Intention Not Theory: the vertigo of Love*

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A Theory of Everything (TOE) must be based on a principle so simple and powerful that it can explain not only all physics, but provide an answer to all philosophical questions and above all explain consciousness and the self. A principle is in fact all the more powerful the simpler it is, since everything that exists, from the simplest to the most complex, must derive from the nesting and stratification of the same principle.
Around the nature of this principle, the candidate par excellence should be Hegel's dialectic. However, although Hegel's dialectic has proved useful in investigating the evolution of human thought and history, it is of little use in all other scientific areas such as in the investigation of natural laws.
The principle sought must therefore be even more primitive: it must be the foundation of the whole, even of Hegel's dialectic.
The purpose of this article is to present this principle and show how it is the foundation of the whole and how everything literally flows from it.

keywords: *Intention, Consummation, Reflection, potency, entelecheia, energeia.*
Meaning of symbols: $^{\diamond}$ indicate a length or an angle or an operator on a path of light; R° and $R_{\bullet}$ indicate respectively the electrical and the gravitational Radius.

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I. INTRODUCTION

A. State of the art and open points on current physics

General Theory of Relativity (GTR) and the Standard Model (SM) of particle physics, taken together, form our current view of the physical world. While the former governs physics in the macroscopic and cosmic scales the latter governs the physics of the microcosm. According to GTR, gravity is not a force but a manifestation of space-time curvature. The relation between space-time curvature and space-time content (mass-energy and momentum) being given by Einstein's field equations. The theory has been extensively tested and no astronomical observation or experimental test (the most accurate of which have been performed in space) has been found to deviate from its predictions. Thus it is the best description we have of gravitational phenomena that we observe in nature. The Standard Model of particle physics gives a unified formalism for the other three fundamental interactions (strong, weak and electromagnetic) between the fundamental particles that make up all matter. It is a quantum field theory which is consistent with both Quantum Mechanics and Special Theory of Relativity. To date, almost all experimental tests of the Standard Model have also agreed with its predictions.
However, merging these two very successful theories to form a single unified theory poses significant difficulties. While in SM particle fields are defined on a flat Minkowski space-time, GTR postulates a curved space-time which evolves with the motion of mass-energy. The definition of a gravitational field of a particle, whose position and momentum are governed by the Heisenberg Uncertainty Principle, is unclear. In addition quantum mechanics becomes inconsistent with GTR near singularities. Attempts at reconciling these theories often lead to a violation of the Equivalence Principle on which GTR is based. Therefore tests of the Equivalence Principle address a crucial problem which is at the heart of fundamental physics today.

In addition, the need to understand the nature of dark matter, the recent remarkable discoveries of observational cosmology and the puzzle of dark energy, all indicate that physics beyond the Standard Model and the General Theory of Relativity is needed. Invoked by most astronomers, dark matter probably consists of undiscovered elementary particles whose aggregation produces the gravitational pull capable of holding together galaxies and clusters of galaxies. It should account for more than 20% of the total mass in the universe but is not understood as yet. Dark energy is an even deeper mystery. Recent measurements show that the expansion of the universe is speeding up rather than slowing down, thus contradicting the fundamental idea that gravity is always attractive and calling for the presence of an unknown form of energy (the "dark energy") - whose gravity is repulsive and whose nature determines the evolution of the universe- which should contribute by about 70% to its total mass.

Predictions of quantum mechanics have been verified experimentally to an extremely high degree of accuracy.[**?**] According to the correspondence principle between classical and quantum mechanics, all objects obey the laws of quantum mechanics, and classical mechanics is just an approximation for large systems of objects (or a statistical quantum mechanics of a large collection of particles). [17] The laws of classical mechanics thus follow from the laws of quantum mechanics as a statistical average at the limit of large systems or large quantum numbers.[18]Broadly speaking, quantum mechanics incorporates four classes of phenomena for which classical physics cannot account:

- probability information
- quantization of certain physical properties
- principle of uncertainty
- wave–particle duality
- quantum entanglement

In the formalism of quantum mechanics, the state of a system at a given time is described by a complex wave function, also referred to as state vector in a complex vector space.[19] This abstract mathematical object allows for the calculation of probabilities of outcomes of concrete experiments. According to one interpretation, as the result of a measurement, the wave function containing the probability information for a system collapses from a given initial state to a particular eigenstate. The possible results of a measurement are the eigenvalues of the operator representing the observable – which explains the choice of Hermitian operators, for which all the eigenvalues are real. The probability distribution of an observable in a given state can be found by computing the spectral decomposition of the corresponding operator.

Contrary to classical mechanics, one can never make simultaneous predictions of conjugate variables, such as position and momentum, to arbitrary precision. Heisenberg's uncertainty principle quantifies the inability to precisely locate the particle given its conjugate momentum.[62]

Quantum coherence is an essential difference between classical and quantum theories as illustrated by the Einstein-Podolsky-Rosen (EPR) paradox, an attack on a certain philosophical interpretation of quantum mechanics by an appeal to local realism.[20] Quantum interference involves adding together probability amplitudes, whereas classical "waves" infer that there is an adding together of intensities. For microscopic bodies, the extension of the system is much smaller than the coherence length, which gives rise to long-range entanglement and other nonlocal phenomena characteristic of quantum systems.[21]

Quantum entanglement is a physical phenomenon that occurs when pairs or groups of particles are generated, interact, or share spatial proximity in ways such that the quantum state of each particle cannot be described independently of the state of the others, even when the particles are separated by a large distance.
Measurements of physical properties such as position, momentum, spin, and polarization, performed on entangled particles are found to be correlated. For example, if a pair of particles is generated in such a way that their total spin is known to be zero, and one particle is found to have clockwise spin on a certain axis, the spin of the other particle, measured on the same axis, will be found to be counterclockwise, as is to be expected due to their entanglement. However, this behavior gives rise to seemingly paradoxical effects: any measurement of a property of a particle performs an irreversible collapse on that particle and will change the original quantum state. In the case of entangled particles, such a measurement will be on the entangled system as a whole. Such phenomena were the subject of a 1935 paper by Albert Einstein, Boris Podolsky, and Nathan Rosen,[20] and several papers by Erwin Schrödinger shortly thereafter,[22][23] describing what came to be known as the EPR paradox. Einstein and others considered such behavior to be impossible, as it violated the local realism view of causality (Einstein referring to it as "spooky action at a distance")[24] and argued that the accepted formulation of quantum mechanics must therefore be incomplete.

Later, however, the counterintuitive predictions of quantum mechanics were verified experimentally[25] in tests where the polarization or spin of entangled particles were measured at separate locations, statistically violating Bell's

inequality. In earlier tests it couldn't be absolutely ruled out that the test result at one point could have been subtly transmitted to the remote point, affecting the outcome at the second location.[26] However so-called "loophole-free" Bell tests have been performed in which the locations were separated such that communications at the speed of light would have taken longer—in one case 10,000 times longer—than the interval between the measurements.[27][28]
According to some interpretations of quantum mechanics, the effect of one measurement occurs instantly. Other interpretations which don't recognize wavefunction collapse dispute that there is any "effect" at all. However, all interpretations agree that entanglement produces correlation between the measurements and that the mutual information between the entangled particles can be exploited, but that any transmission of information at faster-than-light speeds is impossible.[29][30]
Quantum entanglement has been demonstrated experimentally with photons,[31][32][33][34] neutrinos,[35] electrons,[36][37] molecules as large as buckyballs,[38][39] and even small diamonds.[40][41] On 13 July 2019, scientists from the University of Glasgow reported taking the first ever photo of a strong form of quantum entanglement known as Bell entanglement.[42][43] The utilization of entanglement in communication and computation is a very active area of research.

Albert Einstein's original pedagogical treatment :

1. the laws of physics are invariant (i.e. identical) in all inertial frames of reference (i.e. non-accelerating frames of reference); and

2. the speed of light in a vacuum is the same for all observers, regardless of the motion of the light source or observer.

Traditional "two postulates" approach to special relativity

1. The Principle of Relativity – the laws by which the states of physical systems undergo change are not affected, whether these changes of state be referred to the one or the other of two systems in uniform translatory motion relative to each other.[44]

2. The Principle of Invariant Light Speed – "... light is always propagated in empty space with a definite velocity [speed] c which is independent of the state of motion of the emitting body" (from the preface).[44] That is, light in vacuum propagates with the speed c (a fixed constant, independent of direction) in at least one system of inertial coordinates (the "stationary system"), regardless of the state of motion of the light source.

Alternative approaches to special relativity: Lorentz invariance as the essential core of special relativity
Einstein consistently based the derivation of Lorentz invariance (the essential core of special relativity) on just the two basic principles of relativity and light-speed invariance. He wrote:

The insight fundamental for the special theory of relativity is this: The assumptions relativity and light speed invariance are compatible if relations of a new type ("Lorentz transformation") are postulated for the conversion of coordinates and times of events... The universal principle of the special theory of relativity is contained in the postulate: The laws of physics are invariant with respect to Lorentz transformations (for the transition from one inertial system to any other arbitrarily chosen inertial system). This is a restricting principle for natural laws... [45]

Thus many modern treatments of special relativity base it on the single postulate of universal Lorentz covariance, or, equivalently, on the single postulate of Minkowski spacetime.[46][47]

Rather than considering universal Lorentz covariance to be a derived principle, Wikipedia article "Special relativity" considers it to be the fundamental postulate of special relativity. The traditional two-postulate approach to special relativity is presented in innumerable college textbooks and popular presentations.[48] Textbooks starting with the single postulate of Minkowski spacetime include those by Taylor and Wheeler[49] and by Callahan.[50] This is also the approach followed by the Wikipedia articles Spacetime and Minkowski diagram.

In 1908, Hermann Minkowski—once one of the math professors of a young Einstein in Zürich—presented a geometric interpretation of special relativity that fused time and the three spatial dimensions of space into a single four-dimensional continuum now known as Minkowski space. A key feature of this interpretation is the formal definition of the spacetime interval. Although measurements of distance and time between events differ for measurements made in different reference frames, the spacetime interval is independent of the inertial frame of reference in which they are recorded.

Minkowski's geometric interpretation of relativity was to prove vital to Einstein's development of his 1915 general theory of relativity, wherein he showed how mass and energy curve this flat spacetime to a Pseudo Riemannian

manifold. "Distances" Determine Geometry, that is Spacetime intervals between events, which are absolute, evidence the geometry of spacetime, its curvature.

Therefore the pillars of traditional physics are:

1. the continuum Minkowski spacetime which is the scenario in which all the events, real or only possible, are found. It incorporate:
   (a) the finite speed of light (and of any signal);
   (b) the metric, which is based on the Invariant distance between two events, ie $d\tau^2 = dt^2 - dr^2$
   (c) in particuar, for two events linked by light $dt^2 - dr^2 = 0$.
2. mass and energy curve this flat spacetime to a Pseudo Riemannian manifold;

B. The legacy of Greek philosophy up to Hegel

Hereafter, we will limit ourselves to the philosophy of the Greeks, within the horizon of intention philosophy, up to Hegel, and therefore to:

1. the Parmenides' ('En') one, and "Being and thought are the same"
2. the Anaxagoras' nous (mind).
3. the infinite and the relationship between continuous and discrete. Aristotle denies the reality of any infinite magnitude as actually existing and present in nature. For Aristotle the infinite has only a potential existence. Pythagoreans preached that all numbers could be expressed as the ratio of integers, and the discovery of irrational numbers is said to have shocked them.
4. Heraclitus' Logos. According to Hegel, Heraclitus is the first to recognize the dialectic as a principle
5. the Aristotle' Primacy of Substance and Teleology. Aristotle held that there were four kinds of answers ("four causes") to "why" questions (in Physics II, 3, and Metaphysics V, 2):
   - Material Cause - the stuff out of which something is made
   - Formal Cause - the defining characteristics of (e.g., shape) the thing
   - Efficient Cause - the antecedent condition that brought the thing about
   - Final Cause - the purpose of the thing
6. the dualism matter-nous or body-soul or matter-idea or material-form. Plato believed that the material world is a shadow of a higher reality that consists of concepts he called Forms (idea).
7. the Aristotle' dualism potentiality-actuality. The actuality-potentiality distinction in Aristotle is a key element linked to everything in his physics and metaphysics.
8. Aristotle's theory of place

Anaxagoras, born about 500 BC, is the first person who is definitely known to have explained the concept of a nous (mind), which arranged all other things in the cosmos in their proper order, started them in a rotating motion, and continuing to control them to some extent, having an especially strong connection with living things. Amongst the pre-Socratic philosophers before Anaxagoras, other philosophers had proposed a similar ordering human-like principle causing life and the rotation of the heavens. For example, Empedocles, like Hesiod much earlier, described cosmic order and living things as caused by a cosmic version of love,[14] and Pythagoras and Heraclitus, attributed the cosmos with "reason" (logos).[15]

"Actuality" means "anything which is currently happening". Actuality is often used to translate both energeia ($\varepsilon\nu\acute{\varepsilon}\rho\gamma\varepsilon\iota\alpha$) and entelecheia ($\grave{\varepsilon}\nu\tau\varepsilon\lambda\acute{\varepsilon}\chi\varepsilon\iota\alpha$).

The two words energeia and entelecheia were coined by Aristotle, and he stated that their meanings were intended to converge.[4] In practice, most commentators and translators consider the two words to be interchangeable. They both refer to something being in its own type of action or at work, as all things are when they are real in the fullest sense, and not just potentially real.

Potentiality and potency are translations of the Ancient Greek word dunamis ($\delta\acute{\upsilon}\nu\alpha\mu\iota\varsigma$).

Aristotle points out that some things do seem to be more fundamental than others. If there is a hierarchy to being, such that some things are more fundamental than others, there must be a most fundamental thing on which everything else depends. Aristotle thinks that he can approach this most fundamental thing by examining definition. Properly speaking, a definition should list just those items without which the thing defined could not exist as it is. For instance, the definition of a toe should mention a foot, because without feet, toes could not exist. Since we cannot define toes without making mention of feet, we can infer that feet are more fundamental than toes. A substance, then, is something whose definition does not rely on the existence of other things besides it.
For the cosmos to be unified, there must be a base unit of existence on which all other kinds of existence depend. Aristotle's argument for the primacy of substance, then, is his way of saying that it is substance, and not time or location, that binds the cosmos together.

Moreover, the Aristotle's theory of place is of primary interest for physics. *'The place of x is the first (i.e., innermost) motionless boundary of the thing that contains x'* (Physics, Book IV, 212a20-21), or similarly *'the first immobile limit of that which surrounds'* (Physics, Book IV, Chs. 1-5). For a body to be somewhere, it must have a proper place, i.e. a place that only it occupies. Is place real? Among the ontological arguments of Aristotle on the existence of the place there is basically its causal efficacy. Indeed, one of Aristotle's reasons for thinking that it is real is his insistence that *'places have "a certain potency", (dunamis) since each of his elements is "carried to its own place, provided that nothing interferes"* (Phy IV 1, 208b10-12).
In other words, Aristotle defines the place as a "part of" relationship between the content and the container and, moreover, an "intrinsic essential organization" of the container in terms of content.
Morrison [16] argues, that Aristotle's unique container is what he (i.e., Morison) calls the "maximal surrounder" of x, the "body which surrounds x such that all the other bodies which surround x are parts of it" (p. 138). This maximal surrounder is, of course, the universe, which turns out, therefore, to be the common container of all bodies.

Aristotle believed that the best way to understand why things are the way they are is to understand what purpose they were designed to serve. For example, we can dissect an animal to see how its anatomical organs look and what they're made of, but we only understand each organ when we perceive what it's supposed to do. Aristotle's emphasis on teleology implies that there is a reason for everything.

In the Hegel's philosophy (see Heidegger (1958) [13]), the key point it is the dialectical movement of spirit, that is, of absolute subjectivity: the mirroring and reuniting of opposites as the spirit's process of self production.
Hegel also names "speculative dialectics" simply "the method". By this appellation he means neither an instrument of representation nor a peculiar procedural mode of philosophy. "The method" is the innermost movement of subjectivity: "the soul of being", the production process through which the fabric of the whole of the absolute's actualization becomes actualized.
The method, that is speculative dialectic, is for Hegel the fundamental trait of actuality. The method determines accordingly the movement of all occurrences, i.e. history. Hegel says: "In philosophy as such, most currently and recently, is contained what the work from a thousand years has produced; it is the result of all that has preceded it." According to Hegel, In the system of speculative dialectics, philosophy is completed, that is, it attains the highest and thereby its conclusion.

C. Preface

Die Philosophie entbehrt des Vorteils, der den anderen Wissenschaften zugute kommt, ihre Gegenstände als unmittelbar von der Vorstellung zugegeben sowie die Methode des Erkennens für Anfang und Fortgang als bereits angenommen voraussetzen zu können. Sie hat zwar ihre Gegenstände zunächst mit der Religion gemeinschaftlich. Beide haben die Wahrheit zu ihrem Gegenstande, und zwar im höchsten Sinne – in dem, daß Gott die Wahrheit und er allein die Wahrheit ist. Beide handeln dann ferner von dem Gebiete des Endlichen, von der Natur und dem menschlichen Geiste, deren Beziehung aufeinander und auf Gott als auf ihre Wahrheit. Die Philosophie kann daher wohl eine Bekanntschaft mit ihren Gegenständen, Ja sie muß eine solche, wie ohnehin ein Interesse an denselben voraussetzen, – schon darum, weil das Bewußtsein sich der Zeit nach Vorstellungen von Gegenständen früher als Begriffe von denselben macht, der denkende Geist sogar nur durchs Vorstellen hindurch und auf dasselbe sich wendend zum denkenden Erkennen und Begreifen fortgeht.
Aber bei dem denkenden Betrachten gibt's sich bald kund, daß dasselbe die Forderung in sich schließt, die Notwendigkeit seines Inhalts zu zeigen, sowohl das Sein schon als die Bestimmungen seiner Gegenstände zu beweisen. Jene Bekanntschaft mit diesen erscheint so als unzureichend, und Voraussetzungen und Versicherungen zu machen oder gelten zu lassen als unzulässig. Die Schwierigkeit, einen Anfang zu machen, tritt aber zugleich damit ein, da ein Anfang als ein Unmittelbares seine Voraussetzung macht oder vielmehr selbst eine solche ist.

Philosophy misses an advantage enjoyed by the other sciences. It cannot like them rest the existence of its objects on the natural admissions of consciousness, nor can it assume that its method of cognition, either for starting or for continuing, is one already accepted. The objects of philosophy, it is true, are upon the whole the same as those of religion. In both the object is Truth, in that supreme sense in which God and God only is the Truth. Both in like manner go on to treat of the finite worlds of Nature and the human Mind, with their relation to each other and to their truth in God. Some acquaintance with its objects, therefore, philosophy may and even must presume, that and a certain interest in them to boot, were it for no other reason than this: that in point of time the mind makes general images of objects, long before it makes notions of them, and that it is only through these mental images, and by recourse to them, that the thinking mind rises to know and comprehend thinkingly.
But with the rise of this thinking study of things, it soon becomes evident that thought will be satisfied with nothing short of showing the necessity of its facts, of demonstrating the existence of its objects, as well as their nature and qualities. Our original acquaintance with them is thus discovered to be inadequate. We can assume nothing and assert nothing dogmatically; nor can we accept the assertions and assumptions of others. And yet we must make a beginning: and a beginning, as primary and underived, makes an assumption, or rather is an assumption. It seems as if it were impossible to make a beginning at all. ***Hegel*** Incipit Encyclopaedia of the Philosophical Sciences' [11]

The sole principle is structured but it is a whole that cannot be decomposed into elements for itself and independent, because these taken by themselves do not have an autonomy outside the sole principle. And from the sole principle, everything immediately explodes. How can the origin that immediately explodes in the whole be represented? I have tried in innumerable ways, innumerable speeches, innumerable paths, to take the first steps from the sole principle, but each step is totally inadequate since any step, already the first, should reflect the whole in itself. Every time I realize, having chosen a direction, to have mutilated and debased the whole, to have flattened it and done it violence. Moreover, the schemes and figures are only intuitive at first glance. Looking at them more closely, however, it turns out that the incessant movement of dialectics is raging in them. They do not bend and do not allow themselves to be closed in a linear and static scheme.

The resulting physics, the physics of Intention (**IP**), is not in contrast with current physics, both the Special Relativity and the General Theory of Relativity that the QED that the Standard Model. In fact, it reaches the same fundamental equations. But it corrects the basic concepts of modern physics, re-establishing it, and finally overcoming it. This allows to overcome all the difficulties above mentioned, unifying all the interactions, and to get to know the dark matter and the universe and ourselves. Similarly, it integrates and founds Hegel's logic, clarifying physics in the light of philosophy and vice versa. Physics and philosophy are finally reunited: two sides of the same coin.

II. THE SOLE PRINCIPLE

We define Intention, the sole principle, the unique and universal Interaction between two Individuals which is composed by the cyclical alternation of two moments. In the Consummative moment, as result of a decision, the individual donates/receives a part of self to/from its other, which is its universal. In the Mirroring moment, which is the potentiality period between two Consummative acts, the individual mirrors in itself and is mirrored by its other.

A. The Intention Not Theory

More precisely, we must distinguish between three moments: Act ($\grave{\varepsilon}\nu\tau\varepsilon\lambda\acute{\varepsilon}\chi\varepsilon\iota\alpha$ entelecheia) , Energy ($\varepsilon\nu\acute{\varepsilon}\rho\gamma\varepsilon\iota\alpha$ energeia) and Potency ($\delta\acute{\upsilon}\nu\alpha\mu\iota\varsigma$ dunamis).
In the consummative moment of the relationship, the two individuals emerge in act and, insofar as in act, one can give its energy and the other can receive it.

Although the two moments, Act and Energy, occur at the same time, they are logically distinct, the former logically preceding the latter.
In the period of the Potency of the relationship, which opens between an act of receiving and the subsequent act of donating, both individuals are in potency.
By universal, we always mean a concrete individual: the individual of which the individual member is a part.

We use the terms relationship, interaction and intention as synonyms, while individual is any physical entity engaged in an interaction.

The relation takes place between individuals, consequently, apart from the individuals and the relationship that binds them, nothing else exists.
Nevertheless, the individual is structured in itself. The individual is characterized by its Radius R, which represents its amount of energy (being), that unfolds-in and emerges-from its space in the period of potency, space of which it is the reference triad.
There is a "part of" relationship between individuals that determines a hierarchical structure: the universe is the first, in its space-time the spacetime of all other individuals take place, and so on.
The intention is absolute and its movement constitutes the absolute true time of existence (as opposed to the spatial one resulting from the reflective historical reconstruction -Physics deals exclusively with this second reflective time-).
Since each intention takes place in the universe, The Universe is the metronome of intentions. Every intention is in act in an instant in act of Universe.

The Intention relationship can be defined in three steps:

1. CONSUMMATION in ACT: Only ACT is real. It is corpuscular in nature
   - act ($\grave{\varepsilon}\nu\tau\varepsilon\lambda\acute{\varepsilon}\chi\varepsilon\iota\alpha$ entelecheia). the individual (particle) determined in one measurable in the instant of its measure
   - energy ($\varepsilon\nu\acute{\varepsilon}\rho\gamma\varepsilon\iota\alpha$ energeia) : the radiation energy (bosons) exchanged instantaneously between two individuals in relationship
   - consummation: the instantaneous exchange of energy between two interacting individuals
   - decision: the instantaneous not deterministic collapse of the potency of an individual
   - movement: the change from the previous power wave to the new power wave following the change of the universe spatial configuration occurred in the act.
   - The Big Bang in act: The Big Bang is not an event but a continuous process always in act since it is the universe side of the fundamental intention between universe and individuals. The universe is the first universal (the root of the universals tree) of every individual.
   - the line of the present in act of the Universe: in the intentions, each individual emerges in act on the line of the present in act of universe, equidistant R_ω from the Big Bang. The act, therefore, takes place only in the Big Bang and on the line of the present in act equidistant R_ω from the Big Bang. In the middle between these two extremes lies the space-time of potency.
2. POTENCY: it is veiled, it is only presupposed, it is imaginary (in itself, it is the mystery which opens between an act and the next one). It is wave-like in nature.
   - potency ($\delta\acute{\upsilon}\nu\alpha\mu\iota\varsigma$ dunamis): the individual's wave function (wave) before its collapse
   - space of an individual: in the period of potency, the individual ($R_\bullet$) unfolds in the three-dimensional space of potency $R_{\bullet ind}$ of its universal. Although the Act does not partake of potency, here, as potential, it is a premise for the constitution of the three-dimensional space of potency of the individual. Indeed, in the period of potency of the individual, each potential space-time of the Act of the individual is only one element of the set of potential space-times of the Act corresponding to all potential intentions with the totality of the other potential coo-present individuals of the same universal. The spacetime of potency of the individual, therefore, arises by adding a further spatial dimension orthogonal to the bi-dimensional

spatio-temporal plane of the Act of the individual. More precisely, the space of potency arises from the rotation of the plane of the act around its time axis to take into account the multiplicity of possible intentions with co-present individuals of the same universal.

- mirroring: the image $a = M(b)$, within each individual, of the other individual conjoined in the interaction during the period of potency. In the mirroring we have first of all a new kind of radius $R_a^\circ = 1/R_{b\bullet}$, which give place to a parallel and distinct kind of relation.
  Furthermore the Radius of each individual mirrors in the Radius of the other ($R_{a_{tot}} = R_a + R_b cos(\gamma^\diamond)$), and the spaces of the two conjoined individuals relate each other according to the scheme of fig. 9 where the Radius R_{tot}, for both individuals, is either the gravitational one ($R_\bullet$) or the electric one(R°).
  In the schema, each space mirrors in the other according to a Lorentz transformation in the space of Intention.
- period of potency: for each of the two individuals between two successive acts
- movement: it is implicit in the wave of power, which goes from the time 0 of the Big Bang to the time of the line of the present of universe (the Age of the universe), which are fixed, and depends only on the spatial configuration of the bodies on the line of the present (Radius, position, axes inclinations,)
- memory: The present, which comes from the Big Bang continuous as an approaching future, as soon as it surfaces, it submerge as past (antimatter) that move away to go towards the continuous Big Bang, and in this descent informs of itself the future (matter) that ascend in the opposite direction. In this way the past does not vanish but endures as it forms the future. This is the memory, which persists and is effective. The memory of the past that moves away from the present is the other face of the future that approaches, and is immersed in the potency. The further away it is, the more inexorably it is eroded by the waves of the potency and vanishes. Both faces are summarized in entropy which, as a future that takes shape by approaching and emerging in the present, grows, as memory that fades away, decreases.
- evolution: it is the destiny of the present that happens as far as it is written in the potency that approaches as a future, that moves away as memory.

3. REFLECTION : what is veiled in the potency, is revealed in the reflection which appears in act in the present instant.
   The reflection appears as an image and the image emerges from the organization, i.e spatial arrangement, of the other individuals intentions in the background. The reflection reveals the form already present but veiled in the potency.
   It is important: the form, the image, are always the appearance, in the reflection, of the unveiling of the potency, but only insofar as reflection allow it, i.e only as macro phenomenon emergent from the huge amount of intentions below which dissolves the uncertainty inherent in any intention.
   While the two moments of the intention, i.e consummation and potency, are interior, existential, subjective, primitive, the reflection is exterior, objective, appearance.

Since everything that exists, from the simplest to the most complex, must derive from the nesting and stratification of the same principle, reflection is what emerges as a new and higher layer which takes form quantitatively from the huge number of consummative acts below. Reflection flourishes from Consummation and gives place to a new level of reality and so on since the individuals of every new level too relate each other through consummation.
Freedom of decision takes place only in elementary intentions, while it is deterministic and governed by rules in reflective intentions in which the power dissolves. Indeed all the datum is in the snapshot of a single instant of an individual (in the act of receiving or in the act of donating). We have nothing else but what is given in the present instant. The previous instant and the next instant are not given. The spatial arrangement of the multiplicity of intentions forms an image that appears in the reflection where only can bird the memory and knowledge.
Therefore, besides elementary intentions, in the instant of act emerges reflective individuals that, all the same, relate each other according to the unique universal intention relationship.
We define the reflective element of the reflective intention as follows:

- the reflective space-time plane $TS_\parallel$ of the act: it arises from a historical (or predictive) reconstruction of past and future interactions (it is only a knowledge representation) and is real and linear and quantized. It is real because it is the only plane where intentions emerge in act; it is linear since it's space is the disentangling of a unique path where $period \equiv wavelength \leftrightarrow T \equiv S\parallel$. It is quantized since the unique quantity is the quantum radius R ($period \propto R$). Therefore any observable must be real and quantized and any operator must be linear and Hermitian.

- the length of the thread: for each of the two individuals it lasts:
  - the Radius R_a between a receiving act and the successive donating act;
  - the distance $D_{ab} + R_b + D_{ba}$ between a donating act and the successive receiving act

  the intention, therefore, can be summarized as a sequence of threads of length: $T = R_x + D_{xy}$ or equivalently *period = Radius + distance* or *Energy = Act + Potency*.
  Since the Radius is the only quantity of the individual, it is also its meter, its quantum. It follows that all derived quantities, such as frequency, period, wavelength, durations and distances, and any observable, are all multiples of it.
- reflective context of a relationship: it is formed by the totality of the other individuals, outside of the ongoing relationship, who:
  - insofar as they mirror, in their entirety, in the two individuals in relationship and influence the decision, they constitute themselves as attributes, i.e new synthetic dimensions of the universal of the individuals.
  - insofar as each of them, be it simple or complex, individually, reflect in self the recursive image, from its spatio-temporal points of view, of the two individuals in relationship, allow both the historical reconstruction of the movement, i.e evolution, that the emergence of memory.
- reflective individual: it is a new universal, a new synthetic individual (with new synthetic dimensions) composed of, and emerging from the interactions of the most basic individuals members below
- universal of an individual: the individual in whose space the member individual is placed. In other words, the individual is in relation part of with its universal. Every individual in act takes place in the present of the space of its universal individual (of which it is a part), and so on, up to the individual universe which is the place of each individual. So, every individual in act takes place on the time of the present of universe.
- reflective memory: it is the reflective image of the context which emerges reflectively: the spatial configuration of the context still in the act of donating appears, through the energy, to the reflective receiving individual, as a photo.
- reflective evolution: it is the movement of the context which emerges reflectively: the sequence of photos gradually more ancient, present in the instant as they are reflected in reflective individuals gradually more distant.
- movement: potency is multiplicity of possibilities, that is multiplicity of spatial configurations, which reflected in the present give rise to the motion. Rigid motions include translations and rotations which, in the photo of the instant, correspond to the mutual inclination $\gamma^{\diamond}$ of the time axes (a rotation around the power axis $r\varphi$) and to the mutual inclination ϑ of power axes (a rotation around the radial axis r, which is the line of node and the universe's line of the present).

The unveiling of potency, which allows knowledge, requires the existence of conscious reflective individuals engaged as such in reflective relationship with the universe. Indeed, as persons, living reflectively, they don't mirror anymore the universe but reflect the universe in themselves through the mechanism of their senses and have only their own reflected representation of the world, towards which they can relate through their body (entelechy). The individual person is therefore a new level, the first level that comes out of the immediacy of the world and is outside of it. Reflection now takes on meaning and has a role, and a founding role which is that of representation, only in so far as belongs to a reflective person. Since these alive reflective individuals too emerge from the fabric of intentions of universe, and are conscious, it is necessary that the living is an intrinsic property of the intention and that the energy corresponds to the qualia of consciousness (conscious thinking, as all sensations, are qualia, i.e energy) and that the thinking, to the extent that we are not aware of it, is of the same substance that mirroring, that is potency.

The three moments alternate each other cyclically. The moment of the Act, which is the being reflected into itself, reflected into the other appears as energy + potency.

The slogan of the IP is: *"Nature is everything and only what is on the path of light"* and *"The Lorenz angle, between the two individuals involved in the intention, generates, for each of the two individuals, the period of potency that extends between two successive and instantaneous send-receive threads"*.
From the reflective photo of an act, it is possible to reconstruct the historical path of the exchanges of energy that took place in the space-time plane $TS_{\|}$ of the act of each individual in relation, inside the $T_{\omega}S_{\omega\|}$ space-time plane of the universe. Since in space-time plane of the act **the only quantity is the Radius R and therefore the**

frequency of the intention(*period* $\propto R$), then the two dimensions are one and the same *space* $\equiv$ *time* and the space-time plane of the act is linear:

$$period \equiv wavelength \quad \text{or} \quad time \equiv space \quad \text{or} \quad T \equiv S_{\parallel}$$

or (see § III F)

$$\tau^{\diamond} + \sigma^{\diamond} = t^{\diamond} \quad \text{or} \quad \sum_{i}^{N-1} S_i^{\diamond} + S_N^{\diamond} = \sum_{i}^{N} S_i^{\diamond} \quad \text{or} \quad \cos^{\diamond} + \sin^{\diamond} = 1$$

or

$$dl = Act = m = 0 = \tau - \sigma = t - r = E - p = Energy - Potency$$

In the above case, we made a great inaccuracy, since we decapitated the intention ($R = 0$) by excluding the recipient or donor individual from the consummation thread (we only considered the exchange of energy). **Indeed, the Radius R is the substantial part of the path of light**.

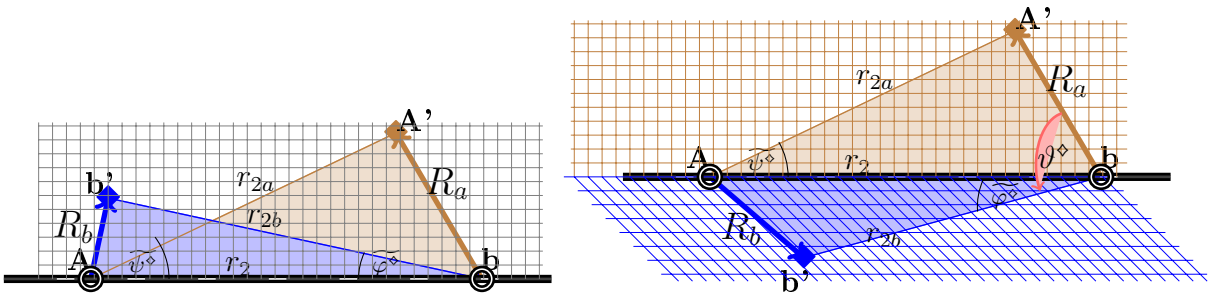


Figure 1. The path of a signal from the transmitter to the receiver does not take place along the current line of the present , i.e. from "A" to "b" , but from the head of the transmitter's radius "A'" it propagates to the tail of the receiver's radius "A", i.e. to the power of the receiver's past/future, and from here along the radius to the receiver's head "b'" ($A' \to A \to b'$), and vice versa ($b' \to b \to A'$). Nevertheless, in the linear plane of the intention, any path joining the same two points has the same length.

FUNDAMENTAL CONSUMMATIVE THREAD EQUATION

In the linear plane of the Act, every intention, and therefore all physics, must respect the linear consummative thread equation:

$$dR_{(\gamma^{\diamond})} = d\tau - d\sigma \qquad \text{or} \qquad d\Psi\left(t^{\diamond}, x^{\diamond}\right) = \frac{2\pi}{R} d\tau\, \Psi \tag{1}$$

where

$$\Psi\left(x^{\diamond}, t^{\diamond}\right) = A\, e^{-i\frac{2\pi}{R}\left((1+\cos\gamma)x^{\diamond} - \cos\gamma\, t^{\diamond}\right)} \quad \text{for attraction} \qquad \text{or} \qquad \Psi\left(x^{\diamond}, t^{\diamond}\right) = A\, e^{-i\frac{2\pi}{R}\left(\frac{(1+\cos\gamma)}{\cos\gamma} x^{\diamond} - \frac{1}{\cos\gamma} t^{\diamond}\right)} \quad \text{for repulsion}$$

which can be represented both in a linear form as:

$$\left(i\partial_{\mu} - \frac{2\pi}{R}\right)\Psi = \left(i\frac{\partial}{\partial t^{\diamond}} + i\frac{\partial}{\partial x^{\diamond}} - \frac{2\pi}{R}\right)\Psi = 0 \quad \text{or} \quad \grave{\varepsilon}\nu\tau\varepsilon\lambda\acute{\varepsilon}\chi\varepsilon\iota\alpha = \varepsilon\nu\acute{\varepsilon}\rho\gamma\varepsilon\iota\alpha - \delta\acute{\upsilon}\nu\alpha\mu\iota\varsigma \quad \text{or} \quad m = E - p^{\diamond} \tag{2}$$

$$\left(\text{where} \quad i\frac{\partial\Psi}{\partial t^{\diamond}} = -\frac{2\pi}{R}\cos\gamma \quad \text{or} \quad -\frac{2\pi}{R}\frac{1}{\cos\gamma} \quad \text{and} \quad i\frac{\partial\Psi}{\partial x^{\diamond}} = \frac{2\pi}{R}(1+\cos\gamma) \quad \text{or} \quad \frac{2\pi}{R}\frac{1+\cos\gamma}{\cos\gamma}\right)$$

than in a quadratic form as:

$$\left(i\frac{\partial}{\partial t^{\diamond}}dt^{\diamond} + i\frac{\partial}{\partial x^{\diamond}}dx^{\diamond}\right)\Psi = \frac{2\pi}{R}d\tau\,\Psi \quad \equiv \quad \left(i\frac{\partial}{\partial t^{\diamond}}\frac{dt^{\diamond}}{d\tau} + i\frac{\partial}{\partial x^{\diamond}}\frac{dx^{\diamond}}{d\tau} - \frac{2\pi}{R}\right)\Psi = 0 \quad \equiv \quad m^2 = E^2 - p^2 \tag{3}$$

$$\left(\text{where} \quad \frac{dt^{\diamond}}{d\tau^{\diamond}} = -\frac{E}{m} = -\cos\gamma \quad \text{or} \quad \frac{-1}{\cos\gamma} \quad \text{and} \quad \frac{dx^{\diamond}}{d\tau^{\diamond}} = (1-\cos\gamma) \quad \text{or} \quad \frac{1-\cos\gamma}{\cos\gamma}\right)$$

B. Intention Physics vs GTR

δῆλον ὅτι καὶ τῆς περὶ φύσεως ἐπιστήμης πειρατέον διορίσασθαι πρῶτον τὰ περὶ τὰς ἀρχάς.
§ 2. Πέφυκε δὲ ἐκ τῶν γνωριμωτέρων ἡμῖν ἡ ὁδὸς καὶ σαφεστέρων ἐπὶ τὰ σαφέστερα τῇ φύσει καὶ γνωριμώτερα· οὐ γὰρ ταὐτὰ ἡμῖν τε γνώριμα καὶ ἁπλῶς. Διόπερ ἀνάγκη τὸν τρόπον τοῦτον προάγειν ἐκ τῶν ἀσαφεστέρων μὲν τῇ φύσει ἡμῖν δὲ σαφεστέρων ἐπὶ τὰ σαφέστερα τῇ φύσει καὶ γνωριμώτερα.

"Plainly therefore in the science of Nature, as in other branches of study, our first task will be to try to determine what relates to its principles.
The natural way of doing this is to start from the things which are more knowable and obvious to us and proceed towards those which are clearer and more knowable by nature; for the same things are not 'knowable relatively to us' and 'knowable' without qualification. So, in the present inquiry we must follow this method and advance from what is more obscure by nature, but clearer to us, towards what is more clear and more knowable by nature." incipit Aristotle Physics [3]

The weak point of current physics is the use, due to the adoption of a Euclidean geometry, or more generally of a manifold, of abstract, intellectual, unnatural concepts of space and time.
Indeed, the concept of simultaneity used in current physics, and the consequent concept of space, is based on the use of a grid of meters and clocks at rest with respect to the observer that measure local time. The time of a moving body, however, is not this local time but that of its wristwatch. In the image of the object that is coming to us by means of the light, we can read not our local time but its own time on its wristwatch (which is different from our local time), and it is the object in the state given by the its proper time that it is acting on us, it is interacting with us. The time of nature, therefore, is always the time proper to an object while local time is only a mental construction imposed by the use of Euclidean geometry. Similarly and as a consequence of this unnatural choice, in current physics the space of an individual in an instant is given by a set of events placed outside his cone of light and which consequently are extraneous to him. The space of an object, vice versa and according to nature, must be that of its cone of light, that is, the set of events at hand, present in its space and which potentially or currently affect it.

