), and the S poles behave like S poles, giving a "hyperbola moving away" (Figure 8B).

On the contrary, if we approach both fragments to that observer, the N poles behave as N poles, giving a "hyperbola approaching" (Figure 8C), while the S poles behave as N poles, giving a "hyperbola approaching" (N monopole) (Figure 8D).

We know from previous works [1-4,7-10,36] that the lines of force of a magnetic field that reach a nearby observer are perceived by him as a "hyperbola approaching" whose lines of force emerge from the N pole. That is, the N pole generates a "hyperbola approaching". However, if we move that N pole away from the observer, it behaves like an S pole, giving a "hyperbola moving away".

We also know [1-4,7-10,36] that the lines of force of a magnetic field moving away from a nearby observer are perceived by him as a "hyperbola moving away" whose lines of force enter through the S pole. That is, the S pole gives a "hyperbola moving away". However, if we approach that S pole to the observer, it behaves like an N pole, giving a "hyperbola approaching".

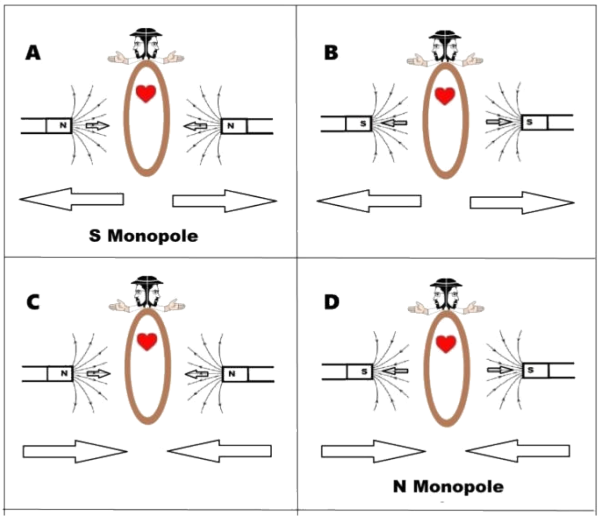

FIGURE 8: Consecutive hyperbolic fragments of N-N poles and S-S poles repel each other. Traction to move them away (A and B). Traction to approximate them (C and D).

A magnet has an S pole and an N pole. When the N pole behaves like an S pole, then the magnet will be an S monopole. If the S pole behaves like an N pole, then the magnet will be an N monopole (table 4).

A compendium of studies before this work has been published in eight versions and seven different languages. [59-66].

TABLE 4: Magnetic monopoles of the N pole, and the S pole, when approaching or moving away from a human organ that acts as a conducting wire.

S magnet monopole	It is generated by moving the N pole away from a conducting wire.	N poles give "hyperbolas approaching". When N poles move away from a conductor wire, they behave like S poles, giving "hyperbolas moving away".
N magnet monopole	It is generated by approaching the S pole to a conducting wire.	S poles give "hyperbolas moving away". When S poles approach a conducting wire, they behave like N poles, giving "hyperbolas approaching".

CONCLUSIONS

(a) In nature, there is space-time relativity, perpendicular to the axis of movement of an organ, which gives hyperbolic curves. The lines of force of an electromagnetic field act in human physiology through hyperbolic curves. In hyperbolic human physiology, there are dipoles, multipoles, and monopoles. They can be fragmented into smaller elements like a magnet and maintain their same characteristics at smaller scales.

(b) When we move the N pole of a magnet away from a conducting wire, an S monopole is generated, since both S and N poles give "hyperbolas moving away". On the other hand, when we approach the S pole of a magnet to a conducting wire, an N monopole is generated, since both S and N poles give "hyperbolas approaching". If the conducting wire is a human organ, we speak of Lenz's Law in hyperbolic medicine.

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