

# Philosophical Approach to Space Fabric and Propagation of Light

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## ABSTRACT

First, the paper proposes that a cosmological entity such as a photon and a physical entity such as an electron belong to two different levels of the Universe. The cosmological entities do not have any physical parameters. Thus, several mysteries of quantum physics are still unresolved because both are considered in the same paradigm. This paper further establishes that the spatial space (medium of propagation) is a fabric made of different cosmological substances. It explains how the space fabric plays an important role in creating different cosmic phenomena such as gravitation, repulsion, cosmic inflation, and other mysteries. This spatial space fabric accepts the electromagnetic wave by way of physical time, creating a spacetime continuum. Next, the paper proposes a new vision that explains how an electromagnetic wave transports photons from an emitter to a receiver with a constant velocity by outlining a new paradigm of time and space and precisely treating photons as cosmological substances. This vision explains how the second postulate of Einstein's special theory of relativity remains valid even if the time dilation due to velocity is not a reality. The correctness of the approach is validated through the results obtained from previous well-known experiments.

## 1. INTRODUCTION

Truth is always biased because it is based on our preconceived and biased notions; that is why "*biased researches occurs frequently in the science*" [1]. When an experiment is conducted, its observations lead to several inferences; out of these, we select only those that satisfy our preconceived and biased notions, creating confusion. That is why we still are not able to solve mysteries like wave-particle duality, entanglement, quantum tunneling, the double-slit experiment, the fabric of spacetime, or the concept of aether. Richard Feynman famously quipped that "*I can safely say that nobody understands quantum mechanics*"

[2]. To “*evaluate information in nonbiased ways requires intellectual humility*” [3] and a philosophical approach, which can lead a scholar in the direction of reality. The present paper will concentrate upon the propagation of light and provide an unbiased philosophical approach to understand the issues at their fundamental level [4] and contribute several new ideas as follows:

1) Physical entities (the emitter and the receiver) and cosmological entities (photons) relate to two different levels of the Universe.

2) The space fabric made of cosmological substances is a spatial medium of propagation called aether, available in the perceptible Universe. The fabric can provide basic support to all physical activations.

3) When the spatial space fabric is used by time in the form of electromagnetic waves, we call it the spacetime continuum. Hence space fabric and spacetime are two different terms.

4) The “receiver space” is responsible for the propagation of light.

5) The second postulate of Einstein’s special theory of relativity says: “*speed of light  $c$  is a constant, independent of the relative motion of the source.*” This statement was found to be correct experimentally [5]. The present paper explains the solution to this mystery.

6) Time dilation due to velocity is an illusion.

This paper has no objection regarding the perfection of experiments conducted regarding the propagation of light, but it does object to the conclusions that may have been extracted based on prior assumptions; hence, these conclusions must be reexamined by viewing their results through different lenses [6]. By doing so, we find a new vision that explains how photons are displaced from one point to another without having their (photon’s) own velocities. This paper outlines a new paradigm of time and space by considering electromagnetic waves as a physical activation created within the space fabric. This paper may appear to contradict some prevailing beliefs on spacetime, but these contradictions are not real; the author is simply saying the same thing in a different way with the purpose that some of the cosmological mysteries may be resolved.

## 2. METHODOLOGY

The methodology is based on the idea that nature behaves equanimously with all entities. A proven fact can be used in other situations using the same logic with parallel aspects. Our observations are biased, and to eliminate this bias, we have to analyze each thing from its root level. First, we are redefining the factors related to the “propagation of light” individually; thereafter, we will explain the process of propagation. The factors are discussed as follows:

1) The first factor we will discuss is the difference between physical and cosmological entities. For example, we know that animals are intellectually nonliving entities; plants are psychologically nonliving entities; physical objects are biologically nonliving entities. Hence, we can easily infer that cosmological substances are physically nonliving entities. Thus, we can conclude that a photon (physically nonalive entity) cannot move its own, and a physical entity causes its displacement.

2) The second factor is the space fabric used as the medium of propagation of light. No physical activation can occur in the absence of space fabric. The fabric facilitates the activation of stationary waves named attraction and repulsion and moving waves named light and magnetic flux.

3) The third factor is the emitter, which has a higher entropy level and imparts quantum and frequency to the space fabric.

4) The fourth factor is the receiver, which has a lower entropy level and acquires photons by providing speed and direction. The amalgamation of frequency, quantum, speed, and direction creates a wave. Here, the lower entropy provokes time and converts spatial space fabric into a spacetime continuum.

