Thought Force is a New Fundamental Interaction

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(Received 26 July 2014; accepted

Abstract: According to current, widespread understanding, measurable thoughts are electromagnetic signals of the brain. The spectrum of frequency of the brain's electric signals is known. We made a very simple experiment with force of thought using a paper wheel. We concluded that the energy carried by thoughts (expressed in frequency of energy wave) was eight orders of magnitude beyond the highest frequencies of the brain's electric waves. The brain's electromagnetic signal doesn't explain all effects of thought, it is just a part of measurable thought. Measurable thought is more than the brain's electromagnetic signal. Thought is a gravity-like force. According to modern physics, gravity is the deformation of space-time. With this definition, however, we can only partially account for the peculiarities of the force of thought. For a complete understanding, we must redefine the concept of gravity; and for this, we must broaden our concept of the "space-time" conceptual system. This broader version is the "space-matter" model. Space-time constitutes a part of the space-matter model. The fundamental difference between the two lies in the definition of time. In the space-matter model, time is created through the action-reaction of space and matter. Time is the wave of space from the viewpoint of matter. Thought manifests itself as a new fundamental force. This new force can be gives either as the changes in the frequencies of space waves (and time waves), or as non-space waves that are faster than light.

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Résumé: Selon la compréhension généralisée actuelle, les pensées mesurables sont des signaux électromagnétiques du cerveau. Le spectre de fréquence des signaux électriques du cerveau est connu. Nous avons fait une expérience très simple avec la force de la pensée à l'aide d'une roue de papier. Nous avons conclu que l'énergie transportée par des pensées (exprimée en fréquence d'onde d'énergie) était de huit ordres de grandeur au-delà des plus hautes fréquences d'ondes électriques du cerveau. Le signal électromagnétique du cerveau n'explique pas tous les effets de la pensée, il est juste une partie de la pensée mesurable. La pensée mesurable est bien plus qu'un simple signal électromagnétique du cerveau. La pensée est une force semblable à la gravité. Selon la physique moderne, la gravité est la déformation de l'espace-temps. Avec cette définition, cependant, nous ne pouvons expliquer en partie les particularités de la force de la pensée. Pour une compréhension complète, nous devons redéfinir le concept de gravité; et pour cela, nous devons élargir notre conception du système conceptuel "espace-temps". Cette version plus large est le modèle «espace-matière». L'espace-temps constitue une partie du modèle d'espace-matière. La différence fondamentale entre les deux réside dans la définition du temps. Dans le modèle espace-matière, le temps est créé par l'action-réaction de l'espace et de la matière. Le temps est la vague de l'espace du point de vue de la matière. La pensée se manifeste comme une nouvelle force fondamentale. Cette nouvelle force peut être donne soit que les changements dans les fréquences des ondes spatiales (et des vagues de temps), ou sous forme d'ondes non-espace ondes qui sont plus rapides que la lumière.

Keywords: Thought, Force of thought, Wave of time, Space-matter, Wave of space, Gravity, Energy of thought, Mind power, Fast wave

1. WHAT IS THOUGHT?

Although thinking is one of our fundamental activities, there is no generally accepted definition as to what thought is. Understanding thought has been a goal of many academic disciplines. The most often used elements of the different definitions are the following:

- Thought is always created by humans (or living creatures).
- Thought is always created by brain or mind, where brain and mind aren't synonyms.
- Thought is always the product of thinking.
- Thought exists in a state (or plane of reality), which is not bound by space and/or time.
- Thought is immeasurable; thought expresses itself in the physical universe via effects that can be measured.
- Thought cannot be described with the tools of physics.

In the following you will see, all the six above mentioned statements are false. So, what is thought?

2. MEASURING OF THOUGHT

2.1. Electroencephalograph (EEG)

According to current, widespread understanding, measurable thoughts (or their effects) are the brain's electric/electromagnetic signals. The brain's electric/electromagnetic signals can be demonstrated in several ways – for example, by the electroencephalograph[1]. The electroencephalograph's output varies with changes in thought. As a result, nowadays, measurable (effects of) thought and the brain's electric (electromagnetic) signals are synonymous. Since the brain is in the head, thoughts are also in the head; however, this is only partly true. Thought can, indeed, leave a person's brain. The electroencephalograph itself provides evidence of this, since it takes measurements outside the head along the scalp.

2.2. Mind power experiments of Princeton University

At Princeton University (USA), there used to be a research program named Princeton Engineering Anomalies Research (PEAR)[2] that studied the "power of mind". PEAR employed electronic random event generators to explore the ability of mind. PEAR's experiments were able to show the "influence of the mind", or in my terms, the force of thought on physical systems.

The PEAR has finished, but the device Random Event Generator (REG) still exists at Psyleron which sells the REGs via the internet. REG is an electronic device that shows the "influence of mind" on the device. The effect of thought occurs accidentally; thought's influence is unpredictable and incalculable.

