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The Causal Connection of the Three-Dimensional Structure of the Earth with the Category Time and its Physical Relation to the Existence of Human Being

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Abstract

The experimental data of the Earth show that a causal connection between the square of its effective radius and the square of its orbital time is given. This far-reaching finding is analyzed, disclosing that this observation is a result of the existence of the point-state of the Earth in the cosmos, described by the third law of Kepler, as well as a result of a time, given by the three-dimensionality of the Earth, which allows to create the physical basis for human life. It is shown that the limiting character of the category time is the background of the significant difference of the magnitude of the personal state of a single person; this difference, which is observable between the beginning and the end of the so-called "living time", discloses the extraordinary importance of the personal state at the end of the life of the considered person.

Keywords: Time; Pendulum effect; Third law of Kepler; Dimension of space; Seeing; Hearing; Biophysics

Introduction

In the foregoing paper of Dorda G [1] ("The Essence of the Phenomenon Time and its Causal Relation to the Process of the Human Seeing and Hearing"), presented in Physical Science & Biophysics Journal, the category time was analyzed. It was shown that the effect of time is given on the one side by the motion of the cosmic objects, i.e. theoretically described by the third law of *Kepler*, and on the other side by the motion of the pendulum effect, manifesting a causal connection between the square of time and the linear length of the pendulum.

Ch. Huygens (1629 – 1695) has observed that both these time-effects are identical phenomena. The intensive analyses of these important physical effects resulted in the observation that the basic law of the whole being refers to a dual system, given by dynamics and statics [1]. It is shown that the dynamics, i.e. the 2D-state, is the basis of both the observation of the category time and of the electromagnetic effects, whereas the statics, i.e. the 1D-state, reflects the existence of gravitational interaction, i.e. of the category mass and the category length. This model of the dual state shows to be the fundamental background for the formulation of the classical, internationally used units meter, kilogram, second and ampere, named the MKSA system. On the basis of this MKSA system, it was possible to formulate physical laws, which describe *causal* processes of the being. A further important result of the analysis of the phenomenon time, presented

in Dorda G [1], was the finding of the causal connection between the physical and biological processes of seeing and hearing of the human [2,3]. In the following chapter, it will be shown that the existence of the phenomenon *time* is for the human of far-reaching importance and promotes therefore the science related conclusive evidence of its causal relation of the human to the radius of the Earth.

The Causal Connection between the Category Time and the Radius Of Earth

It is a fundamental experimental finding that between the square of the effective radius $R_{\text{Earth}}^{\ 2}$ of the Earth and the square of the time of the third law of *Kepler* $T_{\text{Earth,3LK,o}}^{\ 2}$ at the surface of the Earth, the so-called orbital time of Earth, is a causal connection. This effect can be formulated by

$$R_{\text{Earth}}^{\ 2} = const_{\text{Earth}}\, T_{\text{Earth,3LK,o}}^{\ 2} \quad (1)$$

Here $R_{\text{Earth}}^{\ 2} = 4.05897(35)\ \text{x}\ 10^{13}\ \text{m}^2$ is the square of the effective radius, $T_{\text{Earth,3LK,o}}^{\ 2} = 6.486(09)\ \text{x}\ 10^{5}\ \text{s}^2$ the square of the orbital time, and the proportional constant $const_{\text{Earth}}$ is given by $const_{\text{Earth}} = 6.257(97)\ \text{x}\ 10^{7}\ \text{m}^2\ \text{s}^{-2}$, all are related to the Earth.

The experimental finding of Equation (1) is the result of the supposition that the effective radius of the Earth R_{Earth} is given by Equation (3) of Dorda G [1], i.e. by

$$\left(R_{\text{Earth,equa}}\right)^2 \text{x}\, R_{\text{Earth,pole}} = R_{\text{Earth}}^{\ 3} = \left(6.3710074\ \text{x}\ 10^{6}\right)^3\ \text{m}^3 \quad (2)$$

where $R_{\text{Earth,equa}} = 6.378140\ \text{x}\ 10^{6}$ m is the experimentally determined radius of the Earth at the equator and $R_{\text{Earth,pole}} = 6.356766\ \text{x}\ 10^{6}$ m [4] the experimentally determined radius of the Earth at the pole.

This far-reaching relation, given by Equation (2), is the background of the fulfillment of the experimentally observed necessity to show an identity of the time of the pendulum effect (PE) with the time of the third law of *Kepler* (3LK). The fulfillment of this finding is given by Equation (4) of [1] and can be also expressed by

$$g_{\text{PE,Earth}}\ /G\ =\ M_{\text{Earth}}\ /R_{\text{Earth}}^{\ 2}\ =\ 1.4718\ \text{x}\ 10^{11}\,\text{kg m}^{-2} \quad (3)$$

In this equation, $M_{\text{Earth}} = 5.974\ \text{x}\ 10^{24}$ kg is the mass of Earth [4], $G = 6.67384(80)\ \text{x}\ 10^{-11}\ \text{m}^3\ \text{kg}^{-1}\ \text{s}^{-2}$ the generally valid constant of gravity [4], and $g_{\text{PE,Earth}}$ the valuation of the pendulum effect on the surface of the Earth, given by $g_{\text{PE,Earth}} = 9.822(57)\ \text{m s}^2$ [1].

