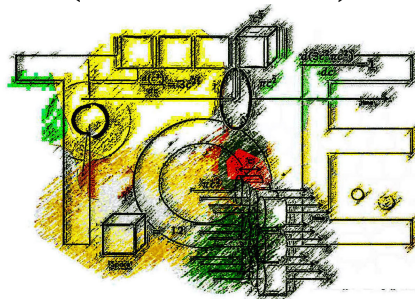


# Unified Principles of Nature : The Crisis in Physics as result of Theory of General Relativity: How to detach Time from Space again

(Falsification of Special Relativity and Falsification of General Relativity)

(TOE-Framework)



Manfred U. E. Pohl  
contact @ manfred-pohl.de

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## Abstract

In first chapter of ToE-Framework “The Solution to the Problem of Time” [1] the author introduced the concept of time that must be used to unify Gravity and Electromagnetism. Today, theoretical Physics is still in a major crisis since at least 1990, as there is no serious improvement in Interpretations of Quantum Theory or Solutions in Quantum-Gravity or String-Theory. In this paper the author concludes that only a radical rejection of both Einsteins Theories (Special Relativity and General Relativity) could lead to the strongly required progress in theoretical Physics. If Physics keeps trapped by Theory of General Relativity, that might be the most stupid Theory for Gravity ever suggested as it circumvents any real progress in theoretical Physics.

Keywords: Theory of Everything, Holographic Universe, Space-Time, Relativity, Einstein, Gravity

## 1. Introduction

The author continues on the arguments in first paper [1]: It is shown that space is a concept within us observers, that could be defined as the “stage” for observations (measurements of reality): “Space is the observer asking about observation (reality)”. On top of this, the concept of time could be defined like “Time is the thought of the observer asking for causality”. Both concepts, space and time, need to be defined, as those are the basic concepts on which all observers have to agree on, in order to be able to reproduce experiments and in order to agree on ONE interpretation of reality.

Within a debate on the topic “time” in May 2019 [2] Ashmead [3] argued against the suggested principle (time = cause) about the origin of “time”, that time is, what we measure (clock-time). This is right and one important fact to consider, but also very wrong. Time – as well as space – are concepts that must be defined “nominal” first, in order to be able to make a measurement. A “nominal” definition of time and of space must be given as a rule for measurement (SI-System). Any other “interpretation” or “real” definition on time and space is pointless, as each single observer would then define his own time and space to be “his” individual reality.

While Ashmead argues that time could be measured in Attoseconds, the author likes to remind that time is defined in the SI System as periodic events of  $1/9192631770$  seconds. An attosecond therefore is kind of an imaginary “second” time, that should exist in addition. The idea of an attosecond to exist reflects the idea that time should flow also in “between” of each  $1/9192631770$  seconds. But by definition in the SI System, time is quantized in portions that are “bigger” than an attosecond and in between each  $1/9192631770$  second, it is not possible to argue about “time” as there is no time there.

Some similar problem come with the definition of space: There is no question about a real definition of space and if space is empty in reality or not (aether), as this must be defined nominal within a scientific model of reality. In order to review the fundamental misconception in scientific modeling within Theories of A. Einstein the author tries to analyse the concepts of time and space used today in physics in this paper in an inductive way, where as in paper [1] it is used a deduction to model time and space.

## 2. Why space and time are dependent in 4 dim-Space-Time

First let us assume that space is, what we measure. We measure, what is defined to be space. This definition is given as a rule for measurement. There are different options to define space. One could use a single stone (mass) with certain length to define a “meter” of space. The trouble then will be: we can’t measure the distance between earth and sun by building a row of stones of 1 Meter between earth and sun. But let us assume we would be able to do a workaround the stone. Let us use a rod of iron to measure space.

Let us assume sun is 10 km far away from earth. We build then a rod of iron based on the single stone of 1 Meter to get a rod of iron of length 10km. We can “hold” this between earth and sun to “measure” the distance. There will be some problems with this kind of measurement. The length of the rod might be influenced by “Temperature”. But let us assume there is no influence by temperature. If we do a measurement on “view”, we must get a simultaneous measurement of two “events” in space in order to measure “one” single length. As we need two objects in space to make a measurement of length, we can’t set as premise, that both objects are not in motion relative to each other. Such premise would already rely on a measurement of distance that we are about to define first. As we first need to measure the distance, we can’t know anything about movement yet. Therefore the measurement must be made “simultaneously”. Measuring with a “view” will then depend on the speed of light. In order to define “space”, speed of light as a “constant” (movement) (in vacuum) then is necessary. (In SI-System space today is defined as “constant” speed of light). The concept of “time” in this kind of definition just comes with the “measurement” (definition) into combination with space, not by nature itself. Both concepts, time and space are “induced” by the observer in to reality.