The effect works "mysteriously", that is, the electric/electromagnetic signals of brain are not able to explain the results, and there is no theory to explain the phenomenon. Psyleron admits (and I think Princeton University, too) that they do not understand the working method of "mind power" (thought force), and until now there has been no theory at all that has been able to describe it [3, 4].

The PEAR was partly successful and partly controversial. It proved the existence of the "power of mind" (force of thought); on the other hand, the device was a "black box", and there was no explanation as to how and why thought influenced the device. REG was able to indicate the "mind power" (force of thought), but wasn't able to measure it.
The measureable thought has remained the electric/electromagnetic signals of the brain.

2.3. Our paper wheel experiment

To avoid black boxes, in our experiments we used a very simple object – a paper wheel. The rotating wheel shows that thought appears as real force. The paper wheel is one of our devices that can be run by thought. We have used more devices to study the force of thought. This force, just like in the experiment at Stanford University, cannot be measured as electric/electromagnetic signals. This is an important result; thought force doesn't seem to be just a kind of electric/electromagnetic signals. In the following you can find an explanation that portrays what may be thought, why and how it rotates the paper wheel.

Studying thought force, the easiest experiment is to suspend a paper wheel – or pin it so that it hangs freely – from its center, and then try to make it spin with your thought force. If there is no wind or any other unwanted force that affects the wheel – that is, the environment of the wheel is controlled – then, this is a normal physics experiment. The rotation is actually brought about by the force of thought, and it is possible to capture the wheel turning on video. Hence, analysis of this movement is very easy. We have made several experiments, and we have determined the energy (E_{rot}) of thought that rotates the wheel.

3. DESCRIPTION OF OUR EXPERIMENTS

3.1. Three factors of the experiment

#1 The subjects of the experiments.

#2 Special devices that are run by thoughts, named Lajtner Machines. One of the simplest Lajtner Machines is a paper wheel.

#3 Power Thinking, which is practically a capacity for concentration that makes it possible to move real objects with thoughts, *almost effortlessly.* (Power Thinking is actually a kind of know-how developed by Dr. Tamas Lajtner[5] .)

#1 The selection of people for participation in the experiments was performed randomly. It can be established that, after some practice, almost every subject involved was able to move the wheel with the force of thoughts. There were differences in their achievements. The value, which we will discuss in some detail below, represents the mean of measured values (with accepted deviations and confidence level). It characterizes the value of thought energy of a statistical population chosen randomly on any given day. Other statistical characteristics regarding the distribution of thought energy are not relevant from the viewpoint of this paper.

#2 Lajtner Machines refers to several devices, each designed to be moved by the force of thoughts. The difficulty level of setting these devices in motion may vary. The distinct levels of difficulty, from the viewpoint of motion, are indicated on a scale from 1 to 12. For example, the difficulty level for the paper wheel is 2 or 3 – that is, it is easy to move.

#3 Power Thinking is a capacity for concentration which can be acquired by practice, and with its application, only minute effort is required to move real objects with the power of thoughts. During our experiments, there were people who were able to move the paper wheel without using-Power Thinking. The percentage of people with this inborn ability made up less than 18 % of the participants in the experiment.

3.2. Our Experiment

We used a paper wheel described above. The force of thought was able to rotate the paper wheel. The paper wheel's motion was visible to the naked eye. The process was video-recorded, and motions were computer-analyzed. We tried out several wheels with diameters ranging between 2 and 15 cm. The diameter hardly affected the results.

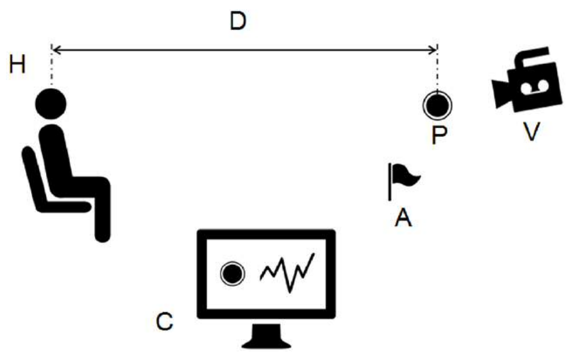

FIG. 1. Configuration of the thought-run paper wheel experiment (conceptual drawings). H is the human that moves the paper wheel with his/her thoughts, P is the paper wheel, V is a video camera, C is a computer connected with camera, A is a very sensible anemometer, D is the distance between

human brain and paper wheel: 0.5-15 meters. Figure 1 is synoptic; I don't think I have to go into the details of the calculations of the energy that rotates the paper wheel – these are elementary relationships[6].

4. THOUGHT MEASURED

4.1. We measured the thought itself

What did we measure using a rotating paper wheel? The effect of thought or the thought itself? We measured the thought itself. A paper wheel is nothing other than a simple object that can be rotated by force. Without force, it cannot rotate at all. It rotates if the force acts upon it. The paper wheel reveals thought in its true form. Humans need only think “Move”, so the thought is "Move", and the paper wheel "moves". If humans think "Stop", the thought is “Stop”, the paper wheel "stops" – hence, the thoughts "Move" and “Stop” are visible. These forces are not the effects of the thought, these forces themselves are thoughts. We measured the thought itself. Thought is measurable force, energy.

