Intention Physics

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A Theory of everything must spring from a metaphysics but must necessarily rest on logics. The aim of this paper is to show the theory of everything: it needs a new conceptual framework, a new geometry, a new mind, a new language. A critical examination of the conceptions of memory, movement, time and space brings to light the primitive space where relativistic physics and quantum mechanics can meet. Furthermore, it highlights the distinction between the true time that opens in the decision between the previous moment and the successive one, and the mnemonic time, trace spatialised in the moment, in which the evolution of the emergent phenomena is reflected. Finally, recognizing space, time, electricity and gravitation as four different aspects of one sole substance, we come to the only unit measure and to the only equation that, devoid of singularity, unifies all the natural interactions, without disagreement with any experimental result, and throws light on the shape and origin of the universe and on matter organization.

Meaning of symbols: $^\diamond$ and $_\blacklozenge$ indicate both 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.

"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." Aristotle physics

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We call Intention 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.
Every individual is characterized by only a radius R (the Schwarzschild radius), which represents all the energy that has and can donate, and that turns in a spin ω, such that $\omega \equiv 1/R$, in a finite three dimensional space that represents all the potency of the relation, whose period depends on the distance between the two conjoined individuals, according to the schema of fig. 8.

The decision, which lies in the live true time, is the only jump from a state to a new state, the only newness that changes the world. Now, since all that exists, it exists in the intention, and the nesting of intentions gives place to new reflective intentions of higher level, the sole principle of intention physics is not limited to the bottom intentions, but it extends to whichever intention to whichever reflective level it could emerge. Indeed, no one only process of our everyday life is not governed by it.
We call Reflection 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. From the multiplicity of intentions emerges the reflection and the Complex individuals, with complex reflective attributes, which evolve reflectively other than consummate.
Indeed, reflection gives place to increasingly complex synthetized universals, characterized by more and more reflectively emergent attributes, and reveals the evolution in time of complex individuals in the period of potentiality, between consummative acts, and even the instantaneous (for definition) exchange of a reflective complex object of donation. The entrance in act of the individuals and the exchange of the object of donation in the intention is always, by definition, instantaneous also if these, if complex, can appear, to an external observer, as lasting over time since, as composed of parts, these latter are engaged in a different and more primitive intention with the observer.
Each individual is in relation with each other individual and the nesting of relations gives place to emergent reflective individuals of higher level. Each individual is part of another individual more complex, in it finds its own place and a role, and so on until the universe, which is itself an individual.
Nevertheless, the potency has its constraints and therefore a form. The acts of

Consummation modify the configuration of the relation (the distances) and therefore leave their traces modifying the form of the more complex individual which emerges from its parts. The emergent reflection illuminates the form of the complex individual and returns its image which is all the memory and all the potency at hand, all present in the instant.
Nevertheless, the unique relation, to whichever emerging level of reality and complexity, is the Consummation. Consummation is interior, existential, primitive; reflection is exterior, objective.
In the intention, every individual mirror its other without and before the possible consummation. Mirroring and reflection are therefore dual, one is the form (the universal) and the other is its fulfilment (an instance). Having clarified the difference, in the following, for simplicity, we will call reflective both reflection and mirroring. Classical physics first of all, but all entire and possible physics as predicting capability indeed, is reflective. Logic is the structure of reflection. Memory is reflective. Mechanism is reflective. Evolution and history are reflective. The spacetime and geometry are reflective. Necessity and chance are reflective. Reflective is what appears from the consummations of the huge amount of underlying intentions. Reflective, for two individuals in their intention, is all the other to the intention that therefore is appearance and forms the context of the decision.
Theory is reflective. Its existence demonstrates the Principle of Reason (Ground). It claims that the present is based on the reflective historical reconstruction of the past, until the reflection vanishes with the rarefaction of the number of underlying consummation acts.

Both classical physics and Intention physics are necessarily reflective, since pure consummation is an existential, but they differ in the point of view.

The point of view of Intention Physics 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. In the intention, the time is the live true time. Limited to the scope of a concrete intention, all present in an instant, there are not events neither therefore 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.
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). It contains the totality of the potency of the present and the totality of the memory. We have nothing else but what is given in the present instant. The previous instant and the next instant are not

given. The flow of time, which is an existential, is therefore outside the range of physics. Since the component threads are the disentangling of a unique path, time is defined as the summation of its components $\Delta T \equiv \Delta S = \Sigma \Delta s_i$ and therefore is not continuous.
From the image present in the snapshot of an instant, it is possible identify the reflective complex individuals in intention endowed with an intrinsic clock (the intention is cyclic). It is possible, therefore, recognize a geometrical progression reorganizing them on two dotty spinning time τ axis (one for each one of the two conjoined reflective individuals) and the relative orthogonal spatial planes and derive a reflective metric.

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. They become two 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. Differently from Intention physics, where the appearance in the act of the two conjoined individuals last only an historical instant, determined and concomitant with the therefore instantaneous exchange of energy which links them, in the classical physics the individuals last in time independently from each other and therefore last in time the exchange of energy which now travels with a finite velocity. Nevertheless, all that is real in the Intention Relation must be preserved in the reflective spacetime and therefore these two profoundly different points of view must be reconciled. Hereafter the way.
The point of contact between classic physics and Intention physics are necessarily the points τ, since they represent the real absolute events and must be true on every real reference system, and more generally the periods $\Delta\tau \equiv \Sigma(\Delta\sigma)$. Nevertheless, there are not other constraints, and we are therefore free to define an artificial larger space that, beyond the spatial dimension S, incorporate the symbol $\Delta\tau(\Delta\tau \equiv \Sigma\Delta\sigma)$ transforming it in a new artificial independent and continuous dimension. This is mathematically possible defining s as a vector and t as an orthogonal complexified vector (multiplied by pseudoscalar $i = \sqrt{-1}$) so that

$$\left\| \sum f_1 \Delta\vec{s} + f_2 i \Delta\vec{t} \right\| \equiv \sum \Delta\sigma - \Delta\tau$$

The right member represents the datum of reality which is a linear relation, the left member represents the isomorphic vectorial transform in the Minkowski spacetime. Of course, we can extend the vectorial transform

$$\left\| \sum f_1 \Delta\vec{s} + f_2 i \Delta\vec{t} \right\| \equiv \Delta l \equiv \sum \Delta\sigma - \Delta\tau \equiv \left\| \sum \Delta\vec{\sigma} - i\Delta\vec{\tau} \right\|$$

and at last leave completely the original form of datum

$$\sum f_1\Delta\vec{s} + f_2 i\Delta\vec{t} \equiv \Delta\vec{l} \equiv \sum \Delta\vec{\sigma} - i\Delta\vec{\tau}$$

On the path of light, we have $dl^2 = 0$ which admits two solutions:

$$\begin{aligned} \boldsymbol{i}f_1(ds) + i\boldsymbol{k}f_2(dt) = 0 \\ \boldsymbol{i}f_1(ds) - i\boldsymbol{k}f_2(dt) = 0 \end{aligned}$$

We can now extend this method and extend the Minkowski spacetime incorporating the vectorial symbol $\Delta\vec{l}$ ($\Delta\vec{l} \equiv \sum f_1\Delta\vec{s} + f_2 i\Delta\vec{t}$) transforming it in a new artificial independent and continuous dimension. This means that we can transform the symbol l in a new artificial dimension i$\boldsymbol{j}l$, that adds beside S and iT : ($\boldsymbol{i}s$, $i\boldsymbol{k}t$, $i\boldsymbol{j}l$), so that the annulling of the length $f_1^2(\Delta S) - f_2^2(\Delta T) - \Delta l^2 = 0$ is no longer obvious but signifies the belonging of the measure dl to the metric of the reflective spacetime or, in the final analysis, to the metric of Intention. The last identity admits four solutions:

$$\begin{aligned} \boldsymbol{i}f_1(ds) + i\boldsymbol{k}f_2(dt) + i\boldsymbol{j}\ dl = 0 \\ \boldsymbol{i}f_1(ds) - i\boldsymbol{k}f_2(dt) + i\boldsymbol{j}\ dl = 0 \\ \boldsymbol{i}f_1(ds) + i\boldsymbol{k}f_2(dt) - i\boldsymbol{j}\ dl = 0 \\ \boldsymbol{i}f_1(ds) - i\boldsymbol{k}f_2(dt) - i\boldsymbol{j}\ dl = 0 \end{aligned}$$

Given the metric in the abstract spacetime, these solutions are, in abstract, always true for whichever dl: they are mathematical trigonometric identity. They become concrete when we put dl equal to the absolute radius R of the individual: in this case they correspond to the Dirac equations.
Indeed, we can found the Intention metric on the simple fact that the path of light between two consecutive exchange (tread) is given by:

$$kT \equiv \Sigma(\Delta S) = \ \boldsymbol{i}S_1 + \ \boldsymbol{j}R + \boldsymbol{i}S_2$$

and therefore

$$\boldsymbol{i}\Delta S \pm i\ \boldsymbol{k}\Delta T \pm i\ \boldsymbol{j}R = 0 \quad \text{or} \quad \boldsymbol{i}\Delta p \pm i\boldsymbol{k}\Delta E \pm i\ \boldsymbol{j}m = 0$$

In the above equation, the complex terms ($\boldsymbol{i}$, $i\boldsymbol{k}$, $i\boldsymbol{j}$) highlight that space, time and mass/energy are different aspects of the same thing, that is expressed by numbers. Above all, in the equation mathematics is incarnated in physics: they become one thing, a body and a soul.

The space of the Intention relation is limited and corresponds therefore to the subset

$$\boldsymbol{i}\Delta p \pm i\boldsymbol{k}\Delta E \pm i\boldsymbol{j}m = 0$$

of the spacetime of classical physics.

1 SECTION I THEORY

All the formulas of this paper derive from the schema of the Intention Relationship of fig. 8. Since these are relationships between lengths, which spring from each other in a recursive manner starting from the Radius R and the γ angle, each formula could be equally written in countless ways. Only the most significant ones have been chosen here.

1.1 The isomorphism

The point of view of Intention physics is that of the individual in the cyclic relationship with its other. The centre is the relationship, in and for itself, as seen from the involved individuals. It is essentially existential, since its core is the change between a state of potentiality and the next via the decision which takes place instantaneously in the live true time of freedom. The live true time of the act and the space of potentiality are the same. The internal and the external of an individual.

The intention relationship of potentiality is the object of physics. In its primitive form, it is the quantum mechanics which deals with potentiality. On the other side, as emerging reflectively from the huge amount of intentions, it is classical physics which deals with reflection.

The relationship in and for itself can be completely geometrized since the difference between itself with its other is distance and all their past, present and future potential exchange links give place to a linear spacetime where the spatial distance is the temporal period and vice-versa.

Because the sole universe thread is sequential, without loops, polar-axes of different individuals never intersect each other, neither two spatial axes, but each spatial axis intersects every polar axis and vice-versa.

Measure is based on the memory which must be present in the instant. The image is reflective. The watch is reflective and is a kind of memory. Because the measure is reflective, it does not take place in the live true time, which is an existential, but in the spacetime of an instant. Therefore, the measure takes necessarily place in the instant. Because the observer and the observed as individuals are meters, each one measures and is measured by the other. Because the observer and the observed as individuals are mirrors, each one reflects and is reflected by the other recursively. Therefore, the observer can see, in the snapshot of the state of the instant, all the historical reflective succession of its own figures and of the figures of the other, and can measure the spatial and temporal distances between every couple of them in order to deduce velocities and accelerations. Let's consider the progression ..,., 1, K, K^2 , .,.. in the historical reconstruction of periodic reflection between individuals A and B where, evidently, there is one only unit of measure and where we attribute the odd terms to the individual A (history of A) and the even terms to the individual B (history of B).

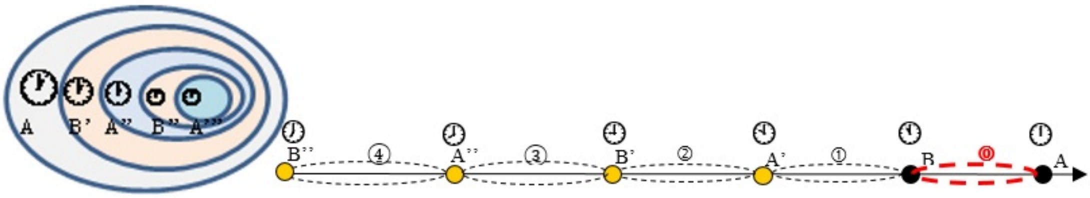


Figure 1: Recursive mirroring: two mirrors facing each other are reflected recursively. If there is a clock on each of them, from the reflected image present in every instant it is possible to reconstruct distances historically and therefore the velocities and accelerations over time, as far as the reflection allows.

We can equivalently represent the mirroring progression either on a spatial path, since it is all present in the now, or on a temporal path, since it is all present at this point. We can equivalently represent the succession on a matrix intersecting the temporal and the spatial paths.

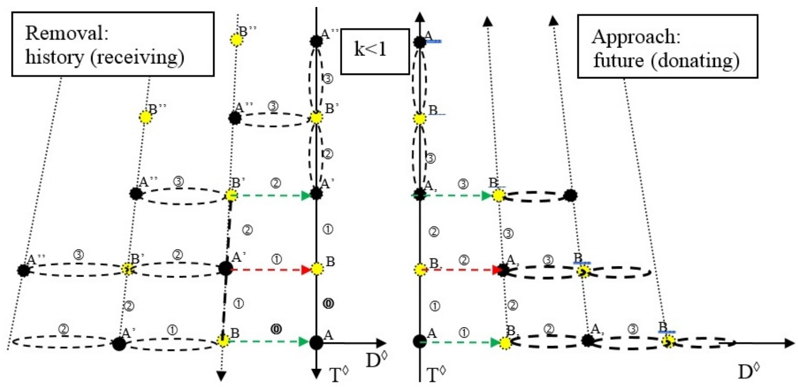


Figure 2: matrix representation: k is greater than 1 in the removal, less than 1 in the approach. Nevertheless, if we consider the receiving moment in the removal and the donating moment in the approach, we have always k<1 and $V^{\diamond} = \dfrac{\overline{AB}}{\overline{0A}} = \dfrac{\Delta\lambda^{\diamond}}{T^{\diamond}} = 1 - k$

More generally, on the path of light, at every reflection, we have an increment of the scale factor exponent:

$$\begin{aligned} s_n^{\diamondsuit} &= k s_{n-1}^{\diamondsuit} \\ s_{nn}^{\diamondsuit} &= \oint s_i^{\diamondsuit} = 0 \end{aligned} \tag{1}$$

Where k is greater than 1 in the removal, less than 1 in the approach. Nevertheless, we have always k<1 if we consider the receiving moment in the removal and the donating moment in the approach. Indicating with s_0 the distance now on the spatial axis between A and B we have that:

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

Therefore

$$\Delta\lambda^{\diamondsuit} = T^{\diamondsuit} - T_{-1}^{\diamondsuit} \quad \text{and} \quad V^{\diamondsuit} = \frac{\Delta\lambda^{\diamondsuit}}{T^{\diamondsuit}} = 1 - k$$

If we look closely at path above, we can realize that every spatial thread is an alternation of the receiving/donating acts of the two individuals in intention: at the receiving act of each individual must correspond the donating act of its other and vice versa.

We can therefore introduce the explicit representation of the two conjoined individuals and reorganize the same tread of points both on a temporal axis, which represent the identity and the permanence of the "self", as an historical reconstruction, and on relative orthogonal axis as spatial distances, which represent the difference of the "other".

In Intention physics the time is defined only in the points of act A,B,A',B', . . . since, between a point of act and the next one, the period of potency extends. Analogously space is defined only on the segments AB ecc.

These points and these segments are 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. 3).