Second, lets try to measure space without the speed of light: We close our eyes and use the rod of iron to “bump” into the sun, while standing on earth. We then use forces, acceleration and mass to measure space instead of using EM-Wave (light). We accelerate the rod of iron into the sun and as it bumps into, we get an acceleration back in the rod of iron, that we can measure. Then it gets complex: if sun is moving away, the acceleration will be influenced by the relative motion. In addition, there might / will be a delay in transmitting the force within the rod of iron (depending on the material). It might be possible that force within the rod of iron travels faster than speed of light. Then we would “feel” the bump into the sun some time before we “see” the bump into the sun (this would break up causality in our mind). If the force within the rod travels slower than light, it is to measure the “speed” of force for different materials used to measure “space” while using “masses”. The general law then must be: It is not allowed any force to travel faster in whatever material than light travels in vacuum (fastest possibility), as otherwise this would break causality in our minds. Furthermore, for this kind of measuring space the concept of inertia and mass is used (must be defined).

Anyway, if space is measured with light (EM-FORCE) or with mass (Gravity and Inertia) it is “created” the concept of “time”, as the concept “velocity” must be introduced to measure (define) space. It is not possible to define space without the concept of time, because for any measurement of space, the concept of time is needed prior to any measurement.

(The author remind that in the ToE Framework [1], space is created out of time, as the concept of time must be defined prior to a definition of space.)

Being more precise, the measurement of space is depending on the concept of force, as in both cases (measuring space with a rod of iron or with a stone or measuring space with EM-waves) the length (distance) is depending on a “force” used for measurement.

The concept of “time” therefore is representing first a concept of force (see also ToE Framework [1]). It is impossible to proof by experiment if speed of light is constant in reality in Vacuum: It is constant by definition as speed of light is basis for the definition of space. In order to define EM-Waves (speed of light) measuring space as a constant (constant speed of light in Vacuum), the concept of a constant speed must be defined. To define a constant speed (inertial frame of reference), two objects with mass are needed: Both move with constant speed to each other and therefore no force ( $F=ma = 0 \rightarrow a=0$ ) should be involved. This definition already shows a conceptual mistake if “Gravity” is introduced as general force. If gravity is to apply, then it is impossible for two objects (mass) to move without accelerating each other due to gravity. Anything moving at a constant speed then must involve a force that keeps the movement steady (movement without force = equalizing gravity).

To summarize the idea of the concept of constant speed of light used in ToE framework [1]: The speed of light is set to be the constant rate at what space is made out of time in order to define a measurement of space and time as the fundamental movement that is not accelerated and being the speed at which “forces” (actions) distribute (travel) in space and time. In order to define “causality”, every force must travel at this fixed speed (not slower, not faster) in order to grant a consistent concept of time, space and causality. “Light” (EM-waves) as “interaction” in terms of “forcing” then must travel always at the “speed of light” as well as any other “force” must travel at this “speed of light”.

### 3. Gravity and Inertia in Space-Time

As we know that the concept of time is needed to measure space and must be defined prior to a definition of space and as well we know that the concept of time is linked to the concept of force, it is to point again to the ToE-Framework [1] : There are “two” different dimension of time needed to make a model of reality. The action and reaction principle require two forces: one force that represents the action, and another force, that represent the reaction to equal the action.

Gravity and Inertia do represent a force that is calculated into space by mistake, as it was not understood the need of two dimensions in time. In order to define a constant speed within an inertial frame of reference it is necessary to define space and velocity to do so. There is need for two objects (masses) with no force working on them (Inertia), while at the same time the measurement of space requires the concept of velocity (and therefore time and therefore force = acceleration).

In an additional paper “*The Holografic Universe Visualisation of Big Bang and Black Holes United Gravity and EM*“ [4] the author explains the concept of Gravity and the concept of Inertia as consequence of the definition of concept „velocity“.

### 3. Mistakes made by Einstein and science in general

In recent paper “The Physics Chimera“ Jarvis [5] pointed out that today's concept of “Inertia” is a problem to physics. Jarvis points to the origin of problems in a different way, but it is possible to argue that under the carpet of “Inertia” the “Problem of Time” is hiding. Collins [6] argues that concept of Inertia is equivalent to concept of Gravity. This is correct if understood that Inertia is the inverse proportional concept to Gravity: Gravity as well as Inertia does arise out of the concept of steady motion. In general, Gravity is the first consequence we see when introducing the concept of “time”, which is a cause (force).