4.2. An average value of the energy of thought (as measured in our experiment) and its effect

The experiment had two parts.

1. The wheel was at rest then it started rotating. Here, we calculated with uniform acceleration. This period was 10 seconds.
2. The wheel rotated. This period was 50 seconds. The velocity of rotation did not change. The average thought energy of a seemingly ordinary person can be expressed as $E_{rot} = 1.62 \times 10^{-11}$ Joules. What does this show?

E_{rot} is a very small amount, but not small enough. Measurable thought is considered to be the brain's electromagnetic signals. The brain radiates electric waves in a spectrum[7] of

$0.02 - 600$ Hz (Hz = 1/sec). Hypothetically these waves can be replicated in terms of sine and cosine functions (cf. Fourier transformation[8]). In this case, we should find frequencies described by the function $f_{hyp} = z \times f_{600Hz}$, where *z* is an integer. Until now, nobody has measured brain waves with frequency f_{hyp}. The brain does not radiate signals like f_{hyp}.

4.3. The energy of the brain's electromagnetic wave is too small to move real objects

Our brain[9] has about $n = 10^{11}$ neurons. The energy that turns the paper wheel is $E_{rot} = 1.62 \times 10^{-11}$ Joules. This energy must be created by neurons. If every neuron of the brain worked exclusively on rotating the paper wheel (which is, of course, impossible) and $E_{rot} = \sum_{i=1}^{n} E_{\text{i neutron}}$, then every neuron should produce an average energy value of $E_{neuron} = 1.62 \times 10^{-22}$ Joules and transmit this energy to the wheel. Sending energy from the brain to the wheel presupposes electromagnetic waves. According to Planck's formula, $E = h \times f$, where *h* is the Planck constant[10, 11]. Thus, the average frequency of the electromagnetic waves is $f_{neuron} = 2.45 \times 10^{11}$ Hz. There ain't no such thing as or microwave radiation of brain. To go one step further, this wave must be generated by every neuron for 50 seconds. This is an impossible result. That is, the paper wheel cannot be rotated by the electric/electromagnetic signals of brain. Does that mean that the paper wheel cannot be rotated by thought? No, because that is precisely what occurred. So what can we conclude? We have to admit that thought must have an unknown character.

5. HOW DOES THE ACCELERATING FORCE COME INTO BEING?

What is thought? Let us think of it this way: From a state of rest, the wheel begins rotating, because the force of acceleration works upon it. According to Newton's Second Law of Motion[12], the force of acceleration is

$$F = m\frac{s}{t^2}, \tag{1}$$

where *s* represents spatial distance. Newton's Second Law of Motion makes it possible to understand the force of acceleration and its factors. *F* does not exist if the wheel remains at rest, $s = 0$ and $t = 0$. F comes into existence and rotates the wheel, when $s > 0$ and $t > 0$.

How can we account for the force of acceleration? Figure 2. illustrates two ways or models.

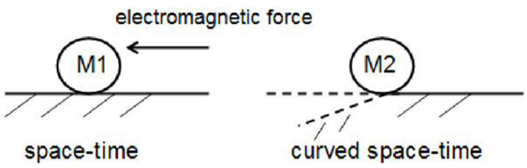

FIG. 2. How to account for the force of acceleration? M1 is mass 1, M2 is mass 2. Figure 2. shows the two possible fundamental forces that could move the mass of paper wheel. (Model, not proportional.)

Both, mass 1 and mass 2 will move. Mass 1 moves, because the electromagnetic force pushes it. Mass 2 moves, because space-time changed. This is how gravity works in space-time according to Einstein's General Theory of Relativity[13, 14, 15, 16] . Einstein's model shows Newton's law of universal gravitation in a more complex form, (2)

$$G_{\mu\nu} = T_{\mu\nu} \times \frac{8\pi \times G}{c^4} \quad , \tag{2}$$

where $G_{\mu\nu}$ is the Einstein tensor, $T_{\mu\nu}$ is the energy-momentum tensor, and c is the speed of light. Under general relativity, the Hamiltonian is a constraint that must vanish. There is no time in the description of gravity according to general relativity.

Time is not involved either in Einstein's model or in Newton's law of universal gravitation, (3)

$$F_{grav} = G \times \frac{m_1 \times m_2}{r^2} \quad , \tag{3}$$

where F_{grav} is the gravitational force between masses m_1 and m_2, r is the distance between the centers of the masses, and G is the gravitational constant. Newton incorporated the "missing *t*" into the gravitational constant *G*.