We can see that, since $\tau = \tau^{\diamond}$, it is possible an isomorphic representation of the reality, represented by the intention schema, defining $t \equiv t^{\diamond} - d$ and $d \equiv (\sigma^{\diamond} + r)/2$ so that to the linear metric of the intention physics corresponds the vectorial metric in the Minkowski spacetime of classic physics.

relativistic spacetime	$\rightarrow$	linear intention spacetime
$i\vec{\tau} = i\vec{t} + \vec{d}$	$\rightarrow$	$t^{\diamondsuit} = t + d = \tau^{\diamondsuit}/\cos\gamma^{\diamondsuit}$ and $t' = t - d = \tau^{\diamondsuit}\cos\gamma^{\diamondsuit}$

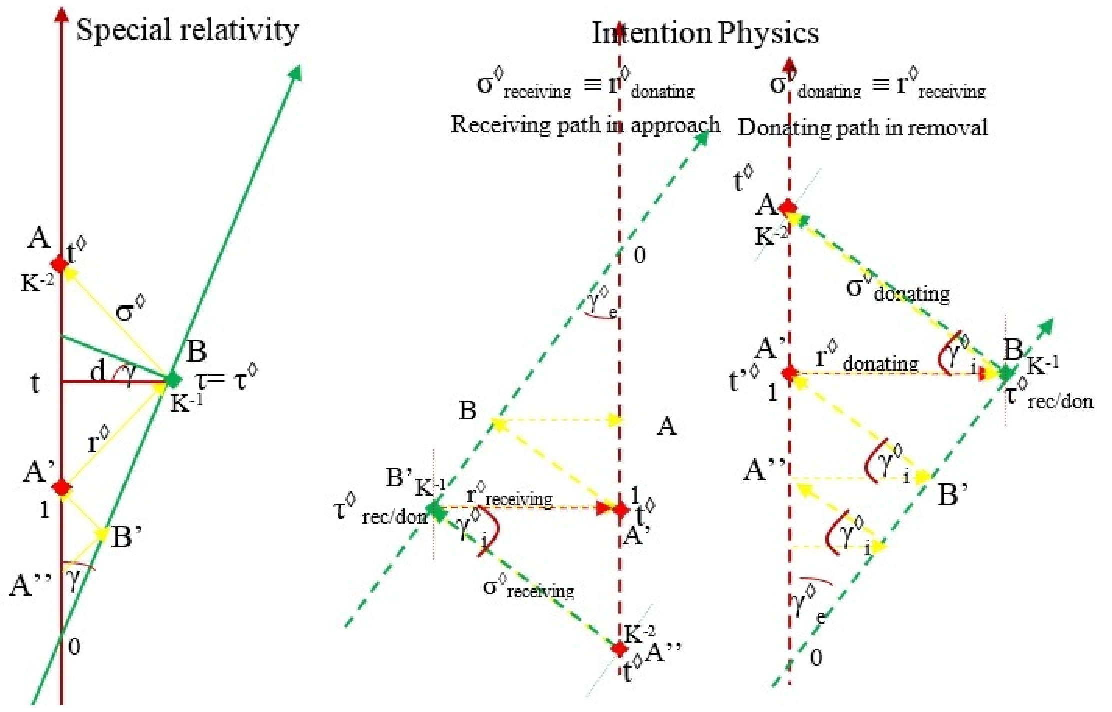


Figure 3: isomorphism: the representation of the temporal and spatial distances between the real points A,B,A',B',A",B", ... in the Minkowski spacetime, on the left, is equivalent to the representation in the Intention historical plane, on the right, with the conversion $v = \tanh\gamma \to V = 1 - \cos\gamma^{\diamondsuit}$ and $e^{-\gamma} \to \cos\gamma^{\diamondsuit}$. The difference is that while the Intention historical plane defines only these points as the unique real, and the spatial distances, therefore, represent the corrispondence between $t^{\diamondsuit}$ and $\tau^{\diamondsuit}$ 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. Being $\tau \equiv \tau^{\diamondsuit}$, it is important to note correspondence between $i\vec{\tau} = i\vec{t} + \vec{d}$ and $\tau^{\diamondsuit} = t^{\diamondsuit} - \sigma^{\diamondsuit}$, and the difference (hidden in the graph) between $\gamma_e^{\diamondsuit}$ and $\gamma_i^{\diamondsuit}$
$\overline{AB} \equiv \sigma^{\diamondsuit} = t^{\diamondsuit} - \tau^{\diamondsuit}$ or $\sin^{\diamondsuit}\gamma_e^{\diamondsuit} = 1 - \cos\gamma_e^{\diamondsuit} = 1 - \cos\gamma$
$\overline{AA'} \equiv t^{\diamondsuit} - t'^{\diamondsuit} = \sigma^{\diamondsuit} + r^{\diamondsuit}$ or $\sin^{\diamondsuit}\gamma_i^{\diamondsuit} = 1 + \cos\gamma_i^{\diamondsuit} = 1 + \cos\gamma$

Or

$$i\tau\cosh\gamma\hat{t} + \tau\sinh\gamma\hat{d} = i\tau\hat{\tau} \quad \to \quad \begin{cases} \tau\cosh\gamma - \tau\sinh\gamma = \tau\cos^{\diamondsuit}\gamma^{\diamondsuit} \\ \tau\cosh\gamma + \tau\sinh\gamma = \tau/\cos^{\diamondsuit}\gamma^{\diamondsuit} \end{cases} \tag{2}$$

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 $\cos\gamma^{\diamond} = e^{-\gamma}$.

Indeed, since

$$v = \tanh \gamma = \frac{\overline{AA'} - \overline{A'A''}}{\overline{AA'} + \overline{A'A''}} = \frac{1 - \frac{\overline{A'A''}}{\overline{AA'}}}{1 + \frac{\overline{A'A''}}{\overline{AA'}}} = \frac{1 - K^{\diamondsuit 2}}{1 + K^{\diamondsuit 2}} \tag{3}$$

we must have $\cosh \gamma = \dfrac{K^{\diamondsuit -1} + K^{\diamondsuit}}{2}$ and $\sinh \gamma = \dfrac{K^{\diamondsuit -1} - K^{\diamondsuit}}{2}$ or

$$\frac{1}{K^{\diamondsuit}} \equiv \frac{1}{\cos \gamma^{\diamondsuit}} = \cosh \gamma + \sinh \gamma = e^{\gamma} \quad \text{and} \quad K^{\diamondsuit} \equiv \cos \gamma^{\diamondsuit} = \cosh \gamma - \sinh \gamma = e^{-\gamma}$$

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.

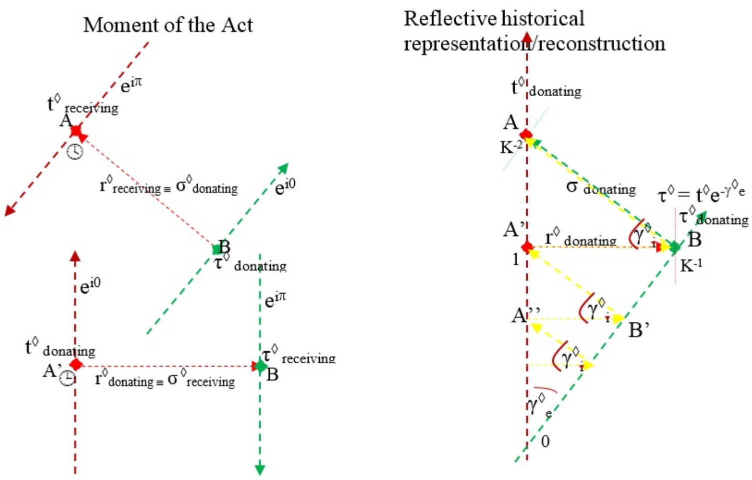


Figure 4: Uncertainty principle: In a measurement, while the measuring instrument A is necessarily classic and therefore reflective, so we know $P^{\diamondsuit} = t^{\diamondsuit}_{A_i} - t^{\diamondsuit}_{A_{i-1}}$, the measured B could be non-classic, therefore we would not know the time $t^{\diamondsuit}_{B_i}$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

In the intention, we have the period of potentiality, which is imaginary, and the moment of the act, which is real.
In every moment, the individual is suspended between the previous act and the next in the space of potency. All the nesting of spatial path of the myriads of previous acts is only a reflective reconstruction, which give place to the memory and to the image of present context where mature the decision. In this suspension is the flow of existential time.

$$\Psi(x,t) = Ae^{\frac{i}{\hbar}(px-Et)} = Ae^{i2\pi\left(\frac{x}{\lambda^{\diamondsuit}}-\frac{t}{T^{\diamondsuit}}\right)} \quad \text{where} \quad \lambda = hR^{\circ}/V \quad \text{or} \quad \lambda = hR^{\circ}/v$$

The donor and the receiver must be synchronized to have same period but opposite phase in the moment of the act. To know position and moment of the other in a given time, we must know the angle γ of the relation which is formed of the time of donating, or of receiving, of both individuals. 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 viceversa.
We can partially reduce this inherent lack of knowledge by putting the measuring individual as 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 $\gamma_e^{\diamondsuit}$ 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 $\Delta T = R^{-1}$, and this is the discrete unit of measure of the time of the individual. Therefore $\Delta T \Delta E \geq 1$.
In other words, in every instant the receiving side of an individual face the parallel donating side of the other and, therefore, the intention schema, composed from the juxtaposing of homologue sides 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.

1.2 The Linear trigonometry (on the path of light)

From the point of view of individual "a" in the Intention, the light is instantaneous and forms the path of donating and receiving threads with his other, whose lengths can be measured both as temporal intervals that as spatial distances in a linear metric $\sin\gamma + \cos\gamma = 1$. The familiarity of intention schema is in appearance only.
In the mirroring representation (see fig. 5), since the recursive mirroring is the disentangling of a unique path, the angles between the two temporal axes τ, t and between the two orthogonal spatial axes $\sigma^{\diamondsuit}$, s form two angles $\gamma_i^{\diamondsuit}$ and $\gamma_e^{\diamondsuit}$ corresponding to the real and supplementary $\gamma_i^{\diamondsuit} = -\pi + \gamma_e^{\diamondsuit}$ angles. The angles are γ_e when both the axes are in a concordant direction, vice versa γ_i when opposite, and they alternate each other.
The angle opposite to $\gamma_x^{\diamondsuit}$ is $\gamma_{\blacklozenge x}$

$$\left\|\vec{A} + \vec{B}\right\| = \left\|\vec{A}\right\| + \left\|\vec{B}\right\| \qquad \oint \vec{s}_i^{\diamondsuit} = 0$$

$$\gamma_i^{\diamondsuit} = -\pi + \gamma_e^{\diamondsuit} \qquad \gamma_{\blacklozenge e} = \pi/2 - \gamma_e^{\diamondsuit} = -\pi/2 - \gamma_i^{\diamondsuit} \qquad \gamma_{\blacklozenge i} = -\pi + \gamma_{\blacklozenge e} = -\pi/2 - \gamma_e^{\diamondsuit}$$

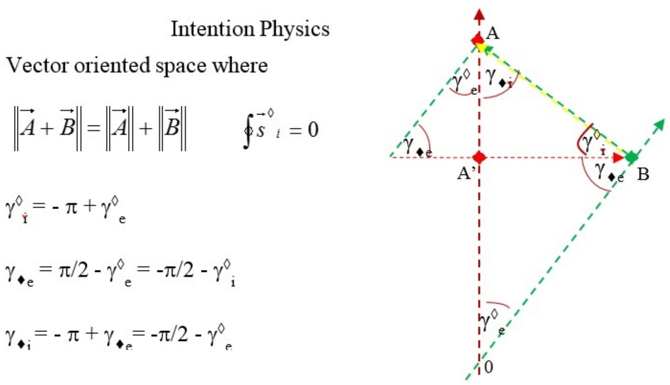


Figure 5: Linear trigonometry: It is a Linear vector oriented space
$\|\overline{A}+\overline{B}\|=\|\overline{A}\|+\|\overline{B}\|$ $\qquad \oint \overline{s}_i^{\Diamond}=0$.
The angles are γ_e when both the axes are in a concordant direction, vice versa γ_i when opposite, and they alternate each other. The angle opposite to $\gamma_x^{\Diamond}$ is $\gamma_{\blacklozenge x}$ and $\gamma_i^{\Diamond}=-\pi+\gamma_e^{\Diamond}$ $\quad \gamma_{\blacklozenge e}=\pi/2-\gamma_e^{\Diamond}=-\pi/2-\gamma_i^{\Diamond}$ $\quad \gamma_{\blacklozenge i}=-\pi+\gamma_{\blacklozenge e}=-\pi/2-\gamma_e^{\Diamond}$.

Where the relations between quadratic and linear trigonometric functions are:

$$\begin{bmatrix} \cos^{\Diamond}\gamma_e^{\Diamond}=\cos\gamma & \sin^{\Diamond}\gamma_e^{\Diamond}=1-\cos\gamma \\ \cos^{\Diamond}\gamma_i^{\Diamond}=-\cos\gamma & \sin^{\Diamond}\gamma_i^{\Diamond}=1+\cos\gamma \\ \cos_{\blacklozenge}\gamma_{\blacklozenge e}=1-\sin\gamma & \sin_{\blacklozenge}\gamma_{\blacklozenge e}=\sin\gamma \\ \cos_{\blacklozenge}\gamma_{\blacklozenge i}=\sin\gamma-1 & \sin_{\blacklozenge}\gamma_{\blacklozenge i}=2-\sin\gamma \end{bmatrix} \tag{4}$$

$$\cos^{\Diamond}\gamma_e^{\Diamond}=\sin_{\blacklozenge}\gamma_{\blacklozenge e} \quad \text{and} \quad K^{\Diamond}=\cos^{\Diamond}\gamma_e^{\Diamond}=e^{-\gamma} \quad \text{and} \quad 1-K_{\blacklozenge}=\sin_{\blacklozenge}\gamma_{\blacklozenge e}=e^{-\gamma}$$

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

$$\cos^{\Diamond}\left(\psi+^{\Diamond}\varphi\right)=\cos^{\Diamond}\psi\cos^{\Diamond}\varphi-\left(1-\cos^{\Diamond}\psi\right)\left(1-\cos^{\Diamond}\varphi\right)=\cos^{\Diamond}\psi+\cos^{\Diamond}\varphi-1$$
$$\cos^{\Diamond}\left(\psi-^{\Diamond}\varphi\right)=\cos^{\Diamond}\psi\cos^{\Diamond}\varphi+\left(1+\cos^{\Diamond}\psi\right)\left(1-\cos^{\Diamond}\varphi\right)=\cos^{\Diamond}\psi-\cos^{\Diamond}\varphi+1$$

$$\sin^{\Diamond}\gamma_e=1-\cos^{\Diamond}\left(\varphi+^{\Diamond}\psi\right)=\sin^{\Diamond}(\varphi)+\sin^{\Diamond}(\psi)$$
$$\sin^{\Diamond}\gamma_i^{\Diamond}=1+\cos^{\Diamond}\left(\varphi+^{\Diamond}\psi\right)=\cos^{\Diamond}(\varphi)+\cos^{\Diamond}(\psi)$$

In the reflective schema, we have $\gamma^{\Diamond}=\gamma_e^{\Diamond}$ when $|\,\gamma^{\Diamond}\,|\leq\pi/2$, $\gamma^{\Diamond}=\gamma_i^{\Diamond}$ otherwise.

$$\begin{bmatrix} \dfrac{d\left(1-\cos\gamma_e\right)}{d\gamma_e^{\Diamond}}=\left(1-\cos\gamma_e\right) & \dfrac{d\cos\gamma_e}{d\gamma_e^{\Diamond}}=-\left(1-\cos\gamma_e\right) \\ \\ \dfrac{d\left(1-\sin\gamma_e\right)}{d\gamma_{\blacklozenge e}}=\left(1-\sin\gamma_e\right) & \dfrac{d\sin\gamma_e}{d\gamma_{\blacklozenge e}}=-\left(1-\sin\gamma_e\right) \end{bmatrix} \tag{5}$$

Hereafter some notable examples:

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

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

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

1.3 The structure of intention

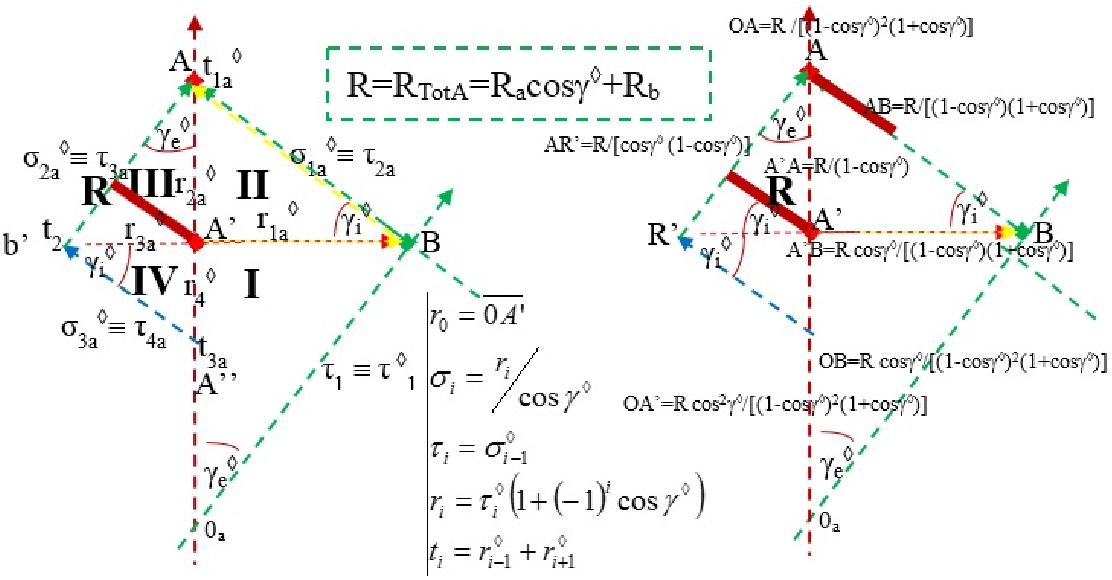


Figure 6: The point of view of A: The schema of intention is recursive since to every angle follows its opposite. Each side of the fig. is the sum of a geometric series $\sum_{i=0}^{n} Rf^{i}\left(\gamma^{\diamond}\right)=\sum R\left\{1+f\left(\gamma^{\diamond}\right)+f^{2}\left(\gamma^{\diamond}\right)+f^{3}\left(\gamma^{\diamond}\right)+...\right\}$ where R is the total radius of the individual $R_{Tot_a}=R_a\cos\gamma^{\diamond}+R_b$ and $R_{Tot_b}=R_b\cos\gamma^{\diamond}+R_a$.

The schema of intention is recursive (see fig. 6) since to every angle follows its opposite. More importantly, whichever configuration is completely determined by any side and the $\gamma^{\diamond}$ angle.
Now we have to find the rule which govern the above geometrical schema in the universal relation.
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 $\gamma^{\diamondsuit}$ varies, but we know from Newton law that $V = \frac{M}{r} = \frac{R_{\bullet}}{r_2}$, were $R_{\bullet}$ is the Schwarzschild radius and r corresponds to $\frac{1}{2}r_2$.
Since every aspect of the reality must spring from a geometrical schema, and in the reality there are two fundamental kind of relationships, the gravitational and the electrical one, that are always both present for a same couple of conjoined individuals, there must be a strict parallelism between them and a relation which unifies them. We must therefore:

1. define an electrical radius R° which plays, in the electrical relationship, the same role of R in the gravitational one

2. search and find the relation between R° and $R_{\bullet}$.