5) The fifth and final factor is the propagation process, where one of the three, *i.e.*, a) the emitter, b) the photon itself, or c) the receiver, is responsible for the propagation. Again, the process of rejecting the probabilities decides this.

6) A self-explanatory figure (Figure 3) explains the constancy of the speed of light to all relative observers.

### 3. DISCUSSIONS AND PROOF

#### 3.1. Difference between Physical and Cosmological Entities

The Universe is constituted of entities of different levels. When these levels are arranged in ascending order, they are called; cosmologically living entities (energy), physically living entities (atoms), biologically living entities (plants), psychologically living entities (animals), and intellectually living entities (social; humans). All these entities of different levels live in a different paradigm. For example, physical entities are the fundamentals of biological entities; but do not follow biological sciences. Similarly, cosmological entities are the fundamentals of physical entities; but do not follow physical science.

In the case of electromagnetic waves, this paper submits that in a quantum mechanical photon-transfer process, the emitter and the receiver of electromagnetic waves are physical entities and those photons are cosmological entities; hence the difference between the two levels should be clarified in detail. Some of the important differences are presented here:

1) Man is made of all the levels of the Universe. When it loses its intellectual form, the animal stage remains (madness). When it loses its psychological form, the vegetation stage remains (coma stage). When it loses its vegetable form (death), the physical stage remains (atoms). In the same sequence, when these lose their physical mass by nuclear fusion, the cosmological stage remains. That explains the difference between physical and cosmological levels.

2) Cain says that *“but for the photon, there’s zero time elapsed between when it’s emitted and when it’s absorbed again. It doesn’t experience distance either”* [7]. In other words, cosmological substances do not experience physical parameters like distance and time. In the absence of distance and time, velocity cannot be imagined; hence, a photon cannot have any velocity.

3) According to quantum mechanics: *“Surprisingly when a photon is observed, it behaves either as a particle or as a wave. But both aspects are never observed simultaneously”*. It further notes that the *“quantum theory predicts that a particle (for instance a photon) can be in different places at the same time. In fact, it can even be in infinitely many places at the same time, exactly as a wave. Hence the notion of wave-particle duality, which is fundamental to all quantum systems ...”* [8]. In the case of Redshift, the photon wavelength is stretched in transit from the source to the observer; that is, a photon does not obey the physical parameters, namely, shape, placement, motion, reference frames, and distances; hence, a photon cannot be treated as a physical particle.

4) A boson [9], which is the smallest available physical particle, has the capability to receive/store/emit heat and can be cooled down to  $-273.15^{\circ}\text{C}$ ; however, hence, it is not a cosmological particle.

5) *“It’s sufficient for a particle to have the energy to have a meaningful sense of existence,”* says Flip Tanedo, Assistant Professor of Physics at the University of California [10]. In other words, a physical particle needs some energy to prove its existence. Here the physical particle is different from energy.

6) This paper strongly propounds that electromagnetic waves and gravitational pulls both are executed by physical entities, using cosmological entities (energy field) as their means.

7) A plant has biological life, whereas molecules do not; instead, they have physical life. In the same way, the physical matter has physical life, whereas cosmological energies do not; instead, they have cosmological life.

8) Physical mass is a property of matter that creates gravity (bends spacetime) and, through inertia, resists the change in velocity, while energy is the capacity for doing work.

9) The reference frame of a physical entity can be placed in space with spatial coordinates, but energies do not have any spatial coordinates.

10) A physical mass can acquire energy and add mass using the mass-energy conversion equation. However, the photon itself cannot acquire another photon.

Our knowledge of cosmology is very limited [11]. The above views are provided by different philosophers based on different experiments. If we consolidate their views, we can easily infer that physical entities and cosmological entities are two different levels of the Universe and should not be considered in the same paradigm. The above comments are necessary to differentiate the physical emitter/receiver from the

cosmological photon in propagating light.

