

The First Lecture of the Unity Axiom

BEGINNING OF FUNDAMENTAL ERRORS

Ph.M. Kanarev

Email: kanphil@mail.ru

<http://www.New-Physics.com>

1. Introduction

An assembly hall of the snow-white liner admitted all truth searchers. The Unity Axiom appeared on the stage in the appointed time. There was no applause. Everybody was looking to her first lecture impatiently, because everybody understood that he came not to see a dissolute concert of the immoral Russian television, but to hear a lecture, which was a historical one for science.

I have made no doubt that you all come, because as from now I am your unselfish aid in your search of scientific truth. You know that a correct beginning is the main thing in the scientific search. Let us start with it.

Dear searchers of the scientific truth,

The analysis of the fundamental mistakes of exact sciences, which have been made by the scientists of the 20th century and have hampered their development, is a goal of my lectures. You will see that some mistakes are obvious and elementary as far as their content is concerned, others are deep hidden, but all of them are global in reference to the aftereffects for exact sciences. You will have a temptation to blame the authors of these mistakes as well as the experts who have failed to notice them.

I'd like to warn you that such attitude to our predecessors is inadmissible. They were prominent scientists of their time, and none of them made scientific mistakes intentionally.

Let us recollect the most ancient thinkers who have put forward a hypothesis that the Earth rests on three whales. Undoubtedly they were prominent scientists of their time and enjoyed authority of their contemporaries. It is possible to give a new example: the followers of Claudius Ptolemy thought that the Sun circles round the Earth.

A question appears from this: how we who have accumulated our knowledge should treat our colleagues trying to perceive the world prior to us? Certainly, we should consider them as great thinkers of their time.

Time will pass away, and your knowledge will seem naïve. Undoubtedly, your followers will find mistakes with you, but they will not be as fundamental as the mistakes that we start analyzing now. I, the Unity Axiom, will protect you from fundamental scientific mistakes.

Now I'd like to declare that my full name is the Space-Matter-Time Unity Axiom. It appears from this that it is necessary to determine these initial notions. But I leave this task for you. For me, it is more important to make you understand that there are no such phenomena in Nature that could influence space, compress it, distort it or stretch it. It is dependent on nobody, that's why we have every reason to consider space an absolute one [1], [2].

Matter is the next notion. I'll withhold from defining this notion as well, because you are prepared enough to understand its content approximately uniformly. So far, it is enough for me. Can we think that matter is absolute as space is? I do not think so. We do not know a source that produces material objects. Finding this source is one of your tasks. There is one hypothesis concerning ether, which fills in space. It is an imperceptible substance that can intertwist as a vortex and form various stable structures, which we call elementary particles [3]. It is supposed that the conditions can be formed when these vortexes lose stability and turn into ether. I think that the reasons why matter cannot be considered as an absolute one are understandable for you.

Time notion is the most mysterious one. How can a correct idea concerning physical essence of this notion be formed? Let us imagine space where there are no material objects and try to understand if there is time in this empty space. Certainly, not, because there is no its measure: matter. Let us imagine that we have introduced one material object in this space. Let us put a question: is there time in space where there is only one material object? Certainly, not, because we cannot estimate the state of this object. Does it move or not? We have no guide to establish a fact of motion or rest of this object in space. It means that there is no time in it [4].

Let us introduce one more object in this space; we can see if it moves or rests in relation to the object that has been the first one to appear. If it moves, we have a wish to determine the thing that we call traveling speed. We note that the second material object has started motion in relation to the first one, and an idea comes on to take duration of one rotation of the second object in relation to the first one per unit of measurement. A duration of the change of the position of one material object in relation to another takes place. We call it time.

The material objects, which are in space, are not interested in our contrivance to estimate the change of their interposition. But our contrivance helps us, and we have to attach important value to it and to use it for our needs. We have introduced time, but it does not depend on us. We cannot change its pace, slow down or accelerate it; that's why we have every reason to characterize time as absolute notion.