We will show this relation afterwards (subsection: 1.9). For the moment, we can identify the potential V with $\sin\gamma$, so that $Vr_2^{\diamondsuit} = R_{Tot}$ must be a constant of the intention.
Both in the refection then in the Intention the length of the path is the same, since the starting point and the ending point are the same.

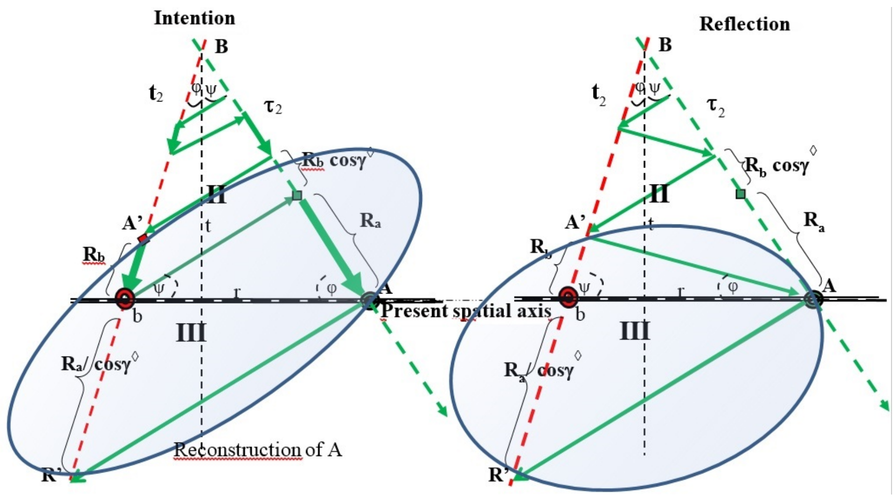


Figure 7: Intention VS Reflection: the reflection (i.e between two complex individuals approaching or moving away in an inertial frame) emerges from the contingent consummations of the huge quantity of elementary individuals, whose radii are negligible, that constitute the matter that make up the two complex individuals A and B. Nevertheless, in the reflection, both A and B acquire a virtual radius which depends on the velocity respect to the barycenter and varies with distance. In the Intention relationship between the two individuals A and B, instead, the radii involved are those of their own, R_{Tot_a} and R_{Tot_b}, therefore are constant and determinant for the relationship.

Nevertheless, the difference between the intention and reflection is profound (see fig. 7). In the Intention, the period is composed of spatial backward receiving, temporal spinning $R_e^{in\pi} \rightarrow R_e^{i(n+1)\pi}$ and spatial forward donating, while in the reflection is composed of spatial forward receiving and spatial forward donating. Therefore, on the threads of every period (A',A,R'), we have:

$\pm i\mathbf{k}f_1(dt) - \mathbf{i}\ f_2(dr) = \pm i\mathbf{j}0$ In the reflection

$\pm i\mathbf{k}f_1(dt) - \mathbf{i}f_2(dr) = \pm i\mathbf{j}R$ In the Intention relationship (corresponds to the Dirac equation)

More important, the delay R_a and R_b at the present time, in the Intention are constant while in the reflection are variable with the distance (or time) and the angle γ .

In fig.3 we showed that the representation of the real points A,B,A',B',A",B", ... in the Minkowski spacetime is equivalent to the representation in the Intention historical plane with the conversion $v = \tanh\gamma \rightarrow V = 1 - \cos\gamma^{\diamondsuit}$ and $e^{-\gamma} \rightarrow \cos\gamma^{\diamondsuit}$. The differece is that the Minkowski spacetime defines the intermediate points too, that are in potency and therefore not real and therefore not definible in the Intention schema. The inertial evolution and the intention relationship are both characterized by the γ angle and the time t (with or without $^{\diamondsuit}$ depending on the representation). The difference is that, in an inertial case, being $d\gamma = 0$, all measures vary with time t only

$$\frac{t_{srel}}{\tau_{srel}} = \frac{t^{\diamondsuit} - d_{srel}}{\tau^{\diamondsuit}} = \frac{1}{\cos\gamma^{\diamondsuit}} - \sinh\gamma = \cosh\gamma \quad \text{and} \quad \frac{d_{srel}}{\delta_{srel}} = \frac{vt_{srel}}{v\tau_{srel}} = \frac{\sigma^{\diamondsuit} + r^{\diamondsuit}}{2\delta_{srel}} = \cosh\gamma$$

In the Intention case, instead, they doesn't. Indeed in the Intention relationship distances and times are functions of (R,γ) where the constant R is the gravitational/electrical Radius of the individual in intention.

In a frame at rest, i.e. R and γ constant,

$$\text{since } \mathrm{d}d_{srel} = 0 \quad \text{, we have at last} \quad \frac{dt_{grel}}{d\tau_{grel}} = \frac{dt^{\diamondsuit} - \mathrm{d}d_{grel}}{d\tau^{\diamondsuit}} = \frac{dt^{\diamondsuit}}{d\tau^{\diamondsuit}} = \frac{1}{\cos\gamma^{\diamondsuit}}$$

Indeed the second term in the equation $t_{grel} = t^{\diamondsuit} - d_{grel}$ is useful only in the synchronization of watch but, being constant, it disappears in the differential equation $dt_{grel} = dt^{\diamondsuit}$, so that the rate d$\tau$/dt becomes equal to $d\tau^{\diamondsuit}/dt^{\diamondsuit}$ and therefore changes from $\cosh\gamma$ to $1/\cos\gamma^{\diamondsuit}$ and, equivalently, $\tanh\gamma$ to $\sin\gamma^{\diamondsuit}(\sqrt{(1 - \cos^2\gamma^{\diamondsuit})}$ and $\sinh\gamma$ to $\tan\gamma^{\diamondsuit}$.

The metric of reality, in other words the unique absolute metric, must depend only on geometry and therefore only on angles and distances. Both an inertial relationship and an intention relationship must be equally characterized by distances and the angles: the relative velocity v for the first and the potential V for the other. The Absolute Metric must, therefore, be founded on the Lorentz transformation where the angles are fixed and vary only the distances:

$$\begin{cases} x_1' = x_1 \cos\gamma - x_4 \sin\gamma \\ x_4' = x_1 \sin\gamma + x_4 \cos\gamma \end{cases} \quad \leftrightarrow \quad \begin{cases} x^\diamondsuit = \sigma^\diamondsuit (1 - V_i) - t_e^\diamondsuit V_e \\ \tau_e^\diamondsuit = -\sigma^\diamondsuit V_i + t_e^\diamondsuit (1 - V_e) \end{cases}$$

In the inertial reflection, where space and time are independent variables,
Setting $x_1 = x$ and $x_4 = ict$ and $v = \tanh\gamma = \sqrt{1 - \frac{1}{\cosh^2\gamma}}$ we have:

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

And the metric:

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

Still, since $x = v_{translation} t + r$ we can equally put

$$\begin{cases} \sigma = \dfrac{r}{\sqrt{1 - v^2}} \\ \\ \tau = \sqrt{1 - v^2}\, t - v_{translation} \sigma \end{cases} \quad \leftrightarrow \quad \begin{cases} \sigma^\diamondsuit = \dfrac{r^\diamondsuit}{1 - V_i} \\ \\ \tau_e^\diamondsuit = (1 - V_e) t_e^\diamondsuit - V_i \sigma^\diamondsuit \end{cases}$$

While in the inertial case the $v\sigma$ term is variable and doesn't cancel in the differentials, in the Intention it is constant and therefore cancels differentiating.
In other words, differently from the inertial system, in the intention, the relation's time and distances are indeed constant, since the geometrical configuration of the relation depends only on R, which is constant, and on V, which is constant since dV must cancel in the immediate vicinity of the individuals.
Therefore, the relational time t or τ, being constant, does not depend on spatial distance but only on angles.
In the immediate vicinity of the individuals, since $dd \ = (v_{translation} d\sigma) = 0$, $d\tau/dt$ becomes equal to $d\tau^\diamondsuit/dt^\diamondsuit$ and therefore $d\sigma/dr = d\sigma^\diamondsuit/dr^\diamondsuit$.

$$\begin{cases} d\sigma = \dfrac{dr}{\cos\gamma^\diamondsuit} \\ \\ d\tau = dt \cos\gamma^\diamondsuit \end{cases} \quad \leftrightarrow \quad \begin{cases} d\sigma^\diamondsuit = \dfrac{dr^\diamondsuit}{\cos\gamma^\diamondsuit} \\ \\ d\tau^\diamondsuit = dt^\diamondsuit \cos\gamma^\diamondsuit \end{cases} \tag{6}$$

In other words, in the intention relationship, the time measurements and the spatial measurements are independent of each other since, given the radius R, they depend only on the angle γ which is assumed, by definition, constant in the measurement.

Therefore, whichever distance, must be decomposed in a pure time distance and a pure spatial distance. The metric in the Minkowski spacetime, which is quadratic, extends artificially to the non real points too.

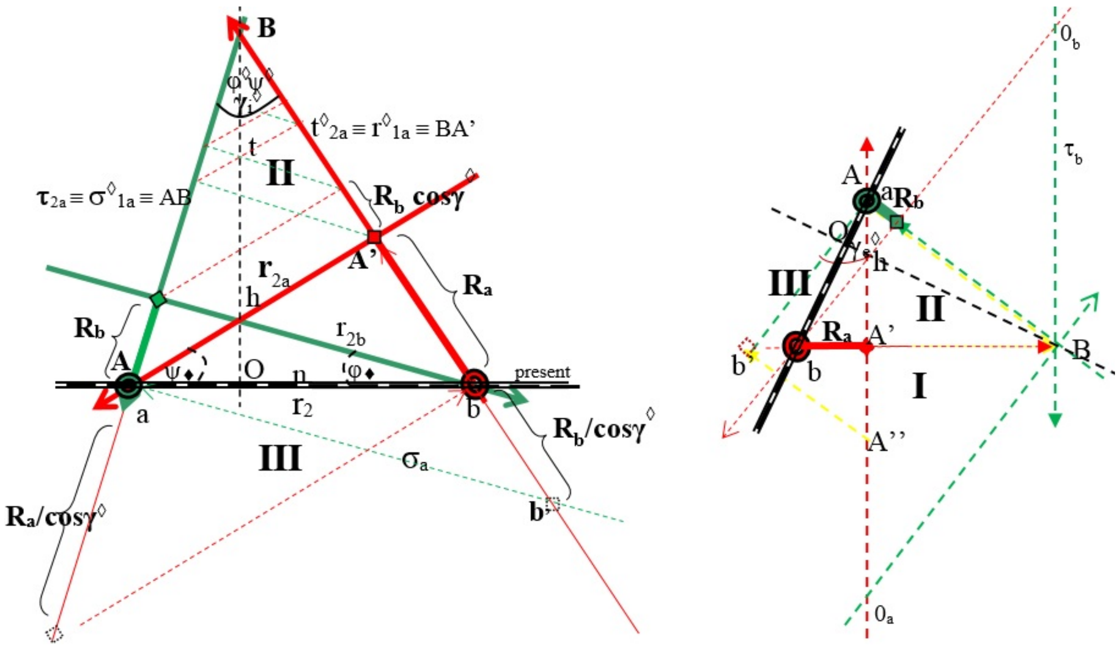


Figure 8: The Intention Schema: The Intention Schema, which emerges reflectively, represents all the possible knowledge on the relation and it is just a knowledge representation. Indeed, contrarily to the above schema, in every instant the receiving side of an individual face the parallel donating side 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. It is noteworthy that the distances are not commutative since $r^{\diamondsuit}_{2a} \neq r^{\diamondsuit}_{2b}$.

The relation manifests itself according to the scheme of fig. 8. Furthermore, the relation is characterized by the axis of the nodes N or r axis, of a spatial nature, which unites the nodes of the two individuals in relationship. The axis of the nodes r is the intersection of the $\mathrm{r}_x\mathrm{t}_x$ 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 in the universe.

In the space of the relationship, therefore, we can identify an rt plane of the relation with respect to which the $\mathrm{r}_x\mathrm{t}_x$ planes of the two individuals are rotated respectively by an angle φ e ψ where $\varphi^{\diamondsuit} +^{\diamondsuit} \psi^{\diamondsuit} = \gamma^{\diamondsuit}$

Since the sole universe thread is sequential, without loops, the polar axes of different individuals never intersect each other. Therefore, the two reference frames must moreover twist around the axis of the nodes r forming the two angles of nutation ϑ_a and ϑ_b where $\vartheta_a^\diamond +^\diamond \vartheta_b^\diamond = \vartheta^\diamond$ according to the fig. 9.

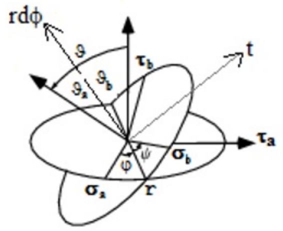


Figure 9: Torsion: Since the sole universe thread is sequential, without loops, the polar axes of different individuals never intersect each other. Therefore, the two reference frames must moreover twist around the axis of the nodes r forming the two angles of nutation ϑ_a and ϑ_b where $\vartheta_a^\diamond +^\diamond \vartheta_b^\diamond = \vartheta^\diamond$

The torsion, doesn't affect the metric but the charge of individuals in the strong interaction and the configuration of the relation.

1.4 The quadratic plane of the potency

The individual spatial plane of the potency is, instant by instant, orthogonal to the historical plane of the intention from which it emerges and in which it finds its foundation. The space is the set of all other individuals at hand in the present instant. The geometry is quadratic since it must describe the set of distances between individuals coopresent in an instant which are not on a path of light. Movement in se, like the live true time, is not present in the instant, nevertheless we can reconstruct changes of spatial distances, and then the reflective evolution of complex individuals in the spatial plane. Indeed the distance changes as $d\vec{r} + r\vec{d\phi}$ where only the first term is in the plane of consummation, while the second is orthogonal to it. A metric must account, and therefore integrate, the consummative intention on the historical plane and the reflective evolution on the spatial plane. The Minkowski spacetime, since its isomorphism with the linear geometry of intention, can do it.

1.5 The three points of view of intention

More in general, since whichever distance l on the intention schema is the sum of a geometric progression with initial value $R_{Tot_a} = R_b + R_a \cos\gamma^\diamond$ (or $R_{Tot_b} =$

$R_a + R_b \cos\gamma^{\diamondsuit}$) and common ratio $k = f(\gamma)$:

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

and since from the point of view of the barycenter $R_{Tot} = R_a + R_b = \dfrac{R_{Tot_a} + R_{Tot_b}}{1 + \cos^{\diamondsuit}\gamma}$, we have, from the point of view of the barycenter:

$$l = \frac{l_a + l_b}{1 + \cos^{\diamondsuit}\gamma} \tag{7}$$

and

$$\frac{l_{1_a}}{l_{2_a}} = \frac{l_{1_b}}{l_{2_b}} = \frac{l_1}{l_2} \tag{8}$$

Therefore:

$$r = \frac{r_{2_a}^{\diamondsuit} + r_{2_b}^{\diamondsuit}}{1 + \cos^{\diamondsuit}\gamma} (= \sigma_{1_a}^{\diamondsuit} + \sigma_{1_b}^{\diamondsuit}) = \frac{R_{Tot}}{1 - \cos\gamma^{\diamondsuit}} \tag{9}$$

$$t = \frac{t_{1_a}^{\diamondsuit} + t_{1_b}^{\diamondsuit}}{1 + \cos^{\diamondsuit}\gamma} = \frac{r}{V} = \frac{R_{Tot}}{(1 - \cos\gamma^{\diamondsuit})^2} \tag{10}$$

$$V_e^{\diamondsuit} = \frac{R_{Tot_a}}{r_{2_a}^{\diamondsuit}} = \frac{R_{Tot_b}}{r_{2_b}^{\diamondsuit}} = \frac{r}{t} = \frac{R_{Tot}}{r} \tag{11}$$

Furthermore, since

$$r = r_2^{\diamondsuit} = r_{2_a}^{\diamondsuit} + R_a = r_{2_b}^{\diamondsuit} + R_b \quad \text{it follows:} \quad dr = dr_a = dr_b \tag{12}$$

And at last

$$A^{\diamondsuit} = \frac{d^2 r}{dt^2} = \frac{dV}{dr} = \frac{dV}{dr_a} = \frac{dV}{dr_b} = \frac{dV}{d\gamma}\frac{d\gamma}{dr} = -c^2 \frac{\left(1 - \cos\gamma^{\diamondsuit}\right)^2}{(R_b + R_a)} = -c^2 \frac{R_b + R_a}{r^2} = \frac{1}{t} \tag{13}$$

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

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

If we define:

$$V_{Tot}^{\diamondsuit} = \frac{R_{Tot}}{\sigma_1^{\diamondsuit}} = V_e^{\diamondsuit} \frac{\left(1 + \cos\gamma^{\diamondsuit}\right)}{2} = V_e^{\diamondsuit} \frac{\left(2 - \left(1 - \cos\gamma^{\diamondsuit}\right)\right)}{2} = V_e^{\diamondsuit}\left(1 - \frac{V_e^{\diamondsuit}}{2}\right)$$

$$A_{tot}^{\diamondsuit} = \frac{d\left(V_{tot} = V - \frac{1}{2}V^2\right)}{d\gamma^{\diamondsuit}} - c^2 \frac{\left(1 - \cos\gamma^{\diamondsuit}\right)^2}{R_b + R_a} \cos\gamma^{\diamondsuit} = \frac{1}{\tau}$$

The equations 8 and 12 guarantee the invariance of velocities, accelerations, potential and energy for the three reference systems. We have therefore three equivalent schemes, one for individual A and B (see fig. 6), where $R_{Tot_A} = R_b + R_a \cos\gamma^{\diamondsuit}$ and $R_{Tot_B} = R_a + R_b \cos\gamma^{\diamondsuit}$ respectively, one for an inertial observer in the barycentre, where $R_{Tot} = R_a + R_b$. We will adopt this last one since it is the point of view of the observer too.