Gravity does not change time according to (2) and (3). If gravity does not change time, then $t = 0$, Newton's Second Law does not work, and the wheel will not rotate. But the wheel does rotate. Consequently, thought changes *s* and *t*. How? There are four known fundamental forces (weak and strong nuclear forces, electromagnetic force, and gravity). If thought rotates the paper wheel, thought must manifest as one of these forces. The nuclear and the electromagnetic forces are out of the question. Thought must be manifested as a gravity-like force. Saying this, gravity must change time. This statement seems to be contradicted by (2) and (3). How are we solving the problem? Let's start with the space-time model!

6. CURVED SPACE-TIME CAUSED BY MASS

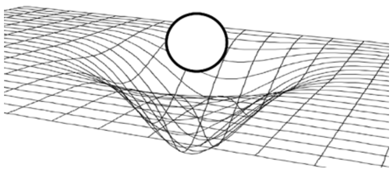

FIG. 3. The well-known and common picture of Einstein's curved space-time caused by mass or (a greater amount of) energy. In the following, I will refer to mass. (Model, not proportional.)

Figure 3. shows how mass modifies Einstein's space-time continuum. Einstein's function (2) describes the relationship between mass and the metric tensors of space. Mass modifies this medium, giving rise to curved space-time. Curved space-time occurs on account of gravity according to the Einstein's space-time model. Masses $m > 0$ always make this "concave" depression in the space-time continuum. Gravitational attraction is a "concave" deformation of space-time.

Rotation of the paper wheel by thought means that thoughts are capable of producing the space-time "concave".

7. WHAT CHANGES *t* TIME?

What happens in Newton's Second Law? Curved space results in $s > 0$. So far, so clear, but how are we to model changes in *t* time? As I mentioned above, in general relativity, the Hamiltonian is a constraint that must vanish. There is no time in the description of gravity according to the general relativity. Hence, we need a new model.

In quantum mechanic theories, the Hamiltonian generates the time evolution of quantum states. Can we find the answer here? Unfortunately not. Why? Because these models use space-time, too, and space-time seems to work very strangely in the case of thought force. (See next chapter.)

8. DEFORMATIONS OF SPACE-TIME CAUSED BY THOUGHT

Let us now examine a different experiment of thought force. The direction of the wheel's rotation can be changed by thought. Thus, thought is able to pull and push the wheel. This experiment will not be convincing, since we are speaking about a wheel. A "push" on one side is a "pull" on the other, and we cannot examine the workings of thought. Does it push or just pull? We need a new idea.

Take, for example, a ball moved by the force of thought. The ball can be attracted by thought force. Given the example above, this is not surprising. Yet, now we discover a strange result. Thoughts are able to push the ball, too. This is not a known effect of gravity. What could this be in terms of space-time? Gravity’s effect is a "concave" deformation, but this pushing cannot be "concave". In this case, space-time is "convex". The space-time continuum does not buckle, it bulges. Thoughts are able to make special deformations in space-time. This special deformation is very different from the curved space-time we are familiar with.
Figure 4. attempts to illustrate modifications in space-time made by thoughts. Thought-induced space-time modifications can be "concave" (first) or "convex" (second).

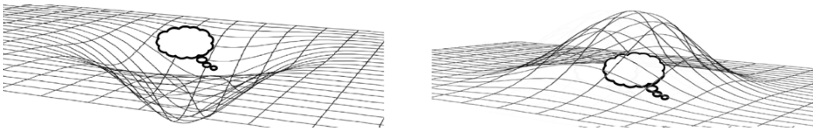

FIG. 4. Thought is able to alter space-time in two ways. (Model, not proportional.)

How can we explain this "convex" character? If we want to use the space-time model, there is a simple explanation: a "convex" deformation is the result of negative masses ($m<0$). Theoretically, it seems to be an explanation, but it is meaningless in the case of thoughts. Could there be a better answer that solves the problem without presuming a negative mass? Yes, there is, if we abandon the space-time model.

9. SPACE-MATTER

The model sketched below marks a fundamental departure from space-time models. I call this new paradigm the "space-matter" model. In the space-matter model, time comes into existence when mass and space meet. Also, whenever mass and space meet, the result is time. Time is the action-reaction phenomena (or mutual effect) of matter and space, and it appears as space waves[17].

How are we to understand this? Where there is no matter, there is space; and where there is space, there is no matter. In this sense, space and matter are indivisible. According to Newton's Third Law, when one body exerts a force upon a second body, the second body simultaneously exerts a force equal in magnitude and opposite in direction upon the first body. Newton meant "body" as mass (matter), but let us apply this law with a wider meaning. "Body" describes that which has an effect upon another body, no matter what it consists of. It is physically impossible for matter to come in contact with space without having an effect on space and vice versa. In light of this, space can be seen as a "body". Based on the Casimir

Effect[18] and other physical phenomena like gravity waves[19], we can state that space exists in waves and vibrations.

