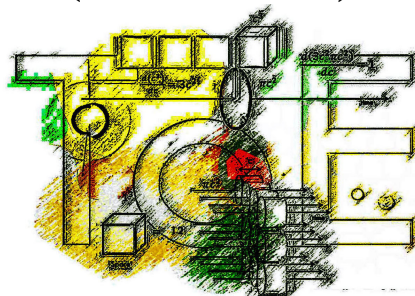


## Unified Principles of Nature: Solution to the “Problem of Time” II

(TOE-Framework)



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### Abstract

Within the first article „Solution to the Problem of Time“ [1] the author explored the origin of time and suggested the Unified Principles of Nature that must be applied in order to unify Quantum Gravity and General Relativity without contradiction. To emphasize the urging conclusion out of the Solution to the „Problem of Time“ the author summarizes in this paper the claim to reintroduce rational thought and argument in science in order to solve pressing problems in human society. Science must consider the Scientific God to unite Quantum Theory and General Relativity into a theory that can describe and predict reality.

**Keywords:** God, unified principle, nature, problem of time, gravity, TOE.

## 1. Introduction

With offering the Solution to the Problem of Time [1] the author introduced the Unified Principle „Time = Cause = God“. This definition of a concept of „Time“ advances on the ideas of Aristotle and Newton, confirming the scientific Logic suggested by Aristotle and Newton to be right, while suggesting to withdraw the concepts of time used in General Relativity and Quantum Theory.

Aristotle suggested four forces as representation of four „causes“ to be the causal explanation for the question of „why“ things happen (concept of cause).

Also in modern physics there are recognized four individual forces (causes), that must be united in order to approach a „Final Theory“ or a „Theory of Everything“.

As it was suggested with the „Solution to the Problem of Time“ to understand „Time“ as the underlying general force, within this paper the author suggest how to introduce the unified force into modern physics with a correction of the present definition of time in the System of Base-SI-Units.

## 2. Aristotle, Newton and Einstein on „Time“

One could summarize the concept of time described by Aristotle as the concept of an „unmoved mover“ (GOD). If it would be possible to connect the concept of time to periodic events (i.E. in solar system or in our galaxy / universe in general) a „day“ of time could be defined as the sun circling earth or the earth circling its own axis. A more general time could be defined if all planets, stars and galaxies would be included into a concept of time. Defining time as movement of „all“ planets, stars and galaxies would make it

impossible to define time as some „periodic“ event (frequency) because each day the universe in relation to the surface of the earth looks different and the sky will never look the same again as yesterday or as last year.

With the physis Newton introduced, we had to deal with a concept of time that must be understood as an even flow in universe, not affected by periodic events like planets circling a sun or galaxies spiral their centers. One could argue that Newton agreed on the concept of time Aristotle had introduced. From point of view of Newton time was defined by an unmoved mover who must be responsible to keep the rotations in solar system active and alive the way we observe solar system. Considering this point of view, it seems consequent that Newton later tried to find explanations for the origin of time and future within the bible and within the book of revelation.

With theory of special relativity and theory of general relativity Einstein introduced a new concept of time that is not compatible with Aristotle or Newton any more. Following Einstein time should be defined by periodic events and could be measured with an instrument named „clock“. As clocks always rely on „forces“, different concepts for building clocks are possible. One could use any planet or star as clock as well as any other „frequent“ events. In consequence, the concept of time is introduced by Einstein as a relative phenomena, namely, every observer and point in space has its own individual „relative“ „time“.

### 3. Time as periodic event : The birth of Quantum Theory and Theory of general Relativity

Defining time as a periodic event lead to the consequence that time is defined on basis of a force. If time is defined as earth circling sun or its own axis, time is defined on either the gravitational force or (at the same time) on the concept of inertia. If time is defined as a frequency observed using an atom (Caesium), time is defined on the basis of the electromagnetic force. Using „clocks“ to measure (define) time, we always define time on base of „forces“. Understanding this phenomena, it is easy to understand why „clocks“ in general always measure different time-flow depending on their exposure to gravitational force or depeing on the motion of a clock within (relative) an electromagnetic field.

There comes another general phenomena into observation if time is defined on basis of periodic events (and measured with „clocks“): Quantisation.