### 3.2. Space Fabric and Time

Spacetime is the boundless four-dimensional continuum in which objects and events have relative position and direction. Three of them are called spatial coordinates, and the fourth is time. Out of this spacetime continuum, 1) the spatial “space” is made of systematically arranged cosmological particles. Nafousi says that “*Empty space is not empty but composed of space particles (SP). This makes the quantized fabric of space*” [12]. This systematic space fabric is supposed to have a constant space density, as presumed by Albert Einstein, and he called it a cosmological constant. 2) The second term is “time,” which is the cause of an electromagnetic wave. Einstein says that “*space may actually give rise to the phenomenon we experience as time*” [13]. A driver (time) travels on the spatial road (space fabric) using a car (electromagnetic wave). In other words, time is an operator of an “electromagnetic wave”, which propagates on the space fabric. We cannot separate space fabric (road) and time (driver); hence, we call spacetime. Dilation or contraction of space lies within the space fabric only, and electromagnetic waves face them in the form of curvature of space fabric.

### 3.3. Medium of Propagation

Before 1887 it was believed that light propagates in a medium called aether. The present paper propounds that the so-called medium is not made of physical constituents; rather, it is made of cosmological constituents, named space fabric. The space fabric is created by using a positive non-zero value for the vacuum energy or different energy fields. [14]. Michelson and Morley failed to detect this medium because they considered it a physical phenomenon [15]. David argued that “*as this aether could not be detected, it was disregarded, and mathematical theories were developed to explain physical interactions without reference to the aether. Now, over a century later, it is generally acknowledged that a major part of the Universe consists of Dark Energy*” [16]. David says that “*this article considers that dark energy could be the same entity as the elusive luminiferous aether and looks at implications for time, space, and gravity.*”

The author proposes that the space fabric supports four activations: attraction, repulsion, light, and magnetic fluxes. This fact shows that the structure of the space fabric is composed of dark matter, dark energy, visibility, and forcibility (the ability to create magnetism); all of them are just opposite to each other. Furthermore, it shows that the space fabric comprises a balance, such that the resultant impression of all four constituents remains zero. Thus, we observe as emptiness all around us is the “resultant zero impression” of the space fabric, which allows us to execute physical activations all around. The space fabric originates and activates physical entities; hence we cannot think of the physical world without space fabric. The four threads evenly weave the space fabric, but the excess amount of dark energy and dark matter curves the space fabric, creating cosmic inflation and gravitational lensing [17]. Because of low entropy, the massive bodies continuously absorb dark energy resulting in a spare amount of dark matter nearby. That results in gravitational pull and time dilation, creating a short path for electromagnetic waves.

### 3.4. Individual Space and Time of an Entity

All individual masses are originated due to the Higgs field [18, 19]. Mass is the indication of the physical entity. Further, Lloyd notes that “*According to Albert Einstein, space and time are simply different aspects of the same entity now called spacetime. It therefore seems plausible that they came into existence simultaneously*” [13]. It means an entity came into existence along with a set of mass and spacetime simultaneously and created its own reference frame. That concludes that all physical entities (reference frames) have their own set of mass and spacetime. Only the space fabric is common to all. To explain the phenomenon, we can consider the following examples:

1) If two beams of light cross the same point of space fabric and their paths pass through each other, they should strike each other. In fact, this never happens. This is because they both are different entities

and have their own individual spacetime.

2) If an object is observed by several observers moving with relative velocities, all observers receive light within their own spacetime with the same speed. Hence all observers must have individual spacetimes.

3) If two objects move in space with a relative velocity, both have their own reference frames and activate individually.

4) By Newton's first law, "*an object in motion will stay in motion*" because all entities have their own spacetime, and their spacetimes move along with the entities themselves.

### 3.5. Creation of Electromagnetic Wave

Consider that there are two bodies present in the space fabric. One is in a high-entropy zone called the emitter; the second is in a low-entropy zone called the receiver. The emitter has a quantum of heat to offer to any receiver's emptiness; hence it offers heat to the space fabric. It offers a limited quantum of heat within an equal interval; this oscillatory action creates a frequency having two peaks: 1) the fullness of the quantum and 2) the emptiness of the quantum. Both are placed 180° apart in oscillating frequency. It produces a nonmoving wave made of "quantum and frequency" and called "excited photons". The receiver's inflow property captures the "excited photons" and provides "velocity and direction". In this way, the space fabric has all four components: quantum, frequency, velocity, and direction, creating the electromagnetic wave. In the process, the wavelength is automatically generated ( $\lambda = v/n$ ). Before the propagation starts, the emitter leaves its possession over the photon, and the receiver holds the possession. Therefore, if the emitter has a relative velocity to the receiver, the velocity  $c$  will not change because we, as the receivers, measure our own inhaling speed, which is constant. Here, the "we" denotes the velocity-measuring instruments, not human beings. In the case of relative velocity, only the wavelength will change (Redshift) [20].

