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Hyperbolic Movement of Light as the Basis of Hyperbolic Medicine

Jesús M. González-González

Doctor of Medicine and Surgery (University of Alicante). Specialist in Stomatology (University of Murcia). Practice in a Private Dental Clinic, in Salamanca (Spain).
gongonjm@hotmail.com

Corresponding author: Jesús M. González-González. C / Ávila, 4, 1º A. 37004 Salamanca (Spain). *gongonjm@hotmail.com*

Abstract: ***"Hyperbolic Medicine" is the study of 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. The movement of light to the observer's eye is through hyperbolic space-time curves, similar to the hyperbolic curves of the lines of force of a magnet, the Earth's magnetic field, and an electromagnetic field. When a human organ in motion moves away from a nearby observer, it does so following hyperbolic lines of force that enter through the south pole S of a magnet, according to a hyperbola where space contracts ($1/K^2 = 1/(1- v^2/c^2)$) and time dilates ($1/K^2 = 1- v^2/c^2$).When a moving human organ approaches a nearby observer, it does so following hyperbolic lines of force that emerge from the north pole N of a magnet, according to a hyperbola where space dilates ($1/K^2 = 1- v^2/c^2$) and time contracts ($1/K^2 = 1/(1- v^2/c^2)$).There is a close relationship between many hyperbolic curves that occur in human physiology and the hyperbolic space-time curves that occur in nature. Its description is the basis of hyperbolic medicine.***

Keywords: medicine, hyperbolic, light, space, time, human

1. Introduction

A hyperbolic curve is an open geometric figure with two branches, which is obtained by cutting a right cone through a plane oblique to the axis of symmetry. The plane does not have to be parallel to the axis of the cone and the hyperbola will be symmetrical in any case [1].

We call "Hyperbolic Medicine" the study of hyperbolic curves that occur in the physiology of a living being, especially in humans and other hyperbolic curves that may be in nature, such as electromagnetic fields, expansion-contraction systems in movement, circadian rhythms, and space-time relativity [2-10].

The eye estimates the distance based on the decrease in the size of the objects and the angle of convergence of the lines [11]. Objects become smaller as their distance from the observer increases. What we see forms a conical beam, with its vertex in the point of view. The conical perspective is the one that comes closest to the reality we see [12]. Photographs produce this type of perspective by collecting the projected image [12-17]. Current work indicates that the conical perspective represents images that travel at the speed of light to the observer's eye, following hyperbolic space-time curves, which are similar to the hyperbolic lines of force of a magnet [18] (fig.1). Human vision is hyperbolic because the space in which we live is deformed by "general hyperbolic curves" that exist at any longitude and latitude of the Earth's geography [19]. Previous studies indicate that animals with binocular vision have their perception in the farthest part of a hyperbolic image, while animals with lateral vision have it in the closest part of that hyperbolic image [20].

According to the Theory of Relativity, an object that moves along an axis X, perpendicular to the line of sight of an observer, contracts that length by the factor $K=\sqrt{1-v^2/c^2}$) (v: speed of the object, c: speed of light in a vacuum), while its time dilates by the factor $K=1/\sqrt{1-v^2/c^2}$). However, its Y and Z dimensions, perpendicular to that direction of movement, are not altered [21, 22].