1.6 The point of view of the inertial observer in the barycenter

Since from fig. 8 we have: $\frac{R_b}{\overline{ah}^{\diamondsuit}} = \frac{R_a}{\overline{bh}^{\diamondsuit}}$ and $r = \overline{ah}^{\diamondsuit} + \overline{bh}^{\diamondsuit} = \frac{R_a + R_b}{\sin^{\diamondsuit}\gamma}$

Denoting by r_{cm_a} the distance between the barycentre and the individual A, we have:

$$r_{cm_a} = \overline{bh}^{\diamondsuit} = \frac{R_a}{\sin^{\diamondsuit}\gamma} \quad \text{and} \quad r_{cm_b} = \overline{ah}^{\diamondsuit} = \frac{R_b}{\sin^{\diamondsuit}\gamma} \quad \text{and} \quad r_{cm_a} + r_{cm_b} = r$$

$$\frac{R_a}{r_{cm_a}} = \frac{R_b}{r_{cm_b}} = \frac{R_a + R_b}{r} = (1 - \cos\gamma) = V$$

$$A = (A_a = \frac{R_a}{r^2}) + (A_b = \frac{R_b}{r^2})$$

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

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

$$\mu_{\bullet} V = \frac{1}{r} = m_a \sin_{\blacklozenge}\varphi = m_b \sin_{\blacklozenge}\psi$$

Denoting by F_c and U_c the centrifugal force and potential

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

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

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

Note that

$$\overline{hO}^{\diamondsuit} = \sin_{\blacklozenge}\varphi \overline{bh}^{\diamondsuit} = \frac{R_b}{r} \frac{R_a}{R_a + R_b} r = \frac{R_a R_b}{R_a + R_b} = \mu \tag{14}$$

is an invariant of every intention.

1.7 The intention inside and outside the elementary Radius

Zero and infinite are not physical number in the Intention physics. Indeed, the universe R_ω is the maximum and to it corresponds a minimum R_α
For the gravitational relations, the maximum individual is the Universe R_ω. Analogously, since there must be a parallel between gravitational and electrical relationship, we provisionally define a parallel R°_ϵ for the electrical relations, and since both must be two aspects correlated of a same reality, there must be, and we must search and find, the relation between R°_ϵ and R_ω. We will show this relation afterwards **(subsection: 1.9)**. For the moment, we assume the existence of a maximum, that denote with R°_ϵ, that is the parallel of the gravitational R_ω for electrical relationship, and that all strong and weak interactions take place inside R°_ϵ.

Outside the radius, when $r{>}R_K$, we have $R \to R_{outside} = R_K$ which is constant (see fig. 10)

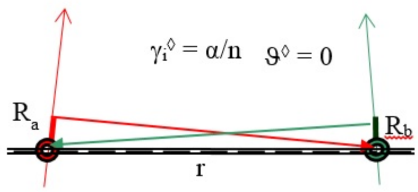


Figure 10: Outside the radius, when $r{>}R_K$, we have $R = R_K$ which is constant, $\gamma^\diamondsuit = \dfrac{\alpha}{n}$ and $\vartheta^\diamondsuit \approx 0$.

and therefore

$$V = \sin^\diamondsuit \gamma = \frac{R_K}{r_k} \quad \text{and} \quad r_k = \frac{R_K}{\sin^\diamondsuit \gamma} \quad \text{and} \quad t = \frac{R_K}{\sin^{\diamondsuit 2} \gamma} \tag{15}$$

Like relations inside R_{ind} have a limit in $t = R_{ind}$, in a similar way relations between complex individuals have a limit in :

$$t_{max} = R_\omega = \frac{r^2_{k_{max}}}{R_K} \quad \text{or equivalently} \quad r_{k_{max}} = \sqrt{R_\omega R_K} \tag{16}$$

The gravitational mass of the individual delimits its space to an $r_{k_{max}} = \sqrt{R_K R_\omega}$. This is the space of Newton law and of general relativity. It holds $r^2 = r_k^2 + r_i^2$, where r_k is the gravitational component of the distance while r_i is the cosmological

one. We will show the relation between r, r_k and r_i in the last section, anyhow, $r \simeq r_k$ almost everywhere except for cosmological distances.
From afar, when $\gamma << \pi/2$, we can handle complex individuals R_K like elementary individuals in intention. As long as γ approaches $\pi/2$, however, the complex individuals vanish and we have to dismember them in their elementary components and consider the relations between these. Now, the elementary individuals R_{ind} are R°_ϵ for electricity and R_ω for gravitation.

When $\gamma^\diamondsuit = \pi/2$ or $\sin\gamma = 1$ or $r = R_{ind}$, space and time axis overlaps, we have $r = t = R_{ind}$ (see fig. 11)

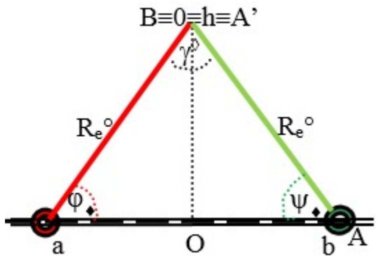


Figure 11: Strong Relation: $Space \equiv Time \quad E \equiv M \quad R_{ind} \equiv r \equiv t \quad \gamma^\diamondsuit = \pi/2 \quad \varphi_\blacklozenge = \psi_\blacklozenge = \pi/3 \quad R_a \equiv r_{2a} \quad R_b \equiv r_{2b}$. Note that $r = \overline{ah}^\diamondsuit + \overline{bh}^\diamondsuit = 2R^\circ_e$ since it is on the path of light.

When $\gamma^\diamondsuit > \pi/2$ the Space and the time axis reverse.

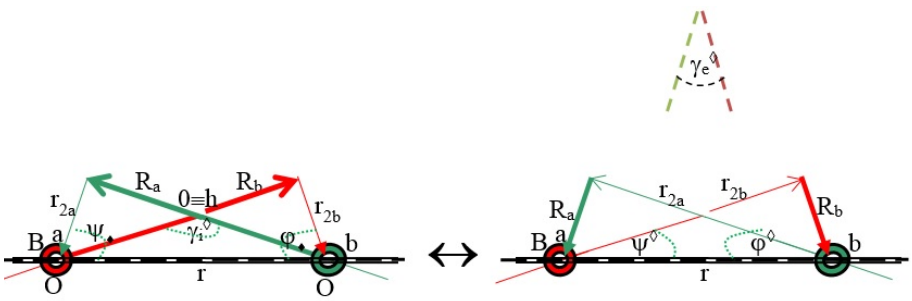


Figure 12: Weak Relation: $Space \leftrightarrow Time \quad E \leftrightarrow M \quad R_{ind} \leftrightarrow t \quad \gamma_i^\diamondsuit \leftrightarrow \pi - \gamma_e^\diamondsuit \quad R_a \leftrightarrow r_{2a} \quad R_b \leftrightarrow r_{2b} \quad \psi^\diamondsuit \leftrightarrow \varphi_\blacklozenge - \pi/2 = 1/2\ \alpha/n \quad \varphi^\diamondsuit \leftrightarrow \psi_\blacklozenge - \pi/2 = 1/2\ \alpha/n$.

Inside the radius, when $r < R_{ind}$, we have that $t = t_{max} = R_{ind}$ is constant and

$R \to R_{inside} < R_{ind}$ is variable (see fig. 15)

$$\text{Since} \quad t_{inside} = t_{\max} = R_{ind} = \frac{R_{inside}}{\sin^{\diamondsuit\, 2}\gamma} \quad \text{We have} \quad R_{inside} = R_{ind} \sin^{\diamondsuit\, 2}\gamma \tag{17}$$

And therefore:

$$V = \sin^{\diamondsuit}\gamma = \frac{R_{inside}}{r} = \frac{r}{R_{ind}} \quad \text{and} \quad r = \frac{R_{inside}}{\sin^{\diamondsuit}\gamma} = R_{ind}\sin^{\diamondsuit}\gamma \quad \text{and} \quad t = R_{ind} \tag{18}$$

See Tab. 1 for a synthetic view of the different areas of the Intention relationship.

r	γ	V	R	$t = 1/a$
$>R_{ind}$	$< \pi/2$	R_K/r_k	R_K	$r_k^2/R_K = R_K/V^2$
$= R_{ind}$	$= \pi/2$	1	R_{ind}	R_{ind}
$<R_{ind}$	$> \pi/2$	$r/R_{ind} = R/r$	$r^2/R_{ind} = R_{ind}V^2$	R_{ind}

Table 1: a synthetic view of the different areas of the Intention relationship

It is noteworthy that, in the transition between outside and inside, the V is reversed and R and t exchange their roles. The intention relationship has a limit in t (the contingent R_{ind} for external relationship or the gravitational $R_{ind} = R_\omega$ or electrical $R_{ind} = R_\epsilon$ for internal relationship) and in the radius $r_{max} = \sqrt{Rt}$ of the spacetime. Moreover, it holds the universal relation:

$$\frac{R}{t} = V^2 \tag{19}$$

where the first member can be interpreted as the probability to find a radius $R = t$ in the spacetime of the relationship. If we put $V = \sum_{i=1}^{n} \vec{V_i}$, where $\vec{V_i} = \frac{\vec{R}_{elem}}{r_i}$, we have:

$$Probability = \frac{R}{t} = V^2 = \left(\sum_{i=1}^{n} \frac{\vec{R}_{elem}}{r_i} \right)^2 = R_{elem}^2 \left(\sum_{i=1}^{n} \frac{\vec{i}}{r_i} \right)^2$$

where $\vec{R}_{elem}$ is the spinor representation of an individual and $\vec{i}$ is a unit vector. This is the starting point of the QED [16]. In particular, inside the radius R_ω of the universe, we have:

$$Probability = \frac{R}{R_\omega} = V^2 = \left(\frac{r}{R_\omega} \right)^2$$

that, if we assume $\vec{R} = \sum_{i=1}^{n} \vec{R}_{\alpha_i} = R_\alpha \sum_{i=1}^{n} \vec{i}$, gives:

$$r = \sqrt{R_\omega \sum_{i=1}^{n} \vec{R}_{\alpha_i}} = \sqrt{R_\alpha R_\omega} \sqrt{\sum_{i=1}^{n} \vec{i}} = \sqrt{\sum_{i=1}^{n} \vec{i}}$$

The distance r which extends between the two individuals A and B is therefore, in its most primitive meaning, the square root of the sum of the spinorial unit vectors of all the elementary individuals $\vec{R}_\alpha$ present in the universe.

1.8 The Universal Metric

In the relation, the space-time plane of the two conjugated individuals are rotated by an angle ϑ around the line of nodes r, therefore we have:

$$\sin^\diamondsuit \vartheta = \frac{\overline{hO}^\diamondsuit}{\overline{0O}^\diamondsuit} = \frac{\mu}{\tau + \mu} = \frac{\mu}{\frac{(R_a+R_b)\cos\gamma}{(1-\cos\gamma)^2} + \mu} = \frac{\frac{\mu}{R_a+R_b}(1-\cos\gamma)^2}{\cos\gamma + \frac{\mu}{R_a+R_b}(1-\cos\gamma)^2} \tag{20}$$

$$\begin{bmatrix} d\sigma \\ d\tau \\ \sigma d\phi \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos\vartheta_a & \sin\vartheta_a \\ 0 & -\sin\vartheta_a & \cos\vartheta_a \end{bmatrix} \begin{bmatrix} \cos\varphi & \sin\varphi & 0 \\ -\sin\varphi & +\cos\varphi & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} dx \\ dt \\ xd\phi \end{bmatrix}$$

$$\begin{bmatrix} d\sigma \\ d\tau \\ \sigma d\phi \end{bmatrix} = \begin{bmatrix} \cos\varphi & -\sin\varphi & 0 \\ \cos\vartheta_a \sin\varphi & \cos\vartheta_a \cos\varphi & -\sin\vartheta_a \\ \sin\varphi \sin\vartheta_a & \cos\varphi \sin\vartheta_a & \cos\vartheta_a \end{bmatrix} \begin{bmatrix} dx \\ dt \\ xd\phi \end{bmatrix}$$

Since in the intention $x = Vt + r$ and $d(V\sigma) = 0$, the terms a_{12} and a_{21} and a_{31} cancel

$$\begin{bmatrix} d\sigma \\ d\tau \\ \sigma d\phi \end{bmatrix} = \begin{bmatrix} \cos\varphi & 0 & 0 \\ 0 & \cos\vartheta_a \cos\varphi & -\sin\vartheta_a \\ 0 & \cos\varphi \sin\vartheta_a & \cos\vartheta_a \end{bmatrix} \begin{bmatrix} dr \\ dt \\ xd\phi \end{bmatrix}$$

$$\sin_\blacklozenge \varphi_\blacklozenge = \frac{R_b}{r} = \frac{\mu}{R_a} \sin^\diamondsuit \gamma \quad \text{and} \quad \sin_\blacklozenge \psi_\blacklozenge = \frac{R_a}{r} = \frac{\mu}{R_b} \sin^\diamondsuit \gamma \tag{21}$$

$$1 - V_e = V_i \quad - 1 = \cos\gamma$$

$$\sin_\blacklozenge \vartheta_{\blacklozenge a} = \frac{\mu}{R_a} \sin^\diamondsuit \vartheta \quad \text{and} \quad \sin_\blacklozenge \vartheta_{\blacklozenge b} = \frac{\mu}{R_b} \sin^\diamondsuit \vartheta \tag{22}$$

the linear metric is relegated exclusively to the path of light in the historical plane ofthe consummation while, outside of it, in the space plane of the individual, where takes place the evolution, we must appeal to the vectorial quadratic metric. Therefore:

$$\sin\phi = \frac{D_K}{r} \quad \text{and} \quad \tan\phi = r\frac{d\phi}{dr} \quad \text{and} \quad s = \sqrt{r^2 - D_k^2} = r\cos\phi$$

To merge the historical plan of consummation with the spatial plan of evolution, we must resort to isomorphism between the historical plan of consummation and the Minkowski space-time, defining the metric in the latter. The metric is therefore defined in the Minkowski space-time :

$$-id\tau\vec{\tau} \equiv \frac{\overrightarrow{\mathrm{r}}\,dr}{V_i - 1} + \overrightarrow{\mathrm{t}}\,\{-idt\,(1 - V_e)\cos\vartheta + rd\phi\sin\vartheta\} + \overrightarrow{\mathrm{L}}\,\{idt\,(1 - V_e)\sin\vartheta + rd\phi\cos\vartheta\} \tag{23}$$

Where the $\boldsymbol{r}$,$\boldsymbol{t}$ and $\boldsymbol{L}$ are the versor of the local proper distance, proper time and orthogonal axis.

The torsion, which becomes appreciable when $\gamma \simeq \pi/2$ in the strong interaction, doesn't affect the distances but only the charge of individuals in the strong interaction. The norm is therefore all the same:

$$-\,d\tau^2 = -dt^2\,(1 - V_e)^2 + \frac{dr^2}{(V_i - 1)^2} + r^2 d\phi^2 \tag{24}$$

The $\sin^{\diamondsuit}\vartheta$ potential corresponds to a kind of V_{Yukawa} potential with the origin translated on the circle $r_c = R^\circ_\epsilon$.

The $\sin^{\diamondsuit}\vartheta$ potential, otherwise negligible, grows up asymptotically on $r \simeq R^\circ_\epsilon$ and constitutes, in concomitance with the Pauli exclusion principle, the cause of the formation of baryons from three homologous individuals.

1.9 The Unification of gravitation and electricity

The Intention demands that the period of the two individuals in intention be the same (see fig. 8).