### 3.6. Responsibility of Propagation of Light

There can be three causes of the propagation of light: 1) by itself, 2) moving because of the emitter, and 3) moving because of the receiver. We will discuss these in turn.

#### 3.6.1. Non-Propagation of Light by Itself

1) Fraser Cain explains that "*From the perspective of a photon, there is no such thing as time. It's emitted and might exist for hundreds of trillions of years, but for the photon, there's zero time elapsed between when it's emitted and when it's absorbed again. It doesn't experience distance either*" [21]. When we say that light is moving, the statement will be irrational because "movement" requires both physical time and physical distance, both are physical parameters, and which are not available in the case of photons.

2) The emitters and receivers are physical entities and executants (doers, who make the action), and they execute cosmological substance (energy, what is being executed). Cosmological entities cannot execute themselves because they do not have any frame of reference.

3) If light could flow on its own, it could go anywhere in space. One cannot decide the source of origin of the light coming to you.

4) If light moves on its own, an anomaly arises as to how its speed can be constant in all moving frames.

5) If light moves on its own, how does it happen that light only moves in a straight line? It could have moved in any direction.

6) If the CMB propagated in a straight line and did not consider the receiver, all CMB would leave the Universe immediately.

7) Newton's second law of motion says that a body's acceleration is given by dividing the force acting upon it by its mass. "*So, a body without mass wouldn't know how to move*" [22]. Photons do not have any mass; thus, they do not experience acceleration.

### 3.6.2. Non-Propagation of Light by the Emitter

1) A photon has zero rest mass. It has energy equivalent to  $hf$  depending on the frequency to be emitted. An excited photon having certain energy can remain with the emitter in the form of a nonmoving wave (vibrating at the same point). Photon has a zero rest mass, so it requires a small thrust to create the infinite (maximum) speed; this thrust is not available to us.

2) While leaving the emitter, the speed of light is “c.” If this movement has some mechanical phenomenon, it should not be reached to all relative frames with the same velocity.

3) If the emitter emits light, it will not consider the receiver’s presence and emit light in infinite directions, which is impossible. About the spherical wave, Holger Fiedler [23] stated that “*a single photon cannot have a spherical wavefront.*” In the case of multiple photons, a finite number of photons cannot cover the infinite size of the wavefront because the size of the wavefront continuously increases to infinity. On the contrary, if the receiver fetches the light, there will be only one direction: toward the receiver (Figure 1). Further, we do not have any proof of radiation without an observer.

4) If an image comes toward the receiver, how is its size reduced within the distance covered?

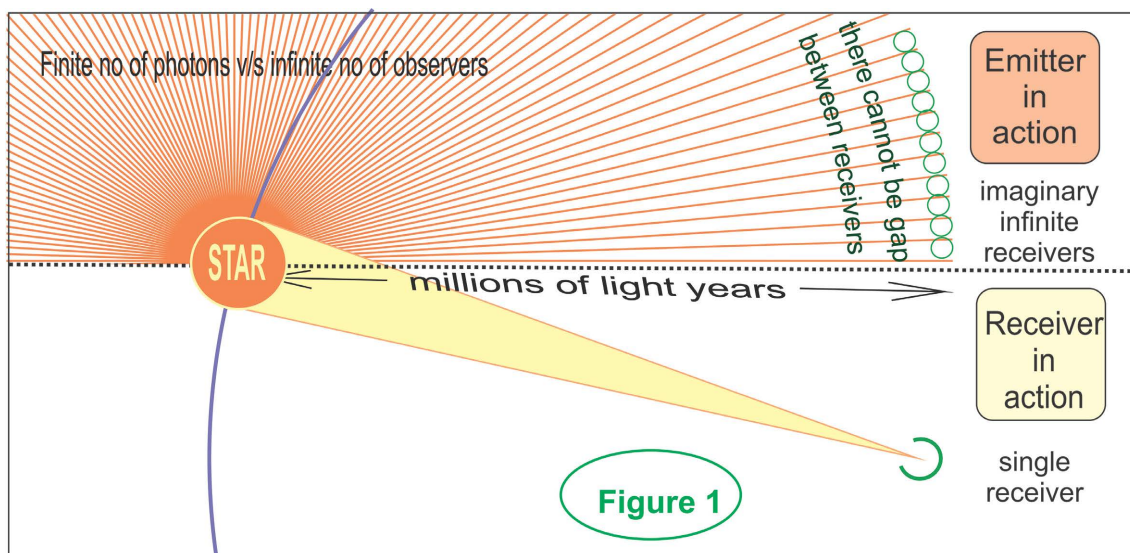
5) If light emission aims at a moving observer, it would not be able to reach it because the observer would change its position.

