

Toward an Exciting Rebuilding of Modern Physics: Conclusion

Alexandru C. V. Ceapa*

ABSTRACT

By disclosing the objective reality behind Einstein's manipulation of equations in [1], we provided for the first time a rationale for the revealed knowledge. It is this rationale that scientists should give in their works for a true advancement of science to be achieved. It should be understood that science and religion are not antinomies, as they seemed to be in the break of science.

Key Words: rebuilding, modern physics, revealed knowledge, Einstein, absolute rest.

43. CONCLUSION

The radius vectors of geometrical points moving uniformly and rectilinearly with respect to inertial observers change systematically over time, in both direction and magnitude. To know their direction and magnitude when projecting them onto coordinate axes, we need to trace such radius vectors by physical signals. So we obtained the new class of 'complementary time-dependent coordinate transformations'. The working hypotheses consisted in recognizing i) the concepts of absolute rest and absolute speed, ii) the running at the same rate of the identical clocks at absolute rest or in uniform rectilinear motion at different speeds, and iii) the same length of the meter-sticks, no matter of their speed.

Obtaining, for light signals, the standard Lorentz transformation as a complementary time-dependent coordinate transformation, we confirmed our working hypotheses. Moreover, by disclosing the objective reality warranting the manipulation of some equations that led to the standard Lorentz transformation in [1], the derivation of the standard Lorentz transformation as a complementary time-dependent coordinate transformation undoubtedly proved the validity of our working hypotheses in special relativity theory. As the same objective reality explained the origin and meaning of the factor β in the Lorentz transformation -the only unintelligible equations in special relativity theory-, it also proved the validity of the principle of the physical determination of equations in special relativity theory, with essential consequences upon all subsequent theories concerning the quantum and subquantum structure of matter, earlier founded upon special relativity theory.

Opposite working hypotheses led Einstein to develop the standard special relativity theory without the derivation of the Lorentz transformation in [1] as a, physically misleading, theory in which the principle of the physical determination of equations did not work. This theory wrongly predicted the famous time dilation, twin paradox and FitzGerald-Lorentz contraction as physical phenomena. Both the mathematical logic and the coinciding denominators in the Lorentz transformation and the relativistic mass raised an apparent understanding of the theory, just as the unknown subquantum nature of the same mass (that we just identified) has assured the 'experimental proof' of the time dilation.

* Correspondence: Alexandru C. V. Ceapa (Note: This work was copyrighted 2006 by the author)
c/o Yiannis Haranas, Ph.D. Website: http://vixra.org/author/Alex_Ceapa E-mail: ioannis@yorku.ca
or c/o Isabel Gaju. Website: <http://www.facebook.com/pages/Alexandru-Constantin-Ceapa-Doctor-in-Fizica-PhD-Physics/156901687585> . E-Mail: isabelgaju@yahoo.com

The relativistic theories concerning the quantum and subquantum structure of matter, built upon the developed special relativity theory, i.e., without the restraints required by the principle of the physical determination of equations, missed essential physical information incorporated in every term of their underlying equations. So much the more adequate experimental techniques to prove the unknown information were not developed. The 'standard model' of 'elementary' particle was obtained in such conditions. The crisis of physics has installed.

There is presently no expected future development of physics without the principle of the physical determination of equations which to break the crisis. It is for this reason that our way to prove the validity of this principle in Einstein's special relativity theory, and its resulting validity in the relativistic quantum theories are so important. On the one side, we could remove the vicissitudes of special relativity theory. On the other side, we identified genuine subquantum information in the terms of the underlying equations of the relativistic quantum theory. We condensed this information in a model of 'elementary' particle, consisting of two spinning systems of subquantum particles (valid for Dirac particles, photons, etc.). The relativistic mass appears as the coupling constant of the two systems, and it can also be changed by acting upon these systems.

There results exciting possibilities of releasing energy, exciting quantum particles and make them interact, and of destroying and condensing matter by acting upon the constituents of the 'elementary' particles. Adequate facilities to testify experimentally and exploit technologically the subquantum energy are to be developed with priority. This because, no matter of the power of the particle accelerator facilities, the subquantum information missed by ignoring the principle of the physical determination of equations in founding the relativistic theories, can not be obtained by colliding high energy particles. But there are also major philosophical reasons for which our validation of the principle of the physical determination of equations is so important.

Since, by the graphical addition of travel times as scalar quantities (Sec. 7), the terms βx , βvt and βt in the Lorentz transformation are, respectively, Cartesian coordinates and Newtonian time, the meaning of the Newtonian concepts of space and time is kept unaltered in special relativity theory, in deep agreement with everyday experience and common sense. Like Galileo's transformation, the spatial equation in the Lorentz transformation connects Cartesian coordinates. So Einstein's special relativity theory proves to be just a chapter of the classical physics, based on manipulating light signals to measure distances and times. The mixture of coordinates and times in the Lorentz transformation, and, by way of consequence, in the metric of the Minkowski space-time originated just in tracing radius vectors by lights signals. So the Minkowski space-time has an operational nature: The Euclidian three-dimensional space and Newtonian time are layed by. Therefore, the human alienation raised by the fictitious time dilation, twin paradox and FitzGerald-Lorentz contraction should end. Philosopher's endeavor to explain, without understanding, the space-time as an objective reality should end too.

By identifying the 'abstract' coordinate systems at absolute rest in special relativity theory, all inertial observers can connect physical quantities which they measure in their reference frames to quantities defined in coordinate systems at absolute rest also by the Lorentz transformation. So Einstein's special relativity theory is a *theory of the absolute*. This conclusion is supported by limits that our confirmed working hypotheses set to Einstein's statement [99] that "The name 'theory of relativity' is connected with the fact that motion from the point of view of possible experience always appears as the relative motion of one object with respect to another. Motion is never observable as 'motion with respect to space' or, as it has been expressed, as 'absolute motion'." Even though motion always appears, from the point of view of experience, as the relative motion of one object with respect to another, this happened only because the inertial coordinate system attached to the latter

object was named "at rest" and erroneously treated as a coordinate systems at absolute rest. So the special relativity theory cannot be further in the service to of those justifying 'scientifically' the almighty misleading relativism governing the 20th and now 21st century, except for its title.

It is the essential role played by revelation in the act of science that became strikingly evident. It was by that Einstein has deduced the Lorentz transformation in [1] manipulating some equations, jumped over any physical explanation of the manipulations, then ignored this derivation of the Lorentz transformation during all his life, although, as we proved in this book, it was so important for the physical foundation of special relativity theory. Since the discarding of his 1905 derivation of the Lorentz transformation has entailed the crisis of modern physics, there results that he was never aware of both the correctness and the worthwhile of this derivation of the Lorentz transformation in [1]. Wherefrom we concluded the revealed nature of his manipulation of equations that led to the Lorentz transformation in [1]. On the scientists attitude toward the role of revelation in the act of science depends the amount of information that will remain undisclosed in the terms of the underlying equations in various theories.

By disclosing the objective reality behind Einstein's manipulation of equations in [1], we provided for the first time a rationale for the revealed knowledge. It is this rationale that scientists should give in their works for a true advancement of science to be achieved. It should be understood that science and religion are not antinomies, as they seemed to be in the break of science.

Turning back to the principle of the physical determination of equations, all the advanced relativistic theories concerning the quantum and subquantum structure of matter must be rebuilt according to this principle, till now true exclusively in classical physics. Reducing the equations of the quantum theories to field equations just falsified both the development and the understanding of physics. The genuine information on the subquantum structure of matter should be normally obtained as early as by the 1940's... and it is yet forbidden by a wrong physics policy. It is real the danger that a physics policy disregarding the key role played by revelation in the act of science, and claiming further that "*terms such as 'absolute rest' and 'absolute speed' are completely foreign and unacceptable to physics*" [2], to further hinder a whole understanding of Einstein's original paper on relativity, so the recognition of the validity of the principle of the physical determination of equations in special relativity theory and relativistic physics, prohibiting any true advancement of physics and true technological progress. The concepts of absolute rest and absolute speed should be understood as passwords. Their deletion from special relativity theory just cut off the access to a true advancement of modern physics.