Today's physicists claim that time is what we measure as time. Measuring time means that we recognize action-reaction phenomena in terms of mass and energy. Let us exchange, however, the terms "mass" and "energy" with "bodies". Time is a measurable action-reaction phenomenon between two bodies, where one body is matter and the other body is space. We can measure the change in matter caused by space insofar as particles are vibrating. The vibration of particle is periodic, which demonstrates the periodic action of space.

What does this imply? If we have matter and space, we have time. Time is not the fourth dimension. It is a phenomenon. It is a spatial wave, a series of signals with properties. This new definition of time is in harmony with our "normal" understanding of time (see later), but it gives us new possibilities.

10. TIME WAVE AND TIME UNIT

10.1. Time wave and time unit

The matter-space vibrations, from the point of view of matter, can vacillate between strong and weak. It oscillates. The change is periodic, and one period is one unit of time[20]. This unit of time has two parts:

a) the crest, when space acts upon matter most strongly; and

b) the period between crests, when the force of space acts less strongly upon matter.

If we employ a simple model, using a cosine function to describe time, we get a periodic wavelength. The wave model is in harmony with space vibrations. Hence, it appears to be a good model: where a) equals the positive amplitude of the cosine function, and every other value of the function is b). In a time unit (a single time wave), there is only one positive amplitude. Time is a repetition of these units. Time is the continuous alternation between a) and b). From the viewpoint of matter, time is characteristic of the periodic way that space acts upon mass.

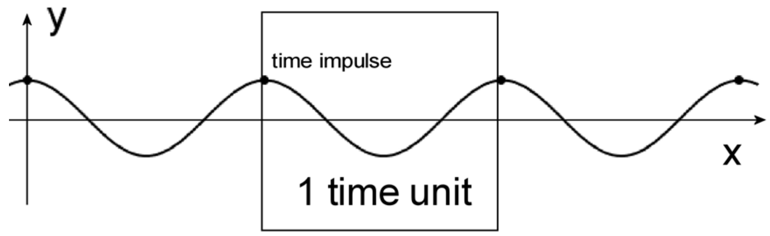

FIG. 5. Time as the wave of space. x and y are spatial distances. (Model, not proportional.)

A pulse of time exists, if $\cos(x) = 1$, marked as point. This is followed by a lack of time pulse, when $\cos(x) < 1$.

10.2. Like an interrupter-type electric bell

Time is space waves. That is, time is a spatial phenomenon. How can we visualize time in this form? Please imagine an interrupter-type electric bell. Its working method is well known and very simple[21]. The main idea is the electromagnet. If an electric current passes through the winding of the electromagnet, its magnetic field opens a pair of electrical contacts. Once open, the electric circuit will be interrupted, and the magnetic field collapses. These connections and interruptions in the electric circuit and magnetic field constitute a cycle. Cycles follow one other in succession as long as the electric circuit is active.

We are speaking about a bell, so we can hear sound, which is generated by a small iron hammer fixed to the electrical contact. It strikes a bell while the circuit is connected (creating the magnetic field), and it returns to its starting position when the magnetic field collapses.

Using the example of an interrupter-type electric bell, we create sonic waves that replicate waves of space. We have a signal that can be described by the cosine function mentioned above. Thus, the device makes periodic signals, which can be seen as a model of space waves of time. We have made time without knowing anything about “time”. All we needed is an “if… then…” algorithm – in other words, an action-reaction phenomenon.

With the example of this bell, we can imagine how space generates waves, and how matter recognizes space waves as time. The creation of this time wave does not require any knowledge of time, since time is nothing other than space waves.

10.3. How can we derive our time from the space wave?

If we wish to express the space wave in terms of physics’ units of time, we may do so. If we take as our unit of time one second, the space waves show us how to divide that unit into the smallest possible parts. To put it another way, a second is represented by our bell striking once; yet, it is possible to strike more quickly – for example, every tenth, hundredth, or thousandth of a second. The space wave is the fastest possible hammer in the given frame. Nothing can strike faster.

10.4. Space waves vs. time waves

A time wave is a wave of space produced by mass and "sensed" by mass. A time wave is the result of a space action followed by matter's reaction and vice versa. The time wave is a set of space waves where the set contains one or more waves of space.

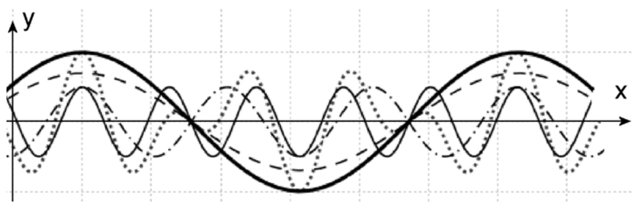

FIG. 6. Time wave is a spatial wave created by mass. x and y are spatial distances. (Two-dimensional model, not proportional.)

The actual form of time waves is unknown (here dotted). The time wave is described in the space-matter model as a cosine function (thick line), where the x and y axes are spatial distances. The original waves of space (with amplitudes <1) are unknown.