One could point to the concept of the “unmoved mover” from Aristotle to explain the concept of Gravity and Inertia. In the ToE Framework [1] the author points back to the traditional and old fashioned science Aristotle used. The author set equations “Time = cause” and Time = first cause = God = unmoved mover = Gravity”

In the discussion with Ashmead [2] the author was confronted with very modern interpretations of time and space in physics. Ashmead called this equation Time = Cause = God to be silly, ridiculous and of no meaningful content for science. The author enjoyed the debate as very interesting, as it unveiled the hidden problem with Einsteins Theories: If someone argues Einsteins Theories of Special and General Relativity to be meaningful, it is impossible to agree to points made by Aristotle. This author likes to insist that the equation “Time = Cause = God” [1] is the most meaningful and progressive scientific statement that can be made by today.

Regarding today's concepts in theoretical physics from point of view of Aristotle, both Theories of A. Einstein must be called to be utter nonsense and ridiculous. Regarding the concept of Special Relativity the author likes to remember that it is impossible to measure a speed without involving a force into this measurement. In general it is impossible to measure the “actual” speed of light, as the speed of light is only a “definition” of a constant movement between two objects which in reality can not exist by definition.

In conceptual terms there is no difference if one define a constant speed of light as the “center of the universe” or if one define the earth or the sun as center of the universe. The old fashioned view (earth must be center of universe) is not correct in the same way: There is no center in the universe, but in order to write laws of nature and calculate nature with maths, we must define a center for each calculation. The concept of relativity then is: it doesn't matter if we define the earth, the sun or any Black Hole as the center of the universe, but it is nonsense to define a constant speed (concept involving two objects (masses) and two points in space) as “center of the universe”. But this is what Theory of Special Relativity is doing. Using the “speed” of earth traveling around sun as a “constant” speed / movement (although this movement in reality is accelerated) to define the concept of velocity (and time) defines the Force between sun and earth (Gravity) as the center of the universe. This is nonsense.

The idea to correct the nonsense within Theory of Special Relativity with the Theory of General Relativity is even more foolish and nonsense. As space is to be defined and should be defined as a stage for observations, one should not define the stage for observations itself as the origin of a force (Gravity) (action). It is no surprise that out of this comes “dark Matter and dark Energy” as some very “spooky” properties of “space”.

The Kaluza-Klein Theory was a somehow logical idea to improve on the nonsense of General Relativity, but it is even more nonsense to introduce a 4th dimension of space to equal out a dimension of time that was connected to space into a 4 dim space-time by a serious mistake in modeling nature.

It is easy to see that the concept of “time” is necessary prior to define concepts of “motion” and the concept of velocity and concept of force in general. Therefore time should be treated as a concept of force in the beginning and not be attached to space into a 4 dim. Space-time. Time is very different from space when it comes to the question who was first (order): Time in terms of the unmoved mover is always first and therefore the origin of space. This kind of model of nature was already well explained by Aristotle.

With regards to the ToE Framework [1] the “two” times involved in a model of reality can represent different conceptual “views” on reality. In a very general view, one could argue that “time” is a mover (force) and two times represent as first time the unmoved mover (GOD / Nature) and as second time the moved mover (observer = mover moved by unmoved mover) to cover the action – reaction principle.

## 4. Solutions

Within today's SI-System the concept of time is defined as property (frequency) of the caesium atom, while space is defined as property of the speed of light. This is a serious and fundamental misconception that makes it impossible to unite Gravity and Electromagnetism and all other forces. If space is defined by the speed of light, time (seconds) must be defined by the speed of light too. Times before time was defined by the rotation of earth around sun. This is more accurate in conceptual terms. As the speed of light reflects the rotation-speed of the earth around the sun, the second must be defined on basis of the properties of speed of light. To detach space from time in order to calculate a consistent world model the circular argument about the concept of motion within the System of units must be fixed:

**SI-Base Unit for Space : “A meter is the distance light travels in  $1/c$  seconds of time in vacuum”**

**SI-Base Unit for Time: “A second is the duration light needs to travel  $c$  meters of space in vacuum”**

**This way Theory of General Relativity is falsified by definition as well as Theory of**

**special Relativity is falsified by definition.**

Imagine space as the stage for actors to play their action and actors as “times”: As time and space are dependent and independent from each other at the same time and not poured into 4-dimensional “space-time”, time must be calculated out of space the same way as it was calculated into space, in order to isolate the actor from the stage. As long as space and movement of mass is defined by speed of light (time) and time is defined by the behavior of the caesium atom, our model of the cosmic scale only reflects the properties of the caesium-atom.