The metric of reality, in other words the unique absolute metric, must depend only on geometry and therefore only on distances and their ratios, i.e angles.
The measures of time and distances present in the GTR metric are not the natural ones, which are absolute, but depend on the particular geometry adopted by an external observer. Nature, however, does not behave based on the intellectual choice made by the external observer, but on the basis of the point of view of the individual directly involved in the interaction. And these two points of view correspond respectively to that of GTR and to that of IP, and these two points of view are different. It is reasonable to expect, therefore, a huge simplification of the equations of physics from the point of view of IP.

Intention physics makes a change in the point of view that passes from that reflective of an external observer to that consummative of an individual dropped into intention and therefore breaks down the pillars of traditional physics :

Standard Physics	Intention Physics
There is an absolute spacetime, the continuum Minkowski spacetime which is the scenario in which all the events are found. Minkowski's continuum spacetime is the set of all real and potential events	Each individual is a spacetime. The spacetime is the individual who is in relationships with its conjoined other inside their common universal individual. The space-time of the act of an individual (which is the individual) represents either the moment of giving or the moment of receiving, never present at the same time. The individual is in itself a three-dimensional reference frame consisting of an absolute spatial axis of the intention, radial and facing the conjugate, an absolute spatial axis of power on which all other individuals are disposed which form the context of intention, and an absolute temporal axis that represents the individual's proper time. The reference triads relates to each other according to the schema in fig. 9
Each particle is characterized by its mass/energy, an electric charge and a color charge. Each one gives rise respectively to the gravitational, electroweak, strong interaction. To date, they require three different theories.	Each individual is characterized by its own gravitational Radius $R_{a\bullet}$ and mirrors in itself the gravitational Radius of the conjoined other as the electrical Radius $R^{\circ}_{a} = 1/R_{b\bullet}$. Both radii correspond, indifferently, to the Radius R of schema in fig. 9.
The speed of light (and of any signal) is finite, since it advances, in every instant, in Minkowsky's continuum space-time	The light (and any exchange in any intention) is instantaneous, since the distance between the receiving and donating in act is not real

For two events linked by light, the metric is: $dt^2 - dr^2 = 0$	For two events linked by light, the metric is: $d\tau - d\sigma = R$
In comparison with the special theory of relativity and Standard Model, which apply in flat spacetime, the general theory of relativity is quite complicated since mass and energy curve this flat spacetime to a Pseudo Riemannian manifold. Whereas the essential building block of the special theory, namely the Lorentz transformation, can be quickly derived from simple physical principles, the general theory requires the introduction of curved spacetime and an extensive use of differential geometry and tensor calculus.	The essential building block of the Intention Physics is the Lorentz transformation in the spacetime of the intention relationship, which unifies Special Relativity and General Relativity and Standard Model. The curvature of spacetime induced by mass and energy is only an isomorphism that emerges reflectively by integrating the set of all potential schemes (see fig. 9) of the relationship at every point in the spacetime of the individual

The threshold between quantum and classical mechanics is that in the first movement occurs in power, in the second in the continuous act, i.e. reflectively. Indeed, for reflective bodies, consummation itself, as well as evolution, generally occurs in a reflexive way since the gift object is also a reflective body.

The point of view of classical Physics is that of a generic external observer abstract from any particular intention. Abstract from its natural seat, time must be the time external and common to all possible or real relations, and then per se and continuum, and analogously space, which now occupies all three dimensions that have lost their specificity to become equal and perfectly interchangeable with each other. They become the separate dimensions of a same reflective spacetime which is not, anymore, an attribute of a particular intention but acquires an artificial identity in self, it becomes the scenario of the independent events. Minkowski's space-time, with its three undifferentiated spatial dimensions plus a fourth temporal dimension, represents the scenario of an external observer who observes the reflective evolution, and therefore continuously in progress, of reflective (classical) bodies. In this scenario, where everything moves in an ongoing continuum and any signal travels with a finite speed, time is supposed to be the real time that flows.
It can therefore be called the geometry of reflection or continuous act.

The point of view of Intention Physics, instead, is consummative, that of the relation of a concrete individual with its other, characterized by the cyclical instantaneous exchange of energy, which describes all the past and the future as it appears mirrored in the present instant. Limited to the scope of a concrete intention, all present in an instant, there are not events neither therefore the continuum of the spacetime but only two conjoined individuals and the nesting of exchange of their substances which link them forming a geometrical progression originated from the frequency of intention. The metric is consequently linear, the disentangling of a unique path. The instantaneousness of exchange and the angle between the temporal axes of two conjoined individuals in intention shrinks the world (the potency) in a receiving and a donating side.

In the physics of intention, each individual is itself a three-dimensional space of which it constitutes the reference triad composed of an energy axis and a time axis that make up the plane of the act, and a potency axis orthogonal to this.
The elementary individual, characterized by his own Radius R°, rotates on his own temporal axis in the space of the potency. The wave function represents this rotation in the plane of power and it collapses in act at each consummation, that is, whenever the axes of consummation of the two individuals cross.
The plane of the potency of intention contains and represents all that is present and within the reach of the individual in the instant. The entire space-time of an individual in intention is the photo of a single instant. In it, any signal unites the donor and the recipient instantly and time takes on the meaning of historical memory reconstruction.
It is not a continuum, but is made up of discrete punctual acts interspersed with periods of power.
It can therefore be called the geometry of consummation or discrete act.

The two geometries, the reflective one, or the phenomenon or the continuous act, and the consummative one, or the discrete act, are isomorphic to each other. In a quantum mechanics context, however, the reflective geometry is epistemologically misleading.

The slogan of the IP is: *"Nature is everything and only what is on the path of light"* and *"The light is instantaneous along each thread"*.
"The Lorenz angle, between the two individuals involved in the intention, generates, for each of the

two individuals, the period of potency that extends between two successive and instantaneous send-receive threads".
Indeed the general relation of the intention scheme, see fig. 9, is $R : r = r : t^{\diamond}$ or $V^{\diamond} = v^{\diamond} = \sin\gamma^{\diamond}$.

$$\Psi\left(x^{\diamond}, t^{\diamond}\right) = A\, e^{-i\frac{2\pi}{R}\left((1+\cos\gamma)x^{\diamond} - \cos\gamma\, t^{\diamond}\right)}$$

The only difference is that the potential has a constraint in the radius and therefore varies with the variation of the distance according to the scheme of fig. 9, the speed does not and is therefore constant.

C. The original error of current physics and Quantum Mechanics

The original error is that of having assumed a space-time of the continuous act. That is, a scenario, a manifold, whose points are the events, and which is a continuum where everything takes place in the continuous act.
With this choice it is inevitable to find that light propagates with finite and constant speed c.

The error derives from the fact that every event is inseparable from the individual (donor or recipient) as well as being only one of the two ends (the conjugated event) that make up the entire event that unites the donor to the recipient.
In other words, the event is not an independent point in itself, but it is the event of an individual's giving or receiving. The event of giving or receiving which presupposes a dual, that is, the corresponding event of receiving or giving, and consequently and above all two individuals in relationship: a donor and a recipient.
In reality we therefore have not a space-time of points, but a space of individuals in relation, where each individual is in itself a space and vice versa.
It is natural to define an individual's own space in an intention, the set of possible relationships (or possible events if we consider both give-and-take events in their unity) that can involve him in the now. From the definition it follows that an individual's own space in the intention coincides with the cone of light (if in the intention the exchange occurs at the speed of light) of the individual in the now. Precisely, with the cone of giving and with the cone of receiving.

This error, that is, considering spacetime as a manifold of point events, involves two inconsistencies:

1. the space of the now, proper to the individual in the intention, in the representation of current physics, is not placed at the point t_0 but expands along the entire temporal axis of the individual, from $-\infty$ to $+\infty$.
2. the introduction of the local time t of the event, dictated by the geometric vision of spacetime that separates the event from the individual, has no physical meaning. In the relationship, in fact, the two individuals are in each other's own space and in the state relative to the time of one's wristwatch. It is the latter, that is the proper time, and not local time, that has an effect on the relationship.

It is easy to verify that both the above-mentioned inconsistencies disappear immediately if we consider the instantaneous speed of light (or more generally the speed of the medium of intention). More precisely, the exchange, or the act of giving-receiving in its unity, which relates two individuals conjugated in intention, is instantaneous. In this case, in fact, the cone of light opens in the spatial axis of giving and in the spatial axis of receiving at the time t_0 of the now. At the same time, the local time of the event, separate and different from the proper time of the donor or recipient individual, disappears. With the introduction of the instantaneous act of giving or receiving in the relationship, however, we are forced to introduce the period of power that opens, for each individual in an intention, between the act of giving and the subsequent act of receiving. In other words, light does not travel from the giver to the recipient in a continuum that is always in progress, that is, in a continuum in which both the giver and the recipient and the light are always in action, but both individuals emerge in the act in the instant of giving-receiving and then plunging into the period of power that elapses until the next surfacing in the act. And the determination of what is exchanged between individuals, in which from time to time one of the possibilities present in the intention is realized, we call decision or collapse of the wave function.

The door is therefore opened to:

- Probability information
- quantization of certain physical properties

- principle of uncertainty
- wave particle duality
- quantum entanglement

Intention physics includes the essential points of quantum mechanics and of standard model, as probability information, quantization and uncertainty principle, of which it provides a philosophical foundation, clarifying some aspects and correcting some errors and providing internal consistency and the mathematical foundation that is currently missing.

In particular, instantaneity of light provides an explanation for all the weirdnesses and quirks of quantum mechanics, and in particular of quantum entanglement. The alternation of potentiality-act moments gives reason of the wave–particle duality.

1. *Wave Particle duality, Collapse, Probability information, Quantization*

The elementary individual, characterized by his own Radius R°, rotates on his own temporal axis in the space of the potency. The wave function represents this rotation in the plane of power and it collapses in act at each consummation, that is, whenever the axes of consummation of the two individuals cross.

$$\Psi\left(x^{\diamond}, t^{\diamond}\right) = A\, e^{-i\frac{2\pi}{R}\left((1+\cos\gamma)x^{\diamond} - \cos\gamma\, t^{\diamond}\right)}$$

In IP, every individual is a flat mirror and is characterized by a Radius R which is his only unit of measure of both time and space, since *time* ≡ *space* are identical.
More precisely, the unit of measure manifests itself as space in the moment of act, and as time in the moment of potency.
The only quantity is the Radius R and therefore the frequency of the intention (*period* $\propto R$). in the intention relationship between two individuals, the potency, with the decision, collapses instantaneously into the act by exchange of energy.

The alternation of potentiality-act moments gives reason of the wave–particle duality.
In the relation, therefore, we have the cyclical alternation of:

potency	↔	**act**
mirroring	↔	*consummation*
universal	↔	*instance*
period	↔	*instant*
space	↔	*point*
wave	↔	*particle*
complex number	↔	rational number

2. *The Quantum Entanglement*

Entangled individuals share the same plane of the potency. Therefore they share the same wave function. The instantaneousness of the interaction, with the consequent negation of the locality, and the wave nature of the power (and corpuscular of the act), account for the strangeness of quantum mechanics.

The physics of intention is in total agreement with the Qed [72] which, however, integrates into a more complete and more natural framework (consummative or discrete act and not reflective or continuous act). In the Qed [72], the three basic actions, from which all the phenomena of light and electron arise, are:

- *Action 1: A photon goes from place to place*
- *Action 2: An electron goes from place to place*
- *Action 3: An electron emits or absorbs a photon*

In the physics of intention these can be paraphrased:

- *Action 3: An electron emits or absorbs a photon*, *Action 1: A photon goes from place to place* and *Action 3: An electron absorbs or emits a photon*
  The space-time of the individual in intention is the set of possible paths or threads that unite the individual with his conjugate through the thread that runs along its axis of giving and then crosses the entire radius of the conjugate while at the same time reversing the give-receive phase, and then go back along its own axis of receiving, then go through its entire radius while at the same time reversing the receive-give phase, and so on again.
  In other words, the interaction takes place in the potency of each of the two conjoint individuals (emitter-absorber). It is actualized, with the decision, in the energy exchange along the consummative axis of donating of the one which coincides with the consummative axis of receiving of the other.
  Therefore, the acts of emission and absorption of the same photon are conjugated, that is, they occur at the same instant since they share a same axis which is the intersection of the two distinct planes of the potency.
  Moreover, all the particles entangled between them share the same whole spatial plane of the potency. Therefore, since the commutativity of the conjugated relation, all the emission-absorption events of each of them and the respectively conjugated absorption-emission events occur all at the same instant, since they are all present within the same spatial plane of the potency.

- *Action 2 An electron goes from place to place*:
  The potency of the electron in moving between two points is instead of a temporal or mnemonic type. It is the set of possible historical reconstructions of the evolution of the electron, which takes place in the potency, between two of its acts described in the previous point.
  These two potencies of the same individual, that is, the spatial one of the act of giving and of the following act of receiving and the temporal one of the movement of the electron in the intermediate period, are correlated.
  In the act, from time to time, the two conjoined potencies unite through the radii of the conjoined individual, in the intermediate period the one is reflected in the other.
  In other words, any path that joins the same two points has the same length, and between two points of the same individual there is a temporal and a spatial path from which $\Delta T = \sum S_i + \sum R_i$

3. The Uncertainty Principle

The Uncertainty principle springs from the lack of memory in the primitive intentions. Indeed, physics is based on memory. Now memory is reflective. Yet reflection has not place in a primitive intention, not therefore memory.

To know position and moment in a given time, we must know the angle γ of the relation which is formed by the path of interactions that, for each individual, makes the thread of receiving follow that of giving and therefore that of receiving and so on. For this purpose, since $A_{donating} \equiv B_{receiving}$, it follows that, for the representation of the path, it is necessary to arrange the two conjoined individuals in the same donor-donor or recipient-recipient state.

Yet, in the act, we have never this case but, on the contrary, the receiving side of the one face the parallel and opposite donating side of the other and vice-versa.

We can partially reduce this inherent lack of knowledge since the measuring individual is reflective but, differently from classical physics, in the quantum physics the measured individual is not reflective and therefore, if we can know its distance, we can't read its time too and therefore we can't know the $\gamma_e^{\diamond}$ angle of relation. This is the origin of uncertainty principle.

In other words, the period of potency (between the act of receiving and the act of donation) of an elementary (electric) individual lasts $\Delta T = R^{\circ} = (\Delta E)^{-1}$, and this is the discrete unit of measure of the time of the individual. Therefore $\Delta T \Delta E \geq 1$.

D. Intention philosophy vs Hegel's Logic

Hegel subdivided Logic into three parts: I The Doctrine of Being; II The Doctrine of Essence; III The Doctrine of Notion and Idea. In the Intention philosophy to these correspond respectively the Potency, the Reflection, the Consummation.

In the Intention philosophy, the key point is "The individual, in an intention, makes a decision that allows him to join with its other donating him a part of himself". This is the inner movement of intention physics.

In the Hegel's philosophy, vice-versa, it is the dialectical movement of spirit, that is, of absolute subjectivity: the

mirroring and reuniting of opposites as the spirit's process of self production.
The Hegel's philosophy is evolutive where the Intention philosophy is consummative.
In the Intention philosophy, the reflective individual unfolds from consummation, as saturation of the space of potency due to the multiplicity of underlying consummative acts, and from reflection derives evolution, as a temporal extension of reflection. Evolution is proper to the potency of the universal. The reflective individual consummates, according to the consummation, and as a result of its consummations evolves, according to the dialectic.
Dialectics is a temporal, evolutionary movement of a universal. It is the vertical movement between two moments of the same individual. Intention is a horizontal spatial movement between two irreducibly distinct individuals. Hegel's logic is the reflection of intention relationship on the temporal dimension of an individual.
The intention, in addition to being more primitive, and therefore the foundation of dialectics, is more detailed and therefore allows us to clarify the dialectic.

III. INTENTION'S PHYSICS: THE GEOMETRY OF THE DISCRETE ACT

A. Discrete vs Continuum

The passage in act is an emergence into reality, a determination that occurs in the instant.
Two individuals A and B are conjugated in an intention. The first instant A has quantity 5 and B has quantity 3, a subsequent instant A has quantity 4 and B has quantity 4. In the intermediate period, i.e. in the continuous period of time that elapses between the two successive instants, the passage of the quantity 1 between A and B. This intermediate period is the period of potency and it is continuous precisely because it is in potentiality, it is not real.

The universe has a finite number of years a finite dimension and even a finite number of baryons. In the reality, everything is discrete and finite. If the act is determined and in the instant, neither the infinite number nor the infinitesimal exist in act. Both are just a word that indicates an endless cyclic operation, a recipe, a program. In fact, any given number we can think or pronounce is finite.
To deny the actual infinite is also to deny the actual infinitesimal and is therefore to affirm the quantum.

In the same way, even irrational numbers are only a recipe, a program, they are not determined, they cannot be in act.
Therefore the numbers are

1. the numbers of the consummative act:
   (a) the integers, which represent a multiple of the quantum, the quantities that, in becoming, can be exchanged in a relationship since the giving-receiving in a relationship is the first becoming, the atomic becoming. Between any two successive integers there is an interval consisting of an infinity of numbers
   (b) the rational numbers, ratios between lengths, and therefore between integers, corresponding to the lines emerging from the historical reconstruction of the interaction which is linear. Periodic reconstruction starting from the present, the result of a program that cyclically projects the present backwards or forwards. In the present of the instant, therefore, we have only a linear world, without curves.
   Between any two successive rational numbers there is an interval consisting of an infinity of numbers.
2. the numbers of the phenomenon or of the memory, which is an image in act that derives from the integration of a tending to infinite number of elementary acts. They are, in addition to the numbers of the consummative act:
   (a) the irrational numbers, which are only a recipe, a program.
   (b) the infinite and the infinitesimals
3. the number of the potency, i.e. the number found in the power period:
   (a) the complex numbers or any number whose square is negative

The irrational numbers and the continuum represent curves, representations of different acts, which emerged in as many different instants, put together to form the real memory of the past. Curved lines emerge from integrals of differentials (the latter are linear in themselves and therefore represent underlying elementary acts) whose points each represent a different act, a different instant. An irrational number is unpronounceable because it is never determined, only determinable. It is never in act, only in potentiality. It is therefore not possible to have two lines in act at the

same time, because they would form an angle with an irrational relationship (e.g. the hypotenuse of a triangle with two equal cathets in Euclidean geometry, nor a curved line in act, because the π is irrational).

Nature is what happens in the act, and the act is made up of discrete and finite numbers, that is, natural numbers and their ratios. Neither infinite nor infinitesimals nor irrational numbers populate the world of what happens and is realized by passing into act.

The need to have recourse to the continuum arises when the act becomes the messenger of a phenomenon that has innumerable acts in itself, carries with it the fruit of innumerable acts of other individuals. It brings with it the story of others.
The more these other individuals who took part, the smaller and more numerous their contributions, the more the need arises to have recourse to the process of the infinite and the infinitesimal, to have recourse to a Euclidean continuum. It was born to take history into account in the context of others.

Euclidean spacetime arises from the relationship between two independent dimensions.
Independent of each other it means that when a point of one dimension is in act or in potential, all points of the other are in act or in potentiality and vice versa. If in fact, in correspondence with a point in action of one of the two dimensions only one point of the other is present, then the two dimensions would be only two different projections of the same linear dimension.

The motion of a planet in orbit is, in the act, always photographed as the linear motion of the planet along the tangent to the orbit at the point of minimum distance. The historical reconstruction of the act would foresee the extrapolation (which is a cyclic, rhythmic process, always equal to itself) back and forth in time of this linear act.
It is only the continuous addition of an innumerable quantity of acts on the planet's temporal axis that gives rise to a curvature.
Similarly, the act of sending a photon from a donor to a recipient would occur instantly on the straight line orthogonal to the temporal axes of the two individuals were it not for the presence of an almost infinite quantity of micro acts which, along its path potential, ie in the becoming of the act, they deflect the light making a curve around a galaxy between them and which acts as a gravitational lens.
To follow the power step by step, therefore, we need to use Euclidean geometry (the manifold), but to study the act we must use linear geometry.
Euclidean geometry, like the infinite and the infinitesimal, is only an extrapolation, it is to consider the infinite in act, which does not exist except as an extrapolation. In other words, the geometry of the manifold follows the emergence of the phenomenon, reflexively.

If a beam of light is sent from the Earth at instant A on a mirror placed on Mars and its reflection is collected at instant B. It can be observed that a period of time of several minutes has elapsed between the outward and return journeys .
Two different interpretations are possible:

1. In a space-time of the continuum act, after the instant of sending, infinite other instants followed one another, all in act, and the light moved instant by instant in the act, that is, in reality. After a second it had travelled nearly three hundred thousand kilometres, and a fraction later it had travelled another micron and so on. The representation cannot be different from that formulated by Einstein with relativity: use of Cartesian coordinates in Euclidean geometry and finite and constant speed of light.

2. In a spacetime of the discrete act, vice versa, in an instant the light passed from the Earth to the mirror placed on Mars, and in another instant almost immediately afterwards, just long enough to travel the radius of an electron, it passed from the mirror placed on Mars to the Earth. For the Earth, and limited to this intention, the period of several minutes elapsed between the two successive instants is the period of the power of the intention: an unreal period that carries within itself the result of all the possible interactions along the way with the rest of the world that forms the context of the intention.

of the two, the true one is that of the discreet act. The true one is the linear geometry and the quantum. From it, by extrapolation, we arrive at the potential geometry of the manifold.
The phenomenon, therefore, which emerges from the innumerable underlying intentions, is power, appearance, unreal, which is however conveyed by the energy in the act.

This apparent and unreal phenomenon needs Euclidean geometry or a manifold.

The passage in act is something that emerges from potency to reality, a determination that occurs in the instant. In other words, the curves are extrapolations resulting from the integration of myriads of linear acts that give rise to the phenomenon. And the phenomenon is the memory, fruit of the potency, carried by the act. And the representation of the phenomenon needs a manifold.

B. The linear Metric space

If you start from the metaphysical assumption that space is Euclidean (or in any case quadratic) to describe the world you discover that the speed of light is constant and you discover special and general relativity, that is, you represent the world as continuous .... as a continuous act .. the ongoing in act.
However, if you run the hypothesis that the speed of light is instantaneous, you discover that spacetime is made up of a single thread that goes on spinning and twisting, which you can measure in meters or seconds, which unites individual ghosts in the act, which reveal themselves in the act in which they are touched by the thread, and then re-immerse themselves in the period of power until the next instant in which the thread touches them again, in which they come back into action revealing themselves again. And this is precisely the terrain of Quantum Mechanics ....

If light is instantaneous, spacetime is the photo of an instant whose protagonist is the thread of light which, thanks to the reconstruction of memory, unravels from a starting point of time to an end point, and can be described with a linear geometry.
The relationships between absolutes must remain the same in any geometry.
In spacetime photo of an instant, a monochromatic ray of light is both a clock, whose unit of time is the period, and a meter, whose unit of space is the wavelength. Individuals behave in an analogous way to light along the direction of their time axis.

There are no differences between current physics and IP in terms of measurement concepts as the expected operation is the same for both clock synchronization and distance measurement. What changes is the geometry and therefore the coordinates used. It is essential to clarify that, in the IP, all the measurements refer to the relative size (radius, time, space) in the photo of the instant where the historical reconstruction is linear. Where the angle γ is constant, as in free motion in an inertial system, we have $l_1/l_2 = dl_1/dl_2$. Where instead the angle γ varies (the instant also varies), we have $l_1/l_2 \neq dl_1/dl_2$.

In any case, in linear geometry, as in the act, any ratio and any quantity is an integer or rational number.

C. The recursive mirroring in the linear plane of the act

Because the observer and the observed as individuals are mirrors, each one reflects and is reflected by the other recursively.
On the path of light, at every reflection, we have an increment of the scale factor exponent:

$$s_n^\diamond = k s_{n-1}^\diamond$$

From the image present in the snapshot of an instant, it is therefore possible recognize a geometrical progression $\ldots 1, K, K^2, \ldots$.
Indicating with s_0 the distance now on the spatial axis between A and B we have that:

$$T_a^\diamond = \frac{s_0^\diamond}{1-k} = s_0^\diamond \left(1 + k + k^2 + k^3 + \ldots\right) = s_0^\diamond + s_1^\diamond + s_2^\diamond + s_3^\diamond + \ldots$$

Therefore

$$\Delta\lambda^\diamond = T^\diamond - T_{-1}^\diamond \quad \text{and} \quad V^\diamond = \frac{\Delta\lambda^\diamond}{T^\diamond} = \frac{\overline{AB}}{\overline{0A}} = 1 - k$$

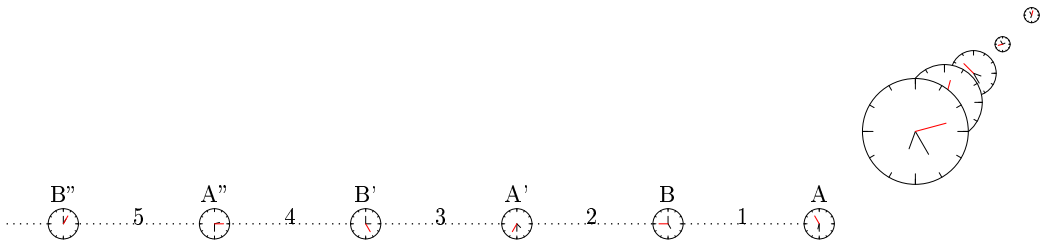


Figure 2. Recursive mirroring: two mirrors facing each other are reflected recursively. If there is a clock on each of them, from the reflected image present in every instant it is possible to reconstruct distances historically and therefore the velocities and accelerations over time, as far as the reflection allows.

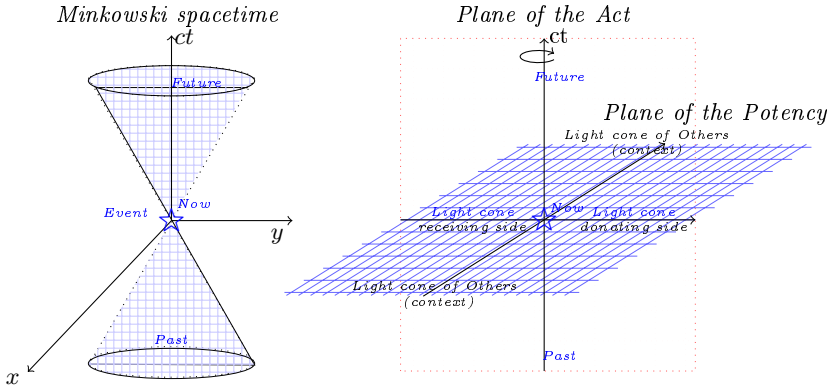


Figure 3. the reference system in the Plane of the Act.
The space-time of the act of an individual (which is the individual) represents either the moment of giving or the moment of receiving, never present at the same time. The individual is in itself a three-dimensional reference frame consisting of an absolute spatial axis of the intention, radial and facing the conjugate, an absolute spatial axis of power on which all other individuals are disposed which form the context of intention, and an absolute temporal axis that represents the individual's proper time.
The light cone of the Minkowski spacetime splits, in the Plane of the Potency of the individual, in two distinct flat spatial surfaces: the totality of the present of receiving (from the Big bang to the present) and the totality of the present of donating (from the present to the Big bang).
Since seeing comes from receiving, each individual is blind to his event of giving while he can see his event of receiving. But each individual can see their own event of giving reflected in the other.

D. The individual space time of the Act

E. The Reflective historical reconstruction (and the Uncertainty Principle)

Since the act is instantaneous, the speed of light is instantaneous: the receiving side of the one face the parallel and opposite donating side of the other and vice-versa: in the act there are no distances or, more precisely, they are veiled and cannot be known.

Indeed physics is based on memory. Now memory is reflective: image that emerges from the spatial configuration of the huge amount of underlying consummative acts.

To know position and moment in a given time, we must know the angle $\gamma^{\diamond}$ of the relation which is formed by the Reflective historical reconstruction of the path of interactions that, for each individual, makes the thread of receiving follow that of giving and therefore that of receiving and so on. For this purpose, since $A_{donating} \equiv B_{receiving}$, it follows that, for the representation of the path, it is necessary to arrange the two conjoined individuals in the same donor-donor or recipient-recipient state (see fig. 4).

The Reflective historical reconstruction makes it emerge a linear space-time metric characterized by:

$$t^{\diamond} = \tau^{\diamond} + \sigma^{\diamond} \qquad \text{or} \qquad 1 = \cos\gamma^{\diamond} + \sin\gamma^{\diamond}$$

It is the geometry of the act where time is spatialized: $time \equiv space$.

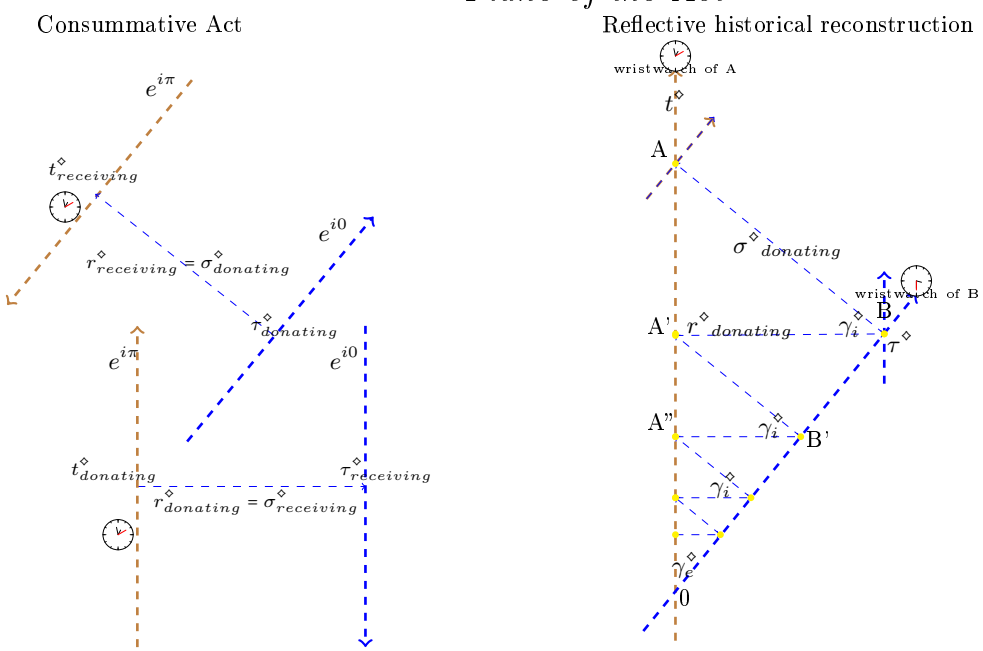


Figure 4. Uncertainty principle: In a measurement, while the measuring instrument A is necessarily classic and therefore reflective, so we know $P^{\diamond} = t^{\diamond}_{A_i} - t^{\diamond}_{A_{i-1}}$, the measured B could be non-classic, therefore we would not know the time $t^{\diamond}_{B_i}$ and therefore we would not know $\cos\gamma^{\diamond} = \dfrac{t^{\diamond}_{B_i} - t^{\diamond}_{A_{i-1}}}{t^{\diamond}_{A_i} - t^{\diamond}_{B_i}}$.

The Uncertainty principle springs from the lack of memory in the primitive intentions. Indeed, physics is based on memory. Now memory is reflective. Yet reflection has not place in a primitive intention.
In the act the distances are veiled, yet, if one of the two individuals is reflective, i.e. classic, it can measure the period between a sending and a receiving and therefore can infer the distance from the other. However, if the other individual is not reflective, its time cannot be known and therefore the $\gamma^{\diamond}$ angle of the relation cannot be determined (see fig. 4).

F. The Linear Geometry of the plane of the Act

Definitions: The elements of the plane of the act between conjoined individuals are:

- nodes : corresponding to the geometrical sequence of the acts, where $k = \cos\gamma^{\diamond}$ is the common ratio, aligned vertically, for each conjoined individual
- axes (oriented vectors): corresponding to the period of potency between acts. These are:
  - Timelines: the axis joining the geometrical sequence of nodes of an individual, conventionally oriented in the direction of the increasing numbering of the sequence
  - Spacelines: the axis orthogonal to the timeline axis of the individual that joins the "n" node with the "n+1" node of the conjoined individual and conventionally oriented in the same way

Properties:

1. the length of a path is the sum of the lengths of the single component vectors, i.e $\left|\vec{A} + \vec{B}\right| = \left|\vec{A}\right| \pm \left|\vec{B}\right|$ where the sign is + for concordant vectors (head tail sequence) , − vice-versa.

Implications: From the above definitions and properties it follows that:

- the length of a path connecting two nodes depends only on the connected nodes. In particular, if the two nodes coincide (closed path) the length is zero. Then it is an irrotational (zero curl) or conservative vector field.

Linear Geometry (on the path of light)
Vector oriented Space

$$|\vec{A}+\vec{B}| = |\vec{A}| \pm |\vec{B}| \qquad \oint_C s_i^{\diamond} = 0$$

$$\gamma_i^{\diamond} = -\pi + \gamma_e^{\diamond}$$

$$\widetilde{\gamma}_e^{\diamond} = \pi/2 - \gamma_e^{\diamond} = -\pi/2 - \gamma_i^{\diamond}$$

$$\widetilde{\gamma}_i^{\diamond} = -\pi + \widetilde{\gamma}_e^{\diamond} = -\pi/2 - \gamma_e^{\diamond}$$

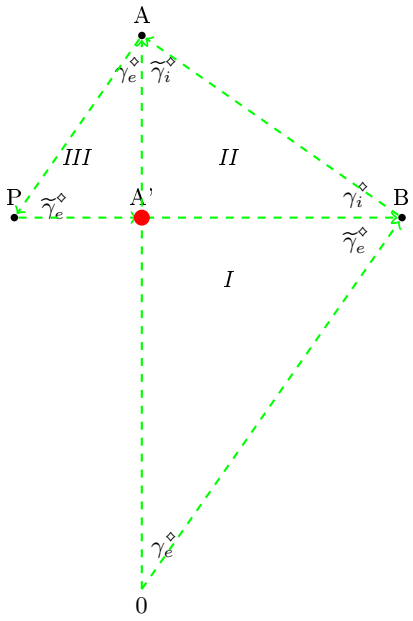


Figure 5. Linear spacetime of the act (on the path of instantaneous light): It is a Linear vector oriented space. The angles are γ_e between two vectors in concordant direction, vice versa γ_i, and they alternate each other.

- the right triangle is the elementary path. The elementary triangle is of type SST while the TTS triangles are always the summation of the geometric series of the previous elementary triangles. Since it is curl-less, it necessarily has two sides concordant (++ or - -) and one discordant (- or +),
- two axes can cross in a node forming an angle $\gamma_e^{\diamond}$ if they are discordant (+ -) (both enter or both exit); $\gamma_i^{\diamond}$ otherwise. We use the convention $\gamma^{\diamond}$ for angles between two like-axis (SS or TT) ; $\widetilde{\gamma}^{\diamond}$ vice-versa (the complimentary angle on the opposite side of the triangle).
  This implies, based on property 1, that for a $\gamma_e^{\diamond}$ angle

$$\sin\gamma_e^{\diamond} + \cos\gamma_e^{\diamond} = 1$$

- the spatial threads (space segment) of the path of light between two time axis form a geometric progression $\ldots\ s_0k^{-4},\ s_0k^{-3},\ s_0k^{-2},\ s_0k^{-1}, s_0,\ s_0k,\ s_0k^2,\ s_0k^3,\ s_0k^4,\ \ldots.$ where $k = \cos\gamma^{\diamond}$ is the common ratio and s_0, that is the scale factor, is the length of a side. It follows that the nodes on the time axis too form a geometrical sequence and $t_0 = \sum_{-\infty}^{0} s_i = s_0/\sin\gamma_e^{\diamond}$. The temporal axis, therefore, derives from the spatial axis as summation of its geometric progression so that so that $r : t = \sin\gamma_e^{\diamond}$. In principle, nothing prevents that, in turn, the segment s_0 also derives from a more primitive geometric progression, and so on. Indeed, if it is true that all quantiies must derive from a unique primitive quantity which is the Radius R, it must be valid that $s_0 = \sum_{-\infty}^{0} R_i = R_0/\sin\gamma_e^{\diamond}$ so that $R : r = r : t = \sin\gamma_e^{\diamond}$. Indeed, we will show that this is the case.

  Note:
  More generally, since in the transition to linear trigonometry only one of the two corresponding functions of Euclidean trigonometry remains unchanged, we can have two cases:

$$\cos\gamma_e^{\blacklozenge} = \cos\gamma \qquad \text{and therefore} \qquad \sin\gamma_e^{\blacklozenge} = 1 - \cos\gamma_e^{\blacklozenge} = 1 - \cos\gamma$$

  or

$$\sin\gamma_e^{\blacklozenge} = \sin\gamma \qquad \text{and therefore} \qquad \cos\gamma_e^{\blacklozenge} = 1 - \sin\gamma_e^{\blacklozenge} = 1 - \sin\gamma$$

  We must use the first case in all the interactions between two individuals, the second case in the constituent interaction, that is, in the interaction that constitutes an individual from its substance, as in cosmology.

Furthermore, we will adopt the convention of using the symbol: $^{\diamond}$, which can be placed indifferently on the operator and on the angle, or only on the operator or only on the angle: $\cos^{\diamond}\gamma^{\diamond} \equiv \cos^{\diamond}\gamma \equiv \cos\gamma^{\diamond}$ for the linear space-time plane of the Act.

- Since in the linear plane of the Act $\sin^{\diamond} + \cos^{\diamond} = 1$, the relations between $\sin^{\diamond}$ operators and the corresponding trigonometric functions are:

$$\begin{bmatrix} \cos\gamma_e^{\blacklozenge} = \cos\gamma & \sin\gamma_e^{\blacklozenge} = 1-\cos\gamma \\ \cos\gamma_i^{\blacklozenge} = -\cos\gamma & \sin\gamma_i^{\blacklozenge} = 1+\cos\gamma \\ \cos\widetilde{\gamma}_e^{\blacklozenge} = 1-\cos\gamma & \sin\widetilde{\gamma}_e^{\blacklozenge} = \cos\gamma \\ \cos\widetilde{\gamma}_i^{\blacklozenge} = 1+\cos\gamma & \sin\widetilde{\gamma}_i^{\blacklozenge} = -\cos\gamma \end{bmatrix} \begin{bmatrix} \cos\gamma_e^{\blacklozenge} = 1-\sin\gamma & \sin\gamma_e^{\blacklozenge} = \sin\gamma \\ \cos\gamma_i^{\blacklozenge} = \sin\gamma-1 & \sin\gamma_i^{\blacklozenge} = 2-\sin\gamma \\ \cos\widetilde{\gamma}_e^{\blacklozenge} = \sin\gamma & \sin\widetilde{\gamma}_e^{\blacklozenge} = 1-\sin\gamma \\ \cos\widetilde{\gamma}_i^{\blacklozenge} = 2-\sin\gamma & \sin\widetilde{\gamma}_i^{\blacklozenge} = \sin\gamma-1 \end{bmatrix} \tag{4}$$

Since the linear operators $\sin^{\diamond}$ $\cos^{\diamond}$ are defined as the same ratios of the sides of a right triangle as the corresponding trigonometric functions, the derivative and the sum of the angles are identical.