The "thick wave" appears as a time wave from the viewpoint of mass. The other waves are not time waves according to masses, because their amplitudes <1.

Every "non-space object" generates a reaction in space. In other words, everything creates time. In our lives (and in our models), we use the time of mass (thick), but a "non-mass" object will use different time waves.

11. HOW DOES GRAVITY WORK?

11.1. Gravity as waves

Every spatial wave has velocity and frequency. So does time[22]. Mass changes the wavelength (and the frequency) of time. The bigger (the faster) the mass, the longer the wavelength (and the smaller the frequency) of time will be.

Among bodies experiencing gravity, the frequency of space waves decreases. That is, the space “pressure” between the bodies decreases. Gravity arises, because the portions of space with higher pressure shift the masses. The figure below illustrates this.

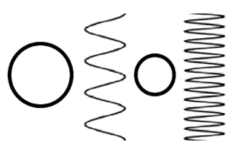

FIG. 7. Space wave model of gravity. Gravitation occurs when space shifts. (Model, not proportional.)

The big mass makes the frequency of space waves (time) smaller at the left side of the small mass. On the other side of the small mass, the frequency of space waves (time) is greater. The greater frequency moves the mass forward.

Or – even more clearly, though less scientifically – take the expression: “You’ll get such a slap, you’ll go flying!” If the small planet gets four slaps from the right and one from the left, it will move left.

Since space waves are time waves from the viewpoint of masses, we can state that gravity occurs when time shifts. Using the new definition of time, we can account for many known phenomena of physics which have gone unexplained until now. In this perspective, the space-time model is only a special subset of the space-matter model.

The gravitational wave is measured by LIGO. So, the *waving* of gravity can be accepted.

In the space-matter model $v_{gravity} >> c$. It seems to be in contradiction with the measurements of LIGO.

11.2. Gravitational waves measured by LIGO

In the space-time model, no particles (whether actual or hypothetical) can move faster than light (cp. Standard Model of Physics[23]). Even (a wave of) gravity, which travels in the fabric of space, has c velocity.

$$v_{gravity} = c \quad (4)$$

was Einstein's theoretical concept. First Hulse and Tayor[24, 25] proposed measuring the gravitational wave to find (4). They awarded the Nobel Price with this measuring[26]. On the other hand, there are physicists that state gravity is much faster than light[27].

The physicists of LIGO accept (4) as fact. Based upon it, LIGO's scientists are supposed to have measured the gravitational waves of two black holes that collided. The event took place 1.3 billion years ago[28]. LIGO's scientists' interpretation of the measurement is based on Einstein's theory, where the velocity of gravity is *c*. The measurement seems to be in contradiction with the space-matter theory. Is there truly a contradiction?

Quite the contrary, this confirms space-matter theory. In my opinion, LIGO did not measure the gravitational effect of two black holes that merged, but gravity's effect upon the electromagnetic energy[B] (light) which has now reached us[29, 30]. Physicists at LIGO certainly refuse this interpretation[31], because they think within a different conceptual framework. From the perspective of the space-matter model, what LIGO's measurement precisely demonstrates is that everything, even light, alters space (and time) waves. What is more, everything has time. This is exactly what the space-matter model propounds (see Figure 6).

12. SPEED LIMIT AND SPACE-MATTER MODEL

12.1. Fast waves

In the space-time model, the speed limit c represents the limit to different physics explanations, too. That is why, for example, the workings of non-local correlation in quantum entanglement cannot be explained in terms of the space-time model[32]. Two independent measurements prove that $v_{nlcqe} > 10{,}000 \times c$, where v_{nlcqe} is the speed of non-local correlation in quantum entanglement[33, 34]. How to explain this in the space-time model? The only solution could be an Einstein–Rosen bridge, known as wormhole[35]. The wormhole is a hypothetical "bridge" connecting two sheets of space-time. There are more open questions here: where and when exist wormholes?

The space-matter model can offer two solutions to explain non-local correlation in quantum entanglement without wormholes. The speed of light exists as a speed limit in the space-matter model, too. This applies to subatomic particles described in the Standard Model and bigger objects built from them. In the space-matter model the action of an object is connected with its velocity[36].

[B] The Fermi space telescope detected a burst of gamma rays 0.4 seconds later after the measurement of LIGO.

$$h_{fw} = h \times \frac{c}{v_{fw}}, \tag{5}$$

Fast waves ($v_{fw} > c$) occur, if $h_{fw} < h$.

12.2. Light speed and maximum action

In the space-matter model, the *c* speed of a light particle (photon) is the limit for carrying *h* action. If $\lambda_{fw} = \lambda_{photon}$, then the wave of a (non-mass) particle carries the biggest action when the particle travels with the speed of light. See (6).

$$E_{fw} = f_{fw} \times h \times \frac{c}{v_{fw}}, \tag{6}$$

If $v_{fw} = c$, then we arrive back at the original Planck-formula. In the space-matter model, the capstone is the fundamental physical constant[37] $h \times c$, instead of *c*.