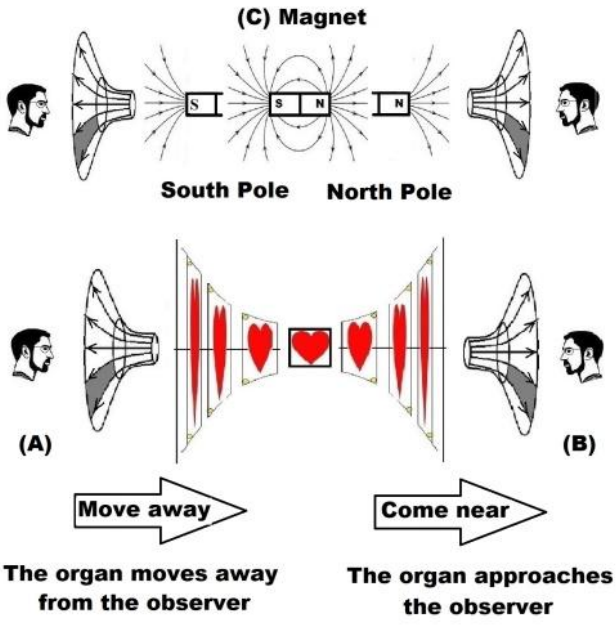

Figure 1: Hyperbolic image of a heart when it moves away (A) or approaches (B) an observer. This image is similar to the hyperbolic lines of force of a magnet (C).

According to current work, it is different if that object moves perpendicular to an observer's line of sight, or if it moves closer and further away in the same line of sight [23-27]. These works indicate that when the object approaches an observer in the same line of vision, he perceives its height

(Y) and width (Z) as increasingly larger, which is why he interprets that these dimensions Y and Z, perpendicular to the axis of movement of the object, have dilated. If the object moves away from the observer along the same line of sight, he perceives those dimensions Y and Z, perpendicular to the movement, becoming smaller and smaller, which is why he interprets that there is a contraction. In both cases, the observer perceives hyperbolic images, when the organ approaches or when it moves away [2-10, 18-20, 23-34].

In a simple magnet and the Earth's magnetic field, there are lines of force that have a hyperbolic shape [2-10, 18-20, 23-33, 35, 36]. Also, the lines of force of the electromagnetic fields are hyperbolic curves [2-10, 19, 20, 23, 31-33, 37-41]. It has been indicated that electromagnetic fields have effects on human physiology, through hyperbolic curves [2-10, 18-20, 23-33, 35, 36].

Helix-shaped structures and hyperbolic patterns are very common in nature. Many processes that occur in human physiology are hyperbolic curves [2, 18, 19, 23, 24, 28-30, 32, 33, 42-56]. Biological rhythms repeat over time and are related to the rotation of the Earth on its axis and around the Sun [57]. It has been thought that the time and rhythms of the biological clock are in the genetic code. These are regulated by environmental signals (light, temperature, humidity, rest, sound) and are synchronized to approach the stimulus frequency [57, 58]. It has been described that these human circadian rhythms can follow hyperbolic curves [29, 30]. As indicated in numerous works, if we divide hyperbolic human physiology into several fragments, all of them repeat their hyperbolic characteristics as if they were fractals [2-10, 19, 23, 31]. This concept of fragmented physiology has been used to study the hyperbolic helical structures of the nerves of the human body and its genetic code [32, 33]. We also know that evolution is a process of genetic change that affects a population over time and is transmitted to its offspring. The evolution of the hominid skull over time is a hyperbolic curve [34, 59-62].

A modification of space-time in that hyperbolic nature can have effects on the hyperbolic space-time curves that are in human physiology. According to this, medical treatments could be done to correct altered hyperbolic curves in that physiology, and synchronize them again with those that occur in nature.

The objective of this work is to theoretically study the hyperbolic movement of lightin relation to human organs, within the concept of hyperbolic medicine.

2. Material and methods

In Internet search engines and various databases, a bibliographic review of scientific works related to the hyperbolic movement of light, perpendicular to a nearby observer and in the same line of sight has been carried out.

Theoretically, this movement has been studied in human organs, according to the following scheme: an observer sees a vehicle approaching that contains a human organ (heart) and then sees how it moves away from him. The dimensions of that vehicle are length (X), height (Y), and width (Z). That observer will attempt to determine the dimension Y and its time t_y with his own rule and his measuring clock. Then, he will try to determine the dimension Z and its time t_z in the same way (fig.2).