From the De Broglie relation $\lambda = h/p$

Imposing $p_a = p_b$ and then $\lambda_a = \lambda_b$ we have:

$$\begin{aligned} \lambda_a = \ & 2\pi\frac{R^\circ{}_b}{\sin_{\blacklozenge}\varphi} = \lambda_b = 2\pi\frac{R^\circ{}_a}{\sin_{\blacklozenge}\psi} = 2\pi r \quad \text{(from intention schema)} \\ \lambda_a = \ & 2\pi\frac{\alpha^{-1}}{p_a} = \lambda_b = 2\pi\frac{\alpha^{-1}}{p_b} = 2\pi r \quad \text{(from De Broglie relation)} \end{aligned} \tag{25}$$

And therefore:

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

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

Furthermore, from another point of view, if the relation must be universal, it must be possible to consider the role of the radius R as the gravitational radius R or as the electrical radius R° as well.
Therefore, from the schema of the universal relation, where $\dfrac{\sin_\blacklozenge \psi}{\sin_\blacklozenge \varphi} = \dfrac{R_a}{R_b}$, we must have:

$$\frac{R_{\bullet b}}{\sin_\blacklozenge \psi} = \frac{R_{\bullet a}}{\sin_\blacklozenge \varphi} \quad \text{in the gravitational case}$$

$$\frac{R^\circ{}_b}{\sin_\blacklozenge \psi} = \frac{R^\circ{}_a}{\sin_\blacklozenge \varphi} \quad \text{in the electrical case}$$

Since

$$V_e^\diamondsuit = \frac{R_{Tot_a}}{r^\diamondsuit_{2_a}} = \frac{R_{Tot_b}}{r^\diamondsuit_{2_b}} = \frac{R_{Tot}}{r_2} = {}^G\!/_{c^2} \frac{2\,(M_a + M_b)}{2r} + {}^{Q^2c^2}\!/_{4\pi\varepsilon_0} \frac{n_a n_b 2 \left(\frac{1}{M_a} + \frac{1}{M_b}\right)}{2r}$$

therefore, must be:

$$R^\circ{}_a = \frac{const}{R_{\bullet b}} \quad \text{and} \quad R^\circ{}_b = \frac{const}{R_{\bullet a}} \qquad (\text{const} = 1)$$

Furthermore, since:

$$R_b \sin_\blacklozenge \varphi = R_a \sin_\blacklozenge \psi \quad \text{then} \quad R_b \cos_\blacklozenge \varphi - R_a \cos_\blacklozenge \psi = const = R_b - R_a$$

Now we identify $R_\bullet$ with the gravitational radius and R° with the classical electrical radius and the two individuals in the intention with the universal schema.
The conservation of the cosines and sines in the Intention Relationship corresponds, respectively, to the to the principle of conservation of energy and momentum.
The relation between gravitation and electricity is that they are each the mirror of the other: $R^\circ{}_a = 1/R_{\bullet b}$. 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.
Introducing the two constants:

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

whence

$$K\Theta = 2\frac{Q^2}{4\pi\varepsilon_0} \quad \text{and} \quad \frac{K}{\Theta} = 2\frac{G}{c^4} \tag{26}$$

we get:

$$V = V^\circ + V_\bullet = \frac{1}{2}c^2 K\left[n_a n_b \frac{\Theta}{E_b} + n_a n_b \frac{\Theta}{E_a} + \frac{E_a}{\Theta} + \frac{E_b}{\Theta}\right]/r$$

or

$$V = \frac{1}{2}c^2 \frac{n_a n_b R^\circ_b + n_a n_b R^\circ_a + R_{\bullet a} + R_{\bullet b}}{r} \tag{27}$$

(to simplify formulas we will use $R \to 1/2R$ so that $V = R/r$)
As usual, n represents the relative sum of elementary electrical individuals, parts of a composite individual, where each elementary electrical individual is a mirror. For an electron, the R° corresponds to the double of the classical electron radius 2*2.8179403227(19)x10^{-15} m; the $R_\bullet$, equal to $2m_0G/c^2$, corresponds to the gravitational Schwarzschild radius 1.3526081... x10^{-57} m. Intention physics shows that each of these four terms takes place in turn in a distinct alternating moment, superimposing their effects, and that the electrical aspect R° of each individual is the mirror of the gravitational aspect $R_\bullet$ of its other in the intention.
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.
In the intention absolute system of measures, which contemplates as only measure the distance, we impose $c = 1$, $G = 1/2$ and $K = \Theta = 1$ i.u (where i.u. is the **i**ntention **u**nit measure). We can recognize that $K = 2\alpha^{1/2}l_p$ and $\Theta = \alpha^{1/2}m_pc^2$ where l_p and m_p are the Planck-length and mass; moreover, from the well-known $\alpha = \frac{Q^2}{4\pi\varepsilon_0\hbar c}$, we get $\alpha = 1/2\frac{K\Theta}{\hbar c}$ and then $\hbar = 1/2\alpha^{-1}\mathbf{i.u.}^2$.
Of course the Compton wavelength is $\frac{h}{mc} = \frac{1}{2}2\pi\alpha^{-1}R_e{}^\circ = 2.4263102367(11)\times 10^{-12}$ m.
At last, we have the universal relation:

$$R_\bullet R^\circ = -K^2 = -1 i.u.^2 \quad (\text{ } 4\alpha \text{ in Planck Unit}) \tag{28}$$

Mechanics, with its one sided concepts of force, momentum, energy, barycentre and the equivalence principle of general relativity, at last precludes from recognizing the inverse equivalence of gravitation and electricity.
Indeed,

$$\begin{array}{lcl} R_{\bullet a}A_a = R_{\bullet b}A_b & \equiv & R^\circ_b A_a = R^\circ_a A_b \\ R_{\bullet a}v_a = R_{\bullet b}v_b & \equiv & R^\circ_b v_a = R^\circ_a v_b \\ \frac{1}{2}R_{\bullet a}v_a^2 = \frac{1}{2}R_{\bullet b}v_b^2 & \equiv & \frac{1}{2}R^\circ_b v_a^2 = \frac{1}{2}R^\circ_a v_b^2 \end{array}$$

and in general $R_{\bullet x} f_x\left(R, \gamma^\diamondsuit\right) = R_{\bullet y} f_y\left(R, \gamma^\diamondsuit\right) \;\equiv\; R^\circ_y f_x\left(R, \gamma^\diamondsuit\right) = R^\circ_x f_y\left(R, \gamma^\diamondsuit\right)$

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.
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. Indeed, the elementary electrical individual R_ϵ donates as antimatter and receive as matter and therefore is a spinor with spin=1/2 since, in the alternation of donating/receiving, it must overturn its time orientation as well as its space orientation.
Thus, all matter electrical elementary individuals have a negative charge and, conversely, all antimatter have a positive charge and all elementary individuals share the same radius, $R^\circ_\epsilon = R^{-1}_{\bullet\epsilon}$ and $R_\alpha = R^{-1}_\omega$, and rotation speed (spin = 1/2): universality of radius and omega.
From $\dfrac{R_{part}}{r_{part}} = \dfrac{r_{part}}{t_{whole}}$ we have:

$$\frac{R_{\bullet part}}{r_{part}} = \frac{r_{part}}{t_{\bullet whole}} \quad \text{(in the gravitation, where } t_{\bullet whole} \simeq R_\omega = 2\pi c/H_0 \text{ and)}$$
$$\frac{R^\circ_{part}}{r_{part}} = \frac{r_{part}}{t^\circ_{whole}} \quad \text{(in the electric, where } t^\circ{}_{whole} = R_\epsilon{}^\circ \text{ is the electrical radius).}$$

Now, on the border of the elementary individual $\mathrm{R}^\circ{}_{ind}$, when $\gamma \to \pi/2$, since $R^\circ{}_{part} \to R^\circ{}_{ind}$, we must have both: $R^\circ_\epsilon = \dfrac{r^2}{R^\circ_\epsilon}$ and $R_{\epsilon\bullet} = \dfrac{r^2}{R_\omega}$.
Therefore

$$\frac{R^\circ_\epsilon}{R_{\bullet\epsilon}} = \frac{R_\omega}{R^\circ_\epsilon} \quad \text{and since} \quad R_\bullet = 1/R^\circ \quad \text{we must have} \quad R^\circ_\epsilon = \sqrt[3]{R_\omega} = R^\circ{}_e/\pi$$

Denoting with R_α the individual mirror of the universe: $R_\alpha = R^{-1}_\omega$ we have

$$R_\alpha : R_{\bullet\epsilon} = R_{\bullet\epsilon} : R^\circ_\epsilon = R^\circ_\epsilon : R_\omega \tag{29}$$

Therefore, R_ω is the finite Radius of the Universe and the maximum. The Amorone R_α, its mirror and therefore the minimum, is the quantum of gravitation and its mediator, it constitutes the totality of the matter of universe. 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, 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 radius implies to enlarge the emergent gravitational radius $R_\bullet = \dfrac{R^{\circ 2}}{R_\omega}$ but this is in contradiction with the smaller gravitational radius requested by $R_\bullet = 1/R^\circ$ and vice versa.

The number of charge can be split up because an individual can interact partially within the intention. This occurs in the strong interaction where, due to the torsion, the involved individual interacts only in one case out of three, from which the -1/3 charge of the quark down.

Therefore, while the gravitational aspect, as sum of amoroni, is an individual's absolute constant, the electrical aspect, as mirror of the gravitational aspect of another contingent individual, is a variable quantity.

The $R_\bullet$ is advanced and therefore positive for matter. The mirror R°, being reflected on 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 (polar axes converge toward the future) for gravitation, while repulsive or attractive depending on the sign of the polar axes for electromagnetism. All is reversed from the negative matter point of view (see fig. 13 and 14) .

Attraction and repulsion are the same thing, depending on the verse in which time is seen flowing.

Inverting matter-antimatter does not change things for the gravitation and not even for the electromagnetism, because here only the homologous or heterologous characterization is valid and this remains unchanged after the inversion.

Similarly, nothing changes in reversing the sign of positive-negative matter.

For positive matter, the acceleration due to rotational motion is always centrifugal, vice versa for negative matter is centripetal.

So also for the negative matter there is an orbital motion, because the gravitational repulsion is balanced by the centripetal acceleration of the rotational motion. Similarly, the electric repulsion between heterologues is balanced by the centripetal acceleration of the rotational motion. In synthesis for matter, reversing the positive-negative sign of both individuals, nothing changes (only the reverse of time is reversed): if there is a stationary motion for positive matter, the same applies to negative matter. Obviously, for non-stationary motion, if there is removing for one there is approach for the other and vice versa.

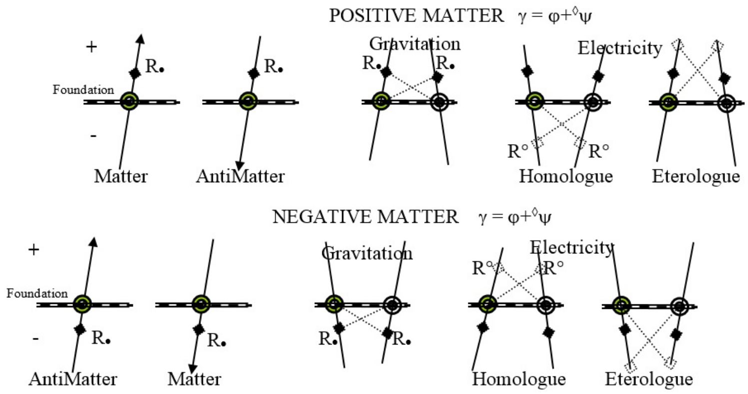


Figure 13: the sign of the acceleration for positive matter on top, and the sign of the acceleration for negative matter on bottom. While the gravitational aspect, as sum of amoroni, is an individual's absolute constant, the electrical aspect, as mirror of the gravitational aspect of another contingent individual, is a variable quantity. The $R_\bullet$ is advanced and therefore positive for matter. The mirror R°, being reflected on 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 (polar axes converge toward the future) for gravitation, while repulsive or attractive depending on the sign of the polar axes for electromagnetism. All is reversed from the negative matter point of view

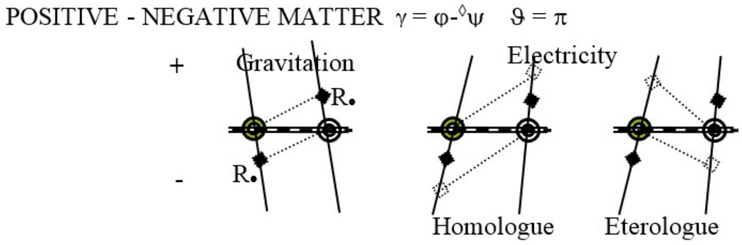


Figure 14: the sign of the acceleration for positive-negative matter

We can unify the metric and U and F with:

$$c^2 d\tau^2 = (1-V)^2 c^2 dt^2 - \frac{dr^2}{(1-V)^2} - r^2 d\phi^2 \tag{30}$$

$$U = \frac{1}{2}mc^2 \left[\frac{E_0^2}{m^2c^4} - 1 - \left(\frac{dr}{d\tau}\right)^2 \right] = \frac{1}{2}mc^2 \left[-2V + V^2 + \frac{L^2}{c^2} V^2 (1-V)^2 \right] \tag{31}$$

$$F = -\frac{dU}{dr} = \frac{1}{r} mc^2 V (1-V) \left[1 - \frac{L^2}{c^2} V \{1 - 2V\} \right] \tag{32}$$

About the V in the $\vec{p_\phi} = LV$ term in the above two equations, it would be more appropriately substituted by r/R or R/r (depending on the seat of the relation:

inside or outside respectively) since its formula, contrarily to the potential V term which is always less or equal to 1, doesn't invert when the distance r, overflowing its seat, crosses the threshold R_{ind} .
Starting from the universal metric (23), we can rearrange the terms as:

$$-id\tau\vec{\tau} \equiv \overrightarrow{\mathrm{r}}\frac{dr}{(V_i-1)} + rd\phi\overrightarrow{\mathrm{L}}\left\{\cos\vartheta + \overrightarrow{\mathrm{r}}\sin\vartheta\right\} - idt\left(1-V_e\right)\overrightarrow{\mathrm{t}}\left\{\cos\vartheta + \overrightarrow{\mathrm{r}}\sin\vartheta\right\}$$

Denoting with

$$\vec{\mathrm{T}}_{\mathrm{r}} \equiv \cos\vartheta + \overrightarrow{\mathrm{r}}\sin\vartheta \tag{33}$$

$$-im\vec{\tau} \equiv m\left(\overrightarrow{\mathrm{r}}\frac{1}{(V_i-1)}\frac{dr}{d\tau} + r\frac{d\phi}{d\tau}\overrightarrow{\mathrm{L}}\vec{\mathrm{T}}_{\mathrm{r}}\right) - mi\frac{dt}{d\tau}\left(1-V_e\right)\overrightarrow{\mathrm{t}}\vec{\mathrm{T}}_{\mathrm{r}}$$

Denoting with:

$$E \equiv m_0c^2\cosh\gamma = m_0\frac{dt}{d\tau}\left(1-V\right) = \frac{E_0}{1-V} \tag{34}$$

$$P \equiv m_0c\sinh\gamma \quad \text{and} \quad \cos\phi P = \frac{m_0c^2}{1-V}\frac{dr}{d\tau} \quad \text{and} \quad \sin\phi P = m_0c^2r\frac{d\phi}{d\tau} \tag{35}$$

We get:

$$-\,im\vec{\tau}^{\diamondsuit} \equiv \left(\overrightarrow{\mathrm{L}}\vec{\mathrm{T}}_{\mathrm{r}}\cos\phi + \overrightarrow{\mathrm{r}}\sin\phi\right)p - \overrightarrow{\mathrm{t}}\vec{\mathrm{T}}_{\mathrm{r}}iE \tag{36}$$

At last, denoting with

$$\vec{\mathrm{i}} \equiv \left(\overrightarrow{\mathrm{L}}\vec{\mathrm{T}}_{\mathrm{r}}\cos\phi + \overrightarrow{\mathrm{r}}\sin\phi\right) \quad \text{and} \quad \vec{\mathrm{k}} \equiv \overrightarrow{\mathrm{t}}\vec{\mathrm{T}}_{\mathrm{r}} \tag{37}$$

We get:

$$-\,im\vec{\tau} \equiv \vec{\mathrm{i}}p - i\vec{\mathrm{k}}E \tag{38}$$

Now, since the versor i and k are orthogonal to each other, we can define the versor j orthogonal to i and k and transform the above identity in the equivalent

$$\pm\,i\vec{\mathrm{k}}E \pm \vec{\mathrm{i}}p + \vec{\mathrm{j}}m = 0 \tag{39}$$

Equivalent to the Dirac equations.
The above versors can be equivalently replaced by Quaternions or Multivariate Vectors. Rowlands [19] uses a combination of multivariate vectors and quaternions to achieve a more physically expressive formulation of the Dirac equations compared to Clifford algebra.
Outside the R_{ind} radius, the R is constant. Inside the R_{ind} radius, viceversa, the R is variable and $R = r^2/R_{ind}$. We must be careful about the relation between potential and energy (see Table 2).

r	γ	V	R	$t = 1/a$	U	ΔE
$>R_{ind}$	$<\frac{\pi}{2}$	$\frac{R_K}{r_k}$	R_K	$\frac{r_k^2}{R_K} = \frac{R_K}{V^2}$	$m_a V = \frac{m_a R_K}{r_k}$	$\Delta U = m_a R_K \Delta \frac{1}{r_k}$
$\leq R_{ind}$	$\geq \frac{\pi}{2}$	$\frac{r}{R_{ind}}$	$\frac{r^2}{R_{ind}} = R_{ind} V^2$	R_{ind}	$\frac{V}{R_{\bullet ind}} = r$	$\frac{1}{\Delta U} = \frac{1}{\Delta r}$

Table 2: Potential and Energy: the table integrates the results of Table 1 with the potential and delta energy formulas. Here $m_a R_K$ is equal to $m_a m_K$ in the gravitational relation, to $R_{\bullet a} R^{\circ}{}_a = 1$ in the electrical one, and $R_{\bullet ind}$ (i.e. $\frac{1}{R_{ind}}$) is equal to $\frac{1}{R_\omega}$ in the gravitational relation, $\frac{1}{R^{\circ}_{\epsilon}}$ in the electrical one.

2 SECTION II APPLICATIONS

The intention schema, by keeping constant one variable at a time, covers all the relations:

1. By keeping constant the angle γ, it describes the relation of approaching or moving away between two individuals in an inertial space
2. By keeping constant the radius $R_\bullet$ or R°, it describes the gravitational or electrical relation between two individuals outside the radius.
3. By keeping constant the time $t = R_\epsilon$ or R_ω, it describes the relation between individuals inside the radius in the Weak and Strong interaction or in the Universe.

In the electrical interaction, only the Coulomb area lies outside $R^{\circ}{}_{ind} = R_\epsilon{}^\circ$. The gravitational relation, instead, has place always inside $R_{ind} = R_\omega$.
In the first relation, which is the relation between R_ω and R_α, the gravitational and the electrical aspects coincide since each one is also the mirror of the other. The period of a single amorone last the entire age of the universe which, in this time frame, generate all the $\frac{R_\omega}{R_\alpha}$ amoroni. The amoroni are therefore always in potentiality and, since they are the subjects ant the mediators of gravitation, and since they are the space of an instant of an individual, this relationship appears and acts as a deformation of the spacetime of the potentiality. The amoroni agglomerate and, from the equilibrium with universe, they form a spinor, which is the electron, and therefore the electrical relationship is born. Since $R_\bullet$ mirrors on other as $R^\circ = 1/R_\bullet$, we have two parallel interactions: the gravitational and

the electrical one that obey to the same geometrical schema. Nevertheless, they are profoundly different since one acts as a deformation of space while the other is mediated by photon in act.
The following discussion represents a sketch of the first immediate results of the theory and are intended to demonstrate its power and validity, without any presumption of perfection and completeness. It doesn't contradict the fundamental findings but explain and perfection them and adds new insight and new predictions.