Thus, we have determined the content of the primary scientific notions, on which we'll base all our scientific assertions. Now we should find an independent judge of reliability of the results of our search. You understand that space, matter and time coexist. It is impossible to separate them. Matter cannot exist outside space. Time can exist only in space that contains matter. It means that all three elements (space, matter and time) are inseparable; that's why we should take into consideration their unity. It has all features of obviousness, and we have every reason to call the inseparable existence of space, matter and time an axiom. This is the Unity Axiom. I exist perennially, and hide from nobody and wait till you take notice of me and ask to help in your irrepressible aspiration to cognate creations of God. Now I am with you and I am glad to help you.

Let us start analyzing concrete scientific problems. Now you know that all phenomena and processes in Nature take place within the framework of the Unity Axiom. The processes of movement of any object in space are inseparable from the time lapse processes. All movements are time functions. Material object position change in space cannot be separated from the time lapse process. If we ignore this fact, we'll get distorted notion concerning a phenomenon being studied.

Now I'd like to draw your attention to the fact that you have observed the Unity Axiom while studying behaviour of the marcoworld. But you have been short of maturity to preserve this principle while transfer to the description of behaviour of the mircoworld. As a result, you have wandered in such thicket and have invented so many scientific fables that it will take you much time to return to a classical way of development, as you call it.

Thus, involuntarily all experiments carried out by you have taken place within the framework of the Unity Axiom. It is only natural that a correct interpretation of the results of these experiments is possible only with the help of the theories and mathematical models operating within the framework of the Unity Axiom.

If for interpretation of the experimental results you use the mathematical models and theories operating outside the framework of the Unity Axiom, you are sure to get an approximate notion concerning the phenomenon that you study at best or a completely distorted notion at worst. I shall cite a series of such mistakes and shall show their essence.

There are such tasks that do not require using time in their solution. For this purpose, the so-called field theories are used. We'll analyse their use as well.

2. Sources of errors

Let us begin the analysis of the sources of errors from the so-called special theory of relativity: Lorentz transforms. Their classical appearance is as follows [5], [6]:

$$x' = \frac{x - Vt}{\sqrt{1 - V^2 / C^2}}; \quad (1)$$

$$t' = \frac{t - Vx / C^2}{\sqrt{1 - V^2 / C^2}}. \quad (2)$$

Let us pay attention to the fact that in the formula (1) coordinate x' is present, it is registered in the moving base (Fig. 1); in formula (2), only time t' , which exists in the same reference system, is registered. Thus, in the mathematical formulas (1) and (2) the oscillating quantity of space interval x' in the moving base **is separated** (I'd like to emphasize that it **is separated**) from time t' existing in this reference system.

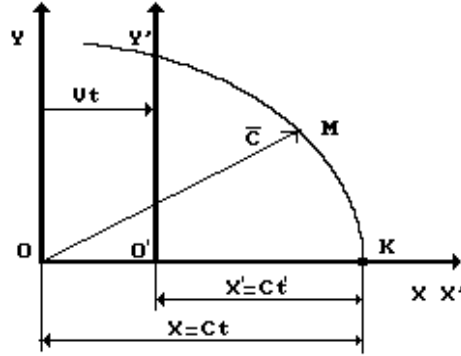


Fig. 1. Diagram to Lorentz transforms analysis

Now we know that in reality it is impossible to separate space from time; that's why these equations cannot be separated from each other. This is a set of equations, and these equations should be analysed together. Only this analysis will correspond to the Space-Matter-Time Unity Axiom, and the results of such analysis will be representative of reality. Hitherto, this simple rule was ignored by you. It appears implicitly from the equation (1) that with $V \rightarrow C$ a value of space interval x' is reduced. Hereof, the physicists of the 20th century have made a conclusion that a value of space interval x' is decreased with an increase of traveling speed V of the moving base. Further, they analysed one equation (2)¹. It appears implicitly from it that with $V \rightarrow C$ the value t' is decreased. They made a conclusion that a rate of time flight is decreased in it when travelling speed V of the moving base is increased.

Let us correct an erroneous interpretation. As it is impossible to separate space from time in reality, let us analyse equations (1) and (2) together; for this purpose, let us divide the first equation by the second equation; as a result, we'll have:

$$\frac{x'}{t'} = \frac{x - Vt}{t - Vx / C^2}. \quad (3)$$

¹ They separated space interval x' from time t' .