Regarding the sum of the angles, denoting by $+^{\diamond}$ the reflective sum of two angles, we have $(\varphi +^{\diamond} \psi) \neq (\varphi + \psi)$

$$\left\{ \begin{array}{l} \cos^{\diamond}\left(\varphi +^{\diamond} \psi\right) = \cos^{\diamond}\varphi\cos^{\diamond}\psi - \left(1-\cos^{\diamond}\varphi\right)\left(1-\cos^{\diamond}\psi\right) = \cos^{\diamond}\varphi + \cos^{\diamond}\psi - 1 = \cos^{\diamond}(\varphi) - \sin^{\diamond}(\psi) \\ \cos^{\diamond}\left(\varphi -^{\diamond} \psi\right) = \cos^{\diamond}\varphi\cos^{\diamond}\psi + \left(1+\cos^{\diamond}\varphi\right)\left(1-\cos^{\diamond}\psi\right) = \cos^{\diamond}\varphi - \cos^{\diamond}\psi + 1 = \cos^{\diamond}(\varphi) + \sin^{\diamond}(\psi) \end{array} \right\} \tag{5}$$

Indeed, as proof, from the above equations it follows that $\cos^{\diamond}\left(\varphi +^{\diamond} \psi +^{\diamond} \varphi -^{\diamond} \psi\right) = 2\cos^{\diamond}\varphi - 1$.

$$\left\{ \begin{array}{l} \cos^{\diamond}\gamma_e = \cos^{\diamond}\left(\varphi +^{\diamond} \psi\right) = \cos^{\diamond}(\varphi) - \sin^{\diamond}(\psi) \\ \cos^{\diamond}\gamma_i = -\cos^{\diamond}\left(\varphi +^{\diamond} \psi\right) = -\cos^{\diamond}(\varphi) + \sin^{\diamond}(\psi) \\ \sin^{\diamond}\gamma_e = 1-\cos^{\diamond}\gamma_e = 1-\cos^{\diamond}\left(\varphi +^{\diamond} \psi\right) = \sin^{\diamond}(\varphi) + \sin^{\diamond}(\psi) \\ \sin^{\diamond}\gamma_i = 1-\cos^{\diamond}\gamma_i = 1+\cos^{\diamond}\left(\varphi +^{\diamond} \psi\right) = \cos^{\diamond}(\varphi) + \cos^{\diamond}(\psi) \end{array} \right\} \tag{6}$$

Hereafter some notable examples:

$$\cos^{\diamond}\left(\frac{\pi}{2} +^{\diamond} \gamma\right) = \cos^{\diamond}\frac{\pi}{2} + \cos^{\diamond}\gamma - 1 = -\left(1-\cos^{\diamond}\gamma\right) = -\sin^{\diamond}\gamma$$

$$\cos^{\diamond}\left(\pi -^{\diamond} \gamma\right) = \cos^{\diamond}\pi - \cos^{\diamond}\gamma + 1 = -\cos^{\diamond}\gamma$$

$$(\pi/3 +^{\diamond} \pi/3) = (\pi/2)$$

The three configurations of the spacetime of the relationship

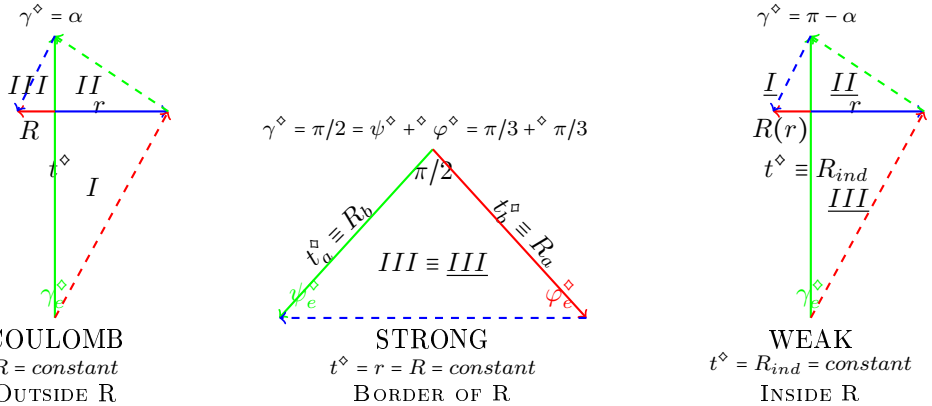


fig. The intention relationship is characterized by $R : r = r : t = \sin\gamma^{\diamond} = 1-\cos\gamma^{\diamond}$.
On the left panel the Coulomb interaction, on the center the strong interaction, on the right the Weak interaction.

G. The derivative operator

The derivation operator is reflexive, as it is based on memory, and discrete. Indeed:

- if not both, at least the comparison term emerges from the mnemonic historical reconstruction
- it is not continuous but discrete as the act is discrete and periodic

The linear mnemonic historical reconstruction is valid in the spacetime of the instant.
Given the pattern of intention, the linear historical reconstruction is valid in the spacetime of an instant where the angle γ is constant: in this case, given the linearity, $dl_x/dl_y = l_x/l_y$.
When the angle γ varies, instead, the linear historical reconstruction is not longer valid except for a small segment $ds^\diamond$. This is due to the fact that the γ angle varies in the presence of a field whose forces are due to interactions, and each interaction occurs at a different instant, that is, in a different spacetime. So we are forced to change spacetime at each interaction, that is, at each $ds^\diamond$.

$$\begin{bmatrix} \frac{d\left(1-\cos\gamma^{\blacklozenge}\right)}{d\gamma^{\blacklozenge}} = 0 & \frac{d\cos\gamma^{\blacklozenge}}{d\gamma^{\blacklozenge}} = 0 \\ \frac{d\left(1-\sin\gamma_{\blacklozenge}\right)}{d\gamma_{\blacklozenge}} = -1 & \frac{d\sin\gamma_{\blacklozenge}}{d\gamma_{\blacklozenge}} = 1 \end{bmatrix} \tag{7}$$

Indeed $d\cos^\diamond\gamma = \cos^\diamond(\gamma +^\diamond d\gamma) - \cos^\diamond\gamma = 1 - \cos^\diamond(\gamma +^\diamond d\gamma -^\diamond \gamma) = 1 - \cos^\diamond d\gamma$
and $d\sin^\diamond\gamma = \sin^\diamond(\gamma +^\diamond d\gamma) - \sin^\diamond\gamma = \sin^\diamond(\gamma +^\diamond d\gamma -^\diamond \gamma) = \sin^\diamond d\gamma$.

H. The II-III quadrants of matter-energy

Quadrants $II - III$ represent the quadrants of matter-energy in the plane $R - r$.

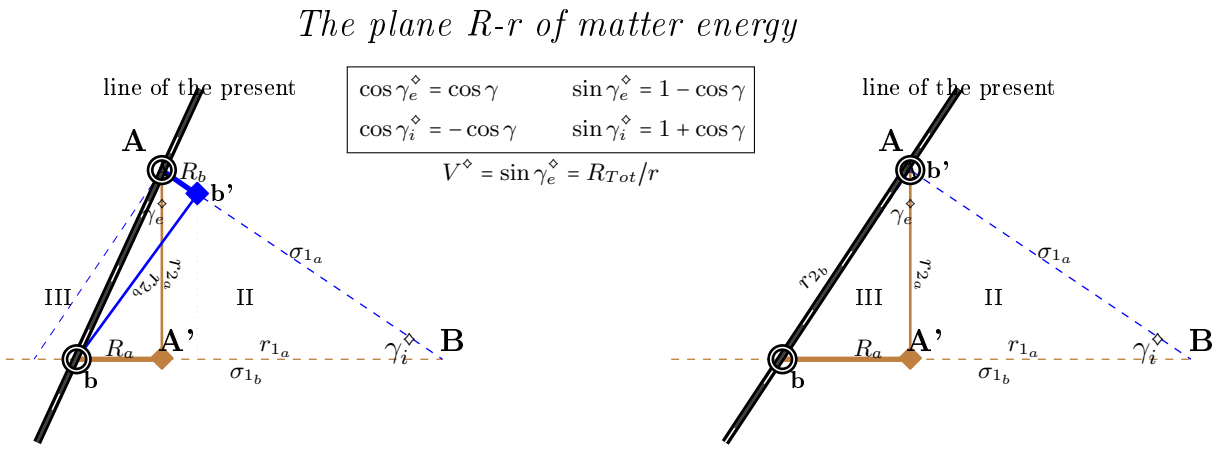


Figure 6. The whole relation is enfolded and unfolds from the Radii of the two conjoined individuals. Quadrants II-III represent the $R-r$ plane of matter-energy. On the left panel the case of a relationship between two individuals with Radius R_a and R_b. In the right panel the case of a relationship between an individual of Radius R_a and an individual of Radius negligible.

In absence of movement, $\cos\gamma^\diamond + \sin\gamma^\diamond = 1$ or, multiplying everything by m_0c^2 :

$$E + U = m_0c^2 \tag{8}$$

$$R_{Tot_b} = R_a + R_b\cos\gamma^\diamond$$

$$\sigma_{1_b} = \overline{Bb} = R_{Tot_b}[1 + \cos^2\gamma^\diamond + \cos^4\gamma^\diamond + \cos^6\gamma^\diamond + \cdots] = R_{Tot_b}\sum_{n=0}^{\infty}\cos^{2n}\gamma^\diamond = \frac{R_{Tot_b}}{1-\cos^2\gamma^\diamond}$$

$$r_{2_b} = \overline{bb'} = R_{Tot_b}[1 + \cos\gamma^\diamond + \cos^2\gamma^\diamond + \cos^3\gamma^\diamond + \cdots] = R_{Tot_b}\sum_{n=0}^{\infty}\cos^{n}\gamma^\diamond = \frac{R_{Tot_b}}{1-\cos\gamma^\diamond} = \frac{R_{Tot_b}}{V_e}$$

I. The I-II quadrants of movement and the isomorphism between the Linear Plane of the Act and the Minkowsky spacetime

"The Lorenz angle, between the two individuals involved in the intention, generates, for each of the two individuals, the period of potency that extends between two successive and instantaneous send-receive threads".

Quadrants $I - II$ represent the quadrants of movement in the plane $r - t$.

$$t^\diamond_{1_b} = r^\diamond_{2_b}[1 + \cos^2\gamma^\diamond + \cos^4\gamma^\diamond + \cos^6\gamma^\diamond + \cdots] = r^\diamond_{2_b}\sum_{n=0}^{\infty}\cos^{2n}\gamma^\diamond = \frac{r^\diamond_{2_b}}{1-\cos^2\gamma^\diamond} = \frac{\sigma^\diamond_{1_b}}{1-\cos\gamma^\diamond}$$

$$R_{Tot} = R_a + R_b \qquad R^*_{Tot} = \frac{R_{Tot_a} + R_{Tot_b}}{2} = R_{Tot}\frac{1+\cos\gamma^\diamond}{2} = R_{Tot}\left(1 - \frac{V}{2}\right)$$

$$\sigma^\diamond_1 = \frac{\overline{Ab}}{2} = \frac{\sigma^\diamond_{1_a} + \sigma^\diamond_{1_b}}{2} = \frac{R_{Tot}}{1-\cos\gamma^\diamond} \qquad t^\diamond_1 = \frac{t^\diamond_{1_a} + t^\diamond_{1_b}}{2} = \frac{R_{Tot}}{(1-\cos\gamma^\diamond)^2}$$

In Intention physics the time is defined only in the points of act $A, B, A', B', \ldots$ since, between a point of act and the next one, the period of potency extends. Analogously space is defined only on the segments $\vec{AB}$ ecc.
These points and these segments are the only in act, the only real, and therefore absolute, and therefore are the only one that must have an equivalent representation (isomorphic) in whichever representation of the reality (isomorphism).
We can therefore represent the recursive mirroring between A and B in the schema on the right and compare it with Minkowski schema used by relativistic physic on the left (see fig. 7).

$$\overline{AB} \equiv \sigma^\diamond = t^\diamond - \tau^\diamond = t^\diamond(1-\cos\gamma^\diamond) \qquad \text{or} \quad V^\diamond_e = \sin\gamma^\diamond_e = 1-\cos\gamma^\diamond_e = 1-\cos\gamma^\diamond$$

$$\overline{AA'} \equiv t^\diamond - t'^\diamond = \sigma^\diamond + r^\diamond = \sigma^\diamond(1+\cos\gamma^\diamond) \quad \text{or} \quad V^\diamond_i = \sin\gamma^\diamond_i = 1-\cos\gamma^\diamond_i = 1+\cos\gamma^\diamond$$

The distance used by current physics is defined as half of the path taken by light to go from A to B and then, reflected, back. Furthermore, we establish by definition that the "time" required by light to travel from A to B equals the "time" it requires to travel from B to A. In the first instance, it could be assumed that this corresponds to $r_{2_a} = (\sigma_{1_a} + r_{1_a})/2$. However, it is easy to see that this measure would violate both points of its definition. In fact, suppose, for greater clarity and precision, to measure the distance as the ratio between n continuous round-trip cycles divided by the number of cycles. Now, it is clear that, if the scheme of fig. 9 is true, a loop includes, in addition to $r_{2_a} = \overline{R_b} + \overline{b'B} + \overline{BA'}$, also the radius $\overline{R_a}$. Therefore a cycle is given by the measure $\sigma_1 = (\sigma_{1_a} + \sigma_{1_b})/2$ and therefore $r \equiv \sigma_1 = (\sigma_{1_a} + \sigma_{1_b})/2$. Obviously, the fact that s_{1a} is different from s_{1b} is only due to the different choice of the measurement of time which, in IP, unlike in current physics, is always proper time. For the same reason we have $t = t_1 = (t_{1_a} + t_{1_b})/2$.

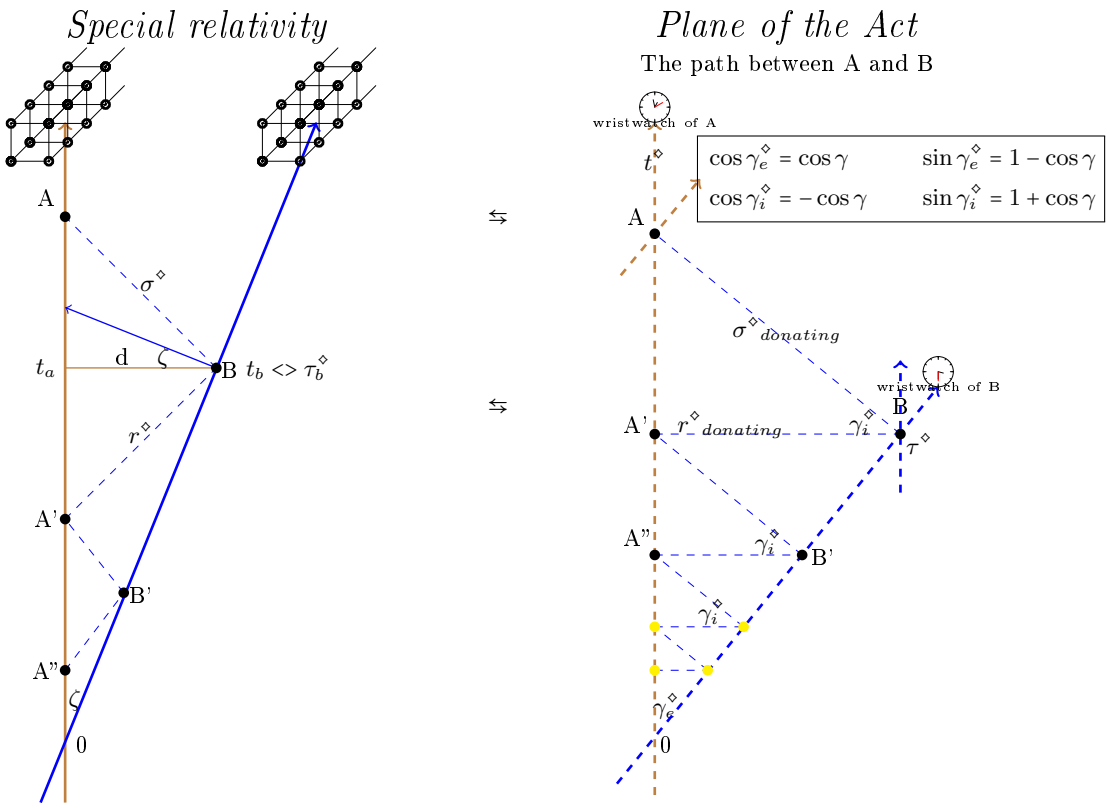


Figure 7. isomorphism: the representation of the temporal and spatial distances between the real points $A, B, A', B', A'', B'', \ldots$ in the Minkowski spacetime, on the left, is equivalent to the representation in the Intention historical plane, on the right, with the conversion $v = \tanh\zeta \to V = 1-\cos\gamma^\diamond$ and $e^{-\zeta} = \cos\gamma^\diamond$. The difference is that while the Intention historical plane defines only these points as the unique real, and the spatial distances, therefore, represent the correspondence between $t^\diamond$ and $\tau^\diamond$ that are therefore joined instantly at every act of donation/receiving, the Minkowski spacetime defines all the intermediate points too (that are in potency and therefore not real in the intention) and establishes a correspondence between each point on t axis and τ axis (be it real or imaginary) making the speed of light finite and traveling in the spacetime. As it is shown in (Peluso 13 jan 2019 [78]) the Intention historical plane is the primitive space where General Theory of Relativity and Quantum Mechanics are reconciled.
Remember that, in the plan of the act, each individual is blind in the donating moment so he can only see the receiving threads so that $V = \frac{\Delta S}{\Delta T} = \frac{\bar{AB} - \bar{A'B'}}{\bar{A'A}} = \frac{\sigma^\diamond(1-\cos^2\gamma)}{\sigma^\diamond(1+\cos\gamma)} = \frac{\sigma^\diamond}{t^\diamond} = \frac{r^\diamond}{\tau^\diamond} = \frac{\sigma^\diamond + r^\diamond}{t^\diamond + \tau^\diamond} = \frac{\sigma^\diamond - r^\diamond}{t^\diamond - \tau^\diamond} = 1-\cos\gamma^\diamond$.

	MINKOWSKI SPACETIME		*LINEAR IP SPACETIME*
	Inertial	Field	*Inertial ≡ Field*
R	$R = (R_{Tot_a} + R_{Tot_b})/2 = R_{Tot}(1-\sin\gamma^\diamond/2)$		$R^\diamond = R_{Tot_b} = R_{Tot} - R_b\sin\gamma^\diamond$
r	$r = \sigma_1^\diamond = (\sigma_{1_a}^\diamond + \sigma_{1_b}^\diamond)/2$		$r^\diamond = \sigma_{1_b}^\diamond = (\sigma_1^\diamond - R_b)/(1-\sin\gamma^\diamond/2)$
Potential	$V = R/r = \sin\gamma^\diamond(1-\sin\gamma^\diamond/2)$		$V^\diamond = R^\diamond/r^\diamond = \sin\gamma^\diamond(1-\sin\gamma^\diamond/2)$
t	$t = t_1^\diamond - r = (t_{1_a}^\diamond + t_{1_b}^\diamond)/2 - r$	dt	$t^\diamond = t_{1_b}^\diamond$
v	$v = r/t = \tanh\zeta$	$\sin(\gamma)$	$v^\diamond = r^\diamond/t^\diamond = \sin\gamma^\diamond$
$\sqrt{g_{00}}$	$1/\cosh\zeta$	$\cos\gamma^\diamond = \sqrt{1-2V}$	$\cos\gamma^\diamond = \sqrt{1-2V^\diamond}$

(9)

Note that the total Radius is here $R = \frac{1}{2}V_i R_{Tot} = R_{Tot}\frac{1+\cos^\diamond\gamma}{2} = R_{Tot}\left(1-\frac{\sin\gamma^\diamond}{2}\right)$. The multiplication by V_i of the Radius R_x, which lies on the spatial axis σ_{1_x}, projects it onto the head of the temporal axis t_{1_x}. It

is therefore possible to redraw the scheme of intention by placing the radii $R_x^*(\gamma) = 1/2V_iR_x$, which is now a function of the gamma angle, on the top of the temporal axes t_{1_x}, as we will do in the cosmological schemes of the universe.

It will certainly surprise that, in disagreement with current theory, the term R, which appears in the potential formula, is not a constant but varies with the gamma angle. Now, in the current theory of gravitation, the determination of the component of the metric tensor $g_{00} = \left(1 - \frac{constant}{r}\right)$, depends on the assumption of a centrally symmetrical field in a vacuum, that is, far from the masses that generate it, setting the stress energy tensor equal to zero.
We now know, from cosmology, that in addition to baryonic matter there is a further component of matter of universe called cdm (cold dark matter). We can therefore say that there is no vacuum in the universe or that the stress energy tensor does not actually reset moving away from the center of the field. It will be shown later (see § III L) that, putting the right terms in the stress energy tensor, we have $g_{00} = \left(1 - \frac{constant}{r}\right)^2 = \left(1 - \frac{R_{Tot}}{r}\right)^2$ as required by the Intention scheme.

On the relationship between the angles ζ and γ, since

$$\left\{ i\vec{\tau} = i\vec{t} + \vec{r} \quad \equiv \quad \begin{cases} t^\diamond = t + r = \tau^\diamond / \cos\gamma^\diamond \\ t'^\diamond = t - r = \tau^\diamond \cos\gamma^\diamond \end{cases} \right.$$

or

$$i\tau\cosh\zeta\hat{t} + \tau\sinh\zeta\hat{d} = i\tau\hat{\tau} \quad \equiv \quad \begin{cases} \tau\cosh\zeta - \tau\sinh\zeta = \tau\cos\gamma^\diamond \\ \tau\cosh\zeta + \tau\sinh\zeta = \tau/\cos\gamma^\diamond \end{cases} \tag{10}$$

we have:

$$e^{-\zeta} \quad \equiv \quad \cos\gamma^\diamond \tag{11}$$

Replacing $\tau^\diamond$ with the mass m, it's easy to identify the vectorial sum on the left with the Dirac's free particle Equation, and the linear sum on the right with the definition of sinh and cosh since $\cos\gamma^\diamond \leftrightarrow e^{-\zeta}$.

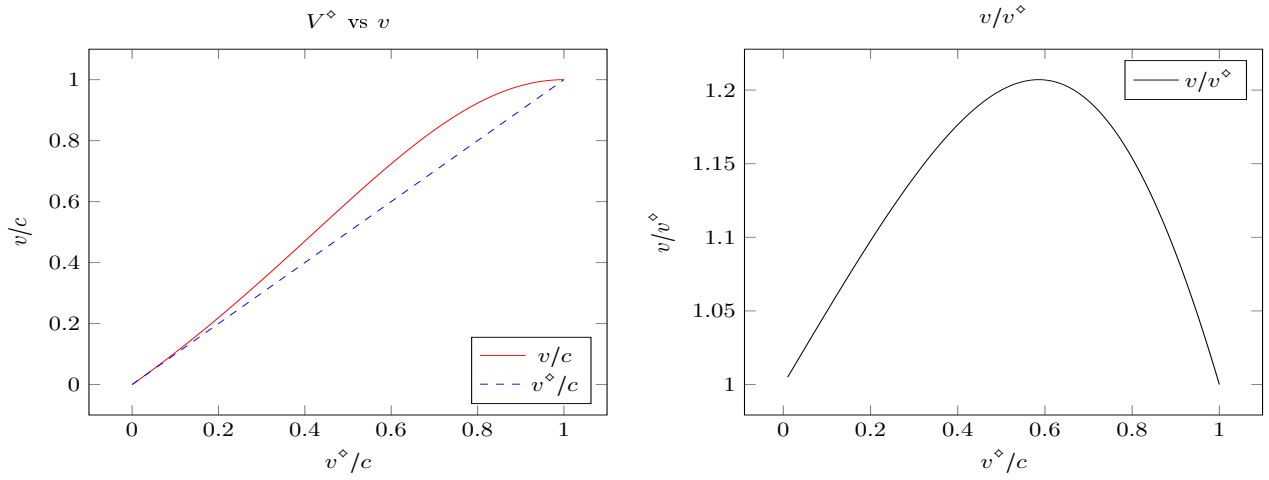


Figure 8. Comparison between the speed of intention and the relativistic speed. They correspond to two different ways of describing the same phenomenon. The difference in values is due to the different definition of time t.

In fig 9 the two temporal axes of the two individuals in relation lie in the same plane. In the most general case, the two temporal axes of the two individuals in relation lie not in the same plane, but on parallel planes. Let P_A be the plane of one parallel to the plane P_B of the other.
At the point of maximum proximity there is a $r_{1_a}(0)$ orthogonal to both parallel planes on which the temporal axes

lie.
We can therefore define:

$$\sin\lambda^{\diamond} = \frac{r_a(0)}{r_a} \tag{12}$$

and therefore

$$\sin\lambda^{\diamond} + \cos\lambda^{\diamond} = 1$$

and

$$V = \sin\gamma^{\diamond}\left(\sin\lambda^{\diamond} + \cos\lambda^{\diamond}\right)$$

$$\frac{L}{m\,r^{\diamond}} = \sin\vartheta^{\diamond} = \sin\lambda^{\diamond}\sin\gamma^{\diamond} \qquad \frac{dr^{\diamond}}{d\tau^{\diamond}} = \cos\lambda^{\diamond}\sin\gamma^{\diamond}$$

J. The energy–momentum relation

In the intention, for each individual, the reception comes immediately before the donation (vice versa, between the donation and the reception the period of power opens). Therefore, indicating with $x^{\diamond}$ the space line between $\tau^{\diamond}$ and $t^{\diamond}$, from the intention schema (see fig. 7) we have:

	RECEPTION				*DONATION*			
	$\tau^{\diamond} = f(t^{\diamond}, x^{\diamond})$	$x^{\diamond}$	$E^{\diamond} = \frac{t^{\diamond}}{\tau^{\diamond}}$	$p^{\diamond} = \frac{x^{\diamond}}{\tau^{\diamond}}$	$\tau^{\diamond} = f(t^{\diamond}, x^{\diamond})$	$x^{\diamond}$	$E^{\diamond} = \frac{t^{\diamond}}{\tau^{\diamond}}$	$p^{\diamond} = \frac{x^{\diamond}}{\tau^{\diamond}}$
removal	$\tau^{\diamond} = \frac{t^{\diamond}}{1-V_e} - \frac{V_i}{1-V_e}x^{\diamond}$	$r^{\diamond}$	$\frac{1}{1-V_e}$	$\frac{V_e}{1-V_e}$	$\tau^{\diamond} = t^{\diamond}(1-V_e) + V_i x^{\diamond}$	$\sigma^{\diamond}$	$1-V_e$	$-V_e$
approach	$\tau^{\diamond} = t^{\diamond}(1-V_e) + V_i x^{\diamond}$	$\sigma^{\diamond}$	$1-V_e$	$-V_e$	$\tau^{\diamond} = \frac{t^{\diamond}}{1-V_e} - \frac{V_i}{1-V_e}x^{\diamond}$	$r^{\diamond}$	$\frac{1}{1-V_e}$	$\frac{V_e}{1-V_e}$

(13)

where

$$E = 1 - V_e = \cos^{\diamond}\gamma = 1 - \frac{x^{\diamond}}{\tau^{\diamond}} \quad \text{in an attractive field} \qquad E = \frac{1}{1-V_e} = \frac{1}{\cos^{\diamond}\gamma} = 1 + \frac{x^{\diamond}}{\tau^{\diamond}} \quad \text{in a repulsive field}$$

Defining $p = \sqrt{\frac{V_i}{V_e}}p^{\diamond}$ (therefore $p = i\sin\gamma$ in an attractive field and $p = \tan\gamma$ in a repulsive field) from the eq. 13 above we have the energy–momentum relation :

$$\cos^2\gamma + \sin^2\gamma = 1 \qquad \text{or} \qquad E^2 = \left(m_0c^2\right)^2 + (pc)^2 \qquad \text{or} \qquad 1/E^2 + v^2 = 1 \tag{14}$$

$$\cos^{\diamond}\gamma + \sin^{\diamond}\gamma = 1 \qquad \text{or} \qquad E^{\diamond} = \left(m_0c^2\right) + \left(p^{\diamond}c\right) \qquad \text{or} \qquad 1/E^{\diamond} + v^{\diamond} = 1 \tag{15}$$

the above equations are completely general, valid for any system, since in the IP there is no difference between an inertial and a non-inertial system, since what matters is the moving away-approaching direction and the giving-receiving direction.
The quantities appearing in the above eq. 14, however, correspond to the energy and to the moment of Minkowski's spacetime, and therefore of current physics, only in the case of a system immersed in a field (GTR).
In the case of an inertial system, in fact, they diverge from the parallel equations used by current physics (the respective measures are convertible into each other by means of Eq.11) :

$$\cosh^2\zeta - \sinh^2\zeta = 1 \qquad \text{or} \qquad E_{\zeta}^2 = \left(m_0c^2\right)^2 + (p_{\zeta}c)^2 \qquad \text{or} \qquad 1/{E_{\zeta}}^2 + {v_{\zeta}}^2 = 1$$

The difference between an inertial and a non-inertial system is that in the first the angle (angle ϵ_0) is constant as the distance varies, while in the second (angle γ) it is not. Yet in the instant there is no difference and the inertial system

can be assimilated to a repulsive field with $\frac{E}{m_0c^2} = \frac{1}{\cos\epsilon_0^\diamond}$ and $\frac{p^\diamond}{m_0c} = \tan^\diamond\epsilon_0$ when the specific energy is greater than 1, to an attractive field with $\frac{E}{m_0c^2} = \cos\epsilon_0^\diamond$ and $\frac{p^\diamond}{m_0c} = \sin^\diamond\epsilon_0$ when the specific energy is less than 1. In the presence of a field, the kinetic moment $\frac{x_\epsilon}{\tau}$ is gradually translated into a field moment $\frac{x_\gamma}{\tau}$ so that the global specific moment $\frac{p^\diamond}{m_0c} = \frac{x_{\epsilon_0}}{\tau} = \frac{x_\epsilon + x_\gamma}{\tau}$ and global specific energy $1 - \frac{p^\diamond}{m_0c}$ are conserved.
With the introduction of the following symbology:

	$E/mc^2 < 1$	$E/mc^2 > 1$
Field	$\cos\gamma_- = \cos\gamma = 1 - \frac{x_\gamma^\diamond}{\tau^\diamond}$	$\cos\gamma_+ = \frac{1}{\cos\gamma} = 1 + \frac{x_\gamma^\diamond}{\tau^\diamond}$
Inertial system	$\cos\epsilon_- = \cos\epsilon = 1 - \frac{x_\epsilon^\diamond}{\tau^\diamond}$	$\cos\epsilon_+ = \frac{1}{\cos\epsilon} = 1 + \frac{x_\epsilon^\diamond}{\tau^\diamond}$

and

	$p^\diamond/mc$	p/mc
Field	$\sin^\diamond\gamma_\pm = 1 - \cos\gamma_\pm = \frac{x_{\gamma_\pm}^\diamond}{\tau} = \pm\frac{x^\diamond}{\tau}$	$\sin\gamma_\pm = \sqrt{1-\cos^2\gamma_\pm} = \sqrt{1-\cos^{\pm2}\gamma}$
Inertial system	$\sin^\diamond\epsilon_\pm = 1 - \cos\epsilon_\pm = \frac{x_{\epsilon_\pm}^\diamond}{\tau} = \pm\frac{x^\diamond}{\tau}$	$\sin\epsilon_\pm = \sqrt{1-\cos^2\epsilon_\pm} = \sqrt{1-\cos^{\pm2}\epsilon}$

it follows that:

Motion	*Conservation of Energy in Free Motion*
Radial	$\cos\epsilon_{0_\pm}^\diamond = \cos\left(\gamma_\pm^\diamond +^\diamond \epsilon_\pm^\diamond\right) = \cos\gamma_\pm^\diamond + \cos\epsilon_\pm^\diamond - 1 = \mathcal{H} = V + T$
Tangential	$\cos\epsilon_{0_\pm}^\diamond = \cos\left(\gamma_\pm^\diamond +^\diamond \epsilon_\pm^\diamond\right) = \cos\left(\gamma_\pm^\diamond -^\diamond \epsilon_{0_\pm}^\diamond\right) = \cos\gamma_\pm^\diamond - \cos\epsilon_{0_\pm}^\diamond + 1 = \frac{1+\cos\gamma_\pm^\diamond}{2} = 1 \pm \frac{1}{2}\frac{x^\diamond}{\tau^\diamond}$
Global	$\cos\epsilon_{0_\pm}^\diamond = \cos\left(\gamma_\pm^\diamond \pm^\diamond \epsilon_\pm^\diamond\right) = \cos\gamma_\pm^\diamond + \sin^\diamond\lambda\left(\cos\epsilon_\pm^\diamond - 1\right) - \cos^\diamond\lambda\left(\cos\epsilon_{0_\pm}^\diamond - 1\right)$

(16)

Analogously, the general equations 14, valid for any system regardless of whether it is inertial or immersed in a field, can be made more explicit in form:

$$E = m_0c^2\sqrt{(1-V)^{\pm2} \pm \frac{dr^2}{d\tau^2} \pm \frac{(J+L)^2}{(m_0r)^2}(1-V)^{\pm2}} = m_0c^2\sqrt{\cos^2\gamma_\pm^\diamond + \left(\cos^2\epsilon_{0_\pm}^\diamond - \cos^2\gamma_\pm^\diamond\right)\left[\sin^2\lambda + \cos^2\lambda\right]} \tag{17}$$

$$E = m_0c^2\left((1-V)^{\pm1} \pm \frac{dr^\diamond}{d\tau^\diamond} \pm \frac{(J+L)}{(m_0r)}(1-V)^{\pm1}\right) = m_0c^2\left(\cos\gamma_\pm^\diamond + \sin^\diamond\left(\gamma_\pm^\diamond - \epsilon_{0_\pm}^\diamond\right)\left[\sin^\diamond\lambda + \cos^\diamond\lambda\right]\right) \tag{18}$$

$$E = m_0c^2\cos\epsilon_{0_\pm}^\diamond\sqrt{\cos^2(\gamma^\diamond \pm \epsilon)_\pm + \sin^2(\gamma^\diamond \pm \epsilon)_\pm[\sin^2\lambda + \cos^2\lambda]}$$

Note that, when $\epsilon_{0_\pm} > 0$, in addition to the usual potential $V = \sin^\diamond\gamma^\diamond = R/r$, we have a new Potential $V_{\epsilon_{0_\pm}} = \sin^\diamond(\gamma^\diamond \pm \epsilon_0)$ and a new radius $R_{\epsilon_{0_\pm}} = V_{\epsilon_{0_\pm}}r$.
This means that, in free fall, the point where speed c is reached is no longer the radius R but the increased radius $R_{\epsilon_{0_\pm}}$.
Analogously, in the circular motion, we must have, from the 16, $E = E^\diamond = \cos\epsilon_{0_-}^\diamond = \frac{1+\cos\gamma}{2} = 1 - \frac{V}{2} = 1 - V_{\epsilon_{0_-}}$. For example, in the Coulomb area, $\epsilon_{0_\pm} = n\alpha$ and therefore $E \simeq m_0\left(1 - \frac{1}{2}n^2\alpha^2\right)$.
At last, at rest, in the static relationship, when p and ϵ cancel, $E = E^\diamond = \cos\gamma_\pm$.

Furthermore, $E = \cosh\zeta \neq E^\diamond = 1/\cos\epsilon$ in an inertial system while $E = E^\diamond$ in a field. This means that, in the current physics, the energy of an inertial system is not congruent with the energy of a field.

K. Distances and Intervals of time in the linear plane of the Act

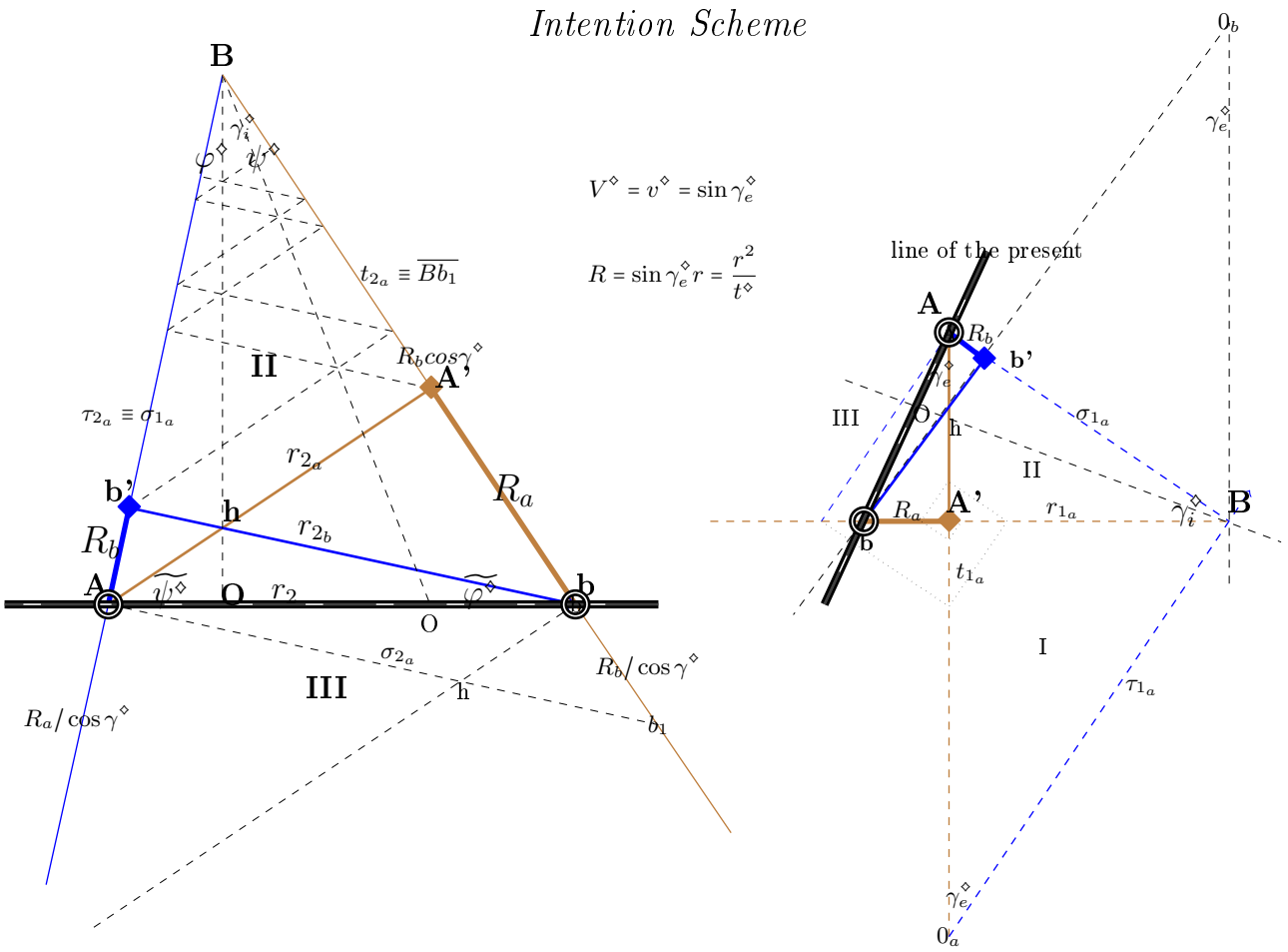


Figure 9. The whole relation is enfolded and unfolds from the Radii of the two conjoined individuals. The schema of intention is recursive since to every angle follows its opposite. Indeed the three quadrants represent time, space and potency and recursively follow one another. The Intention Schema, which emerges reflectively, represents all the possible knowledge on the relation and it is just a knowledge representation. Indeed, contrarily to the above schema, in every instant the receiving side of an individual face the parallel donating side of the other. Therefore, the intention schema, composed from the juxtaposing of homologue sides (donating-donating or receiving-receiving) of the two conjoined individuals, is only a construction for needs of knowledge representation. It is the begin of reflective knowledge which demands the determination of the angle γ of the relation given by the homologue side time of both individuals.
In fig., two $\overline{Oh}$ segments have been reported indicating the position of the center of gravity. Obviously the center of gravity is unique and coincident for both the gravitational and electrical relationship. In fact, where the largest gravitational Radius is also the smaller electric one and vice versa. In the diagram in the figure, therefore, an electrical relationship is represented, recognizable for having the (darker) center of gravity where the Radius is smaller.

Since each side of the fig. 9 is the sum of a geometric series

$$\sum_{i=0}^{n} Rf^i\left(\gamma^\diamond\right) = \sum R\left\{1 + f\left(\gamma^\diamond\right) + f^2\left(\gamma^\diamond\right) + f^3\left(\gamma^\diamond\right) + ...\right\}$$

where R is the total radius of the individual $R_{Tot_a} = R_a\cos\gamma^\diamond + R_b$ and $R_{Tot_b} = R_b\cos\gamma^\diamond + R_a$.

and therefore

$$l_a = R_{Tot_a}\sum_{i=1}^{n} k^{i-1} = R_{Tot_a}\frac{1-k^n}{1-k}$$

At last, defining as usual distances and time intervals, we have :

$$r^\diamond = \frac{\overline{BA} + \overline{Bb}}{2} = \frac{R_{Tot}}{1-\cos\gamma^\diamond} \qquad t^\diamond = \frac{\overline{0_aA} + \overline{0_bb}}{2} = \frac{R_{Tot}}{(1-\cos\gamma^\diamond)^2}$$

Since from fig. 9 : $\sin\gamma^{\diamond} = \dfrac{R_b}{\overline{Ah}^{\diamond}} = \dfrac{R_a}{\overline{bh}^{\diamond}}$ we have that the point h represents the barycenter of interaction, and $r^{\diamond} = \overline{Ah}^{\diamond} + \overline{bh}^{\diamond} = \dfrac{R_a + R_b}{\sin^{\diamond}\gamma}$ (note that the segment $\bar{A}b$ is not a vector of the plane of the Act).
Note that

$$\overline{hO}^{\diamond} = \sin\widetilde{\varphi}^{\diamond}\overline{bh}^{\diamond} = \frac{R_b}{r^{\diamond}}\frac{R_a}{R_a + R_b}r^{\diamond} = \frac{R_a R_b}{R_a + R_b} = \mu \tag{19}$$

since it doesn't depend on $\gamma^{\diamond}$, it is an invariant of every intention (Only outside the Radius).