2.1 ELECTRICITY

It follows that the Dirac equation, and the Lagrangian more in general, is only a non-relativistic limit approximation of the general (39), valid when $\cos\gamma \simeq 1$ and $\sin\vartheta \simeq 0$ (coulomb and weak). Indeed, in the Coulomb and weak area, even neglecting the torsion ϑ ($\sin\vartheta \simeq 0$), the (39) gives:

$$\begin{pmatrix} \dfrac{E_0}{1-V} & -c\sigma\cdot p \\ -c\sigma\cdot p & \dfrac{E_0}{1-V} \end{pmatrix} \cdot \begin{pmatrix} \psi_1 \\ \psi_2 \end{pmatrix} - \begin{pmatrix} mc^2 & 0 \\ 0 & -mc^2 \end{pmatrix} \cdot \begin{pmatrix} \psi_1 \\ \psi_2 \end{pmatrix} = 0$$

Where V is positive in attraction, negative in repulsion.
Now, when $1 - V \simeq 1$, as in the electroweak or gravitational interaction, and in the non-relativistic limit, we have $1/(1-V) \simeq 1 + V$ and

$$T = \frac{E_0}{1-V} \simeq E_0\,(1+V) = E_0 + \frac{E_0}{mc^2}U \simeq E_0 + U \text{ (Lagrangian)}$$

In the strong interaction area, these approximations are no longer valid.

At the end of the subsection 1.7 we have shown how the intention physics can provide QED with the internal coherence and the mathematical foundation that currently lacks it. Below are some deductions on the structure of matter that arise from the physics of intention in a natural way.

The charge is the relative sum of individuals, where the sign is conventionally negative for matter and positive for antimatter. Therefore every individual counts for one, with the exception of the individuals in the strong interaction, where each individual engaged counts for 1/3, since it is free to interact only one time out of three.
Therefore, the quark Up are supposed to be constituted by a couple of individuals matter-antimatter where only one of them is engaged in the strong interaction, with charge -1/3, while the other is linked to this via weak interaction, far away

Area	form	Num. of elem.	Mass/m$_e$ (mnemonic rule) j (e)	i (μ)	k (τ)	Charge
Coulomb	l	1	1	$2\pi\alpha^{-1}/4$	$(\alpha^{-1})^2/4$	-1
Weak	ν	2 eter.	α^4	...	...	-1 + 1
Strong	q (down)	1	2 (3/2 π)	$\alpha^{-1}/\pi(3/2\pi)$	$(\alpha^{-1}/\pi)^2(3/2\pi)$	-1/3
	q (up)	2 eter.	(3/2 π)	$4\alpha^{-1}(3/2\pi)$	$4(\alpha^{-1})^2(3/2\pi)$	-1/3 + 1

Table 3: 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 spin1/2 is a property of the neutrino and quark Up wavefunctions as a whole, not of their component elements.

and therefore with charge +1, and therefore does not interfere with the strong interaction.
From these assumptions, it follows that neutrinos are constituted by a couple matter-antimatter linked via weak interaction. Furthermore, it follows that all individuals engaged in strong interaction interact with a charge of -1/3 and that quarks exists as such only in the strong interaction, where intervene always with radius R_ϵ and charge -1/3. It follows also that the spin1/2 is a property of the neutrino and quark Up wavefunctions as a whole, not of their component elements. wavefunctions.
We can associate the three families of fermions with the three possible axes of the mass, that correspond also to the three kind of interaction (coulomb,strong,weak). Similarly, the different flavors, which represent increasing levels of energy, do not influence the radius of individuals for interactions inside the elementary radius R_ϵ, i.e in the strong and weak interaction. See table 3 for an overview of the elements according to the intention physics.
Depending on the angle $\gamma^\diamondsuit = \gamma_q^\diamondsuit \pm \alpha/n$, we have all the type of interaction:

$$\begin{aligned}
\gamma_q^\diamondsuit &= 0 && \text{in the external area (Newton/Coulomb),}\\
\gamma_q^\diamondsuit &= \pi/2 && \text{in the border area (strong force),}\\
\gamma_q^\diamondsuit &= \pi && \text{in the internal area (weak force).}
\end{aligned}$$

2.1.1 Coulomb and Weak area $\left(\gamma^\diamondsuit \to [\pi] \pm \alpha/n\right)$

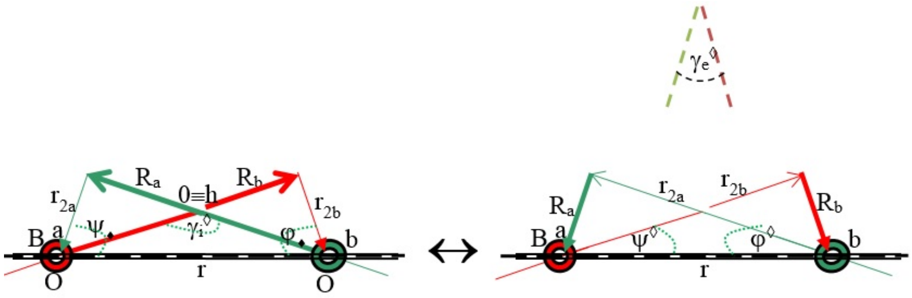


Figure 15: When $\gamma^{\diamondsuit}\!\to\!\pm\alpha/n$, we have the electromagnetic relation (on the left), which take place outside $\gamma^{\diamondsuit}\!\to\!\gamma_i^{\diamondsuit}$. When $\gamma^{\diamondsuit}\!\to\!\pi\pm\alpha/n$, we have its inverse, the weak interaction (on the right), which takes place inside $\gamma^{\diamondsuit}\!\to\!\gamma_e^{\diamondsuit}$.
Weak Relation $\leftrightarrow$ Electromagnetic Relation Space $\leftrightarrow$ Time $E \leftrightarrow M$ $R_{ind} \leftrightarrow t$ $\gamma_i^{\diamondsuit} \leftrightarrow \gamma_e^{\diamondsuit}$ $R_a \leftrightarrow r_{2a}$ $R_b \leftrightarrow r_{2b}$ $\psi^{\diamondsuit} \leftrightarrow \varphi_{\blacklozenge}$ $\varphi^{\diamondsuit} \leftrightarrow \psi_{\blacklozenge}$.

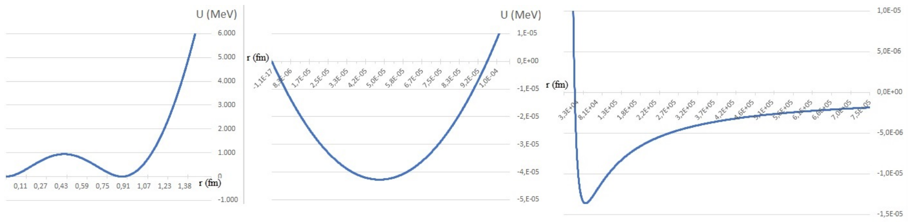


Figure 16: On the left the plot of the eq. 24 in the weak area, where $\gamma^\circ = \pi - \alpha/n$, and $m = m_\epsilon = \pi m_e$ and $\dfrac{L}{c} = \alpha^{-1}$. Therefore the eq. 24 is particularized as $U = m_\epsilon c^2(-V + \frac{1}{2}V^2 + \frac{1}{2}137.036^2\left(\frac{r}{R_\epsilon^\circ}\right)^2(1-V)^2)$. The potential has four real roots at $V = \dfrac{r}{R_\epsilon^\circ} \simeq \{0, 2\alpha^2, 1-\alpha, 1+\alpha\}$ and a global minimum $U \simeq -\frac{1}{2}m_\epsilon c^2$ at $V \simeq 1$ and local minimum $U \simeq -\frac{1}{2}\alpha^2 m_\epsilon c^2$ at $V \simeq \alpha^2$ (on the center of the fig.) and a local maximum $U \simeq 941.483$ MeV at $V = -0.499947$.
On the right the plot of the eq. 24 in the coulomb area, where $\gamma^\circ = +\alpha/n$, and $m = m_e$ and $\dfrac{L}{c} = \alpha^{-1}$. Therefore the eq. 24 is particularized as $U = m_e c^2(-V + \frac{1}{2}V^2 + \frac{1}{2}137.036^2\left(\frac{R_e^\circ}{r}\right)^2(1-V)^2)$. The left and the right plots are the same taking into account that in the Weak (left) V goes from 0 to 1 while in Coulomb (right) the opposite, and that in the Weak $V = r/R$ while in Coulomb it is the inverse. We can recognize the two real roots at $V = \dfrac{r}{R_e^\circ} \simeq \{0, 2\alpha^2\}$ and a global minimum $U \simeq -\frac{1}{2}\alpha^2 m_e c^2$ at $V \simeq \alpha^2$.

When $\gamma^{\diamondsuit}\!\to\!\pm\alpha/n$, we have the electromagnetic relation, which take place outside $\gamma^{\diamondsuit}\!\to\!\gamma_i^{\diamondsuit}$, and its inverse, the weak interaction, inside, $\gamma^{\diamondsuit}\!\to\!\gamma_e^{\diamondsuit}$ when $\gamma^{\diamondsuit}\!\to\!\pi\pm\alpha/n$ (see fig. 15).
Since $\cos\gamma^{\diamondsuit} = \cos\left([\pi] \pm \dfrac{\alpha}{n}\right) = 1 - \dfrac{1}{2}\dfrac{1}{n^2\alpha^{-2}}$:

area	γ°	ΔE_{n1}^{n2}	products
outside	$+\frac{\alpha}{n}$	$\mu_\bullet \Delta\cos\gamma^\diamondsuit = \Delta\frac{1}{r} = \frac{1}{2}\left(\frac{1}{n_1^2\alpha^{-2}R^\circ_{Tot}} - \frac{1}{n_2^2\alpha^{-2}R^\circ_{Tot}}\right)$	***Balmer's radiation***
inside	$\pi - \frac{\alpha}{n}$	$\frac{1}{\mu_\bullet^{-1}\Delta\cos\gamma^\diamondsuit} = \frac{1}{\Delta r} = \left(\frac{1}{2}\left(\frac{1}{n_1^2\alpha^{-2}R_{\bullet Tot}} - \frac{1}{n_2^2\alpha^{-2}R_{\bullet Tot}}\right)\right)^{-1}$ $[\pi]$	***bosons***

In the electromagnetic Interaction,ΔE, where $R^\circ_{Tot} = (R^\circ{}_e + R^\circ{}_{nucleus})$, is the origin of the electromagnetic waves. We arrive at the Balmer's formula considering that $R^\circ{}_e >> R^\circ{}_{nucleus}$ and therefore $R^\circ_{Tot} \simeq R^\circ{}_e$.
In the weak interaction, which is the inverse of electromagnetic interaction, in particular, in the beta decay, if $R^\circ{}_a$ and $R^\circ{}_b$ are the eterologue individuals of a quark Down and anti-Up, jumping from n=2 to n=1, we have $\Delta M = 2(1 - 1/4)^{-1}\alpha^{-2}\pi m_{0e} = 80.39126$ GeV which is equal to the mass of $W^\pm$. Analogously, if $R^\circ{}_a$ and $R^\circ{}_b$ are the eterologue 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 $n = j$.
Neutrinos emerge from the weak relationship between two individuals matter-antimatter.
When $\gamma^\diamondsuit = \pi - \dfrac{\alpha}{n}$ and $r = VR^\circ_\epsilon = \dfrac{\pi}{2}\alpha^2 m_e$ and $t = R^\circ{}_\epsilon$, we have the Neutrinos (see fig. 17).

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

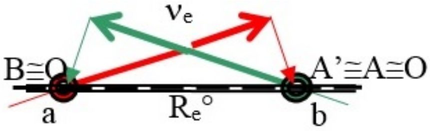


Figure 17: Neutrino:
$\gamma = \pi -^\diamondsuit \frac{\alpha}{n}$, $\vartheta \approx 0$, $m\nu = 2V^2 R_{\epsilon\bullet} = \frac{\pi}{2}\alpha^4 m_e$ and $r = VR^\circ_\epsilon = \frac{\pi}{2}\alpha^2 m_e$

2.1.2 STRONG area $\left(\gamma^\diamondsuit \to \pi/2 \pm \alpha/n\right)$

When $\gamma^\diamondsuit \to \pi/2 \pm \alpha/n$ we have the strong relation with $\vartheta = \pi/2$ and energy and momentum are inverted.
Since $\cos\gamma = \cos(\pi/2 \pm \alpha/n) = \pm\dfrac{1}{n\alpha^{-1}}$:

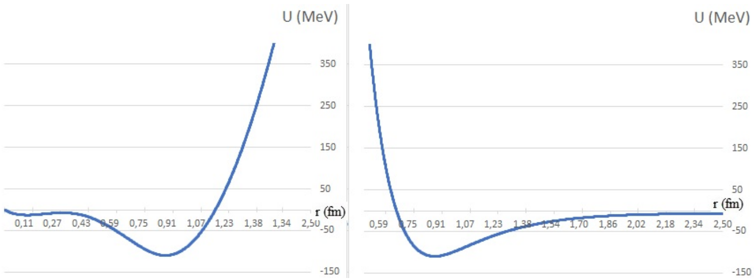


Figure 18: On the left the plot of the eq. 24 in the strong area from the internal side, where $\gamma^\circ = \pi/2 + \alpha/n$, and $m_q = \pi m_e \alpha^{-1}$ and $\frac{L}{c} = \pi$. Therefore the eq. 24 is particularized as $U = 137.036\pi m_e c^2(-V + \frac{1}{2}V^2 + \frac{1}{2}\pi^2 \left(\frac{r}{R^\circ_\epsilon}\right)^2 (1-V)^2)$. The potential has two roots at $V = \frac{r}{R^\circ_\epsilon} \simeq \{0, 0.764\}$ and a local maximum $U \simeq -7.31$ at $V = 0.33$ and a global minimum $U \simeq \pi m_e \alpha^{-1} = 109.99$ MeV at $V \simeq 1$.
On the right the plot of the eq. 24 in the strong area from the external side. The left and the right plots are the same taking into account that in the internal side (left) V goes from 0 to 1 while in the external side (right) the opposite, and that in the internal $V = r/R$ while in external it is the inverse. Mesons lie in the inside strong area, while Internucleon potential lie in the external area. The plot on the left corresponds to the AV18 Potential

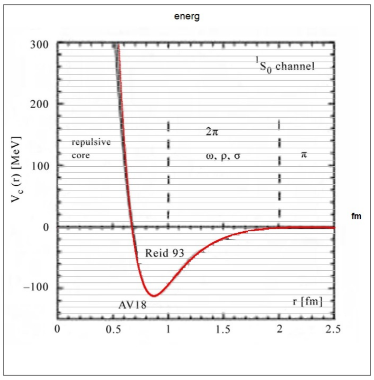


Figure 19: AV18 Neutron Neutron Potential: The plot represent the comparison between the plot on the left side in fig. 18 (red line) with the AV18 potential (black line). For a more strict agreement, though neglecting hyperfine structure terms, it has been added the term $U_{spin} = m\left[\left(IF\frac{r}{R^\circ_\epsilon} > 1 \text{ then } 1 \text{ else -1}\right) - \frac{1}{4}\text{Spin}\left(\frac{L}{c}\frac{R^\circ_\epsilon}{r}\right)V(1-V)\right]$ where Spin $= -\frac{1}{2}$.

area	γ°	ΔE^{n2}_{n1}	products
outside	$\frac{\pi}{2} - \frac{\alpha}{n}$	$\mu_\bullet \Delta(\cos\gamma^\diamond) = \Delta\frac{1}{r} = \left(\frac{1}{n_1\alpha^{-1}R^\circ_{Tot}} - \frac{1}{n_2\alpha^{-1}R^\circ_{Tot}}\right)$	**X**, γ ***radiation***
inside	$\frac{\pi}{2} + \frac{\alpha}{n}$	$\frac{1}{\mu_\bullet^{-1}\Delta\cos\gamma^\diamond} = \frac{1}{\Delta r} = \left(\frac{1}{n_1\alpha^{-1}R_{\bullet Tot}} - \frac{1}{n_2\alpha^{-1}R_{\bullet Tot}}\right)^{-1} [\pi]$	***mesons***

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.
When $\gamma^{\diamondsuit} = \pi/2$ or $\sin\gamma = 1$ or $r = t = R^{\circ}{}_{\epsilon}$, space and time axis overlaps, we have the photon (see fig. 20)

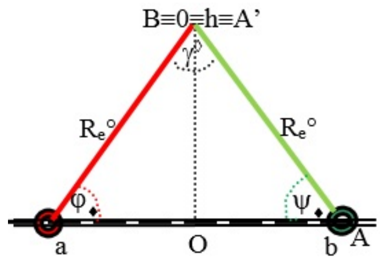


Figure 20: Photon: the photon is characterized by $\gamma^{\diamondsuit} = \pi/2$, $\vartheta = \pi/2$, $E = h\nu$, $v = c$ and $r = \overline{ah}^{\diamondsuit} + \overline{bh}^{\diamondsuit} = 2R_e^{\circ}$

Therefore, all the composed matter, from the electrical to the strong interaction and weak interaction, having to be linked by an attractive force, always involves a matter-antimatter pair. An exception is the interaction between three quarks, which links three individual homologues (-1/3) , which forms the baryons (see fig. 21).