Jarvis [7] suggests a Golden Ratio Algorithm for time in order to offer a new concept of time, that would enable to unite Gravity and Electromagnetism. This concept seems similar and is also not far from the ideas of Aristotle, Physics Book VIII. In fact, the conclusion of the existence of an unmoved mover (GOD) as first principle is necessary to deal with the concepts of “before” and “after”. It is to question if the label “God” or the label “Consciousness” are more useful or precise.

Jarvis uses three different stations of “time”, which are “Time before”, “Time after” and “Time now”. In view on the work of Aristotle the concept of “time now” would be the first cause as a first principle. While Jarvis concludes that this concept of time proves the existence of consciousness, Aristotle concludes that the concept of time proves the existence of a living and loving God, the unmoved mover who is loving to move (not giving potential energy to the universe).

To model a “big bang” the author uses also “three” different times. In Fig.1 it is given a psychological representation of the Big Bang to demonstrate the equivalence of gravitational force and electrostatic force, as all forces are based on the unified force (time).  $T_{\text{universe}}$  is the representation of the first principle of an unmoved mover. (T now).  $T_{\text{thought}}$  is representation of the tinker (I think = I am) that gets conscious (time after).  $T_{\text{emotion}}$  (time before) is the action causing the reaction ( $T_{\text{thought}}$  = time after). This 2-dimensional game of forces is origin of the three-dimensional projection we perceive as reality. In fact, three time-dimensions are involved in a Big Bang or creation of matter in general: When  $T_{\text{before}}$  (emotion) hits  $T_{\text{universe}}$ ,  $T_{\text{universe}}$  reacts with  $T_{\text{after}}$  (thought)

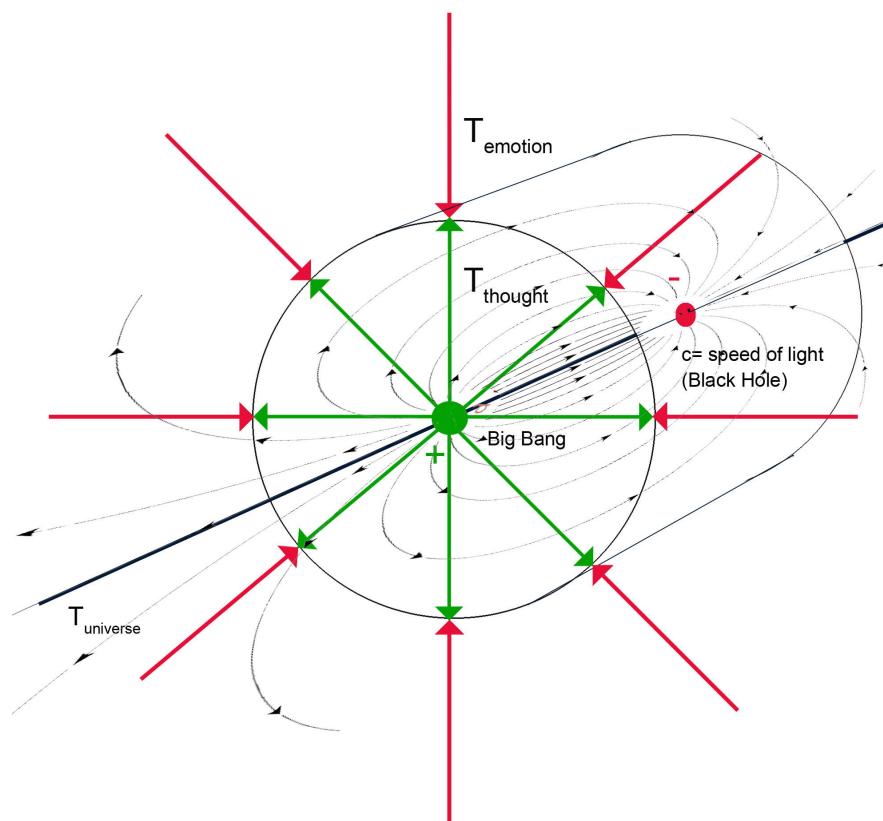


Figure 1 : Gravitational Field = Electromagnetic Field in 2 Dimension representing the Unified Force that is gravity as inverse proportional inertia from the center of creation (Big Bang)

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