At last we have, from the point of view of the barycenter:

$$l = \frac{l_a + l_b}{2} \quad \text{and} \quad \frac{l_{1_a}}{l_{2_a}} = \frac{l_{1_b}}{l_{2_b}} = \frac{l_1}{l_2}$$

It's at last easy to show that :

$$r^{\diamond} = \frac{(\sigma^{\diamond}_{1_a} + \sigma^{\diamond}_{1_b})}{2} = \frac{R_{Tot}}{1 - \cos\gamma^{\diamond}}$$

$$t^{\diamond} = \frac{t^{\diamond}_{1_a} + t^{\diamond}_{1_b}}{2} = \frac{r^{\diamond}}{V} = \frac{R_{Tot}}{(1 - \cos\gamma^{\diamond})^2}$$

$$V_e{}^{\diamond} = \frac{R_{Tot_a}}{r^{\diamond}_{2_a}} = \frac{R_{Tot_b}}{r^{\diamond}_{2_b}} = \frac{r^{\diamond}}{t^{\diamond}} = \frac{R_{Tot}}{r^{\diamond}}$$

and therefore that with respect to the barycenter,

$$R_{Tot} : r = r : t^{\diamond}$$

which is the general relation of the intention scheme.
Furthermore, since

$$r^{\diamond} = r^{\diamond}_{2_a} + R_a = r^{\diamond}_{2_b} + R_b \quad \text{it follows:} \quad dr = dr_a = dr_b \tag{20}$$

And at last

$$A^{\diamond} = \frac{d^2 r}{dt^2} = \frac{dV}{dr} = \frac{dV}{dr_a} = \frac{dV}{dr_b} = \frac{dV}{d\gamma}\frac{d\gamma}{dr} = -c^2\frac{(1 - \cos\gamma^{\diamond})^2}{(R_b + R_a)} = -c^2\frac{R_b + R_a}{r^2} = \frac{V}{r} = \frac{1}{t^{\diamond}} \tag{21}$$

$$F_f = F_{f_a} = F_{f_b} = \frac{1}{r^2}$$

$$U_f = \int F_f d\left(r_{cm_a} + r_{cm_b}\right) = \frac{1}{r}$$

$$\mu_{\bullet} V = \frac{1}{r} = m_a \sin^{\diamond}\varphi = m_b \sin^{\diamond}\psi$$

Note that since $A_{centrifugal} = \dfrac{v^2}{r}$ and $A^{\diamond} = \dfrac{1}{t^{\diamond}}$, then

$$A_{centrifugal} = A^{\diamond} \implies \frac{v^2}{r} = \frac{1}{t^{\diamond}} \implies v^2 = \frac{r}{t^{\diamond}} = V$$

Denoting by F_c and U_c the centrifugal force and potential

$$F_c = F_{c_a} = F_{c_b} = m_a\omega^2 r_{cm_a} = m_a\omega^2\frac{R^{\circ}_a}{R^{\circ}_a + R^{\circ}_b}r = \omega^2\frac{1}{R^{\circ}_a + R^{\circ}_b}r = \omega^2\mu r = \frac{\omega^2}{1 - \cos\gamma}$$

$$L_{tot} = L_a + L_b = \mu\omega r^2$$

$$U_c = \int F_c d\left(r_{cm_a} + r_{cm_b}\right) = \frac{1}{2}\omega^2 \frac{1}{R_a^\circ + R_b^\circ} r^2 = \frac{1}{2}\mu\omega^2 r^2 = \frac{1}{2}\mu\frac{L^2}{\mu^2 r^2} = \frac{1}{2}\mu L^2 V^2$$

In the case of inertial evolution, it's easy to find that the only constraint is $\gamma^\diamond$ constant. Vice versa, in the intention, the angle $\gamma^\diamond$ varies, but we know from Newton law that $V = \sin\gamma^\diamond = \dfrac{M}{r} = \dfrac{R_\bullet}{r_2}$, were $R_\bullet$ is the Schwarzschild radius and r corresponds to $\dfrac{1}{2}r_2$.
The relation manifests itself according to the scheme of fig. 9. We can identify the potential V with $\sin\gamma_e^\diamond$, so that $Vr_2^\diamond = Vr = R_{Tot}$ must be a constant of the intention, and where $V = \sin\gamma_e^\diamond = 1 - \cos\gamma^\diamond$.

L. The inside and outside of the relationship

Zero and infinite are not physical number in IP. So the fundamental relation:

$$R : r = r : t^\diamond$$

has a maximum in $t_{max}^\diamond = R_{ind}$, where R_{ind} is the Radius of the elementary individual container where cold dark matter $R_{cdm} = R(r)$ finds its place:

$$R(r) : r = r : R_{ind}$$

Since the maximum container is the Universe, we have that in the universe

$$R_{cdm} = R(r) = \frac{r^2}{R_\omega}$$

If the radius of the universe is the elementary individual for gravitation, the electric radius of the electron is that for electricity. The inside ($r < R_{ind}$) and the outside ($r > R_{ind}$) are respectively the seats of weak and Coulomb/Newton interactions, while the ($r \simeq R_{ind}$) is the seat of strong interactions.
The following relations descend from the fundamental proportion of the intention schema $V = R : r = r : t^\diamond$ where the first ratio governs the potential outside the radius while the second ratio governs the potential inside the radius. Note how in the same schema, in the transition from outside to inside, the new emergent internal local radius $R(r)$ takes the place of the constant Radius of the elementary individual R_{ind} which, in turn, changes from being the Radius (the quantum -unit of measure- of the external relation) to being the now constant time $t^\diamond$ (the roof -the maximum- of the internal relation).

It is also possible to derive Schwarzschild's metric in Minkowski's spacetime in the following way. The constancy of t for a fixed angle $\gamma^\diamond$ constrains directly the matter.

From $M(r) = \int 4\pi r^2 \rho_{(r)} dr \equiv \dfrac{c^2}{G}\dfrac{r^2}{t^\diamond}2$ we derive $\rho_{(r)} = \dfrac{c^2}{8\pi G}2\left(\dfrac{4}{rt^\diamond}\right)$

and since $p = \dfrac{MA}{4\pi r^2}$ where $A = c^2\dfrac{dV}{dr} = c^2\dfrac{1}{t^\diamond}$ we have $p = \dfrac{c^4}{8\pi G}2\dfrac{1}{t^{\diamond 2}}$

$$T^{ik} = \begin{pmatrix} \rho & 0 & 0 & 0 \\ 0 & p & 0 & 0 \\ 0 & 0 & p & 0 \\ 0 & 0 & 0 & p \end{pmatrix} = \begin{pmatrix} \dfrac{c^4}{8\pi G}2\dfrac{4}{rt^\diamond} & 0 & 0 & 0 \\ 0 & \dfrac{c^4}{8\pi G}2\dfrac{1}{t^{\diamond 2}} & 0 & 0 \\ 0 & 0 & \dfrac{c^4}{8\pi G}2\dfrac{1}{t^{\diamond 2}} & 0 \\ 0 & 0 & 0 & \dfrac{c^4}{8\pi G}2\dfrac{1}{t^{\diamond 2}} \end{pmatrix}$$

since $T_i^i = \rho - 3p$ then $T = \frac{c^4}{8\pi G} 2\frac{4}{rt^\diamond} - 2\frac{c^4}{8\pi\, G}\frac{3}{t^{\diamond 2}}$ and therefore

$$T_0^{0*} = T_0^0 - \frac{1}{2}T = \frac{c^4}{8\pi G}\frac{4}{rt^\diamond} - 3\frac{c^4}{8\pi\, G}\frac{1}{t^{\diamond 2}}$$
$$T_1^{1*} = T_1^1 - \frac{1}{2}T = -\frac{c^4}{8\pi G}\frac{4}{rt^\diamond} + 3\frac{c^4}{8\pi\, G}\frac{1}{t^{\diamond 2}}$$

As usual, to find the universe metric, we start from:

$$ds^2 = e^\nu c^2 dt^{\diamond 2} - r^2\left(d\theta^2 + \sin^2\theta d\phi^2\right) - e^{-\lambda}dr^2$$

which gives:

$$\begin{cases} e^{-\lambda}\left(\frac{\nu'}{r} + \frac{1}{r^2}\right) - \frac{1}{r^2} = \frac{8\pi G}{c^4}T_1^{1*} \\ e^{-\lambda}\left(\frac{\lambda'}{r} - \frac{1}{r^2}\right) + \frac{1}{r^2} = \frac{8\pi G}{c^4}T_0^{0*} \\ \overset{\bullet}{\lambda} = 0 \end{cases}$$

Since $\lambda = -\nu$ and $T_0^{0*} = -T_1^{1*}$ we reduce to the only equation:

$$e^{-\lambda}\left(\frac{\lambda'}{r} - \frac{1}{r^2}\right) + \frac{1}{r^2} = \frac{4}{rt^\diamond} - \frac{3}{t^{\diamond 2}} \tag{22}$$

which admits one solution $e^{-\lambda} = \left(1 - \frac{r}{t^\diamond}\right)^2$

Therefore, the metric of universe in the usual general relativity coordinate system (τ, σ, t, r), observer dependent, which correspond to an "accelerated" frame, like that of an observer held at a fixed spatial point in the surrounding spacetime, is:

$$dl_x^2 = \left(1 - \frac{r}{t^\diamond}\right)^2 c^2 dt_x^2 - \frac{dr_x^2}{\left(1 - \frac{r}{t^\diamond}\right)^2} - r_x^2 d\theta^2 - r_x^2 \sin^2\theta\, d\phi^2 \tag{23}$$

Or, since $R/r = r/t^\diamond$

$$dl_x^2 = \left(1 - \frac{R}{r}\right)^2 c^2 dt_x^2 - \frac{dr_x^2}{\left(1 - \frac{R}{r}\right)^2} - r_x^2 d\theta^2 - r_x^2 \sin^2\theta\, d\phi^2 \tag{24}$$

We will use the eq. (24) outside the R_{ind}, where the R is constant and $t^\diamond$ varies with the angle $\gamma^\diamond$, the eq. (23) inside the R_{ind}, where the $t^\diamond$ is constant and R varies with the angle $\gamma^\diamond$.

M. Taxonomy of intentions

The mirroring function $\mathfrak{R}(R) = 1/R$, where $R^\circ = 1/R_\bullet$, is the condition necessary and sufficient for the equilibrium of a mirroring universe, i.e. a universe where every individual makes itself mirror of whichever other, be it simple or composed in every way, and all the universe mirrors itself in every individual and every individual mirror itself in the entire universe. The Universe R_ω has a mirror, we name it the Amorone R_α. Since the universe is the maximum, the amorone is the minimum. Indeed, the amorone, being the conjugated of the Universe, verify $R_\alpha R_\omega = -1$, and mirrors all the Universe which reflects in it.

The interaction between the Universe and the Amorone is the union of gravitation and electricity since the Universe coincides with the mirror of the Amorone in it and equally the Amorone coincides with the mirror of the Universe in it.

The amorone $R_\alpha = R_\omega^{-1}$ is the unique elementary individual and is the substance of universe. All the gravitation and the mirroring is between and by means of amoroni. The amorone is the unit of measure of universe.
The Amorone consummates with a period R_ω (i.e. the age of the universe); the Universe, vice-versa, consummates with a period R_α. In the period of a single Amorone, therefore, the Universe consummates $\aleph = R_\omega/R_\alpha = R_\omega^2$ times, keeping in existence all the $\aleph = R_\omega^2$ amoroni. The amoroni are therefore all in potency except one at a time.

The principle of reason claims that the present is based on the historical reconstruction of the past up to a starting point started R_ω years ago, this starting point is what we known as the Big Bang (see fig. 10). The line of the present, on the opposite side, is the set of the points where matter coming from the Big Bang, after a period of potency lasted R_ω years, emerges in act and reverses and begins its return journey as antimatter. The line of the present is the place where matter meets anti-matter and forms the baryonic matter (ordinary matter). The center of the line of the present, on the opposite side, is the point where all energy meets the anti-energy and gives rise to the Big Bang.
Therefore, inside the universe, the total amount of energy is positive and equal to R_ω , while all matter is exactly canceled out by antimatter.

However, the radius and therefore the age of the universe is constant, and therefore the Big Bang is not an event, but it is a part of a continuous process (see fig. 11). In every instant the universe, looks like as, and is, the result of a Big Bang that took place R_ω years ago.

The present, which comes from the Big Bang continuous as an approaching future, as soon as it surfaces, it submerge as past (antimatter) that move away to go towards the continuous Big Bang, and in this descent informs of itself the future (matter) that ascend in the opposite direction. In this way the past does not vanish but endures as it forms the future. This is the memory, which persists and is effective. The memory of the past that moves away from the present is the other face of the future that approaches, and is immersed in the potency. The further away it is, the more inexorably it is eroded by the waves of the potency and vanishes. Both faces are summarized in entropy which, as a future that takes shape by approaching and emerging in the present, grows, as memory that fades away, decreases.

approaches the present	$\leftrightarrows$	**moves away from the present**
future that matures	$\leftrightarrows$	memory that fades
matter	$\leftrightarrows$	antimatter
increasing entropy	$\leftrightarrows$	decreasing entropy

The relationship implies:

$$V = R : r = r : t^\diamond \tag{25}$$

Now, from the communion of the amoroni, only two elementary individuals emerge. We will indicate these two elementary individuals by R_{ind}. In details, R_{ind} is the gravitational radius of the universe R_ω or the electrical radius of the electron R_e°.
We have now three special applications of this relation (see eq.25):

1. **the Inertial relationship**: By keeping constant the angle γ, it describes the relation of approaching or moving away between two individuals in an inertial space.

2. **the Communion relationship**: is the constituent relationship between the matter and the emergent individual and is characterized by

   It includes:

   (a) **the Constituent relationship**:
   The amorone $R_\alpha = R_\omega^{-1}$ is the unique elementary individual and the communion of amoroni gives rise to only two emergent compound individuals: the Electron and the Universe.
   Indeed, amoroni attract each other immensely because each one sees in the other the entire universe, until the resulting agglomerate, which is the electron, is such that its reflection in every single amorone member, added for the number of all the members, equals the Radius of the universe R_ω.

$$R_\omega : R_\epsilon{}^\circ = R_\epsilon{}^\circ : R_{\bullet\epsilon} = R_{\bullet\epsilon} : R_\alpha \tag{26}$$

   All the gravitation and the mirroring is between and by means of amoroni. The composite (gravitationally) elementary (electrically) individual R_ϵ is the sole individual that is in equilibrium with universe. Indeed,

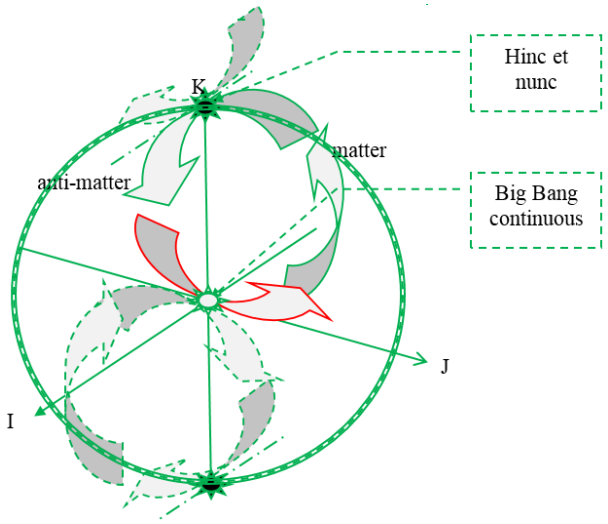


Figure 10. The Big Bang continuous: The radius and therefore the age of the universe is constant, and the Big Bang is not an event, but it is a pat of a continuous process. The principle of reason claims that the present is based on the historical reconstruction of the past up to a starting point known as the Big Bang. The line of the present, on the opposite side, is the set of the points where matter coming from the Big Bang, after a period of potency lasted R_ω years, emerges in act and reverses and begins its return journey in the potency as antimatter. The line of the present is the place where matter meets anti-matter and forms the baryonic matter (ordinary matter). The center of the line of the present, on the opposite side, is the point where all energy meets the anti-energy and gives rise to the Big Bang. Therefore, inside the universe, the total amount of energy is positive and equal to R_ω , while all matter is exactly canceled out by antimatter.

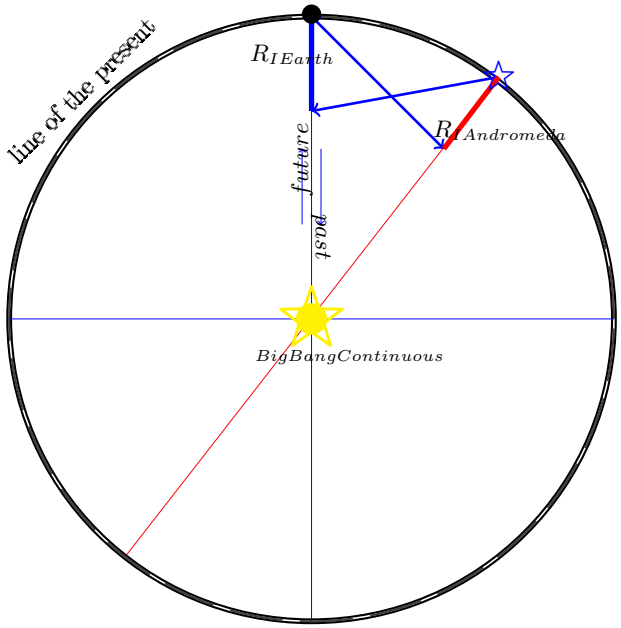


Figure 11. Intention Earth-Andromeda: The present, which comes from the Big Bang continuous as an approaching future, as soon as it surfaces, it submerge as past (antimatter) that move away to go towards the continuous Big Bang, and in this descent informs of itself the future (matter) that ascend in the opposite direction. In this way the past does not vanish but endures as it forms the future. This is the memory, which persists and is effective. The memory of the past that moves away from the present is the other face of the future that approaches, immersed in the potency. The further away it is, the more inexorably it is eroded by the waves of the potency and vanishes. Both faces are summarized in entropy which as a future that takes shape by approaching and emerging in the present, grows, as memory that fades away, decreases.

it is the sole individual whose gravitational radius corresponds to the $R_\bullet$ which emerges from the space enclosed by its electrical radius and vice versa. It is the sole stable individual. To enlarge the electrical

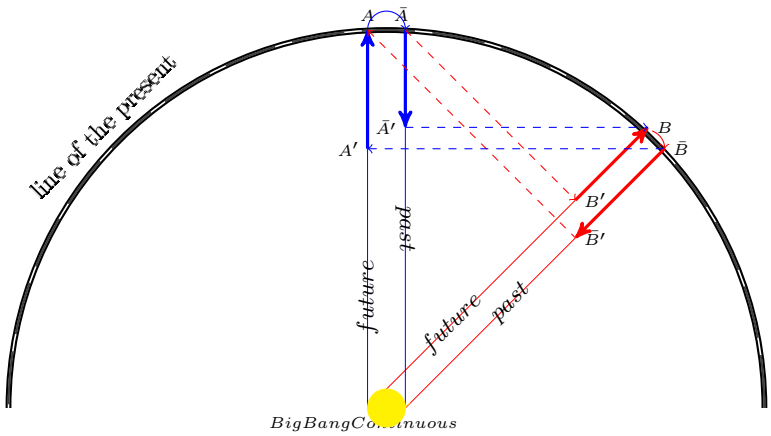


Figure 12. The path of universe intention: The cosmological intention between two individual A and B consists of two overlapping paths (in the figure they were separated to highlight each of them). The path of the present of A: 1) $\bar{B}' \to A$, 2) $Ae^{i0} \to e^{i\pi}\bar{A}$, 3) $\bar{A} \to \bar{B}'$, 4) $\bar{B}' \to B$, 5) $Be^{i0} \to e^{i\pi}\bar{B}$, 6) $\bar{B} \to \bar{B}'$. Analogously for the path of the present of B. Note that only on the line of the present and in the Big Bang the matter converts in antimatter. In the intention, the sending and receiving take place from the present of the individual who sends/receives, not to the present of the other individual, but to its embryonic potentiality (which approaches ascending from the Big Bang). This is why we, on the Earth, cannot communicate with distant alien civilizations. In fact we can not receive from (see) the present in which only they live and act, but from the embryonic potentiality. Equally we can not send to their present in act, but only to the embryonic potentiality of their future present.

radius implies to enlarge the emergent gravitational radius $R_\bullet = R^{\circ 2}/R_\omega$ but this is in contradiction with the smaller gravitational radius requested by $R_\bullet = 1/R^\circ$ and vice versa.

(b) **the Part Of relationship** : Every relation finds its place inside an individual more complex of which it is a part of.

Therefore, apart from leptons and universe, the proportion $R_\omega : R_{whole} = R_{whole} : R_{part}$, starting from $R_{part} = R^\circ_\epsilon$, applies recursively through $R_{whole} \to R_{part}$, providing all the mirroring universe scale giving rise to stars $R_{\bullet s}$ and galaxies $R_{\bullet g}$ and clusters and so on.
The most relevant result of the Part Of relation derives from the consideration that the substance of the universe is in every point the part of the whole for which, in every point, we have $R(r) : r = r : R_\omega$ or

$$R(r) = \frac{r^2}{R_\omega} \tag{27}$$

3. **the Dialogue relationship**: it is a peer to peer relationship between two conjoined individuals emergent from the Communion relationship.

   It includes:

   (a) **the Interior relationship**: By keeping constant the time $t = R_\epsilon$ or R_ω, it describes the relation between individuals inside the radius in the Weak ($r << R_{ind}$) and Strong ($r \simeq R_{ind}$) interaction or in the Universe.

   (b) **the Exterior relationship**: By keeping constant the radius $R_\bullet$ or R°, it describes the gravitational or electrical relation between two individuals outside the radius.

   Inside the elementary individuals, $r \leqslant R_{ind}$, we have $t = t_{max} = R_{ind}$ (t constant and Radius R variable). Outside the elementary individuals, $r \geqslant R_{ind}$, we have $R = R_{max} = R_{ind}$ (t variable and Radius R constant). See tab. IV

N. The Unification of Gravitation and Electricity

The relation between gravitation and electricity is that they are each the mirror of the other: $R^\circ{}_a = 1/R_{\bullet b}$.
The Intention demands that the period of the two individuals in intention be the same (see fig. 9).
From the De Broglie relation $\lambda = h/p$

Imposing $p_a = p_b$ (momentum conservation) and then $\lambda_a = \lambda_b$ we have:

$$\begin{aligned} \lambda_a &= 2\pi \frac{R^\circ{}_b}{\sin^\diamond \varphi} = \lambda_b = 2\pi \frac{R^\circ{}_a}{\sin^\diamond \psi} = 2\pi r \quad \text{(from intention schema)} \\ \lambda_a &= 2\pi \frac{\hbar}{p_a} = \lambda_b = 2\pi \frac{\hbar}{p_b} = 2\pi r \quad \text{(from De Broglie relation)} \end{aligned} \tag{28}$$

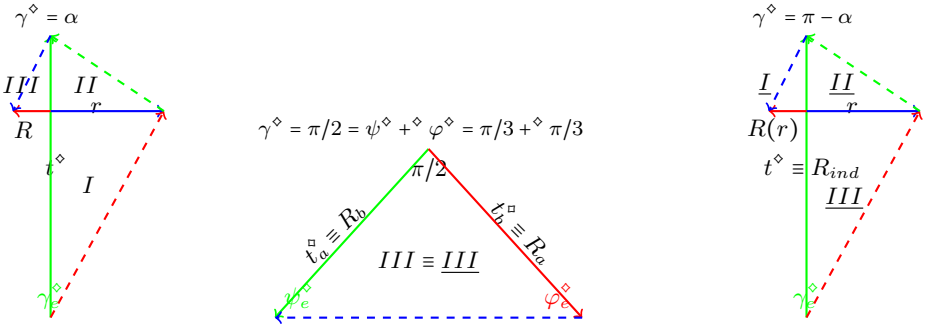
And therefore (the term $\hbar$ depends on the unit of measure adopted see eq. 29 and 30) :

$$p_a = m_a \sin^\diamond \varphi = R^{\circ -1}_b \sin^\diamond \varphi \quad \text{or} \quad R_{\bullet a} = R^{\circ -1}_b$$

$$p_b = m_b \sin^\diamond \psi = R^{\circ -1}_a \sin^\diamond \psi \quad \text{or} \quad R_{\bullet b} = R^{\circ -1}_a$$

What's more, from the schema of the universal relation we have $\frac{\sin^\diamond \psi}{\sin^\diamond \varphi} = \frac{R_a}{R_b}$. if the relationship is universal, then the radius R must be able to represent both the gravitational radius $R_\bullet$ and the electric radius R°.

Table IV. The inside ($r < R_{ind}$) and the outside ($r > R_{ind}$) are respectively the seats of weak and Coulomb/Newton interactions, while the ($r \simeq R_{ind}$) is the seat of strong interactions.
The following relations descend from the fundamental proportion of the intention schema $V = R : r = r : t^\diamond$ where the first ratio governs the potential outside the radius while the second ratio governs the potential inside the radius. Note how in the same schema, in the transition from outside to inside, the new emergent internal local radius $R(r)$ takes the place of the constant Radius of the elementary individual R_{ind} which, in turn, changes from being the Radius (the quantum -unit of measure- of the external relation) to being the now constant time $t^\diamond$ (the roof -the maximum- of the internal relation).



COULOMB
R = *constant*
OUTSIDE R

STRONG
$t^\diamond = r = R$ = *constant*
BORDER OF R

WEAK
$t^\diamond = R_{ind}$ = *constant*
INSIDE R

r	$\gamma^\diamond$	Force	Quadrant	Plane	$\sin\gamma^\diamond$
$\geq R_{ind}$	$\leq \pi/2$	*Coulomb-Newton*	I - II II - III	T - S R - S	momentum potential
$= R_{ind}$	$= \pi/2$	*STRONG*	III ≡ $\underline{\text{III}}$	(T ≡ S ≡ R) ≡ ($\underline{\text{T}}$ ≡ $\underline{\text{S}}$ ≡ $\underline{\text{R}}$)	potential ≡ momentum
$\leq R_{ind}$	$\geq \pi/2$	*WEAK*	$\underline{\text{III}}$ - $\underline{\text{II}}$ $\underline{\text{II}}$ - $\underline{\text{I}}$	R ≡ $\underline{\text{T}}$ - $\underline{\text{S}}$ $\underline{\text{R}}$ - $\underline{\text{S}}$	$\underline{\text{momentum}}$ $\underline{\text{potential}}$

r	$\gamma^\diamond$	form of matter	V	R	$t^\diamond = 1/A$
$\geq R_{ind}$ [a]	$\leq \pi/2$	ACT: baryonic matter (b)	R/r	R	$t^\diamond(r) = \frac{r^2}{R} = \frac{R}{V^2}$
$= R_{ind}$	$= \pi/2$	ENERGEIA: radiation (r)	1	R_{ind}	R_{ind}
$\leq R_{ind}$	$\geq \pi/2$	POTENCY: Cold Dark Matter (CDM)	r/R_{ind}	$R(r) = \frac{r^2}{R_{ind}} = R_{ind}V^2$	R_{ind}

[a] R_{ind} is equal to R_ω (or the radius of a black hole) in the gravitational relation, R°_ϵ in the electrical one

Therefore we must have:

$$\frac{R_{\bullet b}}{\sin^{\diamond}\psi} = \frac{R_{\bullet a}}{\sin^{\diamond}\varphi} \quad \text{in the gravitational case}$$

$$\frac{R^{\circ}{}_{b}}{\sin^{\diamond}\psi} = \frac{R^{\circ}{}_{a}}{\sin^{\diamond}\varphi} \quad \text{in the electrical case}$$

More precisely, the gravitational radius mirror itself in the other as $R^{\circ} = 1/R_{\bullet}$. In the same location where is placed the individual A, we have therefore the gravitational radius $R_{\bullet a}$, corresponding to the energy that the individual has and can donate, and the electrical radius $R^{\circ}{}_{a} = 1/R_{\bullet b}$, corresponding to the energy that the individual can receive. Exactly, we affirm that the unification of gravitational and electromagnetic interactions, always joined and each mirror of the other, passes through the unification of mass and electric charge, being both reducible to a length. The law of the equality of the inertial and gravitational mass is equivalent to the assertion that the acceleration imparted to a body by a gravitational field is independent of the nature of the body. A ball of iron and a ball of lead fall with the same acceleration on the earth, but the acceleration is different to varying of the planet Earth or Jupiter. In overturned way, an electron and a muon fall with different accelerations on a same ion, but for everyone the acceleration is the same to varying of the ion, be it iron or lead. This overturned parallelism is the same between $R_{\bullet}$ and its mirror on other R°. While in the gravitation the mass appears where it lays, in the electricity it appears as the reciprocal and reflected in the other so the barycentre of electricity and gravitation is the same. The electrical radius is therefore the reflex on other of the gravitational radius and both relationships share the same intention schema that emanates from the radius.

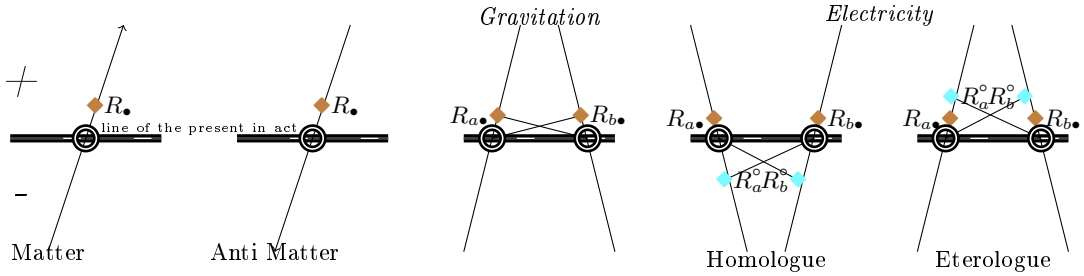


Figure 13. The sign of acceleration: The $R_{\bullet}$ is advanced and therefore positive for matter. The mirror R°, being reflected into the other, appears on the opposite side if the two conjugated individuals in the intention are homologue, on the same side elsewhere. Therefore, from the matter point of view, the acceleration is always attractive (time axes converge toward the future) for gravitation, while repulsive or attractive depending on the sign of the time axes for electromagnetism. All is reversed from the negative matter point of view

In the intention absolute system of measures, which contemplates as only measure the distance, it's advantageous to introduce the two constants:

$$\Theta = \frac{Qc^2}{(4\pi\varepsilon_0 G)^{1/2}} = 1.671001..\text{x}10^{08} \text{ joule} \quad \text{and} \quad K = \Theta 2\frac{G}{c^4} = 2.761312..\text{x}10^{-36}\ meters \tag{29}$$

whence

$$K\Theta = 2\frac{Q^2}{4\pi\varepsilon_0} \quad \text{and} \quad \frac{K}{\Theta} = 2\frac{G}{c^4}$$

and to impose $K = \Theta = 1$ i.u (where i.u. is the **i**ntention **u**nit measure), so that, at last, we get the universal relation:

$$R_{\bullet}R^{\circ} = -K^2 = -1 i.u.^2 \quad (\ 2\alpha \text{ in Planck Unit}) \tag{30}$$

Consequently it follows that $c = 1$, $G = 1/2$ and $\hbar = 1/2\alpha^{-1}$**i.u.**^{2} .
We can recognize that $K = 2\alpha^{1/2} l_p$ and $\Theta = \alpha^{1/2} m_p c^2$ and $Q = \sqrt{1/2}\,\alpha^{1/2} q_p$ where l_p , m_p and q_p are the Planck length, mass and charge.

O. The misunderstanding of the Minkowski spacetime

The object of physics is reality which is phenomenal but nevertheless absolute. His task is to describe it, that is, to identify its elements and rules, in order to make predictions. It is possible to carry out different isomorphic descriptions of the same reality. A theory can start from more or less primitive elements and then, starting from these, define its own derived concepts and then map these with reality through formulas and rules. Different theories will differ for the derived concepts and therefore for the formulas that map them to reality.
We can define individuals, radii, proper time intervals (two ticks of a clock), proper spatial intervals and events as elements of reality.

The formulas of current physics are essentially equivalent to those of the physics of Intention, since at the heart of both is the energy-momentum relation, that binds speed and energy, and given the isomorphism between the two which guarantees the convertibility of one into the other.
However, the two metaphysics are profoundly different, starting with the fundamental concepts, such as space, time, individual, radius and their relationships: that is, geometry.
For example, in the physics of intention, distance include radii and therefore is not a symmetric relation $D_{ab} \neq D_{ba}$, nor velocity.
The points in common between the two geometries are instead constituted by the instants and therefore by the intervals of proper time. The ratio between radii must be equally invariant with respect to the different geometries adopted, and therefore also the radius can be assumed as absolute.
The weakness of current physics is that it adopts not immediately natural concepts. The time t measured on a watch that is not rigidly connected to the individual involved in the event is not immediately natural. The conjugate individual, in fact, which we can also identify with the observer, immediately sees the time τ of the observed individual and it is from the individual at time τ that is influenced in the interaction. The time t, on the other hand, is only a concept made necessary by the adoption of a Euclidean geometry. The time t of Euclidean geometry collects events that are certainly unrelated to each other, which are not correlated. If by *"space"* we mean the home of the individual's possibilities, then time t delineates a space that is a non-*"space"*. On the contrary, IP aims to use only concepts with an immediate physical meaning, only what the individual sees and hears in the intention. Where the individual is at her home, finally in her *"space"*.

Both geometries place space and time on two orthogonal axes of a plane and the relative speed dr/dt, or equivalently the ratio $dt/d\tau$, equal to a rotation of the respective planes.
The difference is that for current physics, the speed of light is finite. The observer, therefore, must place a lattice of clocks and meters to measure the local time of events since, for an observed in motion, the interval between the local times of two events differs from the corresponding interval measured on the observer's wristwatch due to the delta space travelled. For Intention Physics, instead, the speed of light is instantaneous. The observer, therefore, always measures time on his wristwatch since the spatial delta travelled between two events does not affect time.
In an inertial system, therefore, the rotation angle is different for the two physics (being different the definition of dt). Consequently also energy and speed.

In the case of a field, in the Intention Physics nothing changes, including the metric which remains unchanged, except for the fact that this time, in the universal scheme of the intention relationship, it is no longer the angle of rotation that remains constant but the radius of the two individuals.

Even current physics, while introducing a much more complex mathematical apparatus such as the Pseudo Riemannian manifold, provides for a rotation of the planes point by point. This time, however, the inherent rotation of the Pseudo Riemannian Variety does not depend on movement and therefore is not affected by the unnatural assumption of the finiteness of the speed of light.
It follows that, in a field, the angle of rotation of current physics coincides point by point with the angle of rotation of Intention Physics. Consequently also energy and speed.

Ultimately, the physics of intention makes no difference between the inertial system and the field, whereas in current physics different theories are adopted.

What is important, in order to penetrate the deepest physical concepts, is to reason according to nature, that is, according to the point of view of IP.
Without prejudice to this, it is therefore permissible to adopt at will the formulas of linear geometry or the more familiar formulas of Minkowski's spacetime, given the isomorphism between the two which guarantees the convertibility of one into the other.

Is IP congruent with Relativity? of course yes.
See for example figure 7. In the case of a signal starting from A, reaching B and returning from A:

1. In special relativity the thread, and therefore the time, for the outward journey is identical to that of the return,
2. in the IP, on the other hand, the thread, and therefore the time, for the outward journey is shorter than that of the return.

It seems like a discrepancy but in reality there is perfect agreement.
In fact, the time measured in the case of special relativity is t_b, i.e. the time measured by a clock at rest with A (stationary clocks in the stationary system) and local to the position of B at the reflection event (in the immediate proximity). That is, the time measured by a clock at rest with respect to A and positioned in the point where B was at the event of the reflection.
The theory of relativity employs *synchronous stationary clocks located at different places, and have evidently obtained a definition of "simultaneous," or "synchronous," and of "time." The "time" of an event is that which is given simultaneously with the event by a stationary clock located at the place of the event, this clock being synchronous, and indeed synchronous for all time determinations, with a specified stationary clock* (see A. Einstein [44]). The IP, on the other hand, only employs the wristwatches of the individuals in relationship that synchronize, by convention (the choice is purely for convenience), in the instant in which they cross, or reach the minimum distance, by means of the same mechanism foreseen by relativity.

On the other hand, the time τ_b measured by a watch attached to B, that is, by B's wristwatch, at the moment of the event, is less than the local time at rest t_b, if B is in motion, in accordance with special theory of relativity.
In other words, as predicted by special relativity, if A and B synchronize their clocks at the instant τ_0 when they cross ($\tau_{a_0} = \tau_{b_0}$), and then subsequently A sends a signal to B and collects the return, it will result:

1. on the clocks at rest in the stationary system $t_B - t_A = t'_A - t_B$
2. on the wristwatches, being $\tau_B < t_B$ (and $\tau_A = t_A$ and $\tau'_A = t'_A$), we will have $\tau_B - t_A < t'_A - \tau_B$. That is, if $\tau_B = t_B - x$, we will have, for the representation of the same phenomenon, being $t_B - t_A = t'_A - t_B$, $t_B - x - t_A < t'_A - t_B + x$

The difference between Special Relativity and IP is this:
If you assume the speed of light constant, space and time are two different dimensions linked by the constancy of the speed of light c, and therefore you are forced to define a Euclidean geometry ($l^2 = S^2 + T^2$) and then introduce stationary clocks in the stationary system.
If you assume the instantaneous speed of light, space and time are two sides of the same coin, so you are forced to define a linear geometry ($l = S + T$) and time is always that marked by the wristwatches of both individuals in relation, whether they are stationary or in reciprocal movement.
In IP, the time it takes for light to go from A to B is 0, to go back from B to A' is 0, although $\overline{AA'}$' is greater than zero.
That is, the time elapsed from A to A 'is identical for Relativity and for IP, as reality requires. But while for Relativity the light has actually travelled, point by point, the infinite points that lead A to B and back. For the IP, on the other hand, the light reached B in an instant, which it immediately (after having travelled its very small radius) and instantly returned to the sender. However, for the sender, between act A and act A ', in that relationship, the period of power $\overline{AA'}$ opened.
The period of potency (for that specific relationship) is an imaginary time, the time of thought.

In summary, in the IP, contrary to what is done in Relativity, one always follows the path (which occurs in the power) of light.
So the times are dictated by the length of the light path. It is like a thread whose stretch is also a meter that unfolds along the path of interaction. Then just add the various threads of the interaction together.
Obviously the results are, and must be, in perfect agreement with Relativity (both special and general) for the simple fact that these are found experimentally conforming to reality as results.
But the same reality can be told in different ways. I think I have shown that the IP mode is more primitive and general and therefore allows you to understand with simplicity what is not understood with the other theories.
The proof is the coherence and naturalness with which IP explains current physics and overcomes it, reaching its goal in another way.

In other words,
if you start from the metaphysical assumption that space is Euclidean (or in any case quadratic) to describe the world

you discover that the speed of light is constant and you discover special and general relativity, that is, you represent the world as continuous .... as a continuous act .. the ongoing ongoing.
However, if you run the hypothesis that the speed of light is instantaneous, you discover that spacetime is made up of a single thread that goes on spinning and twisting, which you can measure in meters or seconds, which unites individual ghosts in the act, which reveal themselves in the act in which they are touched by the thread, and then re-immerse themselves in the period of power until the next instant in which the thread touches them again, in which they come back into action revealing themselves again. And this is precisely the terrain of Quantum Mechanics ....