Now the mathematical formula (3) describes dependence of coordinate x' from time t' . It appears from this that the formula (3) operates within the framework of the Space-Matter-Time Unity Axiom, i.e. within the framework of reality. Let us pay attention to the fact that matter in the equation (3) is present indirectly. Speeds V and C play its part. It is stipulated by the fact that only material objects can have speed.

From Fig. 1, it is clear that x is a coordinate of a light signal position in the stationary reference system. It is equal to a product of light traveling speed C by time t . If we substitute $x = Ct$ into the given formula (3), we'll get the coordinate $x' = Ct'$, which registers the light signal position in the moving base. Where is this signal situated? As we change the coordinates x and x' , it is situated on the coinciding axes OX and OX' in temporal values t and t' ; to be more exact, it is situated in point K , the crossing point of light sphere with two axes OX and OX' (Fig. 1).

Geometrical meaning of Lorentz transforms is very simple. They have registered the coordinate x' of point K in the moving base and its coordinate x in the stationary base (Fig. 1). This is a cross point of the light sphere with the axes OX and OX' . It is the meaning of Lorentz transforms. There is no other information in these transforms, and they describe no physical effects.

It is important that the given analysis of Lorentz transforms assigns clear geometrical and mathematical sense to all mathematical symbols x, x', t, t', V, C that are employed by these transforms. Please, scrutinize Fig. 1. With $V \rightarrow C$ the value x' is actually decreased. It is natural that time t' , which is required by light signal to get over the distance x' , is also reduced. This is the cause of the clock paradox. Please, reduce Lorentz transforms to the form corresponding to the Space-Matter-Time Unity Axiom, and all paradoxes vanish.

Now you can imagine many theories and mathematical models based on Lorentz transforms, which actually play the role of a theoretical virus. The mathematical models infected with this virus have caused many erroneous interpretations of the experimental data.

In order to get rid of this virus, let us pay attention to a very important fact. Let us try to make a conventional division of the mathematical models into mathematical models and physicomathematical ones. Let us call the mathematical models, which contain only geometric parameters, the mathematical models, and the models, in which time appears, the physicomathematical ones. Then the sphere equation, which contains only geometrical parameters, will be called the mathematical one

$$x^2 + y^2 + z^2 = R^2 \quad (4)$$

The same equation containing a varying radius $R = Ct$ of the sphere will become the physicomathematical one automatically.

$$x^2 + y^2 + z^2 = C^2 t^2. \quad (5)$$

We have introduced time into the mathematical model. Science history has demonstrated that careless treatment of equations containing time as a physical parameter costs the mankind dear. That's why we should be very careful while analysing the consequences originating from the mathematical models containing time.

Let us go on bearing in mind the above-mentioned facts. It is desirable and even obligatory to know the sources of falseness of Lorentz transforms. For this purpose, it is necessary to trace the process of their creation, i.e. their derivation. This process is described in detail by B. Robertson in his book "Modern physics in applied sciences" [6]. He wrote an equation of a light sphere in the stationary base in the following form

$$x^2 + y^2 + z^2 = C^2 t^2. \quad (6)$$

He wrote an equation of this sphere in the moving base in the following form

$$x'^2 + y'^2 + z'^2 = C^2 t'^2. \quad (7)$$

Then he wrote

$$x^2 + y^2 + z^2 - C^2 t^2 = x'^2 + y'^2 + z'^2 - C^2 t'^2 \quad (8)$$

and found that this equation is true when x' is determined according to the formula (1), t' is according to the formula (2).

One feels sad while reading it. Before obtaining the equation (8), it is necessary to reduce the equations (6) and (7) to the following form:

$$x^2 + y^2 + z^2 - C^2 t^2 = 0; \quad (9)$$

$$x'^2 + y'^2 + z'^2 - C^2 t'^2 = 0 \quad (10)$$

and to think what result could be obtained by us during a joint solution of these two equations being equal to zero. What does it mean: to equal two zeroes? It means to equate nothing. In order to equal things having meaning, it is necessary to write the equations (7) and (8) in the following way [2]:

$$x^2 + y^2 + z^2 - C^2 t^2 = S^2; \quad (11)$$

$$x'^2 + y'^2 + z'^2 - C^2 t'^2 = S^2. \quad (12)$$

Now we have every reason to equal the left parts of equations (11) and (12). But in this form they do not belong to Euclidean geometry. They are Minkowski geometry equations [7]. We should check the correspondence of this geometry to the Space-Matter-Time Unity Axiom. A diagram of this check is given in Fig. 2.