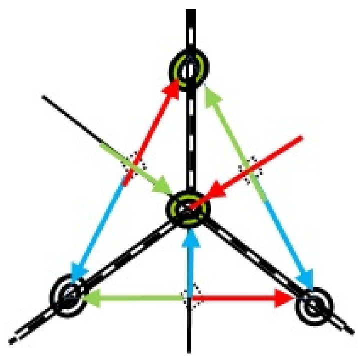


Figure 21: Baryon: the baryon is characterized by $\gamma^{\diamondsuit} = \pi/2$, $\vartheta = \pi/2$, $\varphi_{\blacklozenge} = \psi_{\blacklozenge} = \vartheta_a = \vartheta_b = \pi/3$

The torsion ϑ is relevant only in the close proximity of $\gamma = \pi/2$, growing up asymptotically on $\gamma = \pi/2$. In the baryon, in concomitance with the Pauli exclusion principle, it constitutes the cause of its stability. 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.

From the (31), outside $R^{\circ}{}_{ind}$, when $\gamma^{\diamondsuit}\rightarrow\pi/2+\alpha$, we get a Neutron Neutron potential in street agreement with AV18 (see fig. 19).

2.2 GRAVITATION

We define:

$$R_{\omega||} = \alpha^{-1}e^{(\alpha^{-1})} = 1.23574..10^{(26)}mt \quad \text{and} \quad R_{\omega\perp} = 2\pi R_{\omega||} = 7.6644..10^{(27)}mt$$

We must use $R_{\omega||}$ for the determination of lengths as the Age of the Universe or the cosmological distances (see par.2.2.1); $R_{\omega\perp}$ for the derivation of masses like $R\epsilon$ and R_I (see par. 2.2.2). Therefore:

$$\text{Universe age} \simeq c/H_0 \simeq R_{\omega||} \qquad \text{and} \qquad R_I = \frac{r^2}{R_{\omega\perp}} \qquad \text{and} \qquad R^{\circ}_{\epsilon} = \frac{R^{\circ}_{e}}{\pi} \simeq \sqrt[3]{R_{\omega\perp}}$$

2.2.1 Cosmological Gravitation

Indeed, the mirroring function $\mathrm{Re}(R) = 1/R$, 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 amorone is the unit of measure of universe.

The frequency of consummations between Universe and Amorone is R^2_ω. Indeed it happens $\dfrac{R_\omega}{R_\alpha}$ times during the apparent age of the Universe R_ω .

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 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 $\aleph = \dfrac{R_\omega}{R_\alpha} = R^2_\omega$ times, keeping in existence all the $\aleph = R^2_\omega$ amoroni. The amoroni are therefore all in potency except one.

The gravitation is between and by means of amoroni since the amorone is the subjet and the boson mediator of gravitation. Denoting with $\aleph$ the number of amorone in a composite individual, and with $\aleph_a\aleph_b(n_a n_b)$ the relative number of relations between the two composite individuals a and b, we derive the gravitational and electrical radius as:

$$
\begin{aligned}
\overline{R_{\bullet a}} &= \aleph_a \aleph_b \frac{R_\alpha}{\aleph_b} = \aleph_a R_\alpha = R_{\bullet a} \\
\overline{R_{\bullet b}} &= \aleph_b \aleph_a \frac{R_\alpha}{\aleph_a} = \aleph_b R_\alpha = R_{\bullet b} \\
\overline{R_a^\circ} &= n_a n_b \frac{R_\omega}{\aleph_b} = n_a n_b R_{\bullet b}^{-1} \\
\overline{R_b^\circ} &= n_b n_a \frac{R_\omega}{\aleph_a} = n_b n_a R_{\bullet a}^{-1}
\end{aligned}
\tag{40}
$$

While the Dialogue is the relation between two individuals, the Communion is the relation "part of" between each part and the emergent composite individual. 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 energy of the universe R.

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

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 $R_{part} = R_\epsilon^\circ$, applies recursively through $R_{whole} \rightarrow R_{part}$, providing all the mirroring universe scale giving rise to stars $R_{\bullet s}$ and galaxies $R_{\bullet g}$ and clusters and so on.
Although every direction in $I_\blacklozenge K_\blacklozenge$ plane is inertial, the local $K_\blacklozenge$ axis indicates the absolute rest condition with respect to the totality of the universe and as such is directly correlated to Hubble's velocity.
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. 22). 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. 23). 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, on the opposite side, is the point where matter coming from the Big Bang, after a travel lasted R_ω years, reverses and begins his return journey as antimatter. The present is the place where matter meets anti-matter and forms the baryonic matter (ordinary matter). The age and the radius of universe is constant.

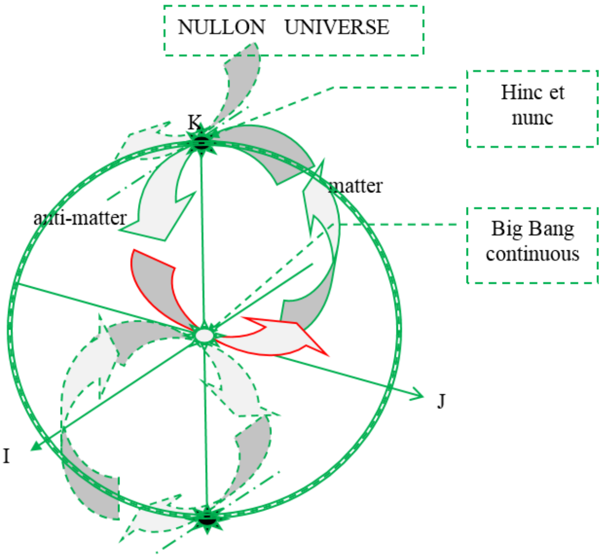


Figure 22: The Big Bang continuous: The radius and therefore the age of the universe is constant, and the Big Bang is not an event, but it is a pat of a continuous process. The principle of reason claims that the present is based on the historical reconstruction of the past up to a starting point known 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 travel lasted R_ω years, reverses and begins his 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.

Moving toward cosmology area, we can find that the relation has an absolute limit in the Universe Radius R_ω, since zero and infinite are not physical number.

In the communion ($V_i = 2 - V_e = 2 - \sin_\blacklozenge \gamma$), we have the limit $t_{1\omega} = R_\omega$ (see fig. 25) from which follows the absolute general relations :

$$\tau_{1\omega_A} = \tau_{1\omega_B} = R_\omega \left(1 - V_e\right)$$

$$r = \sigma_{1\omega_A} = \sigma_{1\omega_B} = R_\omega V_e = D_{light\_travel\_time}$$

$$R_I = 2R_{I_A} = 2R_{I_B} = R_\omega V_e^2 = \frac{r^2}{R_\omega}$$

$$\text{and therefore} \quad \frac{R_I}{r} = V_e = \frac{r}{R_\omega}$$

The presence of the radius R_I and the structure of Intention are the reasons why we can not receive messages from a possible alien civilization (see fig. 24).

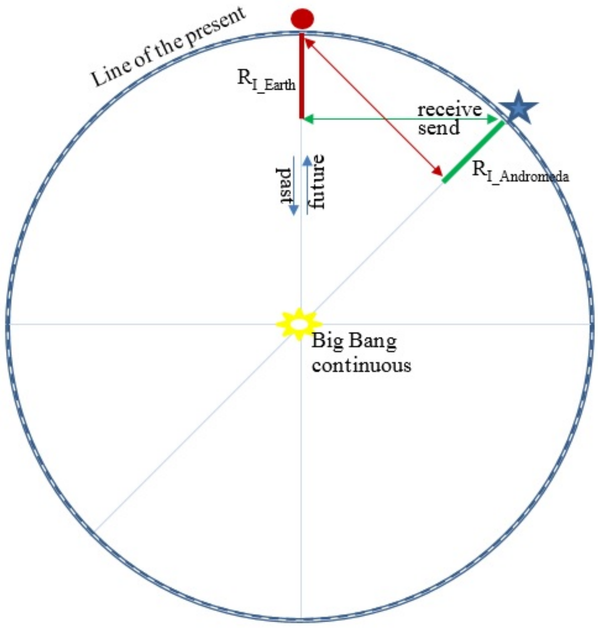


Figure 23: Intention Earth-Andromeda: The present, which comes from the Big Bang continuous as an approaching future, as soon as it surfaces, it submerge as past (antimatter) that move away to go towards the continuous Big Bang, and in this descent informs of itself the future (matter) that ascend in the opposite direction. In this way the past does not vanish but endures as it forms the future.

$$R_{I\_Tot_A} = R_{I\_Tot_B} = R_I V_i = \frac{R_\omega V_e^2 V_i}{2} = \frac{r^2}{R_\omega}\left(1 - \frac{1}{2}\frac{r}{R_\omega}\right)$$

The energy $R_{I_A} = R_{I_B} = \int\limits_{r=A}^{B} \frac{r}{R_\omega} dr = \int\limits_{r=A}^{B} V dr$ is the work performed by the local potential $V(r)$ along the distance r due to an acceleration $1/t = 1/R_\omega$ constant and directed between the two points A and B.

$$v = \tanh\gamma = \frac{r_A}{\tau_1\left(1 - V_e\right) + r_A} = \frac{1 - \left(1 - \sin\gamma^\diamondsuit\right)^2}{1 + \left(1 - \sin\gamma^\diamondsuit\right)^2} = \frac{1 - K^{\diamondsuit 2}}{1 + K^{\diamondsuit 2}}$$

Therefore, we have the equivalence of the three redshifts:

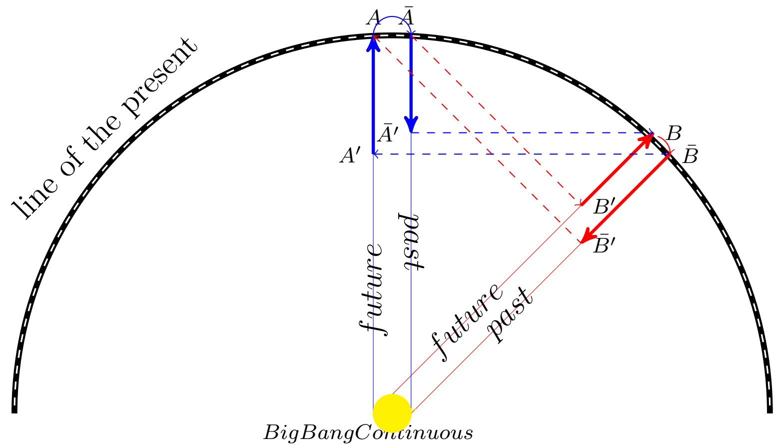


Figure 24: The path of universe intention: The cosmological intention between two individual A and B consists of two overlapping paths (in the figure they were separated to highlight each of them). The path of the present of A: 1) $\bar{B}' \to A$, 2) $Ae^{i0} \to e^{i\pi}\bar{A}$, 3) $\bar{A} \to \bar{B}'$, 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 his 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.

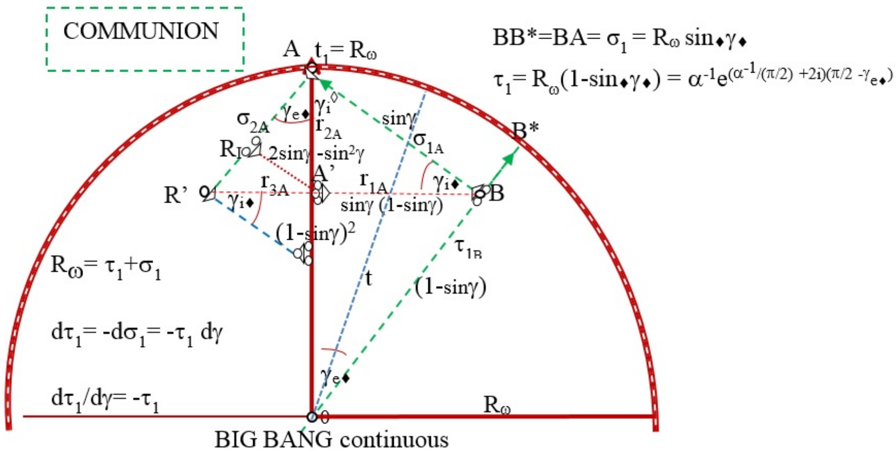


Figure 25: Communion: the relation has an absolute limit in the Universe Radius R_ω

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

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

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

Two objects moving away at speed v, will continue to move away until their vertex 0, drawing back, will reach the big bang point where their Doppler redshift equals their FLRW redshift and their gravitational redshift.
Furthermore, the intention relationship and the constancy of $t_1 = R_\omega$ constrain directly the matter of the Universe.
About Universe metric,
From $M_v\left(r\right) = \int 4\pi r^2 \rho_{v(r)} dr \equiv \frac{c^2}{G}\frac{r^2}{R_\omega}2$ we derive $\rho_{v(r)} = \frac{c^2}{8\pi G}2\left(\frac{4}{rR_\omega}\right)$
and since $p_\nu = \frac{M_v A}{4\pi r^2}$ where $A = c^2\frac{dV}{dr} = c^2\frac{1}{R_\omega}$ we have $p_\nu = \frac{c^4}{8\pi G}2\frac{1}{R_\omega^2}$

$$T^{ik} = \begin{pmatrix} \rho_\nu & 0 & 0 & 0 \\ 0 & p_\nu & 0 & 0 \\ 0 & 0 & p_\nu & 0 \\ 0 & 0 & 0 & p_\nu \end{pmatrix} = \begin{pmatrix} \frac{c^4}{8\pi G}2\frac{4}{rR_\omega} & 0 & 0 & 0 \\ 0 & \frac{c^4}{8\pi G}2\frac{1}{R_\omega^2} & 0 & 0 \\ 0 & 0 & \frac{c^4}{8\pi G}2\frac{1}{R_\omega^2} & 0 \\ 0 & 0 & 0 & \frac{c^4}{8\pi G}2\frac{1}{R_\omega^2} \end{pmatrix}$$

since $T_i^i = \rho - 3p$ then $T = \frac{c^4}{8\pi G}2\frac{4}{rR_\omega} - 2\frac{c^4}{8\pi\ G}\frac{3}{R_\omega^2}$ and therefore

$$T_0^{0*-} = T_0^0 - \frac{1}{2}T = \frac{c^4}{8\pi G}\frac{4}{rR_\omega} - 3\frac{c^4}{8\pi\ G}\frac{1}{R_\omega^2}$$
$$T_1^{1*} = T_1^1 - \frac{1}{2}T = -\frac{c^4}{8\pi G}\frac{4}{rR_\omega} + 3\frac{c^4}{8\pi\ G}\frac{1}{R_\omega^2}$$

Therefore,

$$e^{-\lambda}\left(\frac{\lambda'}{r} - \frac{1}{r^2}\right) + \frac{1}{r^2} = \frac{4}{rR_\omega} - 3\frac{1}{R_\omega^2}$$

which admits one solution $e^{-\lambda} = \left(1 - \frac{r}{R_\omega}\right)^2$
Therefore, the metric of universe is

$$c^2 dl^2 = \left(1 - \frac{r}{R_\omega}\right)^2 c^2 dt^2 - \frac{dr^2}{\left(1 - \frac{r}{R_\omega}\right)^2} - r^2 d\theta^2 - r^2 \sin^2\theta\ d\phi^2$$

Or, since $R_I/r = r/R_\omega$

$$c^2 dl^2 = \left(1 - \frac{R_I}{r}\right)^2 c^2 dt^2 - \frac{dr^2}{\left(1 - \frac{R_I}{r}\right)^2} - r^2 d\theta^2 - r^2 \sin^2\theta \; d\phi^2$$

Now, according to the constant of motion, $dt(1 - V_e) = d\tau/(1 - V_e)$

$$c^2 dl^2 = \frac{c^2 d\tau^2}{\left(1 - \frac{r}{R_\omega}\right)^2} - \frac{dr^2}{\left(1 - \frac{r}{R_\omega}\right)^2} - r^2 d\theta^2 - r^2 \sin^2\theta d\phi^2$$

Now, the path of light in the universe
is not reflection: $d\vec{l} = 0 = d\vec{\tau} - d\vec{\sigma}$
but consummation:

$$d\vec{l} = d\vec{R}_I = d\vec{\tau} - d\vec{\sigma} \quad \text{or} \quad d\vec{l} = \sin\gamma d\vec{\sigma} = \sin\gamma \frac{d\vec{r}}{1 - \frac{r}{R_\omega}}$$

To determine the time τ, we must use therefore the distance $r_A = r = R_\omega \sin_\blacklozenge \gamma$ of the receiver to which we must add the radius $R_{I_A}(t) = 1/2 R_\omega \sin^2_\blacklozenge(\gamma)$, which, as well as the scale factor $a(t)$, depends only on the distance between sender and receiver, and which must be therefore treated as the scale factor $a\,(t)$.