6) In the case of CMB [24], there is no emitter. Even so, illumination reaches us.

### 3.6.3. Propagation of Light by the Receiver

1) Light cannot propagate by itself (refer to Subsection 3.5.1). The emitter cannot throw light (refer to 3.5.2). Now, the only option left with us is that the observer is receiving light because of itself only. This theory suggests that we have two requirements for the propagation of light; the first is the availability of light (quantum with frequency), and the second is the receiver (the speed with direction); once the emitter offers light to the space fabric, it has nothing to do with the process of propagation.

2) In the case of CMB, we have cosmic matter (quantum and frequency) in the space fabric and the inflowing wave (velocity and direction) from the receiver. Both conditions are fulfilled, and we obtain the electromagnetic wave of the CMB. If there is no receiver, the CMB will not propagate.



**Figure 1.** Emission of photons: An emitter can have infinite receivers. The Sun can be seen from infinite positions. If the Sun throws light, it must throw light in infinite directions, which is never possible. Here, the word infinite is used only for infinity, not just for a large number. Any emitter, however large, cannot have infinite photons. This logic proves that the emitter does not throw photons.

3) Leonid noted that “*Time and entropy will be almost identical concepts*” [25]. Naim noted that “*the ‘increase in entropy’ is somehow associated with the direction in which time increases*” [26] and “*there is a quantitative relationship between entropy production and the arrow of time*” [27]. It is further noted that the “*response time is proportional to the ‘entropy’ of the source of signals*” [28]. It can be concluded that the receiver, being in the lower entropy region, is responsible for creating the arrow of time always being toward the self (receiver). In other words, the receiver is always responsible for receiving the quantum.

4) G.P. Thomson found it impossible to explain his results for the double-slit and triple-slit experiments [29]. He asked, “*how light going through a double-slit experiment seems to know before it sets out in its journey*” [30]. This proves that only the aim (receiver) determines the direction of travel.

5) John Gribbin noted that according to the Copenhagen interpretation of quantum mechanics, “*nothing is real unless you look at it*”. Referring to the “*Renninger’s negative-result experiment*”, he further noted that “*lack of an observation can makes the wave function of a system collapse.*” [31]. It says that without an observer, the wave function will not form.

6) According to Albert Einstein, light always moves at a constant speed “*c*”, regardless of any moving frame for an observer. If there is no observer, the speed of light must be zero.

7) In Gribbin’s words: “*The emitter can be considered to produce an ‘offer’ wave which travels to the absorber. The absorber then returns a ‘confirmation’ wave to the emitter, and the transaction is completed with a ‘handshake’ across spacetime*” [31]. Here, both the “offer” by the emitter and the “confirmation” by the receiver is accomplished at the point where the propagation starts. The “confirmation by the receiver is accomplished” should be considered “captured by the receiver”.

Therefore, it is proved that the receiving entity is responsible for the propagation of light, with the emitter and the photon itself having nothing to do with it.

## 4. OTHER FACTORS INVOLVED IN THE PROPAGATION OF LIGHT

### 4.1. Constant Speed of Light

The process of propagation starts from the receiver. The receiver has emptiness, hunger, or low entropy, creating an inflow wave in the medium (space fabric); please refer to **Figure 2**. It can be seen that the receiver has a low-entropy zone, evolves time for propagation, and hence the cause of speed lies on the receiver. Next, the wave propagates through space fabric, whose density decides the speed of light. Fortunately, we have an even space density all over and possess the speed of light constant. Again the paper proposes that the receiver provides the cause of speed, and space fabric provides the quantum of speed.

### 4.2. Red Shift

While the emitter surrenders the photon to the receiver’s inflow space, it creates a wave of constant wavelength. During this surrendering process, if the emitter is also moving away from the receiver, the time between the two impulses will increase; this will increase the wavelength which is perceived as the Redshift or the Doppler effect [32].