If we compare the equations (9) and (11), we'll see that in Euclidean geometry $Ct = OM$ is a straight diagonal of a parallelepiped (Fig. 2); in Minkowski geometry this diagonal cannot be straight, because this equation does not correspond to Pythagorean theorem. S value present in the equation (11) makes a diagonal of the parallelepiped a curvilinear one OEM (Fig. 2). Actually, it means that the parallel lines cross. You can see that Lobachevskian geometry is the beginning of these ideas. Let us go on with our analysis.

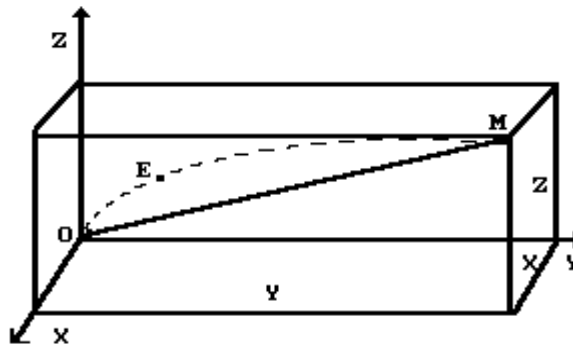


Fig. 2. Diagram to Minkowski geometry analysis

Straightness of the diagonal $Ct = OM$ in the equation (9) corresponds to a property of the photon to move in space straightly. Curvilinearity of the diagonal $Ct = OEM$ in Minkowski equation (11) is at variance with this property. It appears from this that we cannot place the photons

speed C in the correlation postulated by Minkowski (11), which is a foundation of his four-dimensional geometry [7]. Let us check authenticity of this statement using a simple example. For this purpose, let us try to determine the coordinates of a light signal position in space in time t when $x' = y' = z'$. From the equation (11), we have

$$x' = y' = z' = \frac{S^2 + C^2 t^2}{\sqrt{3}}. \quad (13)$$

An unknown space interval S excludes the possibility of determination of the coordinates $x' = y' = z'$. Minkowski equation (11) does not allow to determine the photon position on the trajectory OEM in the given time t violating the space-matter-time unity. It proves incontestable falseness of the mathematical model (11), which is the foundation of Minkowski four-dimensional geometry.

Let us pay attention to the fact that length of the diagonal $Ct = OM$ is measured with the help of the photon, which moves straight with speed C [1], [2]. That's why using the equation (9) we can determine a position of the photon on the diagonal $Ct = OM$ at any time, and corresponds to the Space-Matter-Time Unity Axiom. In each point of the diagonal, the photon $Ct = OM$ (matter), space and time are in continuous unity. For example, for a special case $x = y = z$, the equation (9) gives the following result

$$x = y = z = \frac{C^2 t^2}{\sqrt{3}}. \quad (14)$$

For any t , we can find coordinates x, y, z .

Now you can see that Lobachevskian geometry is a source of all these errors. He has made an axiom of the statement that the parallel lines cross in infinity. It is known that an axiom is an obvious statement, which has no exceptions. I think that in your midst there are no such persons who agree that the statement concerning parallel lines crossing in infinity is obvious.

Let us pay attention to one more important fact. In the equation (9), the sign C is used as a sign of speed of the photon, which moves straight; it corresponds to Euclidean axioms, which state that it is possible to draw only one straight line between two points and the parallel lines will cross nowhere. This fact agrees that in the equation (9) the Pythagorean theorem is given, which operates in Euclidean geometry [8].

An introduction of space interval S in the equation (11) makes a straight trajectory $Ct = OM$ into a curvilinear one $Ct = OEM$ making light move curvilinearly. A question arises: what is a radius of this curvilinearly equal to? **No answer.**

It is difficult to imagine a chaos that could exist in the world if light moved curvilinearly. It is possible to draw only one straight line from a distant star to our mother Earth and innumerable curves, and it is a mystery, along which of them light moves coming to us. But the physicists did not feel confused; they began to use Lorentz transforms (1) and (2) for their investigations easily. They did not want to analyse a correspondence of these transforms to reality. With unprecedented lightness, they used not only Lorentz transforms, but some elements of these transforms. The so-called relativistic root $\sqrt{C^2 - V^2}$ was used most often. Albert Einstein did not escape this temptation.