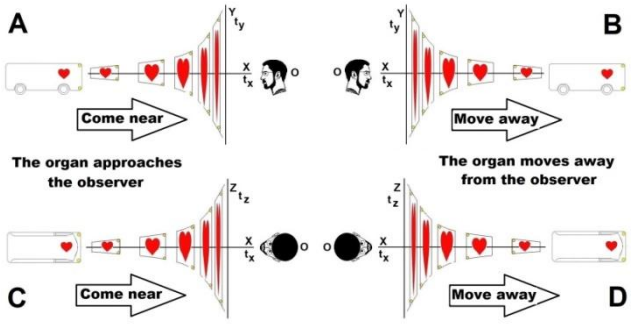

Figure 2: An observer located at O sees a vehicle with an organ (heart) that is in motion. He will determine its Y dimension and its time t_y when it approaches (A) and when it moves away (B). Then, he will determine the dimension Z and its time t_z when it approaches (C) and when it moves away (D).

3. Results

The results are:

1.- Data from the bibliographic study:

- Cone images in nature represent the movement of light through hyperbolic space-time curves [18] and exist regardless of the longitude and latitude of the Earth where they are observed [19].
- The lines of force of a magnet, the Earth's magnetic field, and an electromagnetic field are hyperbolic space-time curves [2-10, 18-20, 23-33, 35-41].
- Many curves that occur in human physiology are hyperbolas and are related to the hyperbolic space-time curves that occur in nature [2, 18, 19, 23, 24, 28-30, 32, 33, 42-56].

2.- Data of the theoretical model used:

A human organ (heart) is located inside a moving vehicle. A near observer measures with his own rules and clocks the movement of that vehicle and he tries to determine in it its length (X), height (Y), and width (Z), as well as their respective times (t_x, t_y, t_z). The explanation is below and the results are in table 1. The transformations of the equations to hyperbolas are found in figure 3 and their graph is in figure 4.

Table 1: Movement of light, perpendicular and in the same line of sight of an observer

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= $\sqrt{1-v^2/c^2}$; [$1/k^2=1/(1-v^2/c^2)$]
	Time t_x parallel to the axis of movement dilates by a factor K = $\frac{1}{\sqrt{1-v^2/c^2}}$; [$1/K^2=1-v^2/c^2$]
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 = $\frac{1}{\sqrt{1-v^2/c^2}}$; [$1/K^2=1-v^2/c^2$] When the organ moves away from the observer these lengths contract by a factor K= $\sqrt{1-v^2/c^2}$; [$1/k^2=1/(1-v^2/c^2)$]
	Times t_y y t_z perpendicular to the axis of movement: When the organ approaches the observer these times contract by a factor K= $\sqrt{1-v^2/c^2}$; [$1/k^2=1/(1-v^2/c^2)$] When the organ moves away from the observer these times dilate by a factor K = $\frac{1}{\sqrt{1-v^2/c^2}}$; [$1/K^2=1-v^2/c^2$]

A) Lengths:

a) When the observer sees the vehicle approaching and measures their perpendicular lengths, that is, its height (Y) and width (Z), he finds that these measurements are increasing, being for him dilation. The observer sees the flashes of light coming from the vehicle and interprets according to classical mechanics that the length traveled by these light beams in a second should be c + v meters if they approach the focus and c - v meters if they move away. However in both cases that length is always c meters. As the observer knows that the perpendicular length of the vehicle in its approximation is dilated, now it would have a value K longer than 1 meter. This value is necessary for the predicted values c/(c + v) and c/(c - v) in the classical mechanics, to become the value c, which is the one that is obtained. For this, the two conditions K (c + v) = c and K (c - v) = c must be done together. Multiplying member to member, the result is $K=1/\sqrt{1-v^2/c^2}$. That is, for the observer the lengths perpendicular to the axis of movement of the vehicle are dilated by a factor $K=1/\sqrt{1-v^2/c^2}$ when it approaches. The hyperbola is $1/K^2=1-v^2/c^2$.

b) When the observer sees the vehicle moves away and measures their perpendicular lengths Y and Z, he finds that are becoming smaller, being for him a contraction. Now it would have a value K smaller than 1 meter. For this, the two conditions (c + v) / K = c and (c - v) / K = c must be done together. Multiplying member to member, the result is $K=\sqrt{1-v^2/c^2}$. That is, for the observer the lengths perpendicular to the axis of movement of the vehicle are contracted by a factor $K=\sqrt{1-v^2/c^2}$ when it moves away. The hyperbola is $1/K^2=1/(1-v^2/c^2)$.