Thus we understand that Euclidean space is not primitive but only an artifice, which doubles the one dimension in two, space and time, and then artificially reunites them through the constancy of the speed of light.
This artifice serves to fill with act, and therefore to negate, the period of potency. Not to accept that in an intention, between one act and another, the period of power opens up.
Euclidean spacetime, or more generally quadratic, is precisely spacetime all in action and continuous, but it is only an artifice, very valid for all reflective phenomena, which emerge from the immense quantity of underlying interactions, which constitute the phenomenal world in which we live daily.
But when you come to consider primitive interactions, this world of continuous act begins to creak.
Quantum mechanics did it. Quantum mechanics can be described, but not understood, with Euclidean geometry.

IV. THE METRIC

A. The Lorentz transformation

Minkowski's spacetime, with its three undifferentiated spatial dimensions plus a fourth temporal dimension, represents the scenario of an external observer who observes the reflective evolution, and therefore continuously in progress, of reflective (classical) bodies. Indeed, for reflective bodies, consummation itself, as well as evolution, generally occurs in a reflexive way since the gift object is also a reflective body. It can therefore be called the geometry of reflection or continuous act. In a reflective (classic) context it is isomorphic to the geometry of Intention. In a quantum mechanics context, instead, it is epistemologically misleading.

In the geometry of intention there is no objective scenario external to the contained bodies, but each individual is a space, that unfold from his Radius, made up of an absolute spatial dimension of consummation, a spatial dimension of power and a temporal dimension. It is not a continuum, but is made up of discrete punctual acts interspersed with periods of power. It can therefore be called the geometry of consummation or discrete act. All individuals, in addition to being in a consummative relationship with each other, are in a "part of" relationship with the universal that contains them and so to rise up to the individual Universe.

Based on the Lorentz transformation (see fig. 14):

Quadratic Geometry of reflection or continuous act (Minkowski space-time)	Linear Geometry of consummation or discrete act (on the path of light)	
Minkowski space-time ↔	Velocity Plane (I-II quadrant) ↔	Potential Plane (II-III quadrant)

$$\begin{cases} \sigma = & x\cos\zeta - ict\sin\zeta \\ ic\tau = & x\sin\zeta + ict\cos\zeta \end{cases} \leftrightarrow \begin{cases} x^\diamond = & \sigma^\diamond\cos\gamma_i^\diamond + t^\diamond\sin\gamma_e^\diamond \\ \tau^\diamond = & \sigma^\diamond\sin\gamma_i^\diamond + t^\diamond\cos\gamma_e^\diamond \end{cases} \leftrightarrow \begin{cases} x^\diamond = & \sigma^\diamond\cos\gamma_e^\diamond - t^\diamond\sin\gamma_i^\diamond \\ -\tau^\diamond = & \sigma^\diamond\sin\gamma_e^\diamond - t^\diamond\cos\gamma_i^\diamond \end{cases} \tag{31}$$

At last, we have the metrics:

$$d\tau^2 - d\sigma^2 = dt^2 - dx^2 \quad \leftrightarrow \quad d\tau^\diamond + dx^\diamond = dt^\diamond + d\sigma^\diamond \quad \leftrightarrow \quad d\tau^\diamond - dx^\diamond = dt^\diamond - d\sigma^\diamond$$

or

$$\tau^{\diamond 2} - \sigma^{\diamond 2} = t^{\diamond 2} - x^{\diamond 2} \quad = \quad \begin{cases} x^\diamond = \sigma^\diamond\cos\gamma^\diamond & -t^\diamond(1+\cos\gamma^\diamond) \\ -\tau^\diamond = \sigma^\diamond(1-\cos\gamma^\diamond) & +t^\diamond\cos\gamma^\diamond \end{cases} * \begin{cases} x^\diamond = -\sigma^\diamond\cos\gamma^\diamond & +t^\diamond(1-\cos\gamma^\diamond) \\ \tau^\diamond = \sigma^\diamond(1+\cos\gamma^\diamond) & +t^\diamond\cos\gamma^\diamond \end{cases} \tag{32}$$

Furthermore, since from the first row of the 31, for $d\sigma = 0$:

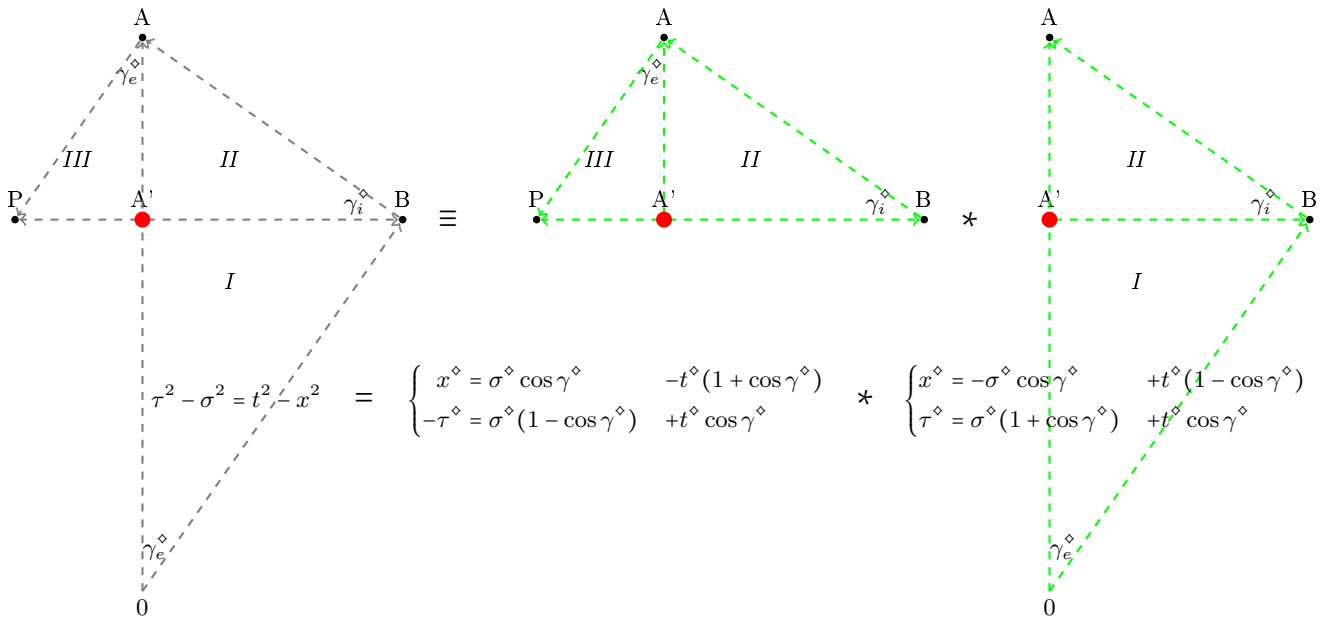


Figure 14. in the passage between the energy plane (III-II quadrant) and the plane of movement (I-II quadrant), although the $\gamma^\diamond$ angle remains unchanged (same value), its sin passes from $\sin\gamma_e^\diamond = 1-\cos\gamma_e^\diamond = 1-\cos\gamma$ to $\sin\gamma_e^\diamond = \sin\big(\arccos\big(\cos\gamma_e^\diamond\big)\big) = \sin\gamma$. So it is necessary to use $v=\sin\gamma^\diamond$ for the speed, and $V=\sin\gamma^\diamond$ for the potential.

$$\frac{dx}{cdt} = v = \tanh\zeta = \sqrt{1-\frac{1}{\cosh^2\zeta}} \quad \leftrightarrow \quad \frac{dx^\diamond}{cdt^\diamond} = V_e = \sin\gamma_e^\diamond = 1-\cos\gamma^\diamond \quad \leftrightarrow \quad \frac{dx^\diamond}{cdt^\diamond} = V_i = \sin\gamma_i^\diamond = 1+\cos\gamma^\diamond$$

(note that $v=\sqrt{1-\dfrac{1}{\cosh^2\zeta}} = \tanh\zeta \quad \leftrightarrow \quad v^\diamond = \sqrt{V_e * V_i} = \sqrt{1-\cos^2\gamma^\diamond} = \sin\gamma$)

we have:

$$\begin{cases} \sigma = \dfrac{x-vt}{\sqrt{1-v^2}} \\ \tau = \dfrac{t-vx}{\sqrt{1-v^2}} \end{cases} \leftrightarrow \begin{cases} x^\diamond = \sigma^\diamond(1-V_i)+t^\diamond V_e \\ \tau^\diamond = \sigma^\diamond V_i + t^\diamond(1-V_e) \end{cases} \leftrightarrow \begin{cases} x^\diamond = \sigma^\diamond(1-V_e)-t^\diamond V_i \\ -\tau^\diamond = \sigma^\diamond V_e - t^\diamond(1-V_i) \end{cases} \tag{33}$$

or

$$\begin{cases} \sigma = \dfrac{x-vt}{\sqrt{1-v^2}} \\ \tau = \dfrac{t-vx}{\sqrt{1-v^2}} \end{cases} \leftrightarrow \begin{cases} \sigma^\diamond = \dfrac{x^\diamond - V_e t^\diamond}{1-V_i} \\ \tau^\diamond = (1-V_e)t^\diamond + V_i\sigma^\diamond \end{cases} \leftrightarrow \begin{cases} \sigma^\diamond = \dfrac{x^\diamond + V_i t^\diamond}{1-V_e} \\ -\tau^\diamond = -(1-V_i)t^\diamond + V_e\sigma^\diamond \end{cases}$$

where since

$$x = vt - r \quad \leftrightarrow \quad x^\diamond = V_e t^\diamond - r^\diamond \quad \leftrightarrow \quad x^\diamond = -V_i t^\diamond + r^\diamond$$

we have at last:

$$\begin{cases} \text{Minkowski s.-t.} \\ \sigma = \dfrac{r}{\sqrt{1-v^2}} \\ \tau = \sqrt{1-v^2}\,t + v\sigma \end{cases} \leftrightarrow \begin{cases} \text{Velocity Plane (I-II)} \\ \sigma^\diamond = \dfrac{r^\diamond}{V_i-1} \\ \tau^\diamond = (1-V_e)t^\diamond + V_i\sigma^\diamond \end{cases} \leftrightarrow \begin{cases} \text{Potential Plane (II-III)} \\ \sigma^\diamond = \dfrac{r^\diamond}{1-V_e} \\ -\tau^\diamond = (V_i-1)t^\diamond + V_e\sigma^\diamond \end{cases} \tag{34}$$

in the inertial case ($d\gamma^\diamond = d\zeta = 0$), v and V are constants. In a field too, for $dr < \epsilon$, we can assume $d\gamma^\diamond \simeq 0$ and therefore $V \simeq constant$ and $\cos\gamma^\diamond \simeq constant$

Furthermore, since in a field the Radius $V_e r = R = constant$, the term $d(V_e\sigma^\diamond)$ and $d(V_i\sigma^\diamond)$ cancel

$$dl^2 = dt^2\cos^2\gamma^\diamond - \frac{dr^2}{\cos^2\gamma^\diamond} \quad = \quad \begin{cases} d\sigma^\diamond = \dfrac{dr^\diamond}{V_i - 1} \\ -d\tau^\diamond = (1 - V_e)dt^\diamond \end{cases} \quad * \quad \begin{cases} d\sigma^\diamond = \dfrac{dr^\diamond}{1 - V_e} \\ -d\tau^\diamond = (V_i - 1)dt^\diamond \end{cases} \tag{35}$$

At last, substituting the constant of motion $dt^\diamond/d\tau^\diamond = dt/d\tau = E/\cos^2\gamma^\diamond$:

$$U = \frac{1}{2}\left[\frac{E^2}{mc^2} - mc^2\right] = -mc^2V + \frac{1}{2}\left(mc^2V^2 + \frac{{p_r}^2}{m}\right) = V + T \tag{36}$$

where V stands for $(R/r)^j$ and where $j = \pm 1$ changes, crossing the border $r = R$, from +1, when $r > R$, to -1, when $r < R$, and vice-versa.

With the conventions of the par. § 13 we can rewrite the eq. 33 as:

$$\begin{bmatrix} \Psi_1 dl_1^\diamond \\ \Psi_2 dl_2^\diamond \\ \Psi_3 dl_3^\diamond \\ \Psi_4 dl_4^\diamond \end{bmatrix} = \left(i\frac{\partial}{\partial x^\diamond}dx^\diamond + i\frac{\partial}{\partial t^\diamond}dt^\diamond\right)\cdot \begin{bmatrix} Ae^{-i\frac{2\pi}{R}\left((1-V_i)x^\diamond + V_e t^\diamond\right)} \\ Ae^{-i\frac{2\pi}{R}\left(V_i x^\diamond + (1-V_e)t^\diamond\right)} \\ Ae^{-i\frac{2\pi}{R}\left((1-V_e)x^\diamond - V_i t^\diamond\right)} \\ Ae^{-i\frac{2\pi}{R}\left(V_e x^\diamond - (1-V_i)t^\diamond\right)} \end{bmatrix} \tag{37}$$

and therefore:

$$\left(i\partial_\mu + \frac{2\pi}{R}\right)\Psi = \left(i\frac{\partial}{\partial x^\diamond} + i\frac{\partial}{\partial t^\diamond} + \frac{2\pi}{R}\right)\Psi = \left(p^\diamond - E + m\right)\Psi = 0 \tag{38}$$

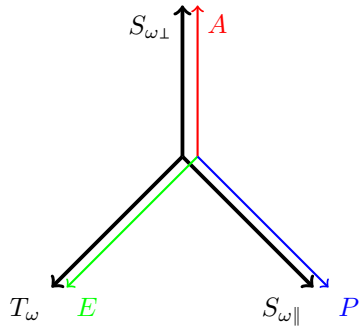
or equivalently:

$$\left(i\partial_\mu\frac{d_\mu^\diamond}{dl^\diamond} + \frac{2\pi}{R}\right)m\Psi = \left(i\frac{\partial}{\partial x^\diamond}\frac{dx^\diamond}{dl^\diamond} + i\frac{\partial}{\partial t^\diamond}\frac{dt^\diamond}{dl^\diamond} + \frac{2\pi}{R}\right)\cdot m\Psi = \left(p^2 + -E^2 + m^2\right)\Psi = 0 \tag{39}$$

B. The complete metric

The space-time of the act represents either the moment of giving or the moment of receiving, never present at the same time, and presents an absolute spatial axis of intention, radial and facing the conjugate, an absolute axis of power on which all other individuals are disposed which form the context of intention, and an absolute temporal axis that represents the individual's proper time. The axis of potency ($rd\phi$) is therefore orthogonal to the plane of the act.
More precisely, the space of potency arises from the rotation of the plane of the act around its time axis to take into account the multiplicity of possible intentions with co-present individuals of the same universal.

The three dimensional spacetime of the relationship



Each individual takes place in the present of the space of its universal individual (of which it is a part), and so on, up to the individual universe that is the place of every individual.

Since the sole universe thread is sequential, without loops, the time axes of different individuals never intersect each other, but they must respect a minimum distance equal to their radius R.

Therefore, in the intention relationship, the $\sigma_x\tau_x$ planes of the act of two any individuals are never parallel. The axis of the nodes r, on the line of the present in act of the universe $S_{\omega\parallel}$, is the intersection of the $\sigma_x\tau_x$ planes of the two individuals.

Perpendicular to the r axis of nodes, there is the time axis t along the local direction of the temporal axis T_ω of the universe.

In the space of the relationship, therefore, we can identify an rt plane of the relation in the universe with respect to which the $\sigma_x\tau_x$ planes of the two individuals are rotated respectively by an angle φ e ψ where $\varphi^\diamond +^\diamond \psi^\diamond = \gamma^\diamond$

The two reference frames must moreover rotate around the axis of the nodes r forming the two angles of weaving $\vartheta_a^\diamond$ and $\vartheta_b^\diamond$ where $\vartheta_a^\diamond +^\diamond \vartheta_b^\diamond = \vartheta^\diamond$ according to the fig. 15,

Summarizing:

1. in an inertial frame ($\vartheta^\diamond = 0,\ R = 0$), the two planes of the act are parallel and coplanar and rotated by the Lorentz angle;
2. in the relationship with ($\vartheta^\diamond = 0,\ R \neq 0$), the two planes of the act are parallel but no longer coplanar being separated by a distance equal to the Radius R, so $\sigma - r = R$ and $\tau - t\cos\gamma^\diamond = R$.
3. in the relationship with ($\vartheta^\diamond \neq 0,\ R \neq 0$), the two planes of the act are no longer coplanar or parallel.

Therefore, in the space of potency, we must introduce relationships between space paths, as $\sin\vartheta^\diamond$, that no longer extend over a path of light and therefore are no longer linear. Indeed, now we have the euclidean:

$$\sin^2\vartheta^\diamond + \cos^2\vartheta^\diamond = 1 \tag{40}$$

From the a_{32} term of eq. (46) we have $\cos\vartheta^\diamond r d\phi = i\sin\vartheta^\diamond\cos\psi^\diamond dt$ and therefore $i\tan\vartheta^\diamond = (r^2 d\phi/d\tau)/(r)$.
Since the constant of motion $r^2 d\phi/d\tau = (L+J)/m_x$, at last:

$$\tan\vartheta^\diamond = i\frac{(L+J)/m}{r} \tag{41}$$

where L and J are the orbital and spin angular momentum operator and (L+J) is the Total angular momentum operator.

In reality there are important differences compared to the representation by Euler angles and therefore compared to a gyroscope:

1. the two planes of the Act do not intersect on the node line as each of the two planes is separated from the node line by a distance equal to the Radius R
2. the meaning of the rotations is different from that of the Euler angles in that the 1st and 3st rotations with respect to the power axis represents the Lorenz rotation, that is the radial velocity between the two individuals. The second rotation "weaving angle" with respect to the axis of the nodes, on the other hand, represents the minimum weaving distance between the temporal axes of the two individuals and transforms the radial velocities into the angular velocity or spin or deflection of light in the context of a body of great mass.
   Furthermore, since the center of gravity is closer to the more massive body, the first rotation must represent the angle that opposes the heavier body, while the last the lighter one.

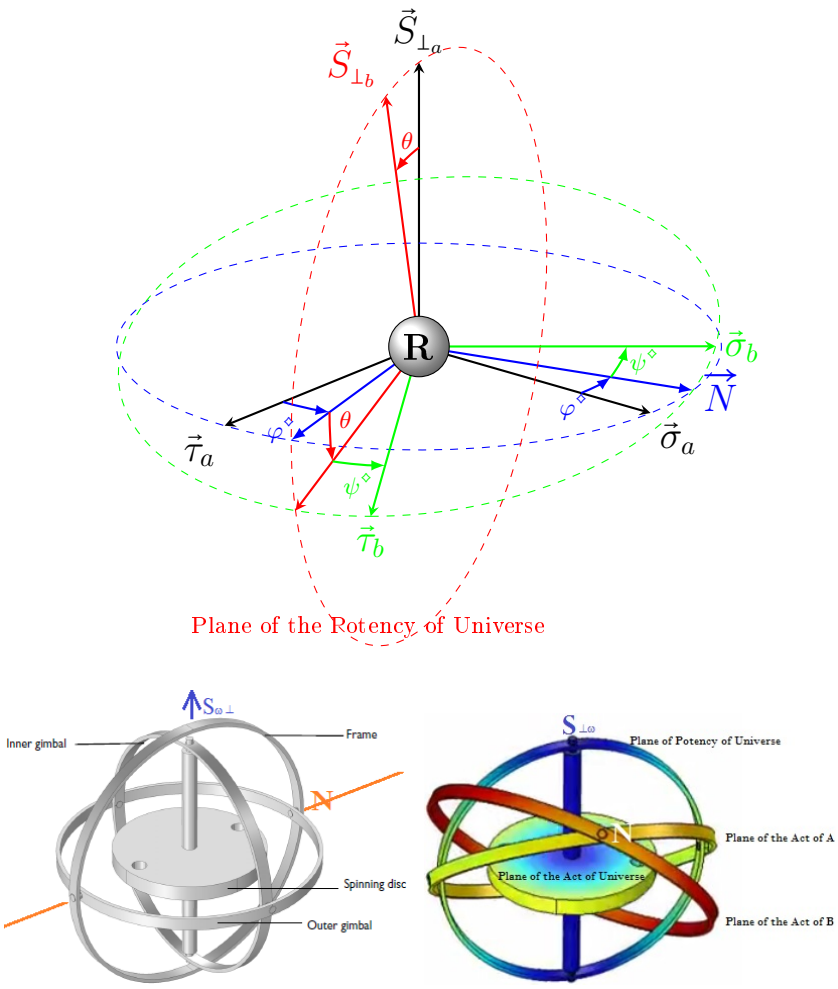


Figure 15. weaving: Since the sole universe thread is sequential, without loops, the time axes of different individuals never intersect each other, but they must respect a minimum weaving distance equal to their radius R. Therefore, the two reference frames must moreover weave around the axis of the nodes r forming the two angles of weaving $\vartheta_a^\diamond$ and $\vartheta_b^\diamond$ where $\vartheta_a^\diamond +^\diamond \vartheta_b^\diamond = \vartheta^\diamond$

3. finally, the spatial axis of the act of the individual can be aligned with the spatial axis of the act or with the temporal axis or with the axis of the potency of the universe giving rise to the three generations of matter.

The $\sin\vartheta^\diamond$ represents the angular velocity of an orbiting individual, or the Spin of a spinning individual or the blending of light near a massive body.
The weaving (weaving angle) affect the charge of individuals in the strong interaction and the configuration of the relation, since it becomes a threesome relationship.
We can now find the complete universal metric that is

$$\begin{bmatrix} dx \\ id\tau \\ \sigma d\phi \end{bmatrix} = \begin{bmatrix} \cos\varphi^\diamond & \sin\varphi^\diamond & 0 \\ -\sin\varphi^\diamond & +\cos\varphi^\diamond & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos\vartheta^\diamond & +\sin\vartheta^\diamond \\ 0 & -\sin\vartheta^\diamond & \cos\vartheta^\diamond \end{bmatrix} \begin{bmatrix} \cos\psi^\diamond & \sin\psi & 0 \\ -\sin\psi^\diamond & +\cos\psi^\diamond & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} d\sigma \\ idt \\ rd\phi \end{bmatrix} \tag{42}$$

and then

$$\begin{bmatrix} dx \\ id\tau \\ \sigma d\phi \end{bmatrix} = \begin{bmatrix} \cos\varphi^\diamond\cos\psi^\diamond - \sin\varphi^\diamond\sin\psi^\diamond\cos\vartheta^\diamond & -\cos\varphi^\diamond\sin\psi^\diamond - \sin\varphi^\diamond\cos\psi^\diamond\cos\vartheta^\diamond & \sin\vartheta^\diamond\sin\varphi^\diamond \\ \sin\varphi^\diamond\cos\psi^\diamond + \cos\varphi^\diamond\sin\psi^\diamond\cos\vartheta^\diamond & -\sin\varphi^\diamond\sin\psi^\diamond + \cos\varphi^\diamond\cos\psi^\diamond\cos\vartheta^\diamond & -\sin\vartheta^\diamond\cos\varphi^\diamond \\ \sin\vartheta^\diamond\sin\psi^\diamond & \sin\vartheta^\diamond\cos\psi^\diamond & \cos\vartheta^\diamond \end{bmatrix} \begin{bmatrix} d\sigma \\ idt \\ rd\phi \end{bmatrix} \tag{43}$$

Since $dx = V\left(-\cos\vartheta^\diamond idt + \sin\vartheta^\diamond rd\phi\right) + dr$, or, equivalently, $dx = a_{12}idt + a_{13}rd\phi + dr$ where r is the axis of nodes, we can replace dx with dr and cancel the terms a_{12} and a_{13}.

$$\begin{bmatrix} dr \\ id\tau \\ \sigma d\phi \end{bmatrix} = \begin{bmatrix} \cos\varphi^{\diamond}\cos\psi^{\diamond} - \sin\varphi^{\diamond}\sin\psi^{\diamond}\cos\vartheta^{\diamond} & 0 & 0 \\ \sin\varphi^{\diamond}\cos\psi^{\diamond} + \cos\varphi^{\diamond}\sin\psi^{\diamond}\cos\vartheta^{\diamond} & -\sin\varphi^{\diamond}\sin\psi^{\diamond} + \cos\varphi^{\diamond}\cos\psi^{\diamond}\cos\vartheta^{\diamond} & -\sin\vartheta^{\diamond}\cos\varphi^{\diamond} \\ \sin\vartheta^{\diamond}\sin\psi^{\diamond} & \sin\vartheta^{\diamond}\cos\psi^{\diamond} & \cos\vartheta^{\diamond} \end{bmatrix} \begin{bmatrix} d\sigma \\ idt \\ rd\phi \end{bmatrix} \tag{44}$$

Furtheromore, since $d\vec{R} = (a_{21}\hat{\mathbf{e}}_t + a_{31}\hat{\mathbf{e}}_\phi)\, d\sigma$ Where $\hat{\mathbf{e}}_r$, $\hat{\mathbf{e}}_t$ and $\hat{\mathbf{e}}_\phi$ denote the versor of the radial, temporal and tangential motion

$$d\vec{R} = \begin{bmatrix} dR_{\parallel} \\ dR_{\dagger} \\ dR_{\perp} \end{bmatrix} = \begin{bmatrix} 0 & 0 & 0 \\ \sin\varphi^{\diamond}\cos\psi^{\diamond} + \cos\varphi^{\diamond}\sin\psi^{\diamond}\cos\vartheta^{\diamond} & 0 & 0 \\ \sin\vartheta^{\diamond}\sin\psi^{\diamond} & 0 & 0 \end{bmatrix} \begin{bmatrix} d\sigma \\ idt \\ rd\phi \end{bmatrix} \tag{45}$$

and since on the thread of energy $d\vec{l} = \pm d\vec{R}$ or

$$\left[d\vec{l}\right] = \begin{bmatrix} d\sigma \\ id\tau \\ \sigma d\phi \end{bmatrix} = \pm \begin{bmatrix} dR_{\parallel} \\ dR_{\dagger} \\ dR_{\perp} \end{bmatrix}$$

combining the (44) and (45) we have at last the universal metric :

$$\left[d\vec{l}\right] = \begin{bmatrix} \dfrac{1}{\cos\varphi^{\diamond}\cos\psi^{\diamond} - \sin\varphi^{\diamond}\sin\psi^{\diamond}\cos\vartheta^{\diamond}} & 0 & 0 \\ 0 & -\sin\varphi^{\diamond}\sin\psi^{\diamond} + \cos\varphi^{\diamond}\cos\psi^{\diamond}\cos\vartheta^{\diamond} & -\sin\vartheta^{\diamond}\cos\varphi^{\diamond} \\ 0 & \sin\vartheta^{\diamond}\cos\psi^{\diamond} & \cos\vartheta^{\diamond} \end{bmatrix} \begin{bmatrix} dr \\ idt \\ rd\phi \end{bmatrix} \tag{46}$$

that can be rewritten in the form:

$$\pm\, m_0 c^2 \hat{\mathbf{e}}_\tau \equiv P\cos\phi\hat{\mathbf{e}}_r + P\sin\phi\hat{\mathbf{e}}_\phi + iE\hat{\mathbf{e}}_t \tag{47}$$

or equivalently (the Dirac equation [75]):

$$\pm i\vec{\mathrm{k}}E \pm \vec{\mathrm{i}}p + \vec{\mathrm{j}}m = 0$$

or

$$(\gamma^{\mu}\partial_{\mu} + im)\,\psi = 0 \qquad \text{and} \qquad R_{\mu\nu} - \frac{1}{2}g_{\mu\nu}R = \frac{8\pi G}{c^4}T_{\mu\nu}$$

Since $\gamma^{\diamond} = \psi^{\diamond} + \varphi^{\diamond}$, We have now the following special cases :

1. **The Schwarzschild metric**, when the angle $\varphi^{\diamond} = 0$ (or $\gamma^{\diamond} = \psi^{\diamond}$)

$$\left[d\vec{l}\right] = \begin{bmatrix} \dfrac{1}{\cos\psi^{\diamond}} & 0 & 0 \\ 0 & \cos\psi^{\diamond}\cos\vartheta^{\diamond} & -\sin\vartheta^{\diamond} \\ 0 & \sin\vartheta^{\diamond}\cos\psi^{\diamond} & \cos\vartheta^{\diamond} \end{bmatrix} \begin{bmatrix} dr \\ idt \\ rd\phi \end{bmatrix}$$

denoting with $V = \sin\psi^{\diamond}$ and with $d\vec{l} = \pm d\vec{R} = \sin\psi^{\diamond}\left(\cos\vartheta^{\diamond}\hat{\mathbf{e}}_t + \sin\vartheta^{\diamond}\hat{\mathbf{e}}_\phi\right) d\sigma$ and $\sin\vartheta^{\diamond} = i\dfrac{(L+J)/m}{r - R_{tot} + R_b}$

$$\left[d\vec{l}\right] \equiv \frac{dr}{V_i - 1}\hat{\mathbf{e}}_r + \left\{idt\,(1 - V_e)\cos\vartheta^{\diamond} - rd\phi\sin\vartheta^{\diamond}\right\}\hat{\mathbf{e}}_t + \left\{idt\,(1 - V_e)\sin\vartheta^{\diamond} + rd\phi\cos\vartheta^{\diamond}\right\}\hat{\mathbf{e}}_\phi \tag{48}$$

At last, for both gravitational and electrical interactions :

$$dl^2 = (1 - V)^2 c^2 dt^2 - \frac{dr^2}{(1 - V)^2} - r^2 d\phi^2 \tag{49}$$

Where, substituting the two constants of motion $r^2 d\phi/d\tau = L/m$ and $\cos\gamma^\diamond dt/d\tau = E/(mc^2)$

$$\mathbf{U} = \frac{1}{2}mc^2\left[\frac{E_0^2}{m^2c^4} - 1\right] = \frac{1}{2}mc^2\left[-2V + \left(V^2 + \left(\frac{dr}{d\tau}\right)^2\right) + \frac{L^2}{m^2R^2c^2}V^2\left(1-V\right)^2\right] \tag{50}$$

$$\mathbf{V} = \frac{1}{2}mc^2\left[\frac{E_0^2}{m^2c^4} - 1 - \left(\frac{dr}{d\tau}\right)^2\right] = \frac{1}{2}mc^2\left[-2V + V^2 + \frac{L^2}{m^2R^2c^2}V^2\left(1-V\right)^2\right] \tag{51}$$

$$F = -\frac{d\mathbf{V}}{dr} = \frac{1}{r}mc^2V\left(1-V\right)\left[1 - \frac{L^2}{m^2R^2c^2}V\left(1-2V\right)\right] \tag{52}$$

It is important to emphasize that the above eq. (50 51 52) are valid for both electrical and gravitational interactions, both outside and inside the Radius R_{ind}.

Indeed, from the fundamental proportion of the intention schema $V = R : r = r : t^\diamond$ see tab. IV, the potential V, which is always $V = \sin\gamma^\diamond \leq 1$, reverses from outside $V = R/r$ to inside $V = r/R_{ind}$.

Regarding the denominator of the centrifugal potential, it is $m_b R_a = mM$ in the external side of the gravitational interaction but $mR = 1$ in the electrical interaction and in the internal side.
Indeed when $r < R_{ind}$ we have $R = r^2/R_{ind}$ and $m = R_{ind}/r^2$ for both gravitational and electric relationships.
Furthermore, the pseudo potential V^* in the $\vec{p_\phi} = mLV^* = m\sin\vartheta^\diamond$ term must be always equal to R_{ind}/r when the native seat of the relationship is outside R, to r/R_{ind} otherwise, since its formula, contrarily to the true potential V which must be always less or equal to 1, does not reverse but continues to grow when the distance r, overflowing its seat, crosses the threshold R_{ind}.
It is the conservation of angular momentum, therefore, that determines the confinement of the relationship on one side or the other of Radius R.

At last In the neighbourhood of $V = 1$ or $\gamma^\diamond = \pi/2$ or $r = R$, we can set $V \simeq 1$ in the first and third term of the right side of eq. (50) that therefore becomes:

$$U + mc^2 \simeq +\frac{1}{2}mc^2\left(V^2 + \frac{dr^2}{d\tau^2}\right) + \frac{1}{2}mc^2\sin^2\vartheta^\diamond\frac{1}{R^2}(R-r)^2 \qquad \text{or} \qquad \mathcal{H} = \frac{\hat{p}^2}{2m} + \frac{1}{2}m\omega^2\hat{x}^2$$

in the electrical case:

$$U + mc^2 \simeq +\frac{1}{2}mc^2\left(V^2 + \frac{dr^2}{d\tau^2}\right) + \frac{1}{2}mc^2\sin^2\vartheta^\diamond R_{\bullet\epsilon}^2(R_\epsilon^\circ - r)^2$$

which is the equation of the quantum harmonic oscillator where $\omega = c\sin\vartheta^\diamond R_{\bullet\epsilon}$ whose corresponding energy levels are $E_n = \hbar\omega\left(n + \frac{1}{2}\right)$.

2. **The Kerr metric** , when the angle $\psi^\diamond = 0$ and $L = 0$.

$$\left[d\vec{l}'\right] = \begin{bmatrix} \frac{1}{\cos\varphi^\diamond} & 0 & 0 \\ 0 & \cos\varphi^\diamond\cos\vartheta^\diamond & -\cos\varphi^\diamond\sin\vartheta^\diamond \\ 0 & \sin\vartheta^\diamond & \cos\vartheta^\diamond \end{bmatrix}\begin{bmatrix} dr \\ idt \\ rd\phi \end{bmatrix}$$

we have $d\vec{l} = \pm d\vec{R} = \sin\varphi^\diamond d\sigma\,\hat{\mathbf{e}}_t$ and $V = \sin\varphi^\diamond$ and

$$d\vec{l} \equiv \frac{dr}{V_i - 1}\hat{\mathbf{e}}_r + \left\{idt\left(1-V_e\right)\cos\vartheta^\diamond - rd\phi\left(1-V_e\right)\sin\vartheta^\diamond\right\}\hat{\mathbf{e}}_t + \left\{idt\sin\vartheta^\diamond + rd\phi\cos\vartheta^\diamond\right\}\hat{\mathbf{e}}_\phi \tag{53}$$

or

$$\frac{1}{\cos\vartheta^{\diamond}}d\vec{l}\equiv\frac{1}{\cos\vartheta^{\diamond}}\frac{dr}{(V_i-1)}\hat{\mathbf{e}}_r+\left\{idt\,(1-V_e)-rd\phi\,(1-V_e)\tan\vartheta^{\diamond}\right\}\hat{\mathbf{e}}_t+\left\{idt\tan\vartheta^{\diamond}+rd\phi\right\}\hat{\mathbf{e}}_{\phi} \tag{54}$$

where $\tan\vartheta^{\diamond}=i\frac{a}{r}$ and $\frac{1}{\cos\vartheta^{\diamond}}=\sqrt{1+\tan^2\vartheta^{\diamond}}=\sqrt{1-\frac{a^2}{r^2}}$. Squaring:

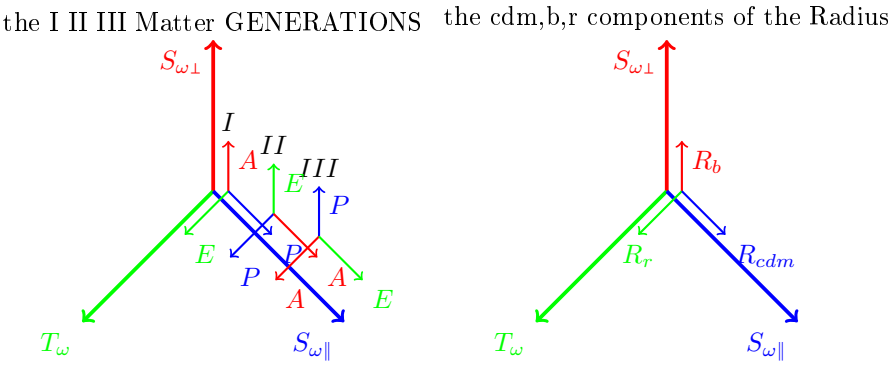
$$\left(1-\frac{a^2}{r^2}\right)dl^2=+\left(1-\frac{a^2}{r^2}\right)\frac{dr^2}{(V_i-1)^2}-\left[(1-V_e)^2+b_1\right]dt^2-\left[4\frac{a}{r}V_e+b_2\right]rd\phi dt+\left[1+\frac{a^2}{r^2}+2V_e\frac{a^2}{r^2}+b_3\right]r^2d\phi^2 \tag{55}$$

$$b_1=-\frac{a^2}{r^2}\qquad b_2=-2V_e^2\frac{a}{r}\qquad b_3=-\frac{a^2}{r^2}V_e^2$$

C. The three components of the metric space of the individual

The three axes of spacetime of the relationship, power, energy and act, correspond to the three components of matter, amoroni or dark matter, energy and baryonic matter, and to the three components of distance. Moreover, according to the three possible dispositions of the axes of the individual on the axes of the universe, we have the three generations of matter.

Each individual takes place in the present of the space of its universal individual (of which it is a part), and so on, up to the individual universe that is the place of every individual. In the Intention physics, every individual is characterized by a radius R which represents the quantity of its being. Furthermore, Act, Potency and Energeia are three concrete and distinct moments of a same individual in an intention. Each of these three different moments, that follow each other cyclically, corresponds to a distinct manifestation of being or radius R. They constitute the first three fundamental dimensions of the space of the relationship.
Furthermore, they represent a correspondent color (red-green-blue) in quantum chromodynamics (QCD) and, at last, depending on the disposition of the axes of the three-dimensional spacetime of the elementary individual on the axes of the three-dimensional spacetime of the Universe, give place to the three matter generations of the standard model. In other words, each one of the three generations of matter is the ongoing manifestation of one of the three aspects of the Radius of an individual in act (on the T_ω axis of universe).



The radius of an individual is composed of three components corresponding to its projections on the axis of the CDM on the axis of baryonic matter and on the axis of radiation, and is located along one of the three axes of the Universe (three matter generations). Indeed, from the eq. (43)

$$\vec{R}=\begin{bmatrix}R_{cdm}\\R_b\\R_r\end{bmatrix}=\left[\varphi^{\diamond}\right]\cdot\left[\vartheta^{\diamond}\right]\cdot\left[\psi^{\diamond}\right]=\begin{bmatrix}\Xi_{cc}{}^2&\Xi_{cb}{}^2&\Xi_{cr}{}^2\\\Xi_{bc}{}^2&\Xi_{bb}{}^2&\Xi_{br}{}^2\\\Xi_{rc}{}^2&\Xi_{rb}{}^2&\Xi_{rr}{}^2\end{bmatrix}\begin{bmatrix}R_{\parallel}\\R_{\perp}\\R_{\dagger}\end{bmatrix} \tag{56}$$

Table IX.