The experimentally observed causal relation between the square of the orbital time $T_{\text{Earth,3LK,o}}^{\ 2}$ and the square of the radius $R_{\text{Earth}}^{\ 2}$ of the Earth, shown in Equation (1), is in fact the result of the experimentally observed possibility to identify the time of the pendulum effect with the time of the third law of Kepler (3LK). This finding includes the observation that the time of the space-less-point-effect of the Earth, which shows theoretically a (quasi) spherical form and is therefore describable by the 3LK, i.e. by $R_{\text{Earth}}^{\ 3}$, is, according to Equation (2), identical with the time given at the square $R_{\text{Earth}}^{\ 2}$ at the surface of the Earth and realized within the three-dimensional space. Therefore it can be assumed that the dynamic state of the point-state refers to the existence of a so-called dead state, thus showing a "deceased time", whereas the time-related state at the surface of the Earth, which is realized within the three-dimensional space and also given by $T_{\text{Earth,3LK,o}}^{\ 2}$, enables the possibility of an alive state, showing the possibility of a personal "living time".

Discussion

It should be mentioned that equations (1)-(3) are based on the model of the existence of the three-dimensional space. This model is a necessary fact, seen with respect to the basic dual system of being and also with respect to the human attempt to find causal orders in the findings of the dynamic state. Really, considering the given connection between the physical and biological processes of seeing and hearing [1-3], we can state that the existence of Equation (1) is also a result of the thinking process of the human to find order in the dynamic processes. This attempt is enabled by the category time, i.e. by a category, for which the limitation, i.e. its start and its end, is characteristic. Evidently, the limitation of time is in fact observable only with respect to other times. Thus, we can conclude that, seen with respect to the origin of the phenomenon time, the effect "time" is therefore a single human effect, i.e. it is a personal related phenomenon, whereas all other times, e.g. considered in connection with persons of the past centuries, can be interpreted to be in summary a kind of "unlimited" time. This fact appears to be an analogy of the relation between the physical magnitudes "frequency" and "time", or said with other words, an analogy to the relation between the infinity and finiteness [1]. Seen with respect to the human being, this fundamental finding suggests a further important conclusion, thus it will be described hereinafter.

In the foregoing paper of Dorda G [1], it has been shown that the real state of being, which is given by experimental data on the basis of the international units meter, kilogram, second and ampere, refers mainly to the process of seeing and hearing of the human and is realized in fact by the thinking process of the human. This process also shows that the human, the real origin of the observation of the existence of the world, appears to be a single person. Thus, it should be mentioned that the in Dorda G [1] described category time,

for which its finiteness is characteristic and which appears to be realized by a single person of the human being, is realized by means of the process of limitation of the time, i.e. by the localization of the dynamics. Thus, it is evident that the start of the process of localization is given, on the one side, by the instant of the procreation of this person. This time, which signifies the beginning of the personal "time", therefore can be named "living time". On the other side, in contrast to this process of the beginning of the single person, the end of this personal "living time" appears to be the death, thus realizing the so-called "deceased time".

According to the described dual state of being, the beginning of the personal "deceased time" is given by the differentiation between the final personal related state of statics and the final personal related non-observable state of dynamics. It should be pointed out that the personal, at this particular time, related statics refers to his personal gravitational mass, whereas the personal related state of the non-observable dynamics appears, for example, to be a for the considered person characteristic intention of self-sacrifice. This specific, only human related intention of self-sacrifice is a consequence of the free will of the human and thus refers to the non-localized, i.e. non-observable part of the personal dynamics. Therefore, it can be stated that the personal dynamical, non-observable part of the given person appears to be – in similarity to the personal gravitational mass – indestructible in time.

Conclusion

The analysis of the experimentally observed causal connection between the square of the effective radius $R_{\text{Earth}}^{\ 2}$ and the square of the orbital time $T_{\text{Earth,3LK,o}}^{\ 2}$, both of the Earth, has shown that this far-reaching effect is a result of the difference of the description of the Earth – i.e. on the one side – in form of a point-state, and – on the other side – as a body within the three-dimensional space. It has been shown that in the case of the point-state of the Earth, it is possible to consider the state of the whole body of the Earth as a body, given solely on the basis of the third law of Kepler. In contrast to this, in the case of the three-dimensional state of the Earth, the existence of dynamics allows to connect the category time with the existence of the human life, realizing the idea of the so-called "living time". The discussion to the existence of the "living time" of any given person shows that the category time, due to its limiting effect, appears to be the most important physical magnitude of the human being, disclosing its special importance at the death of the individual, single person. Finally, it has been pointed out that all the personal non-localized, i.e. non-observable effects of dynamics, have since the death to be considered as indestructible in time.

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