B) Times:

a) When the observer sees the vehicle approaching he considers that there is a perpendicular dilation of Y and Z. Now he measures the time (t_y and t_z) perpendicular to the displacement. He looks at the hands of the clock and thinks that if those hands run through a dilated space in the same sphere of the clock is because they run faster. Thus, he thinks that there is a contraction of time. For this to occur (c + v) / K = c and (c - v) / K = c must be satisfied. Multiplying member to member, the result is $K=\sqrt{1-v^2/c^2}$. That is, for the observer the times perpendicular to the axis of movement of the vehicle are contracted by the factor $K=\sqrt{1-v^2/c^2}$ when it approaches. The hyperbola is $1/K^2=1/(1-v^2/c^2)$.

b) When the observer sees the vehicle move away he considers that there is a perpendicular contraction of Y and Z. He looks at the hands of the clock and thinks that if those hands run through a contracted space is because they run slower. Thus, he thinks that there is a dilation of time. For this to occur, K (c + v) = c and K (c - v) = c must be satisfied. Multiplying member to member, the result is $K=1/\sqrt{1-v^2/c^2}$. That is, for the observer the times perpendicular to the axis of movement of the vehicle are dilated by the factor $K=1/\sqrt{1-v^2/c^2}$ as it moves away. The hyperbola is $1/K^2=1-v^2/c^2$.

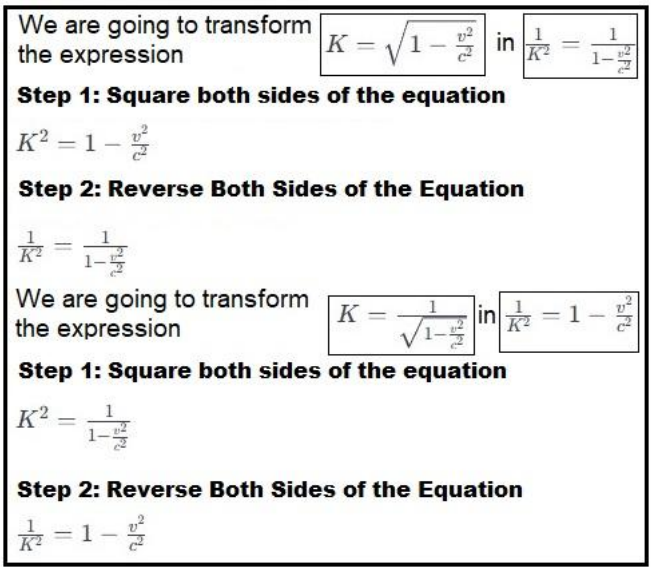

Figure 3: Transformations from K to $1/K^2$, whose graphs are hyperbolas.

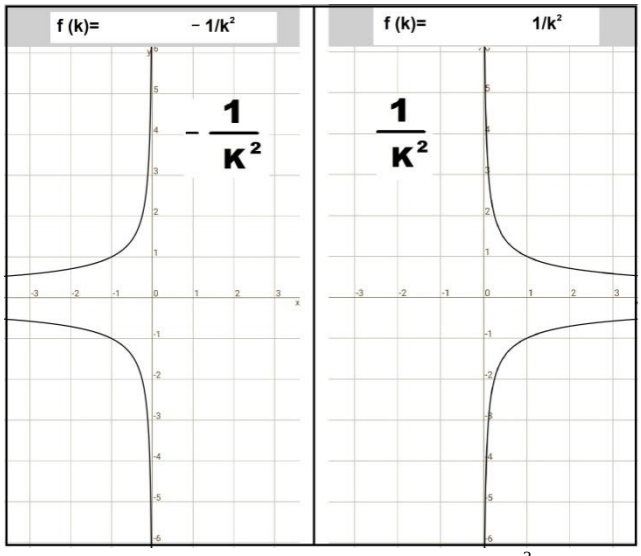

Figure 4: Hyperbolic images of $1/K^2$.