RADIUS aspect	RADIUS location	RADIUS Length	r_{eff} [b]
P ≡ ($\delta\acute{\upsilon}\nu\alpha\mu\iota\varsigma$) Amoroni (CDM)	Inside R_{ind} [a]	$R_{cdm} = r_{cdm}^2/t^{\diamond} = r^2/R_{ind}$	r_{cdm}
A ≡ ($\grave{\varepsilon}\nu\tau\varepsilon\lambda\acute{\varepsilon}\chi\varepsilon\iota\alpha$) baryonic matter	Outside R_{ind} [a]	R_b (located, to be measured)	r_b
E ≡ ($\varepsilon\nu\acute{\varepsilon}\rho\gamma\varepsilon\iota\alpha$) radiation	on the border of R_{ind} [a]	$R_r = R_{ind}$	r_r

[a] R_{ind} is the electrical Radius R_ϵ for electrical relationship, or the Universe Radius $R_\omega = c/H_0$ for gravitational relationship
[b] r_{eff} is the effective physical distance, while r is the observed distance

Table X.

seat	form	R_{ind}	R_a°	R_b°	$R_{\bullet a}\,(M_a)$	$R_{\bullet b}\,(m_b)$	$t^{\diamond} = 1/A$	$V = \sin\gamma^{\diamond}$=R/r	$L = m_b r^2 d\phi/d\tau$	ΔE
$r > R_{ind}$	b		$1/R_{\bullet_b}$	$1/R_{\bullet_a}$	$R_{\bullet_a}$	$R_{\bullet_b}$	r^2/R	R/r	$m_b r^2 d\phi/d\tau$	ΔU
$r = R_{ind}$	r	R_e°	R_e°	$R_e^\circ = R_\omega/r^2$	$R_{\bullet e} = r^2/R_\omega$	$R_{\bullet e}$ [b]	R_{ind}	1	$R_{ind}\, d\phi/d\tau$	1
$r = R_{ind}$	r	R_ω	R_ω	$R_\alpha = R_\omega/r^2$	$R_\omega = r^2/R_\omega$	R_α [c]	R_{ind}	1	$R_{ind}\, d\phi/d\tau$	1
$r < R_{ind}$	CDM	R_e°	r^2/R_{ind}	r^2/R_{ind}	R_{ind}/r^2	R_{ind}/r^2	R_{ind}	r/R_{ind}	$R_{ind}\, d\phi/d\tau$	$1/\Delta U$
$r < R_{ind}$	CDM	R_ω [a]	r^2/R_{ind}	R_{ind}/r^2	r^2/R_{ind}	R_{ind}/r^2	R_{ind}	r/R_{ind}	$R_{ind}\, d\phi/d\tau$	$1/\Delta U$

[a] The R_ω is the radius of universe or of the black hole. The radius R_e° of the electron derives from an equilibrium relationship with the universe, consequently it will have a different radius within a black hole.
[b] $R_{\bullet e} = (R_e^\circ)^{-1}$
[c] $R_\alpha = (R_\omega)^{-1}$

$$\vec{R}_I = \begin{bmatrix} \Xi_{cc}{}^2 & \Xi_{cb}{}^2 & \Xi_{cr}{}^2 \\ \Xi_{bc}{}^2 & \Xi_{bb}{}^2 & \Xi_{br}{}^2 \\ \Xi_{rc}{}^2 & \Xi_{rb}{}^2 & \Xi_{rr}{}^2 \end{bmatrix} \begin{bmatrix} R_\parallel \\ 0 \\ 0 \end{bmatrix} \quad \vec{R}_{II} = \begin{bmatrix} \Xi_{cc}{}^2 & \Xi_{cb}{}^2 & \Xi_{cr}{}^2 \\ \Xi_{bc}{}^2 & \Xi_{bb}{}^2 & \Xi_{br}{}^2 \\ \Xi_{rc}{}^2 & \Xi_{rb}{}^2 & \Xi_{rr}{}^2 \end{bmatrix} \begin{bmatrix} 0 \\ R_\perp \\ 0 \end{bmatrix} \quad \vec{R}_{III} = \begin{bmatrix} \Xi_{cc}{}^2 & \Xi_{cb}{}^2 & \Xi_{cr}{}^2 \\ \Xi_{bc}{}^2 & \Xi_{bb}{}^2 & \Xi_{br}{}^2 \\ \Xi_{rc}{}^2 & \Xi_{rb}{}^2 & \Xi_{rr}{}^2 \end{bmatrix} \begin{bmatrix} 0 \\ 0 \\ R_\dagger \end{bmatrix} \tag{57}$$

If we denote by Y the axis of the universe on which the individual consummation axis insists, we have:

$$R_Y = \sum_{x=1}^{3} R_{xy} = \sum_{x=1}^{3} \Xi_{xy}^2 R_Y \qquad \text{implies that:} \qquad \Xi_{xy}^2 = R_{xy}/R_Y \qquad \sum_{x=1}^{3} \Xi_{xy}^2 = 1$$

In other words, Y represents the matter generation and x the matter component. Hereafter, for simplicity of notation, the index corresponding to the matter Generation will be implied. The eq. (50 51 52) are valid independently also for each of the three components (c,b,r).
this means that:

$$\frac{r_x}{t_x^{\diamond}} = \frac{r}{t^{\diamond}} = V \qquad \text{and} \qquad \frac{R_x}{r_x} = \frac{r_x}{t^{\diamond}} = V\Xi_x$$

seat	$\sin\gamma^{\diamond}$
$r \geq R_{ind}$	$\bar{V}_x = \dfrac{\bar{R}_x}{\bar{r}_x} = \dfrac{\bar{r}_x}{\bar{t}^{\diamond}} \Rightarrow \dfrac{R\,\Xi_x^2}{r\,\Xi_x} = \dfrac{r\,\Xi_x}{t^{\diamond}} = V\,\Xi_x$
$r \leq R_{ind}$	$\underline{V}_x = \dfrac{\underline{R}_x}{\underline{r}_x} = \dfrac{\underline{r}_x}{\underline{t}^{\diamond}} \Rightarrow \dfrac{R/\Xi_x^2}{r/\Xi_x} = \dfrac{r/\Xi_x}{t^{\diamond}} = \dfrac{V}{\Xi_x}$

(58)

Therefore $\bar{R}_x\underline{R}_x = R^2$ and $\bar{r}_x\underline{r}_x = r^2$ $\bar{t^{\diamond}}_x\underline{t}^{\diamond}_x = t^{\diamond^2}$ $\bar{V}_x\underline{V}_x = V^2$
and

$r \geq R_{ind}$	$R = \sum_{x=1}^{3} \bar{R}_x$	$r^2 = \sum_{x=1}^{3} \bar{r}_x^2$	$t^2 = \sum_{x=1}^{3} \bar{t}_x^2$	$V^2 = \sum_{x=1}^{3} \bar{V}_x^2$
$r \leq R_{ind}$	$R^{-1} = \sum_{x=1}^{3} \underline{R}_x^{-1}$	$r^{-2} = \sum_{x=1}^{3} \underline{r}_x^{-2}$	$t^{-2} = \sum_{x=1}^{3} \underline{t}_x^{-2}$	$V^{-2} = \sum_{x=1}^{3} \underline{V}_x^{-2}$

(59)

therefore the eq. (58) become $\bar{V}_x = \frac{\bar{R}_x}{\bar{r}_x} = \frac{\bar{r}_x}{t^\diamond}$ and $\underline{V}_x = \frac{\underline{R}_x}{\underline{r}_x} = \frac{\underline{r}_x}{t^\diamond}$ or more simply $V_x = \frac{R_x}{r_x} = \frac{r_x}{t^\diamond}$ and:

$$\left\{\begin{array}{l|l} t^\diamond_{max} = R_{ind} & R_x = V_x\, r_x = \frac{r_x^2}{t^\diamond} \\ V_x = \frac{R_x}{r_x} = \frac{r_x}{t^\diamond} & r_x = \sqrt{R_x t^\diamond} = \sqrt{\frac{R_x}{R}} \cdot r = \Xi_x r \\ A_x = \frac{R_x}{{r_x}^2} = \frac{R}{r^2} = \frac{1}{t^\diamond} = A & L_x = L\sqrt{\Xi_x^3} \\ v_{\perp_x} = \sqrt{V_x} = \sqrt{\frac{r_x}{t^\diamond}} = \sqrt[4]{\frac{R_x}{t^\diamond}} = v_\perp\sqrt{\Xi_x} & \omega_x = \sqrt{\frac{1}{r_x\, t^\diamond}} = \sqrt[4]{\frac{1}{R_x\, t^{\diamond 3}}} = \omega/\sqrt{\Xi_x} \end{array}\right. \tag{60}$$

Koide's formula suggests that the three generations of leptons are interrelated.

$$-{t^\diamond}^2 + r^2 = -\frac{R^{\circ 2}}{3} \qquad \text{since } t^\diamond = R^\circ \qquad r^2 = 2/3\, R^{\circ 2}$$

$$\sum_{Y=I}^{III} r_Y^2 = 2/3 \left(\sum_{Y=I}^{III} R_Y^\circ\right)^2$$

at last, we arrive at the gravitational mass by dividing the above equation by $R_{ind} = R_\omega$

$$\sum_{Y=I}^{III} \frac{r_Y^2}{R_\omega} = 2/3 \left(\sum_{Y=I}^{III} \frac{R_Y^\circ}{\sqrt{R_\omega}}\right)^2 \qquad \text{and, for } \lim r \to R^\circ \qquad \sum_{Y=I}^{III} m_Y = 2/3 \left(\sum_{Y=I}^{III} \sqrt{m_Y}\right)^2$$

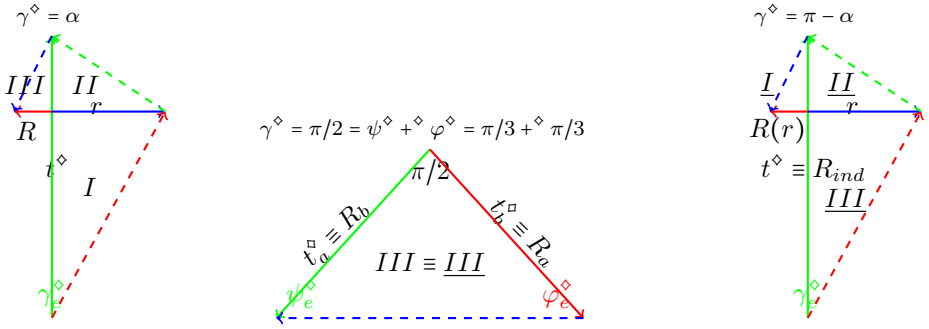
V. THE IP PARTICLE MODEL

The IP Model describes the four fundamental interactions (the electromagnetic, weak, strong and gravitational interactions) in the universe, as well as classifying all known elementary particles.
The exchange of energy, which is the fulcrum of the interaction, takes place between the act of a donor and the act of a recipient.
In the electrical interaction (coulomb/strong/weak) each individual cyclically receives as matter and donates as antimatter.
In the electrical interaction (coulomb/strong/weak) the side donating/receiving corresponds to the charge sign, which in turn depends on the direction of the time axis of the individual on the line of the present in act (positive from big bang to the present in act, negative vice-versa). It is conventionally negative for matter and positive for antimatter. The charge of an aggregate is the relative sum of the component individuals. Consequently, the equivalence between positive and negative charges is equivalent to a corresponding equivalence between matter and antimatter. The composite (gravitationally) elementary (electrically) individual R_ϵ, with its three generations, is the building block of all matter, leptons, quarks and bosons, since it is sole individual that is in equilibrium with universe.

Therefore every electrical individual counts for one (charge 1), with the exception of quarks, which exist as such only in the strong interaction, where each individual component counts for 1/3, since it is free to interact only one time out of three in correspondence with the cyclical alternation of its three moments (PotencyEnergyAct). Each moment corresponds to a color of chromodynamics.
From these assumptions it follows that neutrinos, as they are electrically neutral, are constituted by a couple matter-antimatter (−1, +1) linked via weak interaction. Analogously, the quarks Up are supposed to be constituted by a couple of individuals matter-antimatter (−1/3, +1) where only one is engaged in the strong interaction, the one with charge −1/3, while the other is linked to this via weak interaction, far away, and therefore does not interfere with the strong interaction and has charge +1.

It follows also that the spin 1/2 is a property of the neutrino and quark Up wavefunctions as a whole, not of their component elements.

The three configurations of the spacetime of the relationship



COULOMB
R = *constant*
Outside R

STRONG
$t^\diamond = r = R$ = *constant*
Border of R

WEAK
$t^\diamond = R_{ind}$ = *constant*
Inside R

The three axes correspond to the three fundamental symmetry operations in particle physics:

$S_\parallel$	V	*Momentum/Potential*	**P**arity	reverses signs of space coordinates
T	E	*Energy*	**T**ime reversal	reverses sign of time coordinate
$S_\perp$	m	*mass*	**C**harge conjugation	exchanges particle and antiparticle

$$CP \equiv T \qquad CT \equiv P \qquad PT \equiv C \qquad CPT \equiv 1$$

(see [75]) Amorone is the reflected elementary individual of the universe and has its own non-zero Radius. Mass is a concentration of amoroni (cdm) which form a closed space, which is the elementary individual or electron.The electron therefore has its own radius and therefore its own identity, it is an individual, and it is in three forms corresponding to the three generations of matter each corresponding to one of the three axes of the Universe.
Inside the electron other individuals, that is other electrons, can find a place, thus forming all the building blocks of the model of physics. It is the conservation of the angular momentum that determines the confinement of the content. Energy and therefore mass can be accumulated within an individual container by supplying kinetic energy to homologous individuals contained in it.

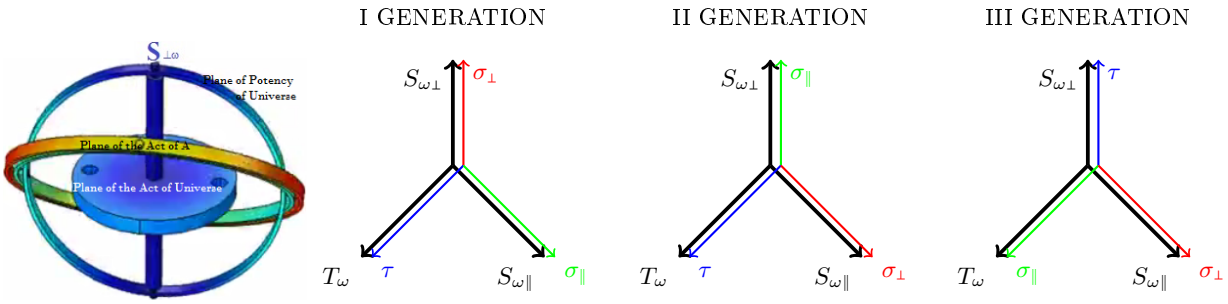
The electron in the strong interaction area appears as a quark. A pair of matter antimatter at the top of the big bang, where $\gamma^\diamond = \pi/2$, constitutes a boson, while at the end, where $\gamma^\diamond \simeq \pi$, constitutes a neutrino. A neutrino with one of its two elements engaged in a strong interaction with other quarks, constitutes a quark UP. A triad composed of a couple of matter antimatter plus a third individual on one of the three axes, constitutes itself as a boson that is in an unstable equilibrium at the top of the big bang where $\gamma^\diamond = \pi/2$. When it collapses, it frees the heterologous pair again either as an UP quark or as a neutrino and releases the mass of the third individual placed on one of the three axes of the universe as residue. In this way the weak interaction realizes the decay from one generation to the other. Conversely, a triad of homologous individuals is arranged symmetrically along the three axes of the container space, at the borders of the internal space, where they rotate with a constant angular momentum and constitute the baryon.

About the mass, it has two fundamental origin:

1. the cdm (amoroni) inside the Radius R_{ind} of an electron or of the universe. It is equal to r^2/R_ω and is localized on the side $\gamma^\diamond = 0$. It is the origin of the mass of electrons and of neutrinos. Depending on the axis, the electron gives rise to the three generations of matter.

2. When $\gamma^\diamond = \pi/2$, the three axes of an individual converge on a single point which is its Big Bang continuous. Now, in the configuration $\gamma^\diamond = \pi/2$, we can have two symmetrical configurations $\varphi^\diamond = \psi^\diamond = \pi/3$. They are:

   - the photon zone: a pair matter antimatter on the same axis that gives place to bosons.
   - the Higgs zone: a triad of individuals (R_{cdm}, R_b, R_r) respectively on the three homologous axes. $m = \alpha^{-1} m_e$, $L = \alpha^{-1}$ and $V = \sin(\varphi^\diamond - \alpha) \simeq 1/2$. It is the seat of the Higgs mechanism. A mixed antimatter matter gives rise to the $W^\pm$ and Z^0 bosons and the Higgs boson. A homologous triad gives rise to the baryons.



	GENERATIONS				LEPTONS				QUARKS		
	I	*II*	*III*	charge	*I*	*II*	*III*	charge	*I*	*II*	*III*
$S_{\omega\perp}$	$\sigma_\perp$	$\sigma_\parallel$	τ	-1	e	μ	τ	$-1/3$	d	s	b
$T_\omega + S_{\omega\parallel}$	$\tau+\sigma_\parallel$	$\tau+\sigma_\perp$	$\sigma_\parallel+\sigma_\perp$	$-1+1$	$\bar{\nu}_e$	$\bar{\nu}_\mu$	$\bar{\nu}_\tau$	$-1/3+1$	$\bar{u}$	$\bar{c}$	$\bar{t}$

Table XI. overview of the elements: We identify the unit charge with the individual and the sign with the matter-antimatter bipartition according to the direction of the individual's temporal axis on the local plane of the universe. Therefore each individual carries a unit charge except individuals involved in strong interaction that count for 1/3, since they are free to interact only one time out of three. Therefore, all the electrically composed matter, having to be linked by an attractive force, always involves a matter-antimatter pair except in the strong interaction where a triad of homologue individuals (-1/3), despite the repulsion, are bound to remain united because of the Pauli exclusion principle, and form the baryons. It follows also that the spin 1/2 is a property of the neutrino and quark Up wavefunctions as a whole, not of their component elements.

the mechanism of Higgs, thanks to the fact that it resides astride the three dimensions, acts as a shuttle between generations and gives mass to bosons and baryons and mesons

Regarding the mass, from the eq. (60) we have

$$R_Y = \frac{r_y^2}{t_y} = \frac{r^2}{t} \qquad R_Y = \frac{r_{cdm}^2}{t_y} + \frac{r_b^2}{t_y} + \frac{r_r^2}{t_y}$$

In the Coulomb/Newton and weak area

$$\vec{R}_\bullet = \begin{bmatrix} R_{\bullet cdm} \\ R_{\bullet b} \\ R_{\bullet r} \end{bmatrix} = \begin{bmatrix} \Xi_{cc}{}^2 & \Xi_{cb}{}^2 & \Xi_{cr}{}^2 \\ \Xi_{bc}{}^2 & \Xi_{bb}{}^2 & \Xi_{br}{}^2 \\ \Xi_{rc}{}^2 & \Xi_{rb}{}^2 & \Xi_{rr}{}^2 \end{bmatrix} \begin{bmatrix} R_{\omega\parallel} \\ R_{\omega\perp} \\ R_{\omega\dagger} \end{bmatrix} \qquad \vec{R}^\circ = \begin{bmatrix} R^\circ_{cdm} \\ R^\circ_b \\ R^\circ_r \end{bmatrix} = \begin{bmatrix} \Xi_{cc}{}^{-2} & \Xi_{cb}{}^{-2} & \Xi_{cr}{}^{-2} \\ \Xi_{bc}{}^{-2} & \Xi_{bb}{}^{-2} & \Xi_{br}{}^{-2} \\ \Xi_{rc}{}^{-2} & \Xi_{rb}{}^{-2} & \Xi_{rr}{}^{-2} \end{bmatrix} \begin{bmatrix} R_{\alpha\parallel} \\ R_{\alpha\perp} \\ R_{\alpha\dagger} \end{bmatrix} \tag{61}$$

In the Strong area

$$\vec{R}^\circ = \begin{bmatrix} R^\circ_{cdm} \\ R^\circ_b \\ R^\circ_r \end{bmatrix} = \begin{bmatrix} \Xi_{cc}{}^2 & \Xi_{cb}{}^2 & \Xi_{cr}{}^2 \\ \Xi_{bc}{}^2 & \Xi_{bb}{}^2 & \Xi_{br}{}^2 \\ \Xi_{rc}{}^2 & \Xi_{rb}{}^2 & \Xi_{rr}{}^2 \end{bmatrix} \begin{bmatrix} R^\circ_{e_\parallel} \\ R^\circ_{e_\perp} \\ R^\circ_{e_\dagger} \end{bmatrix} \qquad \vec{R}_\bullet = \begin{bmatrix} R_{\bullet cdm} \\ R_{\bullet b} \\ R_{\bullet r} \end{bmatrix} = \begin{bmatrix} \Xi_{cc}{}^{-2} & \Xi_{cb}{}^{-2} & \Xi_{cr}{}^{-2} \\ \Xi_{bc}{}^{-2} & \Xi_{bb}{}^{-2} & \Xi_{br}{}^{-2} \\ \Xi_{rc}{}^{-2} & \Xi_{rb}{}^{-2} & \Xi_{rr}{}^{-2} \end{bmatrix} \begin{bmatrix} R_{\bullet e_\parallel} \\ R_{\bullet e_\perp} \\ R_{\bullet e_\dagger} \end{bmatrix} \tag{62}$$

$$\begin{bmatrix} R_{\alpha\parallel} \\ R_{\alpha_\perp} \\ R_{\alpha_\dagger} \end{bmatrix} = R_{\alpha\parallel} \cdot \begin{bmatrix} 1 \\ \alpha^1 \\ \alpha^2 \end{bmatrix} \qquad \begin{bmatrix} R_{\omega\parallel} \\ R_{\omega\perp} \\ R_{\omega\dagger} \end{bmatrix} = R_{\omega\parallel} \cdot \begin{bmatrix} 1 \\ \alpha^{-1} \\ \alpha^{-2} \end{bmatrix} \qquad \begin{bmatrix} R_{\bullet e_\parallel} \\ R_{\bullet e_\perp} \\ R_{\bullet e_\dagger} \end{bmatrix} = R_{\bullet e_\parallel} \cdot \begin{bmatrix} 1 \\ \alpha^{-1} \\ \alpha^{-2} \end{bmatrix} \qquad \begin{bmatrix} R^\circ_{e_\parallel} \\ R^\circ_{e_\perp} \\ R^\circ_{e_\dagger} \end{bmatrix} = R^\circ_{e_\parallel} \cdot \begin{bmatrix} 1 \\ \alpha^1 \\ \alpha^2 \end{bmatrix} \tag{63}$$

Since the Baryonic component of the Radius (mass) lies on the axis of Potency $S_\perp$, orthogonal to the plane of the Act $S_\parallel T$, we have:

$$S_\perp \leftrightarrow S_\perp = 1 \qquad S_\parallel \leftrightarrow S_\perp = \alpha^{-1} \qquad T \leftrightarrow S_\perp = \alpha^{-2} \qquad S_\parallel \leftrightarrow T = 2\pi$$

or

$$\begin{array}{c|ccc} & \sigma_{\parallel} & \tau & \sigma_{\perp} \\ \hline \sigma_{\omega\parallel} & 1 & (2\pi) & \alpha^{-1} \\ \tau_{\omega} & (2\pi) & 1 & \alpha^{-2} \\ \sigma_{\omega\perp} & \alpha^{-1} & \alpha^{-2} & 1 \end{array}$$

LEPTONS

$$\begin{array}{c|c|ccc} \text{charge} & \text{GENERATIONS} & & & \\ \begin{pmatrix} -1 \\ -1+1 \end{pmatrix} & \begin{pmatrix} \sigma_{\ell\perp} \\ \tau_\ell + \sigma_{\ell\parallel} \end{pmatrix} & \begin{pmatrix} \sigma_{\ell\parallel} \\ \sigma_{\ell\perp} + \tau_\ell \end{pmatrix} & \begin{pmatrix} \tau_\ell \\ \sigma_{\ell\perp} + \sigma_{\ell\parallel} \end{pmatrix} & \\ \hline \begin{pmatrix} S_{\omega\perp} \\ T_\omega + S_{\omega\parallel} \end{pmatrix} & \begin{pmatrix} e \\ \bar{\nu}_e \end{pmatrix} & \begin{pmatrix} \mu \\ \bar{\nu}_\mu \end{pmatrix} & \begin{pmatrix} \tau \\ \bar{\nu}_\tau \end{pmatrix} & \end{array} \approx \begin{pmatrix} m_e \\ 2^4\alpha^4\pi m_e \end{pmatrix} \cdot \begin{array}{c|ccc} & \text{GENERATIONS} & & \\ & \begin{pmatrix} \sigma_{\ell\perp} \\ \tau_\ell + \sigma_{\ell\parallel} \end{pmatrix} & \begin{pmatrix} \sigma_{\ell\parallel} \\ \sigma_{\ell\perp} + \tau_\ell \end{pmatrix} & \begin{pmatrix} \tau_\ell \\ \sigma_{\ell\perp} + \sigma_{\ell\parallel} \end{pmatrix} \\ \hline & \begin{pmatrix} 1 \\ \left(\frac{2\cdot1-1}{1^2}\right)^2 \end{pmatrix} & \begin{pmatrix} 1/4\cdot 2\pi\alpha^{-1} \\ \left(\frac{2\cdot2-1}{2^2}\right)^2 \end{pmatrix} & \begin{pmatrix} 1/4\cdot\alpha^{-2} \\ \left(\frac{2\cdot3-1}{3^2}\right)^2 \end{pmatrix} \end{array}$$

PMNS Matrix

$$\begin{array}{c|ccc} & \nu_1 & \nu_2 & \nu_3 \\ \hline \nu_e & {U_{e1}}^2 & {U_{e2}}^2 & {U_{e3}}^2 \\ \nu_\mu & {U_{\mu1}}^2 & {U_{\mu2}}^2 & {U_{\mu3}}^2 \\ \nu_\tau & {U_{\tau1}}^2 & {U_{\tau2}}^2 & {U_{\tau3}}^2 \end{array} \approx 1/6 \cdot \begin{array}{c|ccc} & \nu_1 & \nu_2 & \nu_3 \\ \hline \nu_e & 4 & 2 & 0 \\ \nu_\mu & 1 & 2 & 3 \\ \nu_\tau & 1 & 2 & 3 \end{array}$$

QUARKS

$$\begin{array}{c|c|ccc} \text{charge} & \text{GENERATIONS} & & & \\ \begin{pmatrix} -1/3 \\ -1/3+1 \end{pmatrix} & \begin{pmatrix} \sigma_{q\perp} \\ \tau_q + \sigma_{q\parallel} \end{pmatrix} & \begin{pmatrix} \sigma_{q\parallel} \\ \sigma_{q\perp} + \tau_q \end{pmatrix} & \begin{pmatrix} \tau_q \\ \sigma_{q\perp} + \sigma_{q\parallel} \end{pmatrix} & \\ \hline \begin{pmatrix} S_{\omega\perp} \\ T_\omega + S_{\omega\parallel} \end{pmatrix} & \begin{pmatrix} d \\ \bar{u} \end{pmatrix} & \begin{pmatrix} s \\ \bar{c} \end{pmatrix} & \begin{pmatrix} b \\ \bar{t} \end{pmatrix} & \end{array} \approx m_{up} \cdot \begin{array}{c|ccc} & \text{GENERATIONS} & & \\ & \begin{pmatrix} \sigma_{q\perp} \\ \tau_q + \sigma_{q\parallel} \end{pmatrix} & \begin{pmatrix} \sigma_{q\parallel} \\ \sigma_{q\perp} + \tau_q \end{pmatrix} & \begin{pmatrix} \tau_q \\ \sigma_{q\perp} + \sigma_{q\parallel} \end{pmatrix} \\ \hline & \begin{pmatrix} 2 \\ 1 \end{pmatrix} & \begin{pmatrix} \pi^{-1}\alpha^{-1} \\ 4\cdot\alpha^{-1} \end{pmatrix} & \begin{pmatrix} \pi^{-2}\alpha^{-2} \\ 4\cdot\alpha^{-2} \end{pmatrix} \end{array}$$

CKM Matrix

$$\begin{array}{c|ccc} & \text{d} & \text{s} & \text{b} \\ \hline \text{u} & {V_{ud}}^2 & {V_{us}}^2 & {V_{ub}}^2 \\ \text{c} & {V_{cd}}^2 & {V_{cs}}^2 & {V_{cb}}^2 \\ \text{t} & {V_{td}}^2 & {V_{ts}}^2 & {V_{tb}}^2 \end{array} \approx \begin{array}{c|ccc} & \sigma_{q\perp} & \sigma_{q\parallel} & \tau_q \\ \hline \sigma_{q\perp} & 1 & 1/3\cdot(2\pi)^{-1} & 1/4\cdot\alpha^2 \\ \sigma_{q\parallel} & 1/3\cdot(2\pi)^{-1} & 1 & 1/4\cdot\alpha^1 \\ \tau_q & 1/4\cdot 2\pi\alpha^2 & 1/4\cdot\alpha^1 & 1 \end{array} \approx \begin{array}{c|ccc} & \text{d} & \text{s} & \text{b} \\ \hline \text{u} & 0.0.9487 & 0.05128 & 1.366\times10^{-5} \\ \text{c} & 0.05122 & 0.9471 & 0.001643 \\ \text{t} & 7.25\times10^{-5} & 0.001584 & 0.9983 \end{array}$$

we can get these values by a matrix $Z_1X_2Z_3\left[\varphi^\diamond\right]\cdot\left[\vartheta^\diamond\right]\cdot\left[\psi^\diamond\right]$ with $\varphi^\diamond = \pi/2 + 1.13\alpha$, $\psi^\diamond = \pi/2 + 6\alpha$, $\vartheta^\diamond = .227\alpha$ ($\sin x^\diamond = 1 - \cos x^\diamond$) .

INTERACTION CARRIERS (bosons: γ, g, $W^{\pm}$, Z_0)

charge	GENERATIONS		
$(-1+1)$	$(\tau+\bar{\tau})$	$(\sigma_{\parallel}+\bar{\sigma}_{\parallel})$	$(\sigma_{\perp}+\bar{\sigma}_{\perp})$
$S_{\omega\parallel}$	$\gamma,\ g,\ Z_0$	$\gamma,\ g,\ Z_0$	$\gamma,\ g,\ Z_0$

charge	GENERATIONS		
$\begin{pmatrix}-1\\-1+1\end{pmatrix}$	$\begin{pmatrix}\tau\\\sigma_{\parallel}+\bar{\sigma}_{\perp}\end{pmatrix}$	$\begin{pmatrix}\sigma_{\parallel}\\\tau+\bar{\sigma}_{\perp}\end{pmatrix}$	$\begin{pmatrix}\sigma_{\perp}\\\sigma_{\parallel}+\bar{\tau}\end{pmatrix}$
$S_{\omega\parallel}$	W^-	W^-	W^-

A. The three areas of electrical interaction

Depending on the angle $\gamma^{\blacklozenge} = \gamma_q^{\blacklozenge} \pm \alpha/n$, we have all kinds of interactions (see fig. 16):

$\gamma_q^{\blacklozenge} = 0$	in the external area (Newton/Coulomb),
$\gamma_q^{\blacklozenge} = \pi/2$	in the border area (strong force),
$\gamma_q^{\blacklozenge} = \pi$	in the internal area (weak force).

The whole range of the relationship is covered by the only equation (50) (see fig. 17) .

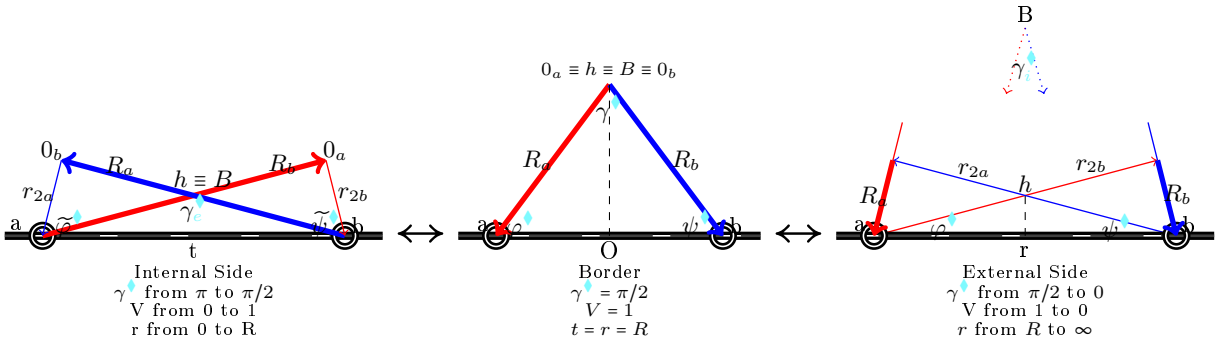


Figure 16. The intention schema when the interaction takes place respectively: On the internal side, on the border and on the external side.

1. *Coulomb and Weak area* $\left(\gamma^{\blacklozenge} \to [\pi] \pm \alpha/n\right)$

The electromagnetic relation (see fig. 18) takes place in the external area where $\gamma^{\blacklozenge} \to \pm\alpha/n$ and the angle between spatial axes is $\gamma_i^{\blacklozenge}$.
Its inverse, the weak interaction, vice-versa, takes place in the internal area where $\gamma^{\blacklozenge} \to \pi \pm \alpha/n$ and the angle between spatial axes is $\gamma_e^{\blacklozenge}$.
Each reverses in the other crossing the border R_{ind}.

In the reverse (see fig. 18) :

Weak	⇆	**Electrom.**
$S_{\parallel}$	⇆	$S_{\perp}$
P	⇆	C
Potential	⇆	Mass

Weak	⇆	**Electrom.**
R_{ind}	⇆	t
R_a	⇆	r_{2a}
R_b	⇆	r_{2b}

Weak	⇆	**Electrom.**
$\gamma_i^{\blacklozenge}$	⇆	$\gamma_e^{\blacklozenge}$
$\psi^{\blacklozenge}$	⇆	$\widetilde{\varphi}^{\blacklozenge}$
$\varphi^{\blacklozenge}$	⇆	$\widetilde{\psi}^{\blacklozenge}$

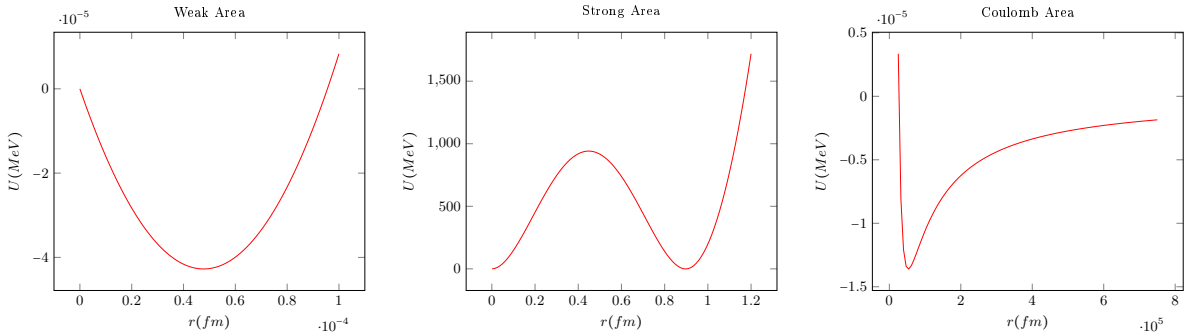


Figure 17. The electrical relationship is governed by the universal equation (50) (see 50) where:
$\frac{L}{c} = n\alpha^{-1}$ and $m = m_e$ in the Coulomb area or $m = m_\epsilon = \pi m_e$ in the strong area ($R_\epsilon^\circ = R_e^\circ/(2\pi) = 0.896978$ fm)
We remember that:
$R^\circ = \frac{1}{R_\bullet} i.u. = K\frac{1}{R_\bullet} meters$ where $R_\bullet = mc^2\frac{1}{\Theta} i.u. = mc^2\frac{K}{\Theta} meters = mc^2\frac{2G}{c^4} meters$
The potential $V = \sin\gamma^\blacklozenge = 1-\cos\gamma^\blacklozenge = r/R^\circ$ in the internal side and the reverse $V = R^\circ/r$ by crossing the border on the external side, and vice-versa. Furthermore, the pseudo potential V^* in the $\vec{p_\phi} = mLV^* = m\sin\vartheta$ term must be always equal to R_{ind}/r when the native seat of the relationship is outside R, to r/R_{ind} otherwise, since its formula, contrarily to the true potential V which must be always less or equal to 1, does not reverse but continues to grow when the distance r, overflowing its seat, crosses the threshold R_{ind}.
It is the conservation of angular momentum, therefore, that determines the confinement of the relationship on one side or the other of Radius R
The eq. (50) is particularized as:
$U = mc^2\left(-V + \frac{1}{2}V^2 + \frac{1}{2}\frac{L^2}{c^2}\left(\frac{r}{R^\circ}\right)^2(1-V)^2\right)$ when the interaction takes place on the internal side (see the plot on the left and center).
$U = mc^2\left(-V + \frac{1}{2}V^2 + \frac{1}{2}\frac{L^2}{c^2}\left(\frac{R^\circ}{r}\right)^2(1-V)^2\right)$ when the interaction takes place on the external side (see the plots on the right).
The two forms are symmetrical with respect to the t axis but with a very different r scale. They have:
three real roots at $V \simeq \{0,\ 2L^{-2},\ 1-L^{-1}\}$ i.e. $\gamma^\blacklozenge$ or $\pi-\gamma^\blacklozenge \simeq \{0,\ 2L^{-1},\ \pi/2-L^{-1}\}$
a global minimum $U = -1/2\,mc^2$ at $V = 1$ i.e. $\gamma^\blacklozenge$ or $\pi-\gamma^\blacklozenge \simeq \pi/2$ (on the center panel -mesons zone-)
a local minimum $U \simeq -1/2\,L^{-2}mc^2$ at $V \simeq L^{-2}$ i.e. $\gamma^\blacklozenge$ or $\pi-\gamma^\blacklozenge \simeq \sqrt{2}L^{-1}$ (on the right and left panel -weak and Coulomb zone-)
a local maximum $U \simeq \left(-3/8+(1/2)^5L^2\right)mc^2$ at $V = 1/2-L^{-2}$ i.e. $\gamma^\blacklozenge$ or $\pi-\gamma^\blacklozenge \simeq \pi/3-L^{-2}$. (on the center panel -baryon/Higgs zone-)

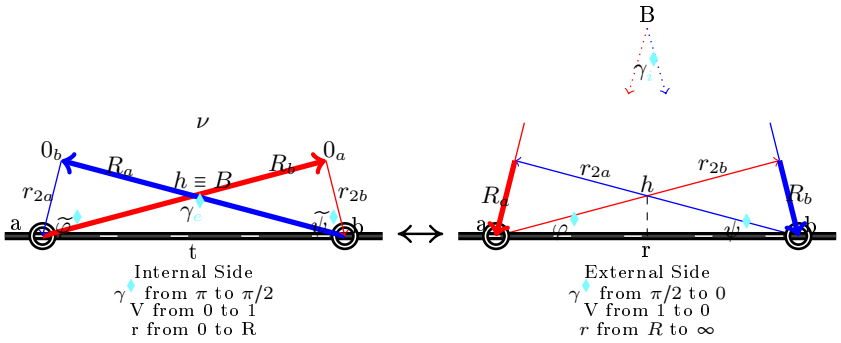


Figure 18. On the right the electromagnetic relation (i.e proton electron), which take place outside the radius R_{ind} where $\gamma^\blacklozenge \to \pm\alpha/n$ and $\gamma^\blacklozenge \to \gamma_i^\blacklozenge$. On the left its inverse, the weak interaction (neutrinos), which takes place inside where $\gamma^\blacklozenge \to \pi \pm \alpha/n$ and $\gamma^\blacklozenge \to \gamma_e^\blacklozenge$.