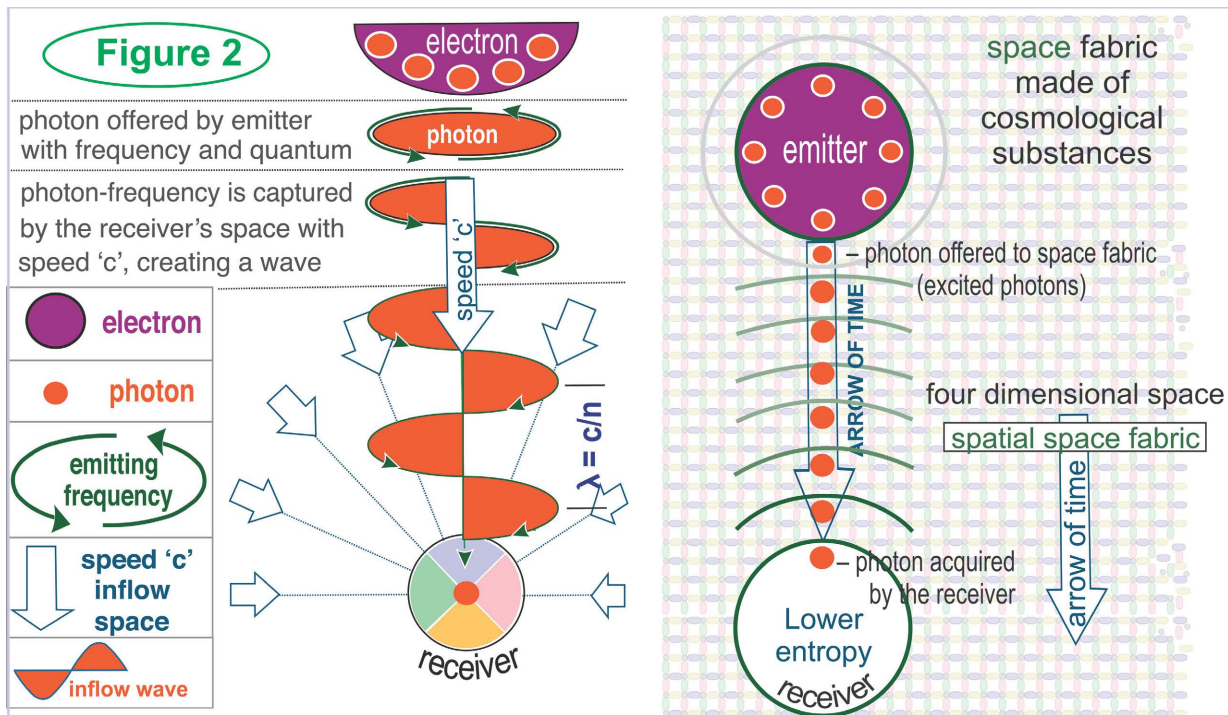
### 4.3. Wave-Particle Duality

The theory suggests that a photon, which is a cosmological entity, cannot be bound to a particular shape. Before being captured by the inflowing wave of the receiver, the photon remains in particle form. As soon as the inflowing wave captures it, it converts it into a “wave.” This is why light behaves in two ways: sometimes like a wave and sometimes like a particle [33].

### 4.4. Time Dilation

#### 4.4.1. Hypothesis of the Time Dilation

We know that “*the speed of light is the same in all inertial frames of reference and is independent of the velocity of the observer and emitter*” [34]. It seems to be illogical. However, experimental results [35]



**Figure 2.** Propagation of light: The emitter consists of a higher entropy zone that comprises quantum and frequency. The receiver consists of a lower entropy zone that comprises direction and speed. The lower entropy of the receiver evolves an arrow of time, whose direction is toward the receiver itself. In other words, the receiver is responsible for carrying photons. The receiver captures the quantum and frequency, amalgamates with direction and speed, and creates an electromagnetic wave. All these functions occur at the space fabric, which is made of systematically arranged energy fields.

comply with the inference. This was a mystery. Some scientists believed that “*the Special Theory of Relativity is an imaginary hypothesis, which does not correspond to physical reality*” [36]. But several scientists tried to resolve this mystery in different ways. The most popular solution to the mystery is the principle of time dilation. This principle suggests that a watch will slow at a higher speed compared to a stationary observer.