As soon time is defined by an periodic event (frequency), all phenomenon observed in nature will be „quantized“, because a time below a frequency of 1 Hz is not defined. The smallest (biggest) portion of time will always be the frequency of 1 Hz. This is due to the fact that at  $\frac{1}{2}$  a day or  $\frac{1}{2}$  a circle of earth circling sun it is not sure if the full circl (event) will be done or if the periodic event will occur again in order to move the clock one „step“ ahead. The wave particle-dualism therefore just comes into observation as the concept of periodic events are defined by introducing the concept of periodic events.

The quantisation of energy and the Heisenberg uncertainty-principle are only representing the definition of time as an periodic event. It is uncertain the next periodic event inbetween the duration of two events, when these events are used to define the duration between events.

On the other hand, reality is not quantized if time is just defined as a vector (Time = cause = God = unmoved mover = force).

### 4. Uunification of Four Forces into one Force

If time = cause = force each time (force) splits up energy at the frequency of 1Hz in positive and negative energy to equal out energy to Zero. Therefore each definition of time based on periodic events creates a big bang that defines positive and negative energy. As additional to the working time (origin = surface of earth) there are by mistake two different times „defined“ in the Standard-Model, which are the center of sun (center of solar system as origin of gravitational time) and the frequency of the Caesium-Atom. Therefore are resulting three forces, that cannot be combined with gravity unless the concept of time is defined well within a theory.

### 5. The “Problem of Time” is still present today

Artists, scientists, spiritual leaders and economists gathered in Amsterdam in 1990 to explore the emerging paradigm of a holistic world view and the implications for a global economy. The five day confrence was inspired by the artists Joseph Beuys and Robert Filliou, and manifested by Louwrien Wijers, who called it a "mental sculpture".

Within the discussions, Quantum-Physicist

David Bohm explained, that there seem to be a mistake in human thinking which is origin of incoherent thinking, that is origin of the fact that we (human being) are producing results that we don't really want. Bohm expressed his opinion, that over thousands of years a way of thinking might have developed, that might be different from the original way of thinking.

If today we think, that it might be the nature of human being to think and act irrational to some extent, one could argue that there is no reason to think that irrational thinking or acting is caused by nature itself unless there is scientific evidence for such assumption.

The “Problem of Time” is known to be the conceptual conflict between general relativity and quantum mechanics. If a solution is proposed in a way to see “time” as some emergent phenomenon, this kind of solution would reflect the origin of irrational thinking and acting. As it was pointed out by this author [1] that time is cause, a model including time as emergent phenomenon would set the effect to be origin of the cause in the very beginning of our model and theory of reality.

Some initial ideas presented by Connes and Rovelli in 1994 [4] proposed a radical shift by defining the time-flow in universe based on the thermal state of a system. Following the suggestion by Connes and Rovelli the fundamental concept of „time“ would be taken out of the physical model and be exchanged with the description of the thermal state of the system.

This idea in fact is an approach to first mark the concept of time as origin of irrational thought within existing models of reality and gives space to introduce the concept of time in such a way, that would

consider time as „cause“, instead of defining time as an irrational (circular) argument.

Analysing the definition of time used today in physics and science, this definition is symbol of irrational thought and action in society of today: If a frequency is measured with the concept of time, the concept of time cannot be defined on base of the frequency that is to be measured with the definition of time without the argument becoming irrational.

**The definition for „time“ used today in 102 states and economies in the world is basically standarizing and dictating irrational thought and action as the underlying fundamental concept of science in general.**

## **6. Claim to correct misconception in todays physics (Introduction of scientific God )**

The crises in today physics (dark energy, dark matter, quantum-gravity, interpretation of quantum theory) can be resolved only, if the definition of time is corrected into a concept of an unmoved mover (GOD) (suggested by Aristotle and Newton), as this is the only way to unite all known forces into one concept of force, namely the concept of time = cause. Furthermore, unless the definition of time in science is corrected, science will keep providing a wrong image of reality. Science will not be able to offer solutions for global problems concerning the future of planet earth, solar system or human society. The „Problem of Time“ in physics is at the same time the „Problem of climate change“.