In the Weak zone the $S_\parallel$ axis passes through the $S_\perp$ axis. Therefore the Weak interaction violates both charge conjugation and parity in-variance. However, the weak interaction leaves systems invariant under the combination CP.
The weak relationship involves a couple of individuals matter-antimatter and takes place where $\gamma^\blacklozenge = \pi - \frac{\alpha}{n}$ where n in {1,2,3} and $V = (1-\cos\gamma^\blacklozenge) = \frac{1}{2}\frac{\alpha^2}{n^2}$.
The result of the weak relationship between an electron and a positron are the three generations of *Neutrinos*, one for each of the three levels n of the weak interaction.
Their mass emerges from the dark matter (CDM) contained within their space r_ν . Therefore we must have:

$$r_\nu = VR_\epsilon^\circ = \frac{\alpha^2}{n^2}R_\epsilon^\circ$$

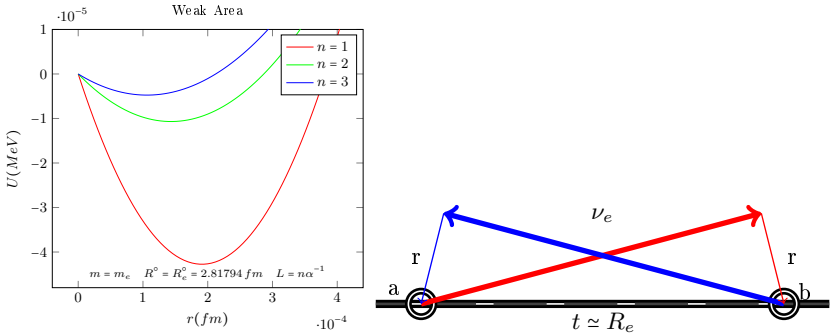


Figure 19. Neutrino: $\pi m_e\left[-V+1/2V^2+1/2(nL)^2V^2(1-V)^2\right]$ where R° = .896978 and $L = n\alpha^{-1}$. There is one generation for each of the three angular momentum levels predicted by the weak interaction.

$$m_\nu = \frac{r^2}{R^{\circ 2}_\epsilon}\frac{R^{\circ 2}_\epsilon}{R_\omega} = V^2 m_\epsilon = \frac{\alpha^4}{n^4}\pi m_e$$

Table XII.

neutrino	n	$\mathbf{V}$ [a] $4(2n-1)/(n\alpha^{-1})^2$	R_{ind} R°_ϵ [b]	r (m) VR_{ind}	cross section (m^2) $8/3\cdot\pi r^2$	m (eV/c^2) r^2/R_ω [c]
ν_e	1	0.000213005	.896981 fm	1.9106^{-19}	3.058204^{-37}	0.072837
ν_μ	2	0.000159754	.896981 fm	1.4330^{-19}	1.720240^{-37}	0.040971
ν_τ	3	0.000118336	.896981 fm	1.0615^{-19}	9.438901^{-38}	0.022481

[a] the $4(2n-1)$ factor is suggested by the cross section measures of neutrino: *"The average electroweak characteristic size is* $r^2 = n\times 10^{-33}\ cm^2$ $(n\times 1\ nanobarn)$, *where* $n = 3.2$ *for electron neutrino,* $n = 1.7$ *for muon neutrino and* $n = 1.0$ *for tau neutrino" [52]* . It should be due to an oscillation around the equilibrium point.
[b] $R^\circ_\epsilon = R^\circ_e/\pi = 8.969810^{-16} m$
[c] $1/R_\omega = m_\epsilon/(R^\circ_\epsilon)^2$ where $m_\epsilon = m_e\pi = 1.60535\, MeV/c^2$

Table XIII. Since $\Delta E = m_0\Delta\cos\epsilon_{0-} = m_0\Delta\cos\left([\pi]\pm\frac{\alpha}{n}\right) = m_0\Delta\frac{1+\cos\gamma}{2} = \frac{1}{2}\Delta\frac{1}{r}$

area	ϵ_{0-}	$\Delta E^{n2}_{n1} = \frac{1}{2}\Delta\left(\frac{1}{r}\right)^{n2}_{n1}$	products
outside	$+\frac{\alpha}{n}$	$= \frac{1}{2}\Delta\frac{1}{r} = \frac{1}{2}\left(\frac{1}{n_1^2\alpha^{-2}R^\circ_{Tot}} - \frac{1}{n_2^2\alpha^{-2}R^\circ_{Tot}}\right)$	***Balmer's radiation***
inside	$\pi - \frac{\alpha}{n}$	$= \frac{2}{\Delta r} = \left(\frac{1}{2}\left(\frac{1}{n_1^2\alpha^{-2}R_{\bullet Tot}} - \frac{1}{n_2^2\alpha^{-2}R_{\bullet Tot}}\right)\right)^{-1}[\pi]$ [a]	***bosons***

[a] the π term depend on the kind of motion: circular or radial.

A jump between different levels ΔU, corresponding to different angular momentum L (see tab. XIII), gives place:

- electromagnetic waves in the electromagnetic Interaction, where $\Delta U \to \Delta E$.
  We arrive at the Balmer's formula considering that $R^\circ_{Tot} = (R^\circ{}_e + R^\circ{}_{nucleus})$ where $R^\circ{}_e >> R^\circ{}_{nucleus}$ and therefore $R^\circ_{Tot} \simeq R^\circ{}_e$.
- $W^\pm$ and Z_0 bosons in the weak interaction where $\Delta U \to \Delta M$ and where the levels are only three(1,2 and 3).
  In particular, in the beta decay, if $R^\circ{}_a$ and $R^\circ{}_b$ are the heterologous individuals of a quark Down and anti-Up, jumping from n=2 to n=1, we have $\Delta M \simeq 2(1-1/4)^{-1}\alpha^{-2}\pi m_{0e} = 80.38575$ GeV which is equal to the mass of $W^\pm$.
  Analogously, if $R^\circ{}_a$ and $R^\circ{}_b$ are the heterologous individuals of a quark Up and anti-Up on n=2 and n=3, and both these individuals jump on n=1, then we have $\Delta M = W^\pm + (1-1/9)^{-1}\alpha^{-2}m_{0e} = 91.18676$ GeV which is equal

to the mass of Z_0.
More generally, a change from $n = i$ to $n = j$ is never direct since it requires less energy to change from $n = i$ to $n = 1$ and then from $n = 1$ to $n = j$.

$$\mu^- + \bar{\nu}_\mu \rightarrow W^- \rightarrow e^- + \bar{\nu}_e$$

$$q_d + \bar{q_u} \rightarrow W^- \rightarrow e^- + \bar{\nu}_e$$

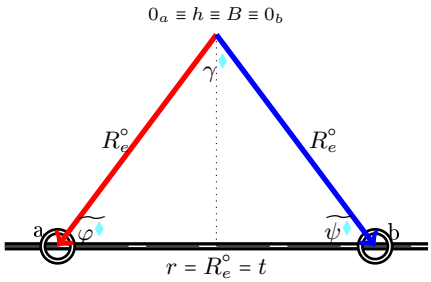
2. *STRONG area* $\left(\gamma^\blacklozenge \rightarrow \pi/2 \pm \alpha/n\right)$

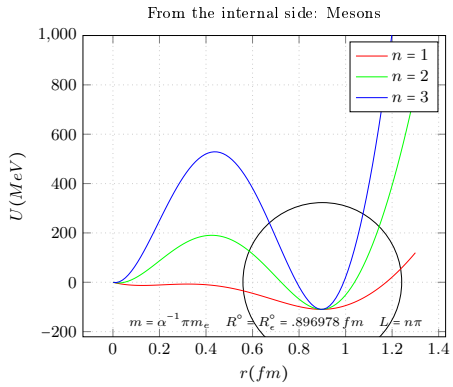
The strong relation (see fig.22) takes place on the border where $\gamma^\blacklozenge \rightarrow \pi/2 \pm \alpha/n$
It has two main symmetrical configurations :

- a pair matter anti-matter with vertex on the border of the Radius, with $L = n$ and $V = 1$ since $V = \sin\left(\gamma^\blacklozenge\right) = \sin\left(\widetilde{\varphi}^\blacklozenge + \widetilde{\psi}^\blacklozenge\right) = \sin\left(\pi/3 +^\blacklozenge \pi/3\right) = \sin^\blacklozenge(\pi/2)$
- a triad *crb* with vertex on the middle of the Radius, with $L = n\alpha^{-1}$ and $V = 1/2$ since $V = \sin\left(\widetilde{\varphi}^\blacklozenge\right) = \sin\left(\widetilde{\psi}^\blacklozenge\right) = \sin^\blacklozenge(\pi/3)$ for each of the three pairs

Inside R	⇆	Border R	⇆	**Outside R**
CDM	⇆	radiation	⇆	baryonic
R [Space]	⇆	Time	⇆	Space [R]
$\Delta V = Mass$	⇆	Energy	⇆	$\Delta V = Momentum$

Inside R	⇆	Border R	⇆	**Outside R**
$t\ [R_{ind}]$	⇆	$r = R_{ind} = t$	⇆	$R_{ind}\ [t]$
$r_{2a}\ [R_a]$	⇆	$R_a = r_{2a}$	⇆	$R_a\ [r_{2a}]$
$r_{2b}\ [R_b]$	⇆	$R_b = r_{2b}$	⇆	$R_b\ [r_{2b}]$
$\gamma_e^\blacklozenge\ [\gamma_i^\blacklozenge]$	⇆	$\gamma_e^\blacklozenge = \gamma_i^\blacklozenge$	⇆	$\gamma^\blacklozenge{}_i\ [\gamma_e^\blacklozenge]$
$\widetilde{\varphi}^\blacklozenge\ [\psi^\blacklozenge]$	⇆	$\psi^\blacklozenge = \widetilde{\varphi}^\blacklozenge$	⇆	$\psi^\blacklozenge\ [\widetilde{\varphi}^\blacklozenge]$
$\widetilde{\psi}^\blacklozenge\ [\varphi^\blacklozenge]$	⇆	$\varphi^\blacklozenge = \widetilde{\psi}^\blacklozenge$	⇆	$\varphi^\blacklozenge\ [\widetilde{\psi}^\blacklozenge]$





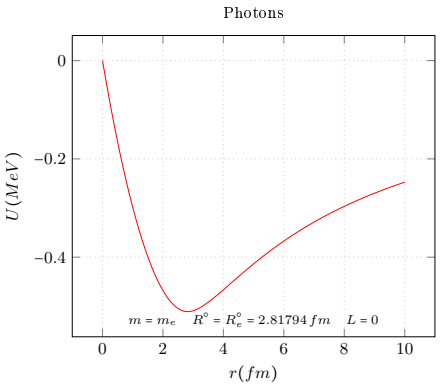


Figure 20. Photon: the photon is characterized by $\gamma^\blacklozenge = \pi/2$, $L = 0$ or $\vartheta = 0$, $E = h\nu$, $v = c$ and $r = \overline{ah}^\blacklozenge + \overline{bh}^\blacklozenge = 2R_e^\circ$

A jump between different levels ΔU, corresponding to different angular momentum L (see tab. XIV), gives place:

- **X,** γ ***radiation*** outside the radius, where $\Delta U \rightarrow \Delta E$.

- **Mesons** inside the radius, where $\Delta U \rightarrow \Delta M$.
  Mesons are constituted by a couple quark-antiquark which links two individuals of equal and opposite charge 1/3. The presence of both matter and antimatter in the quarks UP doesn't change the structure of interaction,

since only one of them ($\pm 1/3$) is engaged in the strong interaction while the conjoined (∓ 1) is linked to this via weak interaction, therefore far outside the range of strong interaction. Mesons can decay or via electromagnetic interaction in presence of a couple of quarks of the same type, or via weak interaction otherwise. In the neighbourhood of $V = 1$ or $\gamma^{\diamond} = \pi/2$ we can set $V \simeq 1$ in the first and third term of the eq. (50) that therefore becomes

$$U + m \simeq +\frac{1}{2} m V(x)^2 + \frac{1}{2} m L^2 R_{\bullet\epsilon}^2 (R_{\epsilon}^{\circ} - r)^2 \qquad \text{or} \qquad \mathcal{H} = \frac{\hat{p}^2}{2m} + \frac{1}{2} m\omega^2 \hat{x}^2$$

which is the equation of the quantum harmonic oscillator where $\omega = c \sin\vartheta R_{\bullet\epsilon} = L R_{\bullet\epsilon}$ whose corresponding energy levels are $E_n = \hbar\omega\left(n + \frac{1}{2}\right)$ where $\omega = m_e$.

All the electrical relationships, inside, on the border or ouside the radius R, having to be linked by an attractive force, always involve a matter-antimatter pair.
The only exception to this rule is the interaction between three quarks, which links three individual homologues with charge -1/3 (the eventual charge + 1, in the UP quarks, is drawn via weak interaction and does not participate in the strong interaction) which forms the baryons. (see fig. 21). The three quarks constituent, having the same charge -1/3, repel each other but, since each one occupies one of the three possible states, for the Pauli exclusion principle they cannot escape since whatever change implies to invade the place of the other.

In its simplest configuration, as we expect the case of the proton to be, we expect a symmetrical arrangement of three quarks $Q = -1/3$ (see 21) at $\widetilde{\varphi}^{\blacklozenge} = \widetilde{\psi}^{\blacklozenge} = \pi/3$ between them and $L = \alpha^{-1}$.

The (50) presents a local maximum at $\widetilde{\varphi}^{\blacklozenge} = \widetilde{\psi}^{\blacklozenge} = \pi/3$ where $V = 1/2$ and therefore $U_{2\pi/3} \simeq 3/2 \cdot Q \cdot mc^2 \left[-1 + 1/4 + (1/2)^4 L^2\right]$. Therefore, for the simplest baryon, where $m = m_{\epsilon} = \pi m_e$ and $L = \alpha^{-1}$ and $Q = -1/3$ we have $U_{2\pi/3} = 941.48$ MeV.
For the proton, we must subtract the mass of the two leptons (positrons with $m_{\epsilon} = \pi m_e$), originally belonging to the two UP quarks, that are now linked via weak interaction as two neutrinos, $U_{2\pi/3} - 2m_{\epsilon} = 938.2704 MeV \simeq m_p$.
Analogously, for the neutron, we must subtract the mass of the single lepton (positron with $m_{\epsilon} = \pi m_e$): $U_{2\pi/3} - m_{\epsilon} = 939.876 MeV \simeq m_n$

Nevertheless, like the mesons, the baryon's quarks too oscillate in the neighbourhood of $V = 1/2$ or $\widetilde{\varphi}^{\diamond} \simeq 2\pi/3$ since $\gamma^{\diamond} = \widetilde{\varphi}^{\diamond} +^{\diamond} \widetilde{\psi}^{\diamond} = \pi/2 + \alpha/n$. The baryon is therefore a three-dimensional harmonic oscillator. For each of them, being $Q = -1/3$ and $V = 1/2$ and $(1 - V) = 1/2 \cdot R_{\bullet\epsilon}(2R_{\epsilon}^{\circ} - r) = 1/2 \cdot R_{\bullet\epsilon}\Delta r$:

$$U_{2\pi/3} + m = \frac{1}{3}\frac{1}{2^4} m \left[\frac{1}{2} V^2 + \frac{1}{2} L^2 R_{\bullet\epsilon}^2 (\Delta r)^2\right] \qquad \text{or} \qquad \mathcal{H} = \frac{1}{3}\frac{1}{2^4}\left[\frac{\hat{p}^2}{2m} + \frac{1}{2} m\omega^2 \hat{x}^2\right]$$

whose corresponding energy levels are $E_n = \frac{1}{3}\frac{1}{2^4}\hbar\omega\left(n + \frac{1}{2}\right)$ where $\omega = L R_{\bullet\epsilon} = \alpha^{-1} m_{\epsilon} = \pi\alpha^{-1} m_e$.

The internucleon potential takes place on the external side of the strong area where $R^{\circ} = R_{\epsilon}^{\circ} = R_e^{\circ}/(2\pi) = 0.896978$ fm.

Table XIV. Since $\Delta E = m_0 \Delta \cos\epsilon_{0-}^{\blacklozenge} = m_0 \Delta \cos(\pi/2 \pm \alpha/n) = m_0 \Delta \frac{1 + \cos\gamma^{\blacklozenge}}{2} = \pm\frac{1}{2}\Delta\frac{1}{r}$

area	$\epsilon_{0-}^{\blacklozenge}$	$\Delta E_{n1}^{n2} = \frac{1}{2}\Delta\left(\frac{1}{r}\right)_{n1}^{n2}$	products
outside	$\frac{\pi}{2} - \frac{\alpha}{n}$	$= \frac{1}{2}\Delta\frac{1}{r} = \left(\frac{1}{n_1\alpha^{-1}R_{Tot}^{\circ}} - \frac{1}{n_2\alpha^{-1}R_{Tot}^{\circ}}\right)$	**X,** γ ***radiation***
inside	$\frac{\pi}{2} + \frac{\alpha}{n}$	$= \frac{2}{\Delta r} = \left(\frac{1}{n_1\alpha^{-1}R_{\bullet Tot}} - \frac{1}{n_2\alpha^{-1}R_{\bullet Tot}}\right)^{-1}[\pi]^{a}$	***mesons***

[a] the π term depend on the kind of motion: circular or radial.

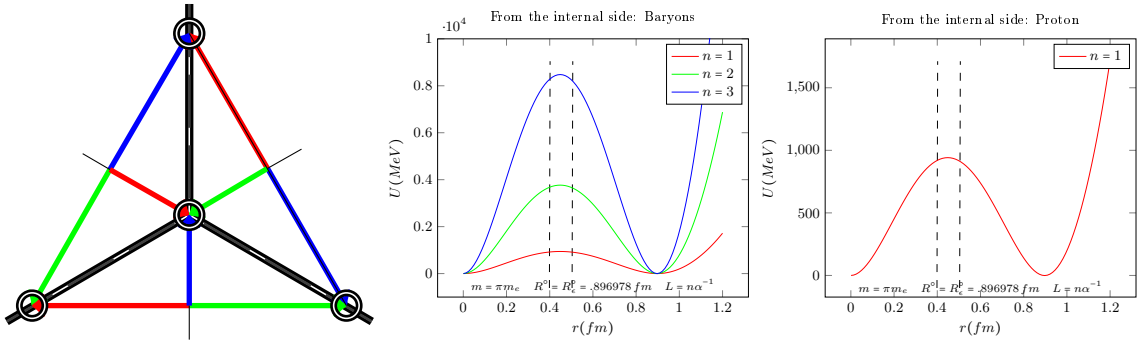


Figure 21. Baryon: the baryon is characterized by $\gamma^{\blacklozenge} = \pi/2$, $\widetilde{\varphi}^{\blacklozenge} = \widetilde{\psi}^{\blacklozenge} = \pi/3$
the plot of the universal equation (50). Strong Area repulsive force between three negative charge -1/3 : $m = \pi\, 0.511\, MeV$; $L = n\,\alpha^{-1}$; $R^{\circ} = .896978 fm$.

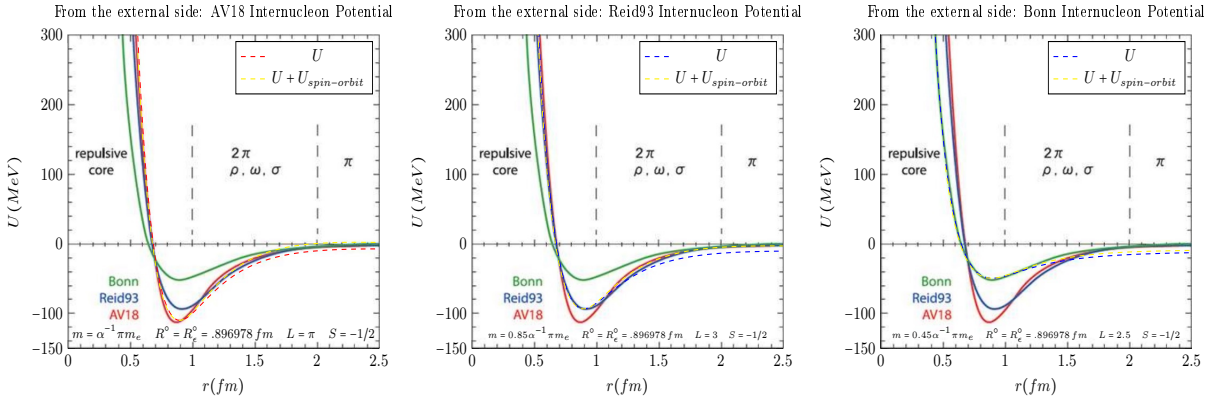


Figure 22. on the external side The eq. (50) is particularized as: $U = mc^2\left(-V + \frac{1}{2}V^2 + \frac{1}{2}\frac{L^2}{c^2}\left(\frac{R^{\circ}}{r}\right)^2(1-V)^2\right)$

The three plots represent respectively the comparison with the AV18, Reid93 and Bonn potential.
For a more strict agreement, though neglecting hyperfine structure terms, it has been added the term:
$U_{spin-orbit} = mc^2\left[(\text{if } r > R^{\circ} \text{ then 1 else -1})\left(-\frac{1}{2}\mathrm{S}\right)\left(\frac{L}{c}\frac{R^{\circ}}{r}\right)V(1-V)^2\right]$ where S is the Spin.

VI. GRAVITATION

A. Galaxy rotation curves

From the 60, indicating with the suffix $_b$ the baryonic component of the matter, we have:

$$r_b = \sqrt{\frac{R_b}{R}} \cdot r = r\,\Xi_b$$

$$A_{b_{gravitational}} = \frac{R_b}{r_b^2} = A_{gravitational} = \frac{R}{r^2} = \frac{1}{t^{\diamond}}$$

(note that, since $R \simeq R_b + R(r)$, we have $A_{b\_gravitational} \simeq \frac{R_b}{r^2} + \frac{1}{R_{\omega}}$)

$$A_{b_{centrifugal}} = \frac{v^2_{centrifugal}}{r_b}$$

Since in the orbital motion $A_{b\_gravitational} = A_{b_{centrifugal}}$, we must have:

$$v_{centrifugal} = \sqrt{V_b} = \sqrt[4]{\frac{R}{r^2} R_b} \tag{64}$$

and the limits

$$r_{b_\infty} = \lim_{r\to\infty} \sqrt{\frac{R_b}{R}} r = \sqrt{R_b R_\omega} \qquad v_\infty = \lim_{r\to\infty} \sqrt[4]{\frac{R}{r^2} R_b} = \sqrt[4]{\frac{R_b}{R_\omega}}$$

On radial orbits, stars plunging in and out of the galactic center, $R_\omega = cH_0^{-1}$, while on circular orbit $R_\omega = 2\pi cH_0^{-1}$. In motion of satellite galaxies around normal galaxies at distances 50-500 kpc (see Klypin A. & Prada F. 2009 [76], the rotation curves are considerably affected by the radial component of the motion which gradually decreases as moving away from the host galaxy. The the maximum speed $v_\infty = \sqrt[4]{\frac{R_b}{R_\omega}}$ consequently decreases as $\sqrt[-4]{2\pi}$ as the initial radial speed turns into tangential speed moving away from the host galaxy consistently with the experimental results. The radial component is instead usually negligible in the galaxy rotation curves of stars.

We find that the predictions for the galaxy rotation curves from Intention physics, MSTG and Milgrom's Mond agree remarkably for all of the 101 galaxies reported in J.R.Brownstein and J.W.Moffat 2005 [66]. In particular, we adopted the mass distribution model $R_b(r) = R_{b_{Tot}} \left(\frac{r}{r_c + r}\right)^{3\beta}$ of a spherically symmetric galaxy, where r_c is the inner core and $\beta = 1$ for HSB galaxies and 2 for LSB and Dwarf galaxies, and used the $R_{b_{Tot}}$ and r_c of the MSTG solution, with no need of any further parameter. It is relevant that the Newton velocity, once replaced the total distance r with the distance r_b along the J axis, are consistent with the experimented values everywhere.

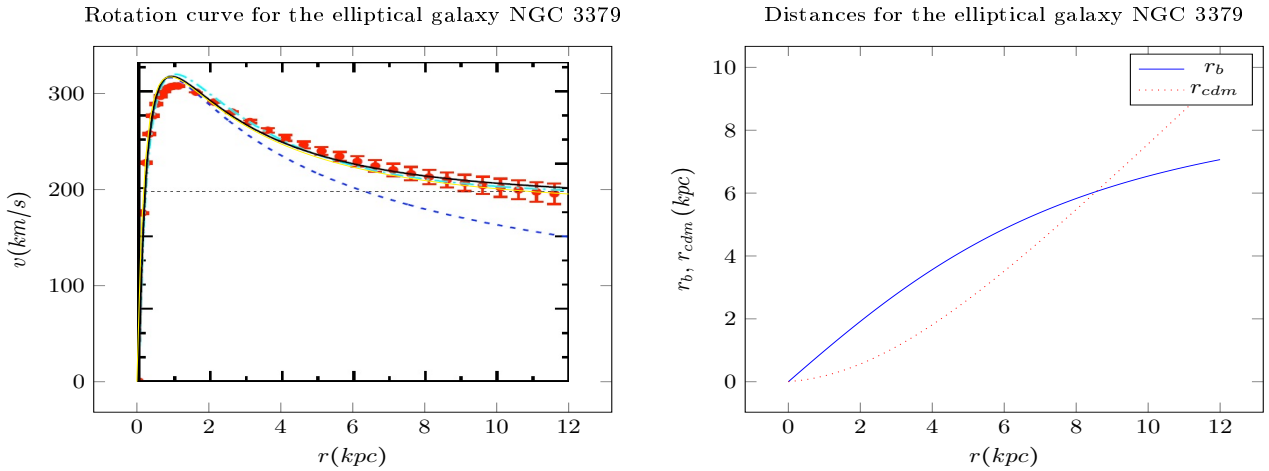


Figure 23. Rotation curve for the elliptical galaxy NGC 3379. The red points (with error bars) are the observations. The solid yellow line is the rotation curve determined by Intention Physics (eq. 64), the short dashed blue line is the Newtonian galaxy rotation curve. Both rotation curves are the best fit to a parametric mass distribution (independent of luminosity observations) a two parameter fit to the total galactic Mass, $M = 6.99\ 10^{10}\ M_\odot$, and a core radius $r_c = 0.45$ kpc and $\beta = 1$. On the right the trend of r_b and r_{cdm}

Very interesting is the determination of the barycentre. From

$$\sum_{i=1}^{n} (M_{b_i} \ddot{r}_{b_i}) = M_{b_{Tot}} \ddot{r}_b$$

we have the barycentre coordinates:

$$r_b = \frac{\sum_{i=1}^{n} M_{b_i} r_{b_i}}{M_{b_{Tot}}} = \sum_{i=1}^{n} \frac{M_{b_i}}{M_{b_{Tot}}} \sqrt{\frac{M_{b_i}}{M_{b_i} + \frac{r^2_{cdm_i}}{R_\omega}}} r_i = \sum_{i=1}^{n} \frac{M_{b_i}}{M_{b_{Tot}}} \frac{r_{b_{max_i}}}{\sqrt{r^2_{b_{max_i}} + r^2_{cdm_{max_i}}}} r_i \tag{65}$$

Where the barycenter, outside the $r_{b_{max}}$ perimeter of any attractor, where the Acceleration becomes constant and equal to $1/R_\omega$, reduces to a gradient which emerges from and reveals a contour plane.

A huge quantity of mass, fractioned in little parts far away, is negligible with respect to a much smaller quantity of mass concentrated in bigger parts.

At last, the presumed direct proof of Dark matter [*Clowe et al. 2006*] , given by the recent observed collision of two clusters of galaxies ("bullet cluster" 1E0657-56), where it is shown that the sources of gravity in the cluster are not located where the ordinary matter is located, can be explained by the correct determination of the barycentre. Intention physics, indeed, predicts the irrelevance of the huge quantity of dominant tiny matter component, that is the X-ray plasma clouds, with respect to the very more large masses constituted by the galaxy clusters.
The barycentre gives reason also of the large structure of universe. At last **The Part Of relationship** : Every relation finds its place inside an individual more complex of which it is a part of, provides all the mirroring universe scale. Indeed the proportion $R_\omega : R_{whole} = R_{whole} : R_{part}$, starting from $R_{part} = R^\circ_\epsilon$, applies recursively through $R_{whole} \to R_{part}$, giving rise to stars $R_{\bullet s}$ and galaxies $R_{\bullet g}$ and clusters and so on.

B. Cosmology

The universe is the universal of every individual who finds its place in it, on the line of the present, distributed on the whole mirroring scale. Conservation of momentum/potential implies that each point on the line of the present is the center of gravity of the universe. So each individual is in its place in the universe when its three redshifts coincide.

Indeed, when the individual is in its place, where the classic velocity is

$$v = \tanh\zeta = \frac{r}{\tau(1-V_e)+r} = \frac{1-\left(1-\sin\gamma\blacklozenge\right)^2}{1+\left(1-\sin\gamma\blacklozenge\right)^2} = \frac{1-(1-V_e)^2}{1+(1-V_e)^2}$$

we have the equivalence of the three redshifts:

$$\text{Gravitational redshift} \quad \frac{1}{1-\frac{R_{cdm}}{r}} = \frac{1}{1-V_e} = \frac{1}{1-\sin\gamma} = 1+z$$

$$\text{Doppler redshift} \quad \sqrt{\frac{1+v}{1-v}} = \frac{1}{1-V_e} = \frac{1}{1-\sin\gamma} = 1+z$$

$$\text{FLRW redshift} \quad \frac{R_\omega}{\tau} = \frac{1}{a} = \frac{1}{1-V_e} = \frac{1}{1-\sin\gamma} = 1+z$$

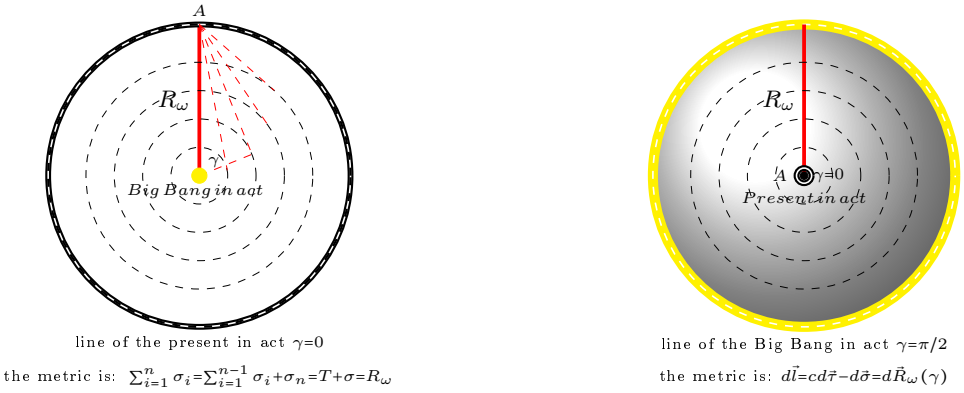


Figure 24. each individual on the line of the present has its own point of view on the universe Radius R_ω. For each individual, every point in the universe Radius R_ω represents a distance $\sigma + T = R_\omega$ in the linear spacetime that turns in the isomorphic spherical surface of equidistant points in the three-dimensional quadratic space of potentiality. The space of potentiality, interposed between the big bang and the line of the present in progress, is three-dimensional and flat.In the present model all space-time is in potency, with the exception of the Big Bang and the line of the present in act, and every instant is all new and all present. Every instant the whole universe recurs unfolding itself from the Radius all interconnected.

The fundamental consummative thread equation of universe is :

$$cd\vec{\tau} - d\vec{\sigma} = cd\vec{t} - d\vec{r} = d\vec{R_{\omega(\gamma)}} \quad \text{or} \quad 0 = cd\vec{\tau} - d\vec{\sigma}\left(1+\frac{dR_{\omega(\gamma)}}{d\sigma}\right) \tag{66}$$

In the case of purely radial motion, i.e. without spin and without rotations, the interaction takes place entirely in the plane of the act and the metric is purely linear.
Indeed, dividing the first of the 66 by $d\vec{R_{\omega(\gamma)}}$ we have $E = mc^2(1-V)$ and squaring:

$$U = \mathcal{H} = \frac{1}{2}\left[\frac{\vec{E}^2}{mc^2} - mc^2\right] = -mc^2V + \frac{1}{2}\left(mc^2V^2 + \vec{p}_r^2\right) = V + T \tag{67}$$

In the 67, the term dr represents the peculiar position inside a static reference frame at a comoving distance $X = R_\omega V = R_\omega \sin\gamma$. Therefore, when this reference frame is free falling with velocity $v = X/R_\omega = V$, the term $p_r = mdr/d\tau$ represents the momentum due to the peculiar velocity relative to (whitin) the comoving free falling inertial reference frame.

Here, since $X = R_\omega \sin\gamma$ and $V = c\sin\gamma$, we have that everywhere and at all times :

$$H = \frac{V}{X} = \frac{c}{R_\omega} = H_0 \tag{68}$$

Since every point on the line of the present of the universe is a barycentre, the universe frame is inertial and its metric is:

$$d\vec{l} = cd\vec{\tau} - d\vec{\sigma}\left(1 + \frac{dR_{\omega(\gamma)}}{d\sigma}\right) = cd\vec{\tau} - b(\gamma)d\vec{\sigma} \tag{69}$$

where the distance factor $b(\gamma) = (1 + dR_{\omega(\gamma)}/d\sigma)$ depends only on the distance (angle γ) between sender and receiver.

In cosmology, as usual, we switch to different coordinate system, known as comoving coordinates:

$$D_M(\tau) = a(\tau)D_M \qquad \text{and} \qquad V = \frac{dD_M(\tau)}{d\tau} = \dot{a}D_M \qquad \text{and} \qquad H = \frac{V}{D_M(\tau)} = \frac{\dot{a}}{a}$$

where

$$a(\tau) = H_0\tau = 1 - \sin\gamma \qquad \text{and} \qquad \dot{a} = H_0$$

From the identity

$$\frac{G}{c^2}M(\gamma) = \frac{1}{2}R(\gamma) = \frac{1}{2}\frac{V^2}{H_0}$$

placing $\mathcal{V} = -\frac{1}{2}R(\gamma)H_0$ and, by virtue of the fact that $V = v$, placing $T = \frac{1}{2}V^2$, it follows:

$$\mathcal{U} = 0 = \mathcal{V} + T$$

or :

$$\mathcal{U} = -\frac{4\pi}{3}G\rho a^2 D_M^2 m + \frac{1}{2}m\dot{a}^2 D_M^2 \qquad \text{and since } \mathcal{U} = 0 \qquad \frac{\dot{a}}{a} = \sqrt{\frac{8\pi}{3}G\rho} \tag{70}$$

These are coordinates that are carried along with the expansion, so that we can express the distance $D_M(t)$ as a product of the comoving distance D_M and a term $a(t)$ which is a function of time only. The original D_M coordinate system, which does not expand, is usually known as physical coordinates. The term $a(t)$ is the scale factor of the universe, and it tells us how physical separations grow with time, since the coordinate distances D_M are by definition fixed.

in the transition to the comoving coordinates, we have $d\sigma = R_\omega d\sin\gamma \to R_\omega d\chi$ and

$$dl^2 = c^2d\tau^2 - b^2(\gamma)\left(R_\omega^2 d\chi^2 + R_\omega^2\chi^2 d\theta^2 + R_\omega^2\chi^2\sin^2\theta d\phi^2\right) \tag{71}$$

At last the universe metric, in the frame of a free falling observer, using the comoving coordinates is:

$$dl^2 = c^2\frac{dT^2}{a(t)^2} - \left(dD_M^2 + D_M^2 d\theta^2 + D_M^2\sin^2\theta d\phi^2\right) \tag{72}$$

The brightness or faintness of distant supernovae relative to the empty Universe model

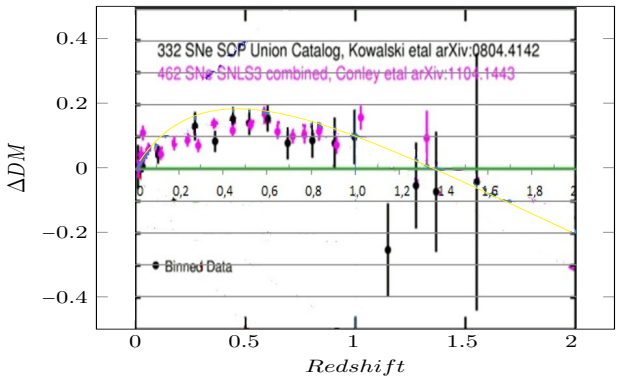


Figure 25. In the figure above, the brightness or faintness of distant supernovae relative to the empty Universe model is plotted vs redshift. Here, $\Delta(D_M) = 5\log_{10}\left(\frac{D_L}{R_\omega z\left(1+\frac{z}{2}\right)}\right)$ is the difference between the distance modulus determined from the computed flux $D_L = D_M(1+z)$ (see eq. 73) and the distance modulus computed from the redshift in the empty Universe model, and sigma is the standard deviation of the $\Delta(D_M)$. The result are in good agreement with the observed data.

where $dT = a(t)\,d\tau$ and $dD_M = b(\gamma)\,R_\omega d\chi = cd\tau = c\frac{dT}{a}$ and the scale factor $a(t) = \frac{1}{1+z} = \frac{\tau}{R_\omega} = (1-\sin\gamma)$.

At last, since $z = \frac{\lambda-\lambda_0}{\lambda_0} = \frac{1}{1-\sin\gamma} - 1$ which gives $\gamma = \arcsin\frac{z}{z+1}$ and $dz = \frac{\cos\gamma}{(1-\sin\gamma)^2}d\gamma$

$$D_M = b(\gamma)\int_0^\gamma R_\omega d\chi = b(\gamma)\cdot\frac{c}{H_0}\gamma \tag{73}$$

$$H(z) = \frac{dz}{dD_M} = H_0E(z) = H_0\frac{\cos\gamma}{(1-\sin\gamma)^2}\cdot\frac{1}{b(\gamma)+\gamma\frac{db(\gamma)}{d\gamma}} = H_0\sqrt{a^{-3}\cdot\frac{1+\sin\gamma}{\left(b(\gamma)+\gamma\cdot\frac{db(\gamma)}{d\gamma}\right)^2}} = H_0\sqrt{a^{-3}\cdot\Omega^*(\gamma)} \tag{74}$$

In case the universe was made up of dark matter only (Amoroni) we would have: $dR_\omega(\gamma) = dR_{\omega_{cdm}} = V\,d\sigma = \sin\gamma\,d\sigma$ and therefore

$$b(\gamma) = (1+\sin\gamma) \tag{75}$$

Therefore we would have:

$$D_M = (1+\sin\gamma)\int_0^\gamma R_\omega d\chi = \frac{c}{H_0}\cdot(1+\sin\gamma)\gamma = \frac{c}{H_0}\cdot\left(1+\frac{z}{z+1}\right)\arcsin\left(\frac{z}{z+1}\right) \tag{76}$$

$$D_A = aD_M = \frac{c}{H_0}\cdot\left(1-\sin^2\gamma\right)\gamma = \frac{c}{H_0}\cdot\frac{(2z+1)}{(z+1)^2}\arcsin\left(\frac{z}{z+1}\right) \tag{77}$$

$$D_L = \frac{D_A}{a^2} = \frac{c}{H_0}\cdot\frac{1+\sin\gamma}{1-\sin\gamma}\gamma = \frac{c}{H_0}\cdot(2z+1)\arcsin\left(\frac{z}{z+1}\right) \tag{78}$$

$$\Omega^*(\gamma) = \Omega^*_{cdm}(\gamma) = \Omega_{0_{cdm}} \cdot \sin\vartheta_{cdm} = 1 \cdot \sin\vartheta_{cdm} = \frac{1+\sin\gamma}{\left(b(\gamma)+\gamma\cdot\frac{db(\gamma)}{d\gamma}\right)^2} = \frac{(1+\sin\gamma)}{(1+\sin\gamma+\gamma\cos\gamma)^2}$$

$$= \frac{\left(1+\frac{z}{z+1}\right)}{\left(1+\frac{z}{z+1}+\arcsin\left(\frac{z}{z+1}\right)\sqrt{1-\frac{z^2}{(z+1)^2}}\right)^2} \tag{79}$$

$$H(z) = \frac{dz}{dD_M} = H_0 E(z) = H_0 \cdot \frac{\cos\gamma}{(1-\sin\gamma)^2(1+\sin\gamma+\gamma\cos\gamma)} = H_0 \cdot \sqrt{\Omega^*_{cdm}(\gamma)a^{-3}} \tag{80}$$

$$T_\omega = \int_0^\gamma \frac{a}{H(z)}dz = \frac{1}{H_0}\cdot\frac{\cos\gamma(\sin\gamma+4)-2\gamma(\sin\gamma-1)^2+5\gamma}{4}$$

$$= \frac{1}{H_0}\cdot\left(\arcsin\sqrt{\frac{z+1/2}{z+1}} - \frac{\pi}{4} + \frac{\left(3z^2+6z+1\right)\arcsin\left(\frac{z}{z+1}\right)+\sqrt{2z+1}\,(5z+4)}{4\,(z+1)^2}\right) \tag{81}$$

Already with this first approximation, we obtain results almost identical to those of the ΛCDM model except in the radiation dominated era.