$a\,(t) = \dfrac{1}{1+z} = \dfrac{\tau}{R_\omega} = \left(1 - \dfrac{R_I}{r}\right) = \left(1 - \dfrac{r}{R_\omega}\right) = (1 - \sin_\blacklozenge \gamma).$

Therefore

$$c d\tau = d(r_A + R_{I_A}) = d(R_\omega(\sin_\blacklozenge \gamma + 1/2 \sin^2_\blacklozenge \gamma)) = (1 + \sin_\blacklozenge \gamma) dr$$

and since $dr = R_\omega d(\sin_\blacklozenge \gamma) = R_\omega (1 - \sin_\blacklozenge \gamma) d\chi$

$$c d\tau = a\,(t)\, R_\omega \,(1 + \sin\gamma)\, d\chi$$

$$D_{now} = \int_0^\gamma R_\omega \,(1 + \sin\gamma)\, d\chi = \frac{c}{H_0} \cdot (1 + \sin\gamma)\,\gamma \tag{41}$$

$$D_A = a D_{now} = \frac{c}{H_0} \cdot \left(1 - \sin^2\gamma\right)\gamma \tag{42}$$

$$D_L = \frac{D_A}{a^2} = \frac{c}{H_0} \cdot \frac{1 + \sin\gamma}{1 - \sin\gamma}\gamma \tag{43}$$

$$H(z) = H_0 E(z) = H_0 \cdot \frac{\cos\gamma}{(1 - \sin\gamma)^2 (1 + \sin\gamma + \gamma\cos\gamma)} \tag{44}$$

$$T_\omega = \int_0^\gamma (1 - \sin\gamma) dD_{now} = \frac{1}{H_0} \cdot \frac{\cos\gamma(\sin\gamma + 4) - 2\gamma(\sin\gamma - 1)^2 + 5\gamma}{4} \tag{45}$$

where $\dfrac{c}{H_0} \equiv R_\omega$ and $\gamma = \arcsin\left(\dfrac{z}{1+z}\right)$. Equivalently:

$$D_{now} = \frac{c}{H_0} \cdot \frac{(2z+1)\arcsin\left(\frac{z}{z+1}\right)}{(z+1)}$$

$$D_A = \frac{c}{H_0} \cdot \frac{(2z+1)\arcsin\left(\frac{z}{z+1}\right)}{(z+1)^2}$$

$$D_L = \frac{c}{H_0} \cdot (2z+1)\arcsin\left(\frac{z}{z+1}\right)$$

$$H(z) = H_0 \cdot \frac{(z+1)^3\sqrt{1-\frac{z^2}{(z+1)^2}}}{(z+1)\sqrt{1-\frac{z^2}{(z+1)^2}}\arcsin\left(\frac{z}{z+1}\right)+2z+1}$$

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

Now, for the age of the universe, we have

$$T_{\omega_{age}} = \lim_{z\to\infty} T_\omega - \lim_{z\to 0} T_\omega = \left(\frac{5\pi}{8}-1\right)\frac{1}{H_0}$$

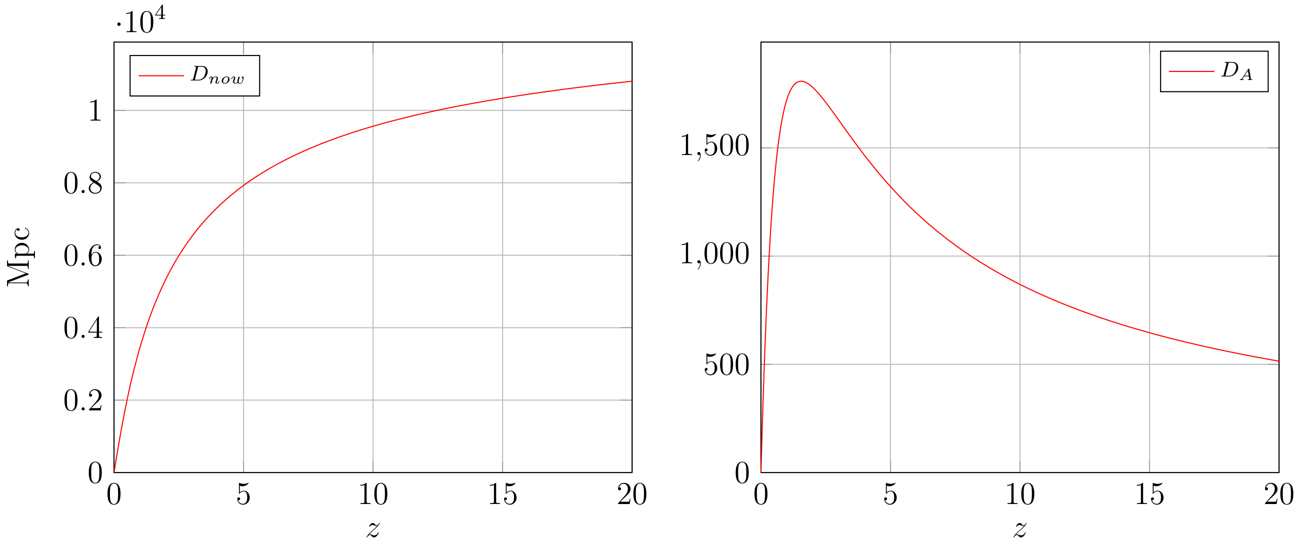
On the other hand, in the minimal 6-parameter Lambda-CDM model, where it is assumed that curvature Ω_k is zero and $w = -1$, neglecting the radiation density ($\Omega_{\text{rad}} \sim 10^{-4}$), we have, for the Age of universe

$$T_{\omega_{age}\Lambda CDM} = \frac{2}{3H_0\sqrt{\Omega_\Lambda}}\,\text{arsinh}\sqrt{\left(\frac{\Omega_\Lambda}{\Omega_m}\right)}$$

Therefore, equating the two limits, we have that $T_{\omega_{age}} = T_{\omega_{age}\Lambda CDM}$ when $\Omega_\Lambda \simeq 0.69933$ and $\Omega_m \simeq 0.30067$. These are in fact the best values that fit the experimental data.

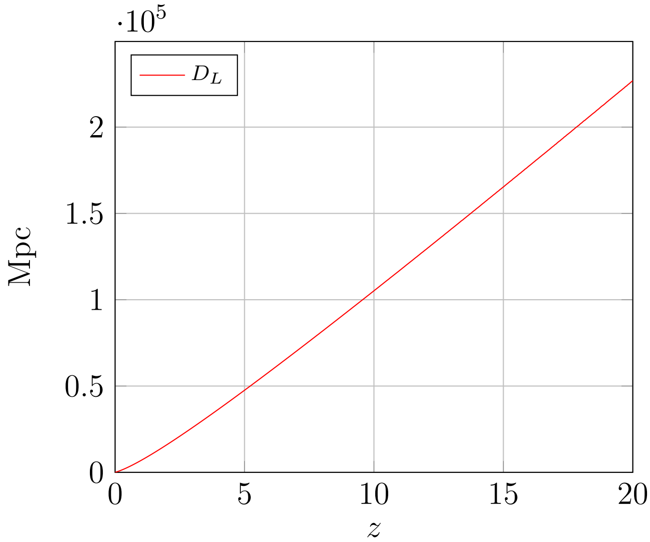
The above distances agree very well with the experimental data of observations (see Fig. 26 ,27, 28, 29).

From eq. 41 we see that the D_{now} depends on the dark matter R_I. Now, we have that, given an intermediate point C between two points A and B, $D_{now}(A \to B) \neq D_{now}(A \to C) + D_{now}(C \to B)$. This means that the radius R_I which emerges from the distance r between a sender and a receiver $R_{I_A} = R_{I_B} = \int\limits_{r=A}^{B} \frac{r}{R_\omega}dr = \int\limits_{r=A}^{B} V dr$, is different from the sum of all the radii dR_I which emerge from the distances dr that make up r and that give: $\int\limits_{r=A}^{B} \frac{dr}{R_\omega}dr \simeq 0$.



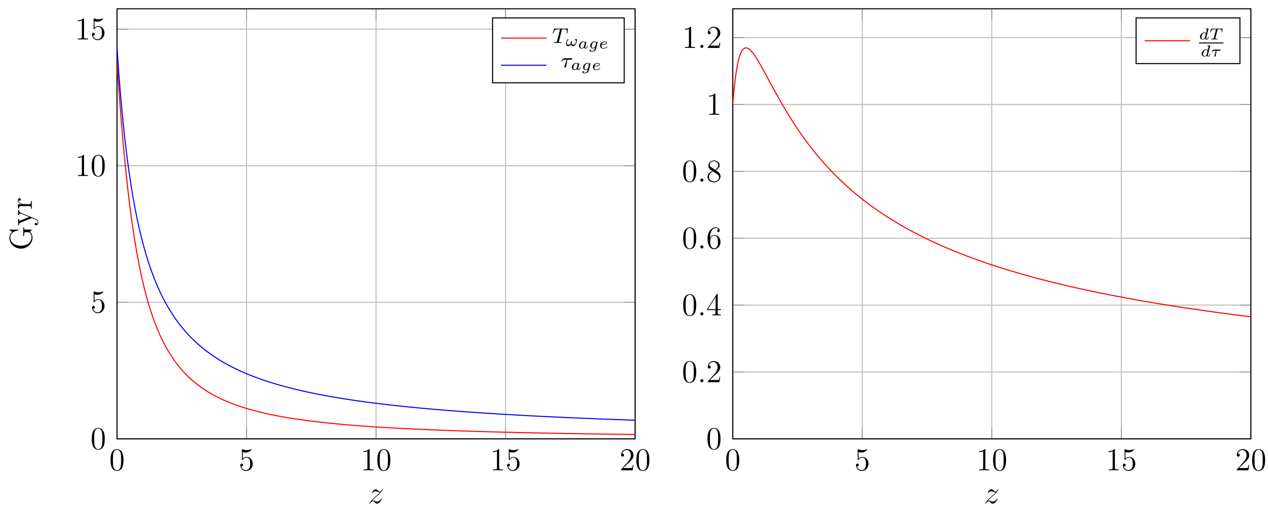
(a) (b)

Figure 26: Cosmological Distances: in the plot $H_0 = 68.3$ and therefore $R_\omega = c/H_0 = 4389.35$ Mpc and $T_{\omega_{age}} = \left(\frac{5\pi}{8} - 1\right) R_\omega = 13.79$ Gyr.



(a)

Figure 27: Cosmological Distances: in the plot $H_0 = 68.3$ and therefore $R_\omega = c/H_0 = 4389.35$ Mpc and $T_{age} = \left(\frac{5\pi}{8} - 1\right) R_\omega = 13.79$ Gyr. The real age of the Universe is instead $\tau_\omega = a(t)R_\omega$. The Horizon problem is therefore due to a wrong evaluation of the age of the universe



(a) (b)

Figure 28: Cosmological Time: in the plot $H_0 = 68.3$ and therefore $R_\omega = c/H_0 =$ 4389.35 Mpc and $T_{age} = \left(\frac{5\pi}{8} - 1\right) R_\omega = 13.79$ Gyr. The real age of the Universe is instead $\tau_\omega = a(t) R_\omega$. The Horizon problem is therefore due to a wrong evaluation of the age of the universe

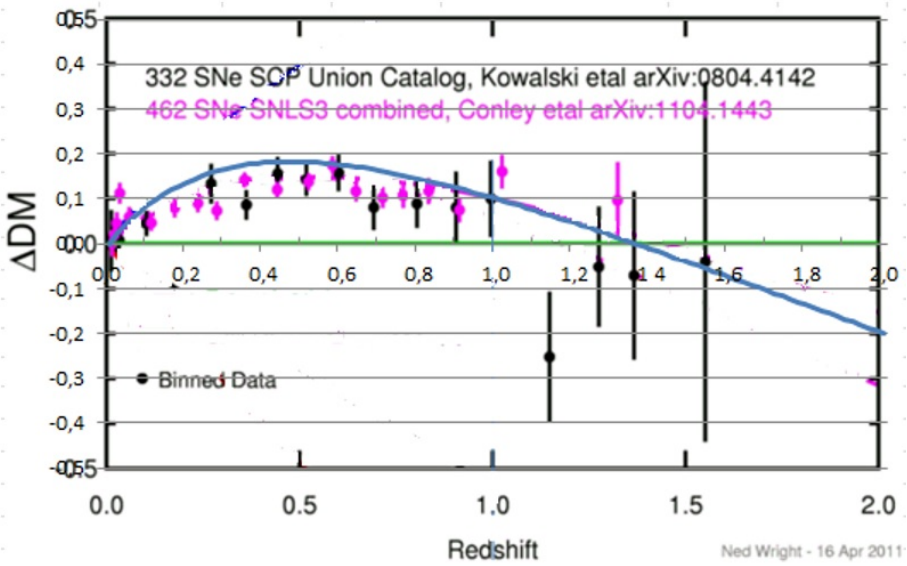


Figure 29: In the figure above, the brightness or faintness of distant supernovae relative to the empty Universe model is plotted vs redshift. Here, $\Delta(DM) = 5\log_{10}\left(\frac{D_L}{R_\omega z\left(1+\frac{z}{2}\right)}\right)$ is the difference between the distance modulus determined from the computed flux D_L (see eq. 43) and the distance modulus computed from the redshift in the empty Universe model, and sigma is the standard deviation of the $\Delta(DM)$. The result are in good agreement with the observed data.

Furthermore, if we measure the diameter of a circle l with center in γ, both along the perpendicular to the line of sight that along the line of sight, we find respectively:

$$l_\perp = D_{now}(\gamma)\Delta\theta = R_\omega(1+\sin\gamma)\gamma\Delta\theta$$

$$l_\parallel = R_\omega(1+\sin\gamma)\Delta\gamma = D_{now}\left(\gamma+\frac{\Delta\gamma}{2}\right) - D_{now}\left(\gamma-\frac{\Delta\gamma}{2}\right) - \delta(\gamma) = \frac{c\Delta z}{H_z} - \delta(\gamma)$$

where $l_\perp = l_\parallel = l$ and

$$\delta(\gamma) = \cos\gamma\sin(\Delta\gamma)\gamma$$

Therefore

$$\frac{D_{now}(\gamma)\Delta\theta + \frac{c\Delta z}{H_z}}{2} = l + \frac{1}{2}\cos\gamma\sin(\Delta\gamma)\gamma$$

Furthermore, the time duration τ is different from T_{age}.

$$\frac{dT_{age}}{d\tau} = \frac{(1-\sin\gamma)(\sin\gamma+\gamma\cos\gamma+1)}{\cos\gamma} \tag{46}$$

From what has been said, it is important remember that the metric extends the physical linear path of the intention in an artificial space, where it's possible define new and unreal relations between points, as the angular distance or the luminosity distance or the proper distance or the cosmological time, which are based on trigonometry in an euclidean space. Although we can measure them in an objective manner, they don't correspond to a physical process since they don't correspond to the real path of light. The problem of the horizon, caused by an unphysical cosmological time T, vanishes when we consider the right time $\tau = R_\omega(1 - \sin\gamma)$. Analogously the latest Hubble finding, based on the direct measurements of the local expansion rate, confirms a nagging discrepancy with the measurement made by the European Space Agency's Planck satellite, which maps the cosmic microwave background, a relic of the big bang. The difference between the two values is about 9 percent and can be traced back to the assumed value of the the sound horizon at radiation drag, r_d, deduced by theoretical considerations based on cosmological models.

2.2.2 Gravitation between complex individuals

Analogously, in the gravitational intention between two individuals, we have a limit $t_{1Max} = R_\omega$ (see fig. 30)

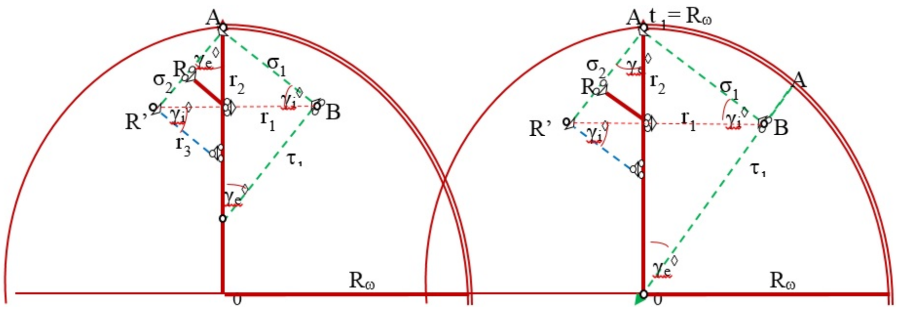


Figure 30: in the gravitational intention between two individuals, we have a limit $t_{1Max} = R_\omega$

From eq. 16 we have $R_K = \dfrac{r_k^2}{t}$ where we denote with R_K the gravitational mass and with r_k the gravitational distance. Now, t has a limit in R_ω, therefore $r_k = \sqrt{R_K t}$ has a limit in $r_{k_{max}} = \sqrt{R_K R_\omega}$. In other words, the gravitational mass of the individual delimits its space to an $r_{k_{max}} = \sqrt{R_K R_\omega}$. This is the space of Newton law and of general relativity. Nevertheless the measured distance, using light flux or angles etc., is r. Therefore we must find the relation $r^2 = r_k^2 + r_i^2$, where r_k is the gravitational component of the distance while r_i is the cosmological one.

To find the metric outside a massive body in the gravitational space, we start from:

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

which gives:

$$\begin{cases} e^{-\lambda}\left(\dfrac{\nu'}{r_k} + \dfrac{1}{{r_k}^2}\right) - \dfrac{1}{{r_k}^2} = -\dfrac{8\pi G}{c^4}\left[T^1_{b1} + T^1_{v1}\right] \\ e^{-\lambda}\left(\dfrac{\lambda'}{r_k} - \dfrac{1}{{r_k}^2}\right) + \dfrac{1}{{r_k}^2} = \dfrac{8\pi G}{c^4}\left[T^0_{b0} + T^0_{v0}\right] \\ \dot{\lambda} = 0 \end{cases}$$

Where T_b is the baryonic mass while T_v is the residual intention energy in the vacuum.
Now, in the case of central symmetry in the vacuum, T_b cancels but T_v does not.

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

Letting $\lambda = -\nu$ and $T_0^{0*} = -T_1^{1*} = \dfrac{c^4}{8\pi G}\left(\dfrac{4}{rR_\omega} - \dfrac{3}{R_\omega^2}\right)$ we reduce to the only equation:

$$e^{-\lambda}\left(\frac{\lambda'}{r_k} - \frac{1}{{r_k}^2}\right) + \frac{1}{{r_k}^2} = \frac{4}{rR_\omega} - \frac{3}{R_\omega^2} \tag{47}$$

Therefore, outside r_{kmax}, in the vacuum, $r = R_\omega$ and

$$e^{-\lambda}\left(\frac{\lambda'}{r_k} - \frac{1}{r_k^2}\right) + \frac{1}{r_k^2} = \frac{1}{(R_\omega)^2} \tag{48}$$

which admits two solutions:

$$e^{-\lambