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PREFACE

Kant compared human history to an incessant conflict of obscure, dogmatic ocean with emerging from it at times enlightened isles of rationality, usually set off by some scientific revolution.

The First Scientific Revolution of Galileo, Descartes and Newton has triggered the First Enlightenment and refuted a lot of dogmatic prejudices. However, emerging rationality did not eradicate the dogmatism and First Enlightenment was marked by perverted coexistence of rational reason with absurd dogmatism and collapsed under its assaults, which went on uninterrupted till our own days dominated by dogmatic obscurantism.

The new reason underlying Einstein's Second Scientific Revolution emerges from the predominate dogmatism as the unique possible support of rational dealing with mankind's critical problems. Since it is as yet restricted to Physics, its extension over all domains of reflection and praxis seems to take on vital importance.

The present essay endeavors to make a step in this direction, deriving from the Second Scientific Revolution its underlying ontology and the "Relativistic Dialectic" - the new reason of the Second Enlightenment which Einstein requested saying:

"A new manner of thinking is essential if humankind is to survive".

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EINSTEIN'S PHYSICAL REALITY

The Relativistic Dialectic is based upon the ontological foundations underlying Einstein's concept of physical reality and his physical models. Einstein's "Physical Reality" is presented in the chapter "NATURAL MODEL".

However, more interested in physics than in philosophy, he took as granted certain essential constructs, which we attempt to found in "TIME AWARENESS AND EVENTS" and "STRUCTURES OF MIND". We may mention

- "physical body";
- CD (Continuum/Discreteness) polarity with its foundational primacy of continuum, reducible to awareness intuited as continuous background of discrete perceptual events and to intuitive continuous time as background of discrete clocks.
- TimeSpace.

Deriving ontology from physical models consists in identifying their most general principles pointing to the underlying physical reality. Such ontology has to be axiomatic, as its origination and, like any axiomatic model, has to support the falsifiability of its axioms. This request is automatically satisfied for axioms underlying the Extended Relativity by the falsifiability of the latter.

We illustrate the falsification of discreteness based systems denying Einstein's postulated primacy of continuum with examples of Aether ("SECOND SCIENTIFIC REVOLUTION"), of the rudimental Quantum Mechanics (Tome II "FOUNDATIONS OF QUANTUM PHYSICS") and of foundations of mathematics ("SET THEORY" and "FOUNDATIONS OF MATHEMATICS").

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DOGMATISM AND RATIONALITY

"Concepts and Conceptual Systems get justified exclusively by their capacity to coordinate events. They cannot be justified in any other way. Therefore, it is, in my opinion, one of the most pernicious acts of Philosophers to have transferred some conceptual bases of Natural Science from the controllable domain of empiric adequacy into the inaccessible heights of the Necessary Apriori. This applies particularly to our concepts of time and space, which the Physicists - forced by the facts - had to descend from the Olympus of Apriori in order to repair them and make them usable."

This Einstein's assertion presents concisely two opposed worldviews and attitudes: Dogmatism and Rationality.

Dogmatism, founded on whimsical speculations a priori aspiring to absolute truth, snubs high-handedly science, know-how and, above all, facts. "If the facts disagree with me then so much worse for the facts." - this Hegel's declaration may serve as motto of dogmatism.

Rationality rests modestly upon contemporary scientific and practical know-how and endeavors to generalize it into a critical synthesis of contemporary knowledge.

As we mentioned above, Kant compared human history to an incessant conflict of obscure, dogmatic ocean with emerging from it at times enlightened isles of rationality, rare and far between. The astounding self-generating and sticking power of dogma stems according to Kant from laziness and cowardice.

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Laziness to think, rather than to enjoy snug platitudes of naive view (aka naive realism). Cowardice to stray off beaten tracks and to follow Horace's "Sapere Aude" (Dare to Reason).

These "enlightened rationality isles" are usually set off by some scientific breakthrough, by science finding new ways of descending piled up dogmatic ideas "from the Olympus of Apriori" and "making them usable".

Modern times start with the First Scientific Revolution of Galileo, Descartes and Newton which has triggered the First Enlightenment and has refuted a lot of dogmatic prejudices. Galileo rendered science relativistic, axiomatic and empirically verifiable. Descartes posited it as subjective and uncertain and armed Galilean inertial referentials with algebraized coordinate systems opening the way to calculus. Newton, armed with Cartesian mathematics created the genial instance of Galilean relativity, to wit the Gravity model. (see "FIRST SCIENTIFIC REVOLUTION").

However, emerging rationality did not eradicate the dogmatism and First Enlightenment was marked by perverted coexistence of rational reason with most absurd dogmatism and collapsed under its reactionary assaults which went on uninterrupted till our own days dominated by dogmatic obscurantism.

The Second Scientific Revolution of Einstein's Extended Relativity, deeper and more radical than the first, triggered the Second Enlightenment. The present essay endeavors to expose its underlying ontology and reason - the Relativistic Dialectic.