4. Discussion

According to previous work, closer houses are perceived as larger than those further away. Images reach the human eye at the speed of light and follow a hyperbolic curve that is similar to that caused by the lines of force of a magnetic field [2-10, 18-20, 23-28, 30-34]. Images of nature are hyperbolic because the deformed space in which we live is hyperbolic (fig.5).

A conical perspective image is a static image. It is an instant image (fig.5A). When we see this image in motion, the lines become curves and we observe a hyperbola (fig.5D). Conical perspectives are hyperbolic space-time curves [18]. 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 [2-10, 18-20, 23-28, 30-34] (fig.1C). If an organ in motion approaches an observer, he perceives its dimensions perpendicular to the movement (height Y, width Z) as larger the closer it is to him. On the contrary, if it moves away from the observer, he perceives those dimensions perpendicular to the movement as smaller. In both cases, the observer perceives hyperbolic images, when the organ approaches or when it moves away (fig.6).

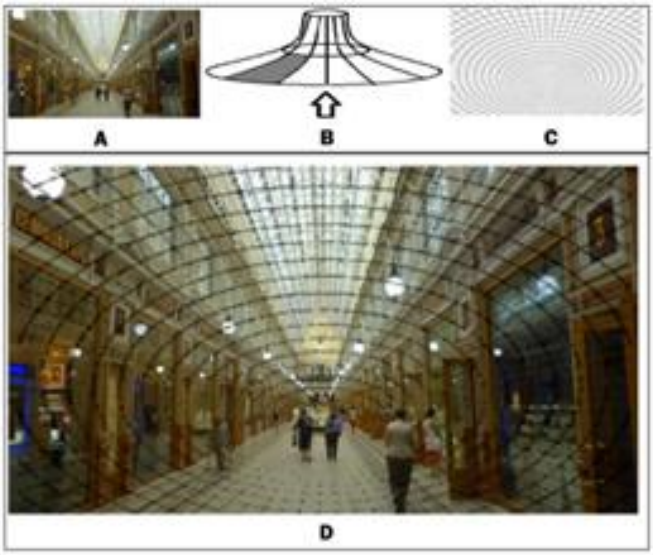

Figure 5: Image taken in Saint Petersburg (A). Scheme of a hyperbola (B). In C is image B observed from where the arrow is. Image A observed as a hyperbola (D).

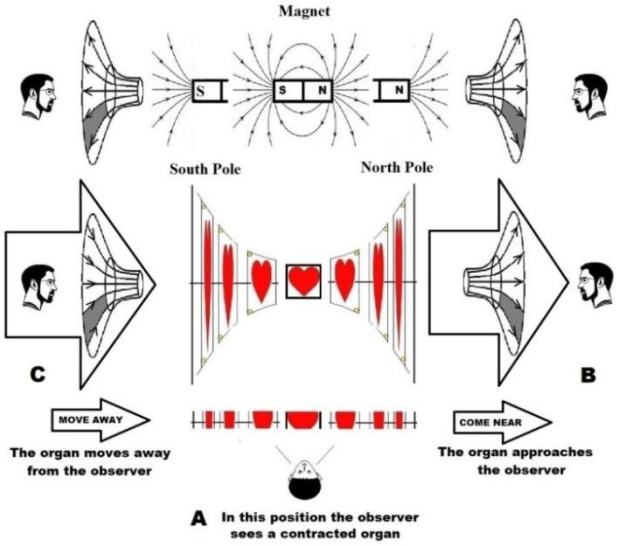

Figure 6: Hyperbolic movement of light, perceived by a close observer from three different positions: A) perpendicular to that movement, B) in the same line of sight approaching, and C) in the same line of sight moving away.