In his foundational scientific article "To electrodynamics of moving bodies" [9], to which everybody refers as to the article that has initiated new physics, he writes: "If we take into consideration that light along axis Y propagates always with speed $V_Y = \sqrt{C^2 - V^2}$ when observing from the resting system, it means ...". This statement can originate from Minkowski geometry, not from Euclidean geometry. In order to check this fact, one should have a diagram corresponding to the given formula, but it is not available in the article. Let us correct this defect and draw the following diagram (Fig. 3).

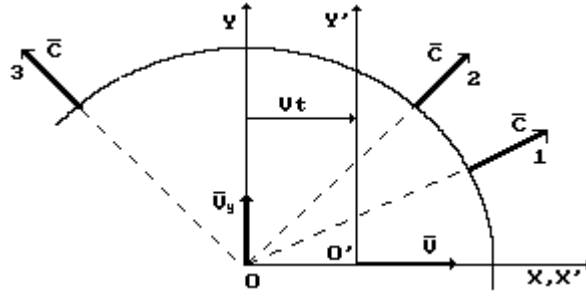


Fig. 3 Diagram to analysis of essence of the formula $V_y = \sqrt{C^2 - V^2}$

It is natural that the formula

$$V_y = \sqrt{C^2 - V^2} \quad (15)$$

originates from Pythagorean theorem operating within the framework of the Space-Matter-Time Unity Axiom. In order to get it from Fig. 3, it is necessary to return velocity vectors \vec{C} and \vec{V} to point O. But we have no right to do it. First of all, we know that it is possible to transfer along the path only force vectors, and it is done on conditions that they all influence one isolated system [10]. In the case being considered, velocity vectors exist, not force vectors. They are applied to the points, velocity of which they describe, and they cannot be transferred along the path. Moreover, in this case vector \vec{V} is applied to the beginning of O' moving system that stands alone in relation to the photons, which have flown from O point in various directions with speeds of light \vec{C} .

Thus, we have neither mathematical right, nor physical one to return to velocity vectors \vec{V} and \vec{C} to point O in order to use Pythagorean theorem for a derivation of the formula $V_y = \sqrt{C^2 - V^2}$. A lack of such right is confirmed by an elementary check. If we assume that $V_y = 0$, we have an absurd results $V = C$. If we take speed of the photon 3, which has flown into the left part of the light sphere, we are deprived of the possibility to get an absurd result.

Nevertheless, Albert Einstein is awarded the Nobel Prize on physics by the Nobel Committee with the following wording: "For important physical and mathematical investigations, especially for discovery of the law of photoelectric effect" [11]. Later on, we shall analyse the law of photoeffect and shall see correctness of its mathematical model, but erroneousess of its interpretation. We should recognize erroneousess of interpretation as a natural one, because at that time the law of formation of the spectra of the atoms and the ions, which mathematical model coincides completely with the mathematical model of the law of photoeffect, was not opened yet [1], [2].

Now you can imagine damage caused to exact sciences by the scientists who have agreed to give a status of an axiom to the statement concerning parallel lines crossing in infinity without any experimental check of authenticity of this statement. Besides, this statement contains a vivid logic mistake. The parallel lines, which cross in infinity, cease to be straight lines automatically. If initially they are straight parallel lines, they become curvilinear lines when crossing in infinity, and we observe it in Minkowskian geometry (11).

I'd like to draw your attention to the fact that criticizing A. Einstein for his erroneous theories of relativity you (being scientific truth searchers) do wrong. He is to be blamed only for the fact that he treated the investigation results of his predecessors with confidence and created his erroneous theories on these mistakes, and it is only natural. The mistakes were begun not by him, but by Lobachevsky, Riemann, Minkoski and Lorentz. We'll not analyse Riemann's geometry [12]. It is a pseudo-Euclidean geometry; that's why it cannot be used in all investigations where mathematical sign of speed of light C is present.

I think that the above-mentioned facts are enough in order to conceive an essence of the sources of the fundamental scientific errors. In the second lecture, we'll consider the errors of Niels Bohr. They are deeply hidden, but we'll find them.

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