This divergence is closed when the other two ingredients of the Universe are also taken into consideration, namely radiation and baryon matter. Indeed:

$$\vec{\Omega} = \frac{\vec{\rho}_\Omega(z)}{\rho_{critic}} = \begin{bmatrix} E \\ P \\ A \end{bmatrix} = \begin{bmatrix} 0 \\ \Omega_{cdm}(z)\,(1+z)^3 + \Omega_b(z)\,(1+z)^3 + \Omega_r(z)\,(1+z)^4 \\ 0 \end{bmatrix} \tag{82}$$

where

$$\Omega_r(z) = \Omega_{0_r}\sin\vartheta_r \qquad \Omega_b(z) = \Omega_{0_b}\sin\vartheta_b \qquad \Omega_{cdm}(z) = (1-\Omega_{0_b}\sin\vartheta_b - \Omega_{0_r}\sin\vartheta_r)\Omega^*_{cdm}(\gamma)$$

and where, from the eq. (41),

$$\sin\vartheta_r = \frac{\Omega_{0_r}\sin^2\gamma}{\sqrt{(1-\sin\gamma)^2+\Omega^2_{0_r}\sin^4\gamma}} = \frac{\Omega_{0_r}\,(z/(1+z))^2}{\sqrt{1/(1+z)^2+\Omega^2_{0_r}\,(z/(1+z))^4}} \tag{83}$$

$$\sin\vartheta_b = \frac{\Omega_{0_b}\sin^2\gamma}{\sqrt{(1-\sin\gamma)^2+\Omega^2_{0_b}\sin^4\gamma}} = \frac{\Omega_{0_b}\,(z/(1+z))^2}{\sqrt{1/(1+z)^2+\Omega^2_{0_b}\,(z/(1+z))^4}} \tag{84}$$

$$\tag{85}$$

Since the eq. (70) and since by definition $\frac{da}{a} = adz$, we have:

$$H(z) = H_0\sqrt{\Omega_r(z)\,(1+z)^4 + \Omega_b(z)\,(1+z)^3 + \Omega_{cdm}(z)\,(1+z)^3} = H_0 E(z) \tag{86}$$

$$D_M = \int_0^z \frac{dz}{H(z)} \tag{87}$$

$$T_\omega = \int_\infty^z \frac{a}{H(z)}dz \tag{88}$$

and since:

$$D_M^{-2} = D_{M_{cdm}}^{-2} + D_{M_b}^{-2} + D_{M_r}^{-2} = D_M^{-2}\left(\Xi^2_{cdm} + \Xi^2_b + \Xi^2_r\right)$$

$$\Xi_{cdm} = \frac{\sqrt{\Omega_{cdm}(z)\,(1+z)^3}}{E(z)} \qquad \Xi_b = \frac{\sqrt{\Omega_b(z)\,(1+z)^3}}{E(z)} \qquad \Xi_r = \frac{\sqrt{\Omega_r(z)\,(1+z)^4}}{E(z)}$$

at last:

$$D_{M_{cdm}} = D_M/\Xi_{cdm} \tag{89}$$

where $\Xi_{cdm} > 0.99$ until $z < 4.65$ while, in the neighbourhood of Z=1090, $\Xi_{cdm} \simeq 0.9498 + (1090 - z) \cdot 1.126 \times 10^{-5}$.

1. *The Radiation-dominated era*

In the Radiation-dominated epoch, where takes place the Big-Bang nucleosynthesis (BBN), we have $cd\tau(a) \simeq R_\omega \frac{ada}{\sqrt{\Omega_r \sin\vartheta_r}}$ and therefore $c\tau \simeq \frac{R_\omega}{\sqrt{\Omega_r}} \int \frac{ada}{\sqrt{\sin\vartheta_r}}$ where $\sin\vartheta_r \simeq 1$. The ΛCDM model and the present model are indistinguishable in this era. The present model therefore shares the same nucleosynthesis theory as the ΛCDM model.

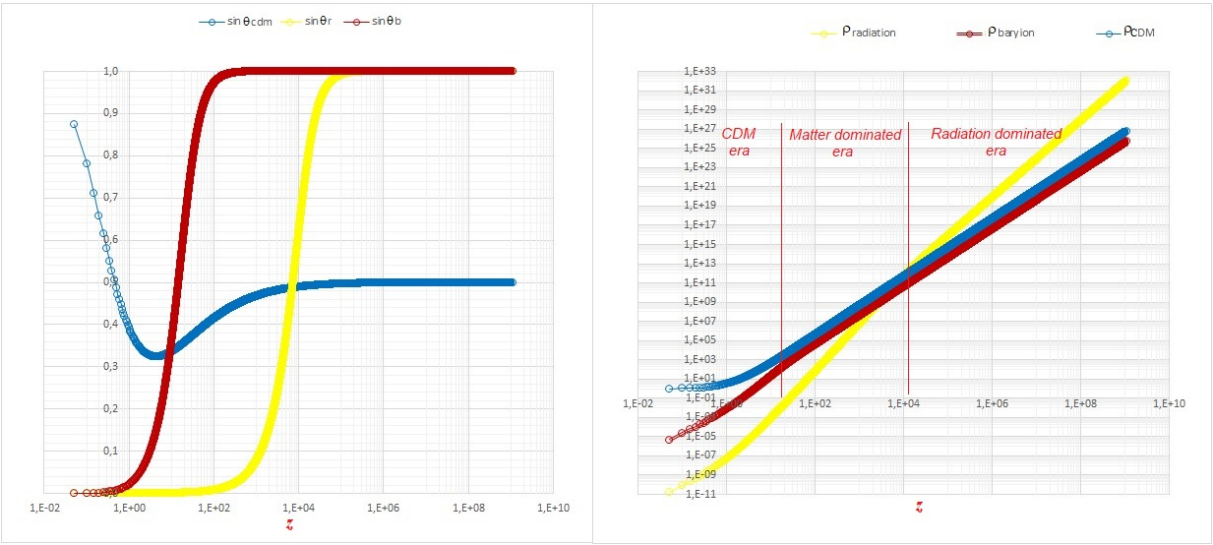


Figure 26. The ΛCDM model and the present model are indistinguishable in the Radiation-dominated era and therefore share the same nucleosynthesis theory. Analogously, the matter dominated era and the CDM dominated era of the present model are practically indistinguishable from the corresponding eras (matter dominated and dark energy dominated eras) of the ΛCDM model

2. *The Matter-dominated era*

The matter-dominated era, which does not include the CDM, extends between the energy dominated era and the potency dominated era

3. *The Potency-dominated era*

The time and distances scale with the redshift of the ΛCDM model and of the present model are only very slightly different in the matter-dominated era. Therefore, as in the ΛCDM model we have $r_{s_{drag}} = \int_z^\infty \frac{c_s(z)}{H(z)} dz$, where $c_s(z)$ is the sound speed,

$$c_s(z) = \frac{c}{\sqrt{3}} \frac{1}{\sqrt{1 + \frac{3\Omega_b}{4\Omega_\gamma} a}}$$

The acoustic oscillations in l seen in the CMB power spectra correspond to a sharply-defined acoustic angular scale on the sky, given by:

$$\theta_* = \frac{r_s^*}{D_M} \quad \text{(with the metric of the standard } \Lambda CDM \text{ model)}$$

$$\theta_* = \frac{r_s^*}{D_{M_{cdm}}} \quad \text{(with the metric of the present model)}$$

where r_s^* is the comoving sound horizon at recombination quantifying the distance the photon-baryon perturbations can influence, $D_{M_{cdm}}$ is the cdm component of the comoving angular diameter distance that maps this distance into an angle on the sky (in the neighbourhood of Z=1090, $\Xi_{cdm} \simeq 0.943 + (1090 - z) \cdot 1.25 \times 10^{-5}$). *Planck* measures: $100\theta_* = 1.04109 \pm 0.00030$ (68%, TT,TE,EE+lowE), a measurement with 0.03% precision.
It is the CMB analogue of the transverse baryon acoustic oscillation scale $r_{drag}/D_{M_{cdm}}$ measured from galaxy surveys, where r_{drag} is the comoving sound horizon at the end of the baryonic-drag epoch. The BAO measurement constraint can be expressed as a approximate relation between r_{drag} and h as:

$$\left(\frac{r_{drag}h}{\text{Mpc}}\right)\left(\frac{0.3}{\Omega_m}\right)^{0.4} = 101.056 \pm 0.036 \quad \text{(with the scale ladder of the standard model see. Planck Collaboration 2018 [71])}$$

$$\left(\frac{r_{drag}h}{\text{Mpc}}\right) = 101.06 \pm 0.036 \quad \text{(with the scale ladder of the present model)}$$

Therefore from the two constraints:

$$\frac{r_s^*}{D_{M_{cdm}}} = \theta_* \simeq 0.0104109 \tag{90}$$

$$r_{s_{drag}}h \simeq 101.06 Mpc \tag{91}$$

and by imposing the two further constraints:

$$z^* \simeq 1090$$
$$z_{drag} \simeq 1060$$

we find, in the range H_0 between 68 and 75, the approximate:

$$\Omega_b \simeq -0.028 + 0.1426\, h^{-1} - 0.0671\, h^{-2} \tag{92}$$

that, together with radiation density:

$$\Omega_r = \Omega_\gamma \left(1 + 0.2271 N_{eff}\right) = 2.469 \times 10^{-5} h^{-2} \left(1 + 0.2271 N_{eff}\right) \text{ for } T_{cmb} = 2.725 \text{ K} \tag{93}$$

guarantees that the scale ladder of the present model fits the BAO measurements (see fig.27 and fig.28) on $z_{drag} \simeq 1060$ and matches the acoustic angular scale on $z^* \simeq 1090$.

We dont't now exactly the matter tensor, but from 92 and 93 we have the following two equations:

$$H_0 = \sqrt{\frac{2.469 \times 10^{-5}}{\Omega_\gamma}} \times 100 \qquad \text{or} \qquad H_0 = \frac{0.1426 - \sqrt{0.1426^2 - 4 \times 0.0671 \times (\Omega_b + 0.028)}}{2 \times (\Omega_b + 0.028)} \times 100 \tag{94}$$

In particular, $H_0 = 74.86$ corresponds to a Universe with $R_\omega = \alpha^{-1} e^{\alpha^{-1}}$.

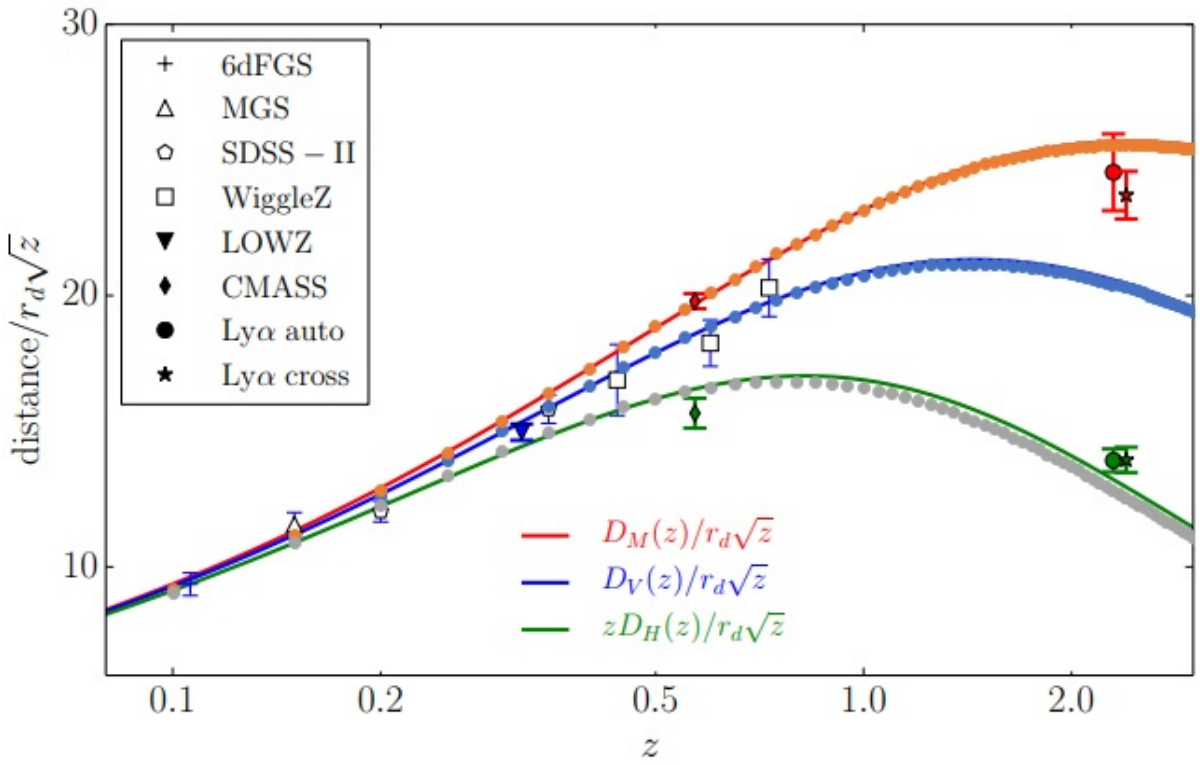


Figure 27. The BAO "Hubble diagram" (Aubourg É. et al. 2014 [69]) from a world collection of detections. Blue, red, and green points show BAO measurements of D_V/r_d, D_M/r_d, and zD_H/r_d, respectively, from the sources indicated in the legend. These can be compared to the correspondingly colored lines, which represents predictions of the fiducial Planck ΛCDM model (with $m = 0.3183$, $h = 0.6704$) and the prediction of the Intention model (dotted line) when $r_{s_{drag}} = 101.06/h$ Mpc. The scaling by $\sqrt{z}$ is arbitrary, chosen to compress the dynamic range sufficiently to make error bars visible on the plot. Filled points represent BOSS data, which yield the most precise BAO measurements at $z < 0.7$ and the only measurements at $z > 2$. For visual clarity, the $Ly\alpha$ cross-correlation points have been shifted slightly in redshift; auto-correlation points are plotted at the correct effective redshift.

VII. CONCLUDING NOTES ON PHYSICS

Minkowsky's spacetime represents the Reflective geometry or of the Continuous Act or of the phenomenon. However, it is not original, it does not correspond to the true nature of reality where, in the intention relationship between two individuals, the potency, with the decision, collapses instantaneously into the act by exchange of energy.

Nonetheless, image, memory, information and knowledge are reflective.
The geometry of intention, therefore, must pay its tribute to the possibility of knowledge, therefore it too must be content with being only a representation of knowledge, that is, a reflexive construction, while maintaining its character as a discrete act.

In the geometry of intention or discrete act, the entire space-time of the individual is all present in the current instant of the true time of the individual's flowing life.
Therefore, for the individual, there is a spatialized time of memory separate and distinct from the real time of life. The real time of life flows, following itself instant after instant and every instant is born all new and, with it, its entire space-time.
In the geometry of intention we have, therefore, a truly alive time, which flows, in which the living being lives, and its own space-time, all completely new, true instant by true instant, in which the being unfolds and appears to itself in all its contingent history and its temporary destiny.
In fact the space-time of the individual, snapshot of an instant just before the decision, is composed of all and only the potential instantaneous interactions involving other individuals potentially available and present now, at $\Delta T = 0$, or of all and only the potential interactions emerging in the historical reconstruction of memory, since $c\Delta T_{ab} \equiv \sum_a^b \Delta S$ everywhere, forming the set of possible threads of history.

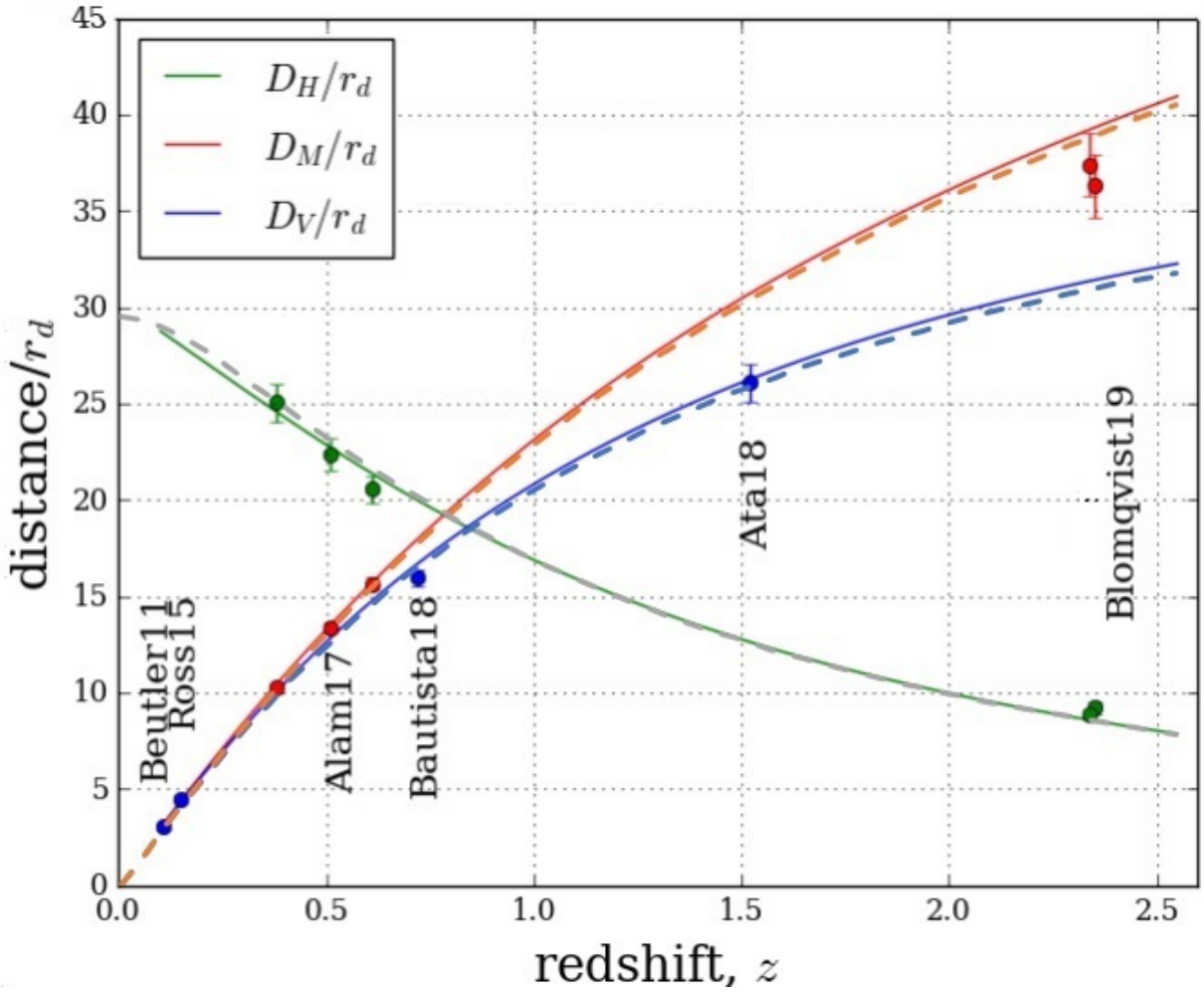


Figure 28. BAO measurement (Agathe VS. et al. 2019 [67]) of D_H/r_d andD_M/r_d using BOSS galaxies (Alam et al. 2017), $Ly\alpha$ absorption in BOSS-eBOSS quasars (Agathe et al. 2019) and correlation between BOSS-eBOSS quasars and $Ly\alpha$ absorption (Blomqvist et al. 2019). Other measurements give D_V/r_d, with $D_V = D_M^{2/3}(zD_H)^{1/3}$, using galaxies (Beutler et al. (2011), Ross et al. (2015), Bautista et al. (2018)) and BOSS-eBOSS quasars (Ata et al.2018). Solid lines show the Pl2015 values (Planck Collaboration et al.2016). These can be compared to the correspondingly colored lines, which represents predictions of the fiducial Planck ΛCDM model (with $m = 0.3183$, $h = 0.6704$) and the prediction of the Intention model (dashed lines) when $r_{s_{drag}} = 101.06/h$ Mpc.

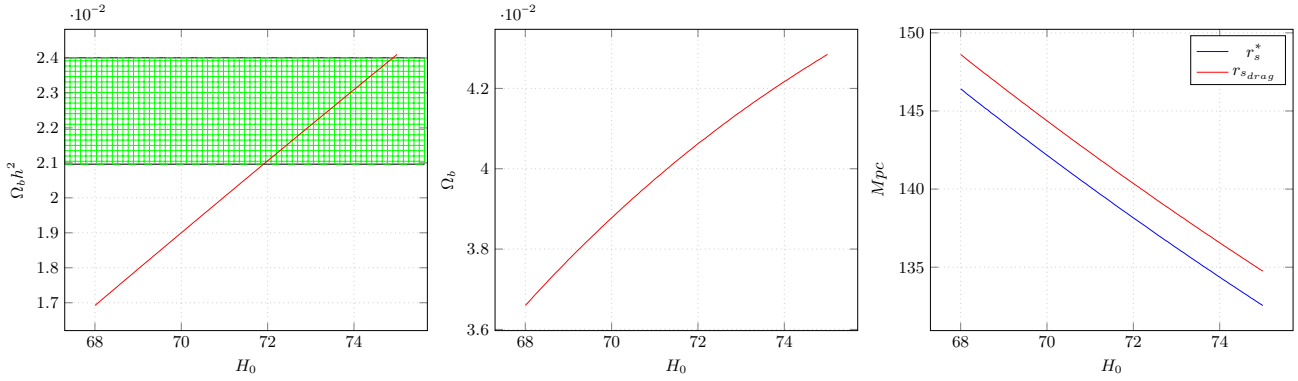


Figure 29. on the first and second panel the baryonic density as a function of the Hubble constant. The Big-Bang Nucleosynthesis predicts $0.021 \leq \Omega_b h^2 \leq 0.024$ (95% confidence).
On the right panel, the comoving sound horizon at recombination r_s^* and the comoving sound horizon at the baryon drag epoch.

In IP there are no external observers, since the act of observing is the result of an interaction between two conjoined individuals, neither events, since the term event hides the fact that the interaction is a path that connects the head of the radius of a donor individual with the tail of the radius of the recipient individual and from there, through the radius of this, to the head, and vice versa.

In Minkowski's reflective geometry, on the other hand, there is neither birth nor novelty. Spacetime is not relative to a particular individual, but absolute. The time of memory, which is already completely given and crystallized, is mistakenly made to coincide with the time that is truly alive, which flows. Minkowski's space-time recomposes each instant of this time (ex absolute), which has been deprived of its spatial nature, with each point of space (ex absolute), which has been deprived of its temporal nature. Instant after instant a configuration of space follows the previous one like a frame follows the previous one in an already recorded film.

Minkowsky space-time isomorphically transforms the path of instantaneous interactions within an intention, which has a linear metric, into the path of interactions that occur with a constant speed, which has a quadratic metric.
If by phenomenon we mean what takes place in the continuous act, Minkowsky's Space-time operates a phenomenalization of reality, but in reality the act is discrete.
Thus its equations are useful as they are isomorphic to reality and make correct predictions but in some cases it gives rise to misleading interpretations, giving rise to the oddities of quantum mechanics. In other cases it gives rise to epistemologically erroneous interpretations. Furthermore, it does not allow to recognize the inverse relationship between the inside and the outside of an individual and the inverse relationship between gravitation and electricity. Above all, it does not allow to recognize that the three spacetime axes of the relationship, power, energy and act, correspond to the three components of matter (i.e. amoroni or dark matter, radiation and baryonic matter), and to the three components of distance, and to the three generations of matter, according to the three possible arrangements of the axes of the individual on the axes of the universe.

VIII. COSCIOUSNESS

A. The foundation of intention

The intention involves individuals of a same universal who, in the period of potency, unfold their being R constituting their space. Space is matter and it is potency and it is thought. The nature of thought is to mirror for love by measuring the other with himself. In the instant of act, through the decision, the individual donates a part of himself to its other who needs it.
The intention involves two individuals of a same universal and takes place in the true living time.
Mirroring takes place in the period of potency, when the being R unfolds and constitutes its space, between a donating and the successive receiving act: potency ≡ mirroring.
Potency is thought.
To mirror is to love.
The decision is the choice, made by an individual, of one of all possibilities and is guided by mirroring (by love).
The potency, canceled by decision, is converted into energy, that is, into the qualia of consciousness.
Thought is the evolution of brain matter, which corresponds to the evolution of its potency, and therefore, as evolution, it is dialectical, its movement is that of Hegel's dialectic.
Mirroring is fulfilled through donation ≡ love is fulfilled through charity.

The Intention is the beginning and the end, and follows three methods, which, all the same, arise from it. These are:

1. DIALECTIC: the way of potency

   (a) the individual, still conjoined with his/her other at the end of the previous consummative act
   (b) must separate by placing the other outside himself
   (c) to then reunite with the other, giving himself or herself, by starting the new consummative act

2. Increasing Entropy: the way of consummation
   The direction of consummation is: those who have more donate to those who have less

3. Darwinism: the way of reflection
   from the innumerable underlying intentions the verse of evolution emerges reflexively, which is the most probable, that is, the most suitable for the conservation and propagation of life as it in turn is an instrument for consummation.

For all three methods, the end is the consummation.

B. The reflective intention: the movement, the mechanism, the animal, the perception through senses, the Consciousness

Everything emerge reflectively from the innumerable intentions in the originary relationship between the Universe and Amorone. In the period of potency, the Amorone mirrors in itself the Universe giving place to the entire space of universe where unfolds its entire potency. This intention gives place to a single substance in the form of potency, entelecheia and energy, which is the universe. There is nothing more.
There is not an absolute potency that does not change, the SHAPE of forms. But ideas, logic, mathematics, universals, the laws of nature, are not in themselves, are not substance, are not subsisting metaphysical entities. They too, like everything, emerge reflectively.

Each universal has its own space with its own set of dimensions. The reflective individual, on the basis of the intention in which it fell, can make himself the son of innumerable universals. The reflective intention is the relationship between two reflective individuals of a same universal that, as reflective, have a body which appears to external observers and evolves although each individual, as such, is in potency in its own intention. Similarly, the object of gift, if reflective, has a body which appears to external observers and evolves traveling with a finite speed although, in the intention, it is exchanged instantaneously. In fact, the elements of the intention are the two individuals and the instantaneous exchange of their energy, everything else, including their bodies, appears reflexively in the background, and what is reflective constitutes the context of the intention, but it is not an element of intention.

The whole world can be seen as a single original consciousness.
With life the other is born. It was born as a living mechanism, as an individual person, which leaves the immediate world, of which, as a person, it is no longer an immediate part, reflecting the world itself through mechanisms, which are its own sense organs, and which now, expelled from the world, has only its own reflected representation of the world, towards which it can relate through its body (entelechy). The individual person is therefore a new level, the first level that comes out of the immediacy of the world and is outside of it. Reflection now takes on meaning and has a role, and a founding role which is that of representation, only in so far as a reflective individual person is born. The reflective individual has a body (entelechy) which, as such, has its own potency (dunamis). Its body immediately belongs to the external world but, as a reflexive mechanism, is the bridge between the person and the cosmos with which he is always in relationship. The reflective person stand out from the individual immediately immersed in the world for making his own representation of the world that is now external. The representation arises from the same potency of the individual that turns into energy in the relationship, as the world reflected through the senses interacts with the potency of the person becoming representation or, more precisely, awareness of the representation of the external world. This same potency, limited to a body (a mechanism), can in turn interact on the representation of the external world. Only an individual person now has a self, his own potency and can make decisions as this self. The individual is a potency that has made itself independent of the rest of the potency of the world to which it belongs. The person lives and builds its own story, has its own potency which is constituted as the person's subconscious. His senses interact with his potency and his decisions interact with his potency as well as with the outside world. The person is in himself, like every individual, threefold: entelecheia (form), potency, energeia. As a mechanism immediately immersed in the world, it is subject to the physical laws of Darwinism, as a potency that has become progressively independent by separating itself from the world with its own reflective representation, it is a person. The temptation of the person is to increase more and more this potency, which is his own self, without limits, going beyond that of others, to the point of dreaming of taking over all the potency: becoming God.

Each reflective individual evolves as constituted of parts (evolution is the fruit of the reflection of the parts), consummates as a person (himself) involved in an intention.
A self is not a form, but a body that has a potency and that updates instant by instant transforming itself, thus modifying its body and at the same time its potency, evolving and making its history.
Everything is in the body, both its memory and its potency.
The individual perceives his energy. Energy, fruit of the consummation that transforms the body and the world with which it interacts, is to appear and appear as, and is, the Qualia.
The reflection, which we carry out through the mechanism of the senses, is energy and therefore Qualia. The senses

of the animal can be defective, and therefore malfunction or not work at all, for example we can be deaf or hear bad or be blind or color blind, but what we perceive is not a creation of our body, but they are the Qualia, and these are universal. They are the alphabet of universal consciousness. The red, any given sound, are Qualia and are universal and appear to us. In the same way, each animal has its own potency that evolves simultaneously with the evolution of its body, decision after decision, energy after energy.

Each animal is a historical instance, a living body, it is not a form. A living body means that it has a potency as a living animal and has a memory, and the body occupies a place in the universe at all times.
In this way, in addition to the universal and immediate consciousness in which all the components of the matter of the Universe participate and which is constituted by them, the reflective consciousness of animals is born.
When an animal is born, a new consciousness is born, which is more, which does not take anything away from universal consciousness but is added as something beyond and more. It's a creation.
When an animal dies, a conscience disappears.
The individual is an instance of a Universal that consummates and relates as an instance of that universal.

The potency of the brain turns into energy during the relationship with the external world and becomes consciousness.

The scheme of intention and mirroring conveys the basic structure to potency, and the nesting and the stratification of intentions on ever higher levels, generates new entities that are increasingly structured, with the corresponding dimensions and laws.

All the matter, in itself, is immediate thoughts, immediate life. Mechanisms, operators, in itself, work not directly for the sake of consummation but always as a medium. They are forms of potency and as such they are constrained thoughts and passive life.
Analogously, behavioral repertoire of animals, tactics, strategies, in itself, work not directly for the sake of consummation but always indirectly, as a medium.

Brain itself is a mechanism, it is a generator of mirroring potency. It is plastic because it is plasmed by its own mirroring since it memorizes all its own mirroring, either because it is induced by senses or because it is induced for the sake of consummation. The brain evolves and works with the same rules as Darwinism for the purpose of consumption. Darwinism is the universal mechanism of evolution.

The animal individual, existentially, is his own consciousness, and this is his thoughts where thoughts are also understood as sensations. Reflexively it is his body by which he reflects and has thoughts. Nevertheless, the individual has thoughts. The individual perceives is thoughts for the sake of consummation inside its intention. The individual is therefore the lover, behind the mirroring potency or thoughts, in the intention relationship with its universal. As lover, it is free to choose its own universal.

The animal, in itself, exits from the cosmos as one and becomes an entity external to it. Their body is a mechanism. Animals don't mirror, but reflect the external world with their senses that are mechanisms. Conscious life is the ability to transform the reflection of the external world through senses in mirroring potency inside the brain and the mirroring potency inside the brain in reflection on the external world through the body. The brain is the seat of a huge mirroring potency. It loves because it mirrors and it mirrors what it loves, it thinks thanks to its mirroring potency, it lives since it is in intention and therefore freely decides and consummates, but it lives in a reflective world. They can therefore have thoughts and select and evolve their thoughts through mirroring, and can actualize their thinking, grafting the mechanism of one's body, matching the mirroring of their body to their thinking.
Only a reflective individual, who lives reflective intentions, can see the reflexive movement of the exchange of gifts of a reflexive intention or the evolution of a reflective body. Only a reflective body maintains its identity, constitutes itself as "this" individual, and evolves and has a history. In fact, its history, its evolution, is given by the progressive and continuous actualization of its parts along the lines of the present in progress. It is actualized and evolves not directly, as an individual, in itself, but indirectly, as it is composed of parts in turn composed of parts and so on up to the elementary individual. Its own movement is the reflection that fills its own potency taking its form, because only potency has movement in itself. The reflection in itself, as actualization, has no movement but, taking the form of potency, it assumes the movement that it lacks.

Potency is first, reflection follows by actualizing potency. But potency is alive, it is thought that has a purpose and lives in an intention. Consequently it presupposes the relationship, a loving individual and a loved individual. We can understand nature because our thoughts are of the same substance as nature. Nature is potency in action and our thoughts are potency, the same potency.

Potency is therefore the form of reflection, which is the phenomenon, which is actualized and becomes conscious through the senses, appearing what is already in itself, that is images and colors and sounds. The potency is already

immediately, in itself and for itself, image colors and sounds.

Nature is the potency of a first individual that places all other individuals intentioning them. What is elementary cannot have a history. It must place the compounded individual who rises reflexively from his potency and enter into intention with it, becoming in turn an individual and building history together.

Physics, Mathematics and thought are daughters of Potency. This is the reason why Physics "The book of nature is written in the language of mathematics" and we can know them.
Potency therefore has its own structure, and this structure was what Plato investigated.
But ideas, logic, mathematics, universals, the laws of nature, are not in themselves, are not substance, are not subsisting metaphysical entities. They too, like everything, reflectively emerge from the innumerable intentions in the originary relationship between the Universe and Amorone. Universals are only contingent words and logic and mathematics and physics are the contingent language in the dialogue between God and living beings. They have no truth in themselves, but only utility and suitability for the purpose.

This structure unfolds from the scheme of intention, and arises only reflectively. If we look at it more closely, it vanishes in the uncertainty principle, that gives way only to freedom of intention. There is an intentional relationship between the Present in act and the Big Bang in act. The Big Bang determines the present just as the present determines the Big Bang.

$$\begin{array}{ccc} & \textit{Intention} & \\ \text{Big Bang in act} & \longleftrightarrow & \text{Present in act} \\ \Vert & \text{potency} & \Vert \\ \text{GOD} & & \text{men, creatures and creation} \end{array}$$

The Universe evolution is governed by :

1. teleology of intention
   - dialectic
2. physical laws: arise reflectively from the intention schema:
   - conservation of energy.
   - the maximum entropy production: Those who have more donate to those who have less.
   - Darwinism: $suitable \equiv possible \equiv Potency$: what is more suitable is more possible.

individuals, although they have a place in the world, transcend it. In fact, the world is only the word of the dialogue between God and the living individuals.

IX. INTENTION PHILOSOPHY

Regarding the Hegel's introduction to his **E**ncyclopaedia of the **P**hilosophical **S**ciences' [11] already quoted in the Preface of the present work: *"The objects of philosophy, ... is Truth, in that supreme sense in which God and God only is the Truth."*, we argued in this article that truth is not in itself, is not substance, is not subsisting metaphysical entity since God is not Truth: *God is Charity; nothing but Charity.*
Charity is not an idea, is not a form. It is a free and creative movement, an intention that unfolds from a relationship between living and free persons whose foundation is love.

We affirm that whichever existent exists in the intention, since the intention is primitive and the nesting of intentions gives place to new reflective intentions of higher level. As a result, the sole principle of intention physics is not restricted to the bottom intentions, but it extends to whichever intention to whichever reflective level it could emerge, as well in the range of quantum mechanics or standard model, as in the range of general relativity and cosmology. Indeed, no one only process of our everyday life is not governed by it.

The first Intention is that between the Universe and Amorone. From this first intention reflexively arise all the entities of the universe, and finally the reflective animal. There are no laws in the Single Principle. The so-called "iron" laws of logic or of nature are nothing more than the reflective appearance on a fabric of underlying consummative intentions. The quantitative emergence from a multiplicity of acts, each new, free, dictated only by love.

Being is not the totality of form, immutable in its perfection, to which nothing can be missing and therefore still, immobile. This is the error of those who consider being as an absolute space by itself, as a space that is substance. Potency is not infinite, eternal. There are no Platonic ideas per se, subsisting metaphysical entities.

There is no eternal and unchanging space, totality of forms, but the historical space of the instant where words take root. Potency is thus a home only within which thoughts, words, entities and knowledge are finally possible.

The beginning is not the space or the matter, but it is the individual in the intention. The space, and the form which fill it, is not substance, it is the image that an individual endowed of interiority receives in the intention with Foundation, source of the life, which creates and maintains him in existence.
As engaged in intention with Foundation, we become individual and receive the life incarnating in the physical space of the intention. The physical space is therefore the language and the context of this intention.

The Unique Principle of all that exists, that is, of all inorganic matter and of all that lives, of language as well as of thought, is the love that is fulfilled through charity and which we call intention. Everything is a fabric of intentions and besides intention there is nothing else. An intention is cyclical and takes place between two conjoined individuals, one of whom is the universal of the other who makes himself his son. The intention consists of two moments connected by the decision that finds space between them:

- the moment of separation, in which the father and the son are distinct from each other in the instant that precedes the consummation. In this moment:
  - one yearns to give a part of oneself, one's body, to one's Universal The donor does not see the other, he must have hope, moved by love he must go out of himself, he must jump in the dark towards the other he does not see to give him self.
  - the other yearns to receive a part of himself, of the body of these, from his Universal The recipient does not see the other, must have faith, moved by love must listen, must be seduced by the other, open up to the other, welcome him.
- the moment of union in the spirit that occurs in the decision through the gift of oneself, of one's own body. At the moment of union, distances are canceled, spacetime disappears and is replaced by real time, the time of the spirit. The time of the spirit is what is placed in the middle between two different space-time instants.

The decision, inherent in the movement of intention, is the only real movement and as such must necessarily be immediate: if it were mediated, it would have to be mediated by some other more original movement. At the basis of the movement of intention, which is giving or receiving, there is therefore the decision that is immediate. In its originality, decision and giving and receiving are three moments of a discreet whole: the entire movement of intention is therefore immediate. It is the leap that makes the power go from one state to another.

The individual then, in placing himself in an intention, freely chooses the universal of which to make himself an instance, chooses his own essence. He exists because he is kept in intention. The Universal, however, always appears personified, it is not something abstract or ideal, but it is concrete in that it is an individual: the individual to whom the other individual tends to give and receive in order to join it. The Universal is at the same time the other of the individual and its essence. The other in the act of decision when the individual separates from the power, its very essence when the individual outside the decision returns to his power. In consummation the individual, in joining with the other as something, does nothing but rejoin himself, but since this something has been chosen, in consummation the individual chooses his essence. To be more precise, the individual does not choose his essence, his essence is already given, it is one and he cannot create another, but he chooses himself in his authenticity by opening himself to the whole Life or, closing himself to it, a more or less driven mutilation which goes as far as falsification.

The Spirit is the unity that in space-time breaks and leaves its trace: the split line that becomes a mirror axis of symmetry. The two faces facing each other, previously united, are now like two lovers, each reflecting the other. Each of the two parts, in separating, carries the image of the other in itself, unites the essence of the other to its own: in this way each becomes a mirror of the other, sees itself reflected in the other, and the two form a relationship that has the split line as its axis of symmetry. From this mirror symmetry it must not be concluded that the two are the same. The two merge in the spiritual time of consummation as they separate in the space-time instant, but they are always two distinct individuals. Distinguished from a NOT. In a horizontal sense, the individual is NOT the other individual, in a vertical sense, the individual is NOT its universal.

The nothing becomes, and becomes the other, through being intentioned by Being, against which her action is closure or acceptance:

- arises by opening up to the love of God, in which it finds its foundation
- accepts or falsifies its meaning

Only love (is being) can be nientified (in nothing), only nothing can nientify. Nothing can only reflect love, and in this live, or nientify love, and in doing so die.

As reflective person, we are not being but nothing. We have the being. We are not God, we have God. We have a body, we have sensations, we have thoughts, we have emotions, we have moods, we have life. Being nothing means having being from Being, a gift that can be accepted or refused by nientifying it. Love gives itself to nothing by placing it as an individual, making it the recipient of love.

Nothingness is not a constituent of being. "Being there" (dasein) is not being, being does not belong to him, but is continually given to him. "Being there" is like a mirror that reflects this life-giving energy. The individual cannot therefore nientify the being that is the Foundation or the energy from it, but can open or close to it. The word nientification, with this warning, must always be understood as a filter lowered onto being, or as the closing of "Being there" to being. The nientifying of nothing does not have being as object, but consists in opening or closing oneself to the being that is given to it. And since being is his life, nientifying corresponds to suicide. Being does not contain the nientification within it. Nothing is not a constituent of being.

Thus, nientification starts from the animating principle, which is love, and from the general structure of charity in which it is expressed.

If you make the mistake of considering the individual for himself, abstracted from the intention that poses and maintains him, then it can be said that Existence is before the essence, as Sartre claims (see Jean-Paul Sartre (1946) [12]).

But the individual exists in that it is placed by the Foundation in an intention, as invested with love. The individual cannot exist outside an intention, and an intention unites the Founder and the founded placing them in the same species. Being there comes into existence already endowed with an essence, mutual that of its Foundation, reflects it. This essence is love fulfilled through charity. The founded individual is then free to amputate up to totally distort his nature. Existence, then, is not before essence.

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[3] *Aristotle, Physics*
[4] *Aristotle, Metaphysics*
[5] *Plotinus: Enneads (250 AD)*
[6] *Proclus: Elements of Theology (V century AD)*
[7] *Giordano Bruno: Cena de le Ceneri, 1584*
[8] *Giordano Bruno: De la causa, principio et uno, 1584*
[9] *Giordano Bruno: De l'infinito, universo e mondi, 1584*
[10] G.Galilei, Dialogo sui due Massimi sistemi del mondo
[11] *G.W.F. Hegel, Encyclopaedia of the Philosophical Sciences (1830)*
[12] *Jean-Paul Sartre: Existentialism Is a Humanism, Lecture given in 1946*
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