This explanation is about the results of table 1 and has two consequences: 1º) any object that moves along an X-axis perpendicular to the line of sight of an observer will have a contracted length X (fig.6A), and 2º) if the object moves in the same line of sight of the observer the lengths Y and Z perpendicular to that axis expand if the object approaches the observer (fig.6B), or contract if it moves away from him (fig.6C).

According to the literature study, the lines of force of

electromagnetic fields are hyperbolic curves [2, 37-41], and these are very common in many human physiological processes [2-10, 18, 19, 23, 24, 28-30, 32, 33, 42-56]. We also know that electromagnetic fields have effects on human physiology [2-10, 18-20, 23-33, 35-41], through hyperbolic lines of force [19]. Concerning the above, it has been pointed out that when an organ approaches an observer it does so according to the hyperbolic lines of force that emerges from the north pole of a magnet. When the organ moves away from the observer, it does so according to the hyperbolic lines of force that enter through the south pole of a magnet [2-10, 19, 20, 23, 24, 28, 31-33].

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. 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 [32]. As with a nerve, a fragment of the genetic code can be considered as a wire carrying an 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. The helical shape of the genetic code may have its origin in a transverse magnetic field, whose lines of force follow a counterclockwise helical path [33].

Some hyperbolic curves that occur in human physiology may be conditioned by the hyperbolic curves of the Earth's magnetic field. There is an adaptation of human physiology to the hyperbolic deformation of the space in which we live. Geomagnetic rhythms can act as a time clock to organize physiological rhythms. This means that human biorhythms follow hyperbolic curves, synchronized with the hyperbolic lines of the Earth's magnetic field. If external stimuli are applied that modify the hyperbolic physiological curves, they tend to synchronize to become hyperbolic again. Cellular physiological processes are subject to permanent synchronization. Cells in the human body synchronize their physiological processes to create hyperbolic curves similar to those that exist in nature [2-10, 23, 24, 28, 30, 34]. All of the above serves to establish the foundations of hyperbolic medicine.

5. Conclusions

1. The movement of light to the observer's eye is through hyperbolic space-time curves, similar to the hyperbolic curves of the lines of force of a magnet, the Earth's magnetic field, and an electromagnetic field.

2. When a human organ in motion moves away from a nearby observer, it does so following hyperbolic lines of force that enter through the south pole S of a magnet, according to a hyperbola where space contracts ($1/K^2 = 1/(1- v^2/c^2)$) and time dilates ($1/K^2 = 1- v^2/c^2$).

3. When a moving human organ approaches a nearby observer, it does so following hyperbolic lines of force that emerge from the north pole N of a magnet, according to a hyperbola where space dilates ($1/K^2 = 1- v^2/c^2$) and time contracts ($1/K^2 = 1/(1- v^2/c^2)$).

4. There is a close relationship between many hyperbolic curves that occur in human physiology and the hyperbolic space-time curves that occur in nature. Its description is the basis of hyperbolic medicine.

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Author Profile

Jesús M. González-González. Bachelor of Medicine, University of Salamanca (1985).Doctor of Medicine and Surgery, University of Alicante (1992).Specialist in Stomatology, University of Murcia (1992).Medical practitioner of State Health Service, 1987-1990.Dentist of State Health Service, 1991-2.Private practice in Stomatology 1991-present. Masters: 5. Attendance at medical courses: 76. Attendance at other courses: 10. Published books: 12 (one of them published in seven languages). Collaboration in books:1. Published manuscripts: 80 (50 as a single author). Other publications: 5. Founder President of APFS-Salamanca y PNH 2003-14. President or member of the conference organizing committee: 13. Reports in congresses: 28. Short films: 1. Patents: 7. Honour mention: 7. Participation in the media, press, radio, television: 36.