12.3. Fast light and its action

According to the 'fast light and slow light' experiments[38] at University of Rochester (USA) light is fast light, when its speed v_{fl} is greater than c, $(v_{fl} / c) > 1$. In my opinion, fast light is a kind of fast wave, so (5) defines the action of fast light. $h_{fl} < h$. (6) shows the energy of fast light. Saying this,

$$f_{fl} \times h_{fl} < f_{fl} \times h, \tag{7}$$

where f_{fl} is the frequency of fast light. But we know from the experiment that the energy of fast light is

$$E_{fl} = f_{fl} \times h. \tag{8}$$

(8) shows the measured value of E_{fl}. How is it possible? (8) covers a relationship, a context, which is showed in (9).

$$E_{fw} = (f_{fw} \times (h \times \frac{c}{v_{fw}})) \times (\kappa \times \frac{v_{fw}}{c}), \tag{9}$$

where $\kappa > 0$, it is a factor that depends on the type of fast wave. In the case of fast light

$$\kappa = 1. \tag{10}$$

that is,

$$E_{fl} = (f_{fl} \times (h \times \frac{c}{v_{fl}})) \times (1 \times \frac{v_{fl}}{c}) = f_{fl} \times h, \tag{11}$$

(8) remains true, because the energy of fast light (6) gets additional energy displayed in (11). The additional energy of fast light is a *special kinetic energy* caused by v_{fl}, where $(v_{fl} / c) > 1$ in the case of fast light.

This kind of kinetic energy isn't a snap phenomenon in the space-matter model. It exists, because every non-space phenomenon changes the space waves. (See Figure 6.) Changing space waves means changes of energy of non-space objects.

Fast light is one type of fast waves. We speak about fast light, if $h \geq h_{rest} \geq h_{light0}$, where h_{light0} is the minimum "inborn rest action" that light needs to have to be able to exist as light (photon), and h_{rest} is the actual value of its rest action[C].

12.4. Light speed and maximum 'rest action'

Now we can correct the definition written in Chapter 12.2. In the space-matter model the *c* speed is the highest speed for carrying the biggest h_{rest}, where h_{rest} is the *rest action* of light. See (12).

$$h = h_{rest} + h_v, \tag{12}$$

[C] We know three "types" of light ($v_{light} > c$, $v_{light} = c$ and $v_{light} < c$). This study brings the fast light into the focus, but (9) may have a compact form that describes the actions of fast light, light and slow light.

where h_{rest} is the action of the light and/or fast light, h_v is the action that depends on the v_{fl} velocity of fast light. If $v_{fl} = c$, then we suppose that $h_v = 0$ and $h = h_{rest}$.

In the case of non-photon fast waves:

$$h \times \frac{c}{v_{fw}} = h_{fw\,rest}, \quad (13)$$

$$h_{fw} = h_{fw\,rest} + h_{fw\,v}, \quad (14)$$

where $h_{fw\,rest}$ is the (inborn) rest action of fast wave and $h_{fw\,rest} < h_{light0}$. The velocity of fast wave causes $h_{fw\,v}$.

12.5. New fundamental force

Note the non-photon fast waves don't represent any known fundamental forces. They aren't known fundamental interactions (no electromagnetic, no strong nuclear, no weak nuclear, no gravitational force.) They represent a new kind of fundamental force we cannot find in our physics books. They come up in the space-matter model. The space-matter model is useful in many cases, for example, it describes the nonlocal correlation in quantum entanglement very simply. There are two ways to describe it. With fast waves (that is, with particles) or with space waves (that is, without particles). Here I show the fast wave model, because it works in both cases, with the "old" and with the "new" definition of time.

Now let's see it as fast waves, where the action of nonlocal correlation in quantum entanglement is smaller than the action of light. $h_{nlqc} < h_{light0}$. Understanding the following logic, you will also understand how thought force can be described as fast wave.

12.6. The nonlocal correlation in quantum entanglement as fast wave in the space-matter model

We know two measurements of the velocity of nonlocal correlation in quantum entanglement. They show many different velocities. The E_{nlqe} energy value of the nonlocal correlation must be ($h/2\pi$). Why does the nonlocal correlation have many different velocities? The fast wave (as nonlocal correlation) seems to use the special kinetic energy described in (14). If $E_{nlqe} = f_{nlqe} \times h_{nlqe1}$, then the special kinetic energy must exist in every case, where $h_{nlqe\,1} > h_{nlqe} \geq h_{nlqe\,0}$, and $h_{nlqe\,0}$ is the smallest rest action that an existing nonlocal correlation must have and h_{nlqe} is the actual value of rest action. (We know many values of velocities measured by both experiments, so we would be able to calculate a rough interval of existing rest actions h_{nlqe} .)