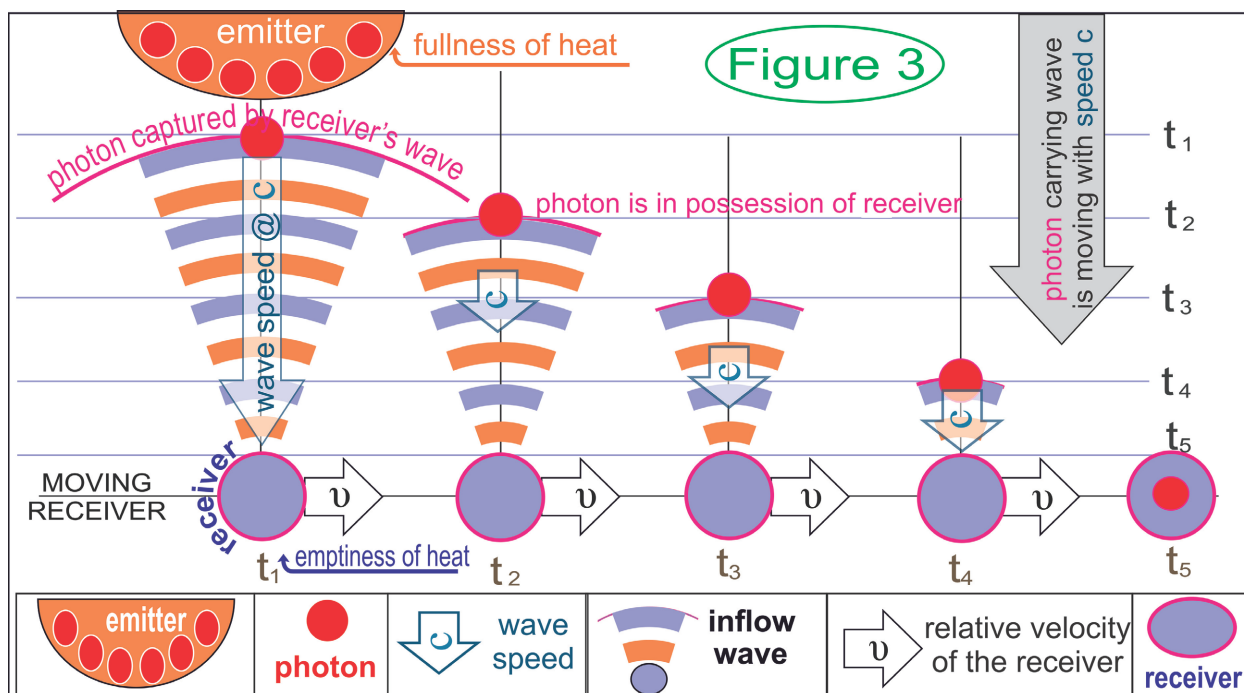
#### 4.4.2. Time Dilation with Velocity and the Twin Paradox

The above statement leads to numerous unanswered questions. One famous mystery is the twin paradox. There are twin brothers making journeys in space in high-speed rockets in opposite directions. After a period, both return to the Earth. Now either of them can claim that he was stationary within his frame, and the other one was moving at high speed. Either of them can claim that he is older than the other. This claim goes against logic.

#### 4.4.3. There Is No Time Dilation with Velocity

An emitter offers a photon (the red star in Figure 3) to the inflowing wave of the receiver. At event t1, the inflowing wave of the receiver captures the photon. The receiver is moving from left to right with speed “v”. As the photon remains in possession of the receiver (the inflowing wave is an organ of the receiver), at event t2, the photon as the rider also moves along with the receiver. The photon’s second movement is the speed of the inflowing wave toward the center of the receiver, which is “c.” After t3, t4, and t5, the photon, which remains in possession of the receiver’s inflow wave, is inhaled with speed “c” by





**Figure 3.** The emitter with the fullness of heat departs the photon, where the inflowing wave of the receiver captures it for acquisition. Subsequently, no connection exists between the emitter and photon. The receiver lying in the lower entropy zone creates an arrow of time toward itself. Once the receiver's wave captures the photon, it remains within the wave till it reaches the acquiring receiver. While measuring the speed of light, we measure only the inflow wave speed of the receiver, which has no connection to the emitter.

the receiver itself. As a result, the receiver always measures the light speed as equal to "c". The receiver does not measure the speed of light; it only measures its own inflow wave's speed, which is constant. The author argues that once the emitter has surrendered the photon to the inflowing wave of the receiver, it has no business with the photon whatsoever. It is as if someone (the receiver) is taking bread (photons), and once his hand has captured the bread, it hardly matters if he is moving or if the plate (emitter) is moving; the speed of the hand carrying bread toward his mouth "c" will not change.