Today the International Bureau of Measurement [2] provides the definition of time and space as following:

**„The second, symbol s, is the SI unit of time. It is defined by taking the fixed numerical value of the caesium frequency  $\Delta\nu_{\text{Cs}}$ , the unperturbed ground-state hyperfine transition frequency of the caesium-133 atom, to be 9 192 631 770 when expressed in the unit Hz, which is equal to  $\text{s}^{-1}$ “**

**„The metre, symbol m, is the SI unit of length. It is defined by taking the fixed numerical value of the speed of light in vacuum  $c$  to be 299 792 458 when expressed in the unit  $\text{m s}^{-1}$ , where the second is defined in terms of the caesium frequency  $\Delta\nu_{\text{Cs}}$ .“**

As discussed in this paper and based on the findings in the „Solution to the Problem of Time“ [1] the definition of time based on a periodic event is indicated as the origin of a misleading model of reality offered by „science“ today as well as origin of irrational thought and action of „modern“ society. In case science wants to provide and introduce a valid picture of reality, the definition of time used in science by all nations must be changed „radical“. Otherwise it will be impossible to provide a consistent theory that includes theory of general relativity as well as theory of quantum mechanics as „special“ cases.

To correct the ill defined concept of time in science the author suggest to claim a basic human right that is the use of a correct definition of „time“ as fundamental basis for scientific (logical, rational) argument.

The connection between basic human rights and the definition of time in science / physics / states / economies is obvious: The freedom of speech and the freedom of opinion cannot be given on the definition of time within society, as the definition of time is as well basis for law and order as well it is basis for contracting in economy as well it is basis for a definition of mental health or mental disorder.

The claim for (new = correct) definition of time and space:

**The second, symbol s, is the SI unit of time. It is defined by taking the fixed numerical value of the speed of light  $c$  when expressed in the unit  $\text{s m}^{-1}$ :**

**A second is the duration light needs to travel  $c$  meters.**

**The metre, symbol m, is the SI unit of length. It is defined by taking the fixed numerical value of the speed of light  $c$  when expressed in the unit  $\text{m s}^{-1}$ :**

**A metre is the distance light travels in  $1/c$  seconds.**

This way the „irrational“ thought (circular argument) in the fundamental body of science (spacetime) is eliminated, as time is defined on base of speed of light as well as space is defined on base of speed of light. Speed of light is to be calculated then and defined by geometrical analysis of the motions in solar system. As discussed in „The Solution to the Problem of time“ [1], the speed of light can be calculated as a stable rate of information on a 2-dimensional surface, that is the ratio of diameter and circumference of a circle representing the balance of thought and emotion of the observer.

$$1 = 12 \pi c^3$$

## 6. Conclusion

<http://www.alainconnes.org/docs/carlotime.pdf>

The Solution to the Problem of Time suggest to model reality as a 3-dim. hologram of the 2-dim. thought and emotion of the observer (human being). While „thought“ should have its representation as „space“ (distance, place), „emotion“ should have its representation as „time“ (cause).

$$\frac{d}{dc} \left[ \frac{d}{dc} [c^3] \pi c^2 \right] = constant = 1$$

$$12\pi \cdot c^3 = 1$$

$$\epsilon_0 \mu_0 c^2 = 1$$

$$\epsilon_0 = 4c \quad \mu_0 = 3\pi$$

The suggested equation reflects the premise of the constancy of the sum of information while projecting a 2 dimensional picture of thought and emotion into a 3-dimensional hologram.

Although there are many promising new approaches alive in physics today such as the concept of entropic gravity (Verlinde E), the introduction of a unified and final theory will be only possible with (after) a radical new definition of the concept of time in science.

## 7. References

1. Pohl M U E 2019, Unified Principels of Nature: Solution to the Problem of Time. Scientific GOD Journal Volume 10 Issue 3 : <https://scigod.com/index.php/sgj/issue/view/93>
2. <https://www.bipm.org/en/measurement-units/>
3. Bohm D in Amsterdam 1990: <https://www.youtube.com/watch?v=hfHzfonAgX4&t=360s>
4. Connes A, Rovelli C 1994 : Von Neumann algebra automorphisms and time-thermodynamics relation in general covariant quantum theories,