In this study we don't know the value of h_{nlqe} ; let's suppose: $h_{nlqe\,1} = h_{nlqe}$. The nonlocal correlation in quantum entanglement has the mission to change the spin of photon, which needs $h/2\pi$ value energy. We know the velocity: $v_{nlcqe} > 10{,}000 \times c$, so h_{nlqe} is given by (5). We can calculate the frequency using (6): $f_{nlcqe} > 1{,}591 \;\; (1/\text{sec})$.

Note that this fast wave represents a new, unknown fundamental force. Using this new force, physics can describe thoughts as fast wave (particle).

12.7. Back to the thought

Now we can return to the force of thought. Using the space-matter model, thought can be described either as fast wave, where $h_{thought} << h$ and the paper wheel experiment shows that $h_{thought} < h_{light0}$, or as the modifications of space waves.

What *is* thought? Fast wave or modification of space waves? It depends on the speed of thought we haven't measured yet. From different reasons that are not presented in this paper, thoughts seem to be modified space waves[D]. Because of this, and because space waves are easily comparable with the space-time model, I use the modified space waves in the following.

Note this kind of force of space waves represents a new kind of fundamental force we haven't known. This is a gravity like force, but this is not gravity, or at least, this isn't a known form of gravity.

13. HOW DOES THOUGHT FORCE WORK?

The attractive or "concave" thoughts in the space-time model make the wavelengths of space waves longer in the space-matter model. On the other hand, the pushing or "convex" thoughts make them shorter.

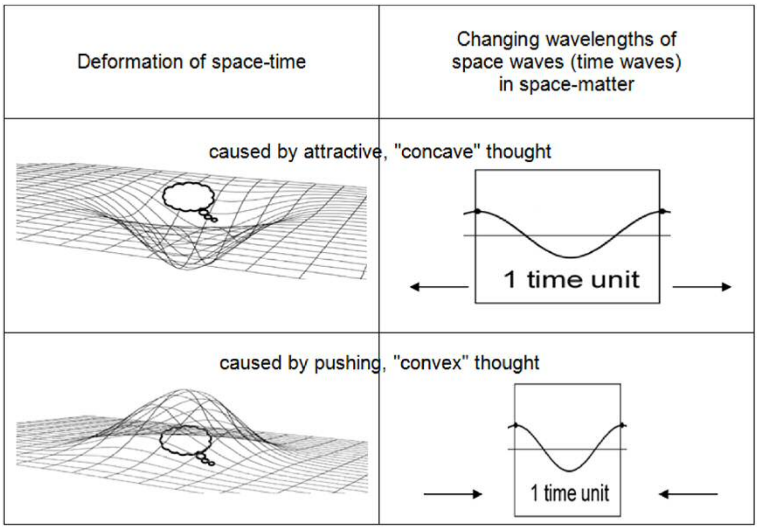

FIG. 8. The effect of thought force displayed in space-time and space-matter models. (Model, not proportional.)

[D] See more in reference 20.

Thoughts are able to increase and decrease the wavelengths of time waves (and space waves). The black arrows show the direction of the change in wavelengths. The thought (force) is transported in space waves.

This new fundamental interaction doesn't exist in space-time model, but it is an important part of the space-matter model.

14. WE LIVE THE PHYSICS OF SPACE-MATTER

Can we test the abovementioned without laboratories and experiments? Yes, we can. Even more, we live this physics. Here I will give you three examples that show how our feelings work – using the laws of physics described above.

If you are happy, time seems to fly. Can the physics of space-matter explain this sensation? Yes. What does it mean according to physics? Time slows down for you. The clock indicates that an entire afternoon has passed, though it seems like only minutes, just as though you were traveling at high speed. We know that clocks moving at great speeds run slowly (theory of relativity). When you are happy, you behave as though you are flying.

Other times, it feels as though time is dragging. You have been standing in line for an hour and are about to go crazy, but only five minutes have passed. The activity is repellent, so your clock speeds up. It runs too fast. For you, it seems hours have passed, when the clock on the wall only indicates a few minutes.

When you are in love, the other individual is attractive. Why? They truly are attracting you when you feel the flying sensation, which means your clock is running slowly. A slower clock can result in greater gravity. Thus, what you feel for the other individual is an actual attraction; they truly do attract you. In physics terminology, the wavelengths of space waves (which are wavelengths of time waves, too) around you will be greater than those not around you. The energy of the time waves is different. In short, "Time has pushed you into your lover's arms."[39]

15. THOUGHTS THAT NO BRAIN CREATES

Thought has a given frequency spectrum within space waves. Thoughts are phenomena that modify the space waves in this spectrum and are created by the human brain. From the viewpoint of physics, these modifications are forces that can be made by brains or non-brains, by living or inanimate (non-living). There are thoughts that no brain and even no living thing created.

If we follow this logic, we may say thought is a kind of communication, where the expression of "communication" takes on a new meaning. This kind of communication is the action-reaction phenomenon that exists within the given spectrum of the space wave and can be created and/or sensed by brains. It can also be created and measured by devices.

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