The 2<sup>nd</sup> postulate of Albert Einstein is applicable only for an observer of direct light, not for the light propagating between two distinct objects in the space, where the observer cannot observe the propagating light between the two; because it is not an observer of light. The calculated speed of light can be different from "c", and the observed speed will always remain equal to "c". Therefore, we cannot observe the calculated speed.

## 5. RESULTS AND ACHIEVEMENTS

The paper suggests the following new prospects against the prevailing notions:

- 1) Different levels of the Universe: The physical (atomic) world and the cosmological (energy) world refer to two different levels of the Universe and cannot be treated within the same science.
- 2) Wave-particle duality: the theory propounds that the cosmological substances do not have any physical parameters; hence, it hardly matters whether a photon is a particle or wave.
- 3) Space fabric: Space fabric or aether is a balanced structure of different cosmological energy fields. The space fabric can be perceived as the blankness in the sky through which we can observe a distinct object using electromagnetic waves.

4) Dark matter and dark energy: these are cosmological substances that lead to curvature in the fabric, creating gravitation and repulsion, indirectly increasing and decreasing the space distances.

5) Cosmic Inflation: the presence of dark energy within the space fabric lengthen it and creates cosmic inflation.

6) Space appears dark: It is argued that the size of the space fabric may be immense but not infinite. Beyond the space fabric, the light cannot travel. We observe a blackness over the background of the sky.

7) Diversion of light due to massive bodies in the space: The fabric is constituted of both dark matter and dark energy. A massive physical body in space continuously acquires dark energy as food, leaving the imbalanced extra dark matter in space fabric. This extra dark matter curves space fabric and creates a short path for light, thereby diverting the light coming from distinct stars. It can also be called gravitational lensing.

8) Speed of light: The speed of light is the property of neither the photon. The receiver provides time due to entropy, and space fabric disciplines the activation of time in terms of speed in accordance with its space density. If we ignore the excess of dark energy and dark matter, the space density is invariable. That causes the speed of light constant. Need not to say that the receiver's wave use the fabric as a medium, hence follow the discipline of space fabric.

9) Mystery of the double-slit experiment: In the case of the double-slit experiment, the receiving screen decides the photon's path. Each time, the screen selects the point of lowest entropy and receives the photon at that point. Immediately after receiving a photon, the entropy of that point increases, and the receiving screen selects another lowest entropy point for another incoming photon. Thus, we get an equally distributed interference pattern on the screen.

10) Time dilation due to speed: The electromagnetic wave, which is actually the receiver's spacetime, captures the photon and inflows it to the receiver. The inflowing wave speed of the receiver is constant. While measuring the speed of light, the receiver actually reads its own receiving speed, which has to be constant. When we say "for the all relative observers," all observers have their own electromagnetic wave as their integral part, and they measure their own created waves. When you are not the receiver of the light, the speed can be different from "c." There is no need to consider that the time is dilated. The postulate is applicable for the receiver of the light. Please refer to [Figure 3](#). The author accepts the occurrence of time dilation with gravity or acceleration, not with velocity.

## 6. CONCLUSION

The paper concludes that just like the physical substances are means of activation of biological entities, in the same way, the cosmological substances are means of activation of physical entities. This "means" is in the form of the space fabric created by the symmetrical arrangement of different cosmological energy fields. This elucidation of space fabric helps us in resolving several cosmological mysteries, such as dark matter, dark energy, magnetic flux, gravitation, repulsion, cosmic inflation, time dilation due to gravity, and spacetime. Please refer to Section 5 of this paper, where results and achievements are explained. In the case of electromagnetic waves, it explains how a receiver, being at a low entropy zone, evolves time, creates an arrow of time toward self, and becomes the operator of light propagation. When the receiver measures the propagation speed, it only measures its own inflow speed, which cannot be variable. In other words, the constancy of the speed of light is a natural phenomenon because all relative observers activate their individual inflowing waves with the speed relative to themselves, which is constant. This explanation resolves the long-awaited mystery of time dilation due to speed. In view of the future prospects, when we understand the detailed structure of the space fabric, we will be able to simplify the cosmological world, and we will easily determine the long-awaited grand unification theory, a dream of Albert Einstein because the space fabric is the only common means of activation, which governs both electromagnetic waves and gravity.

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## CONFLICTS OF INTEREST

The author declares no conflicts of interest regarding the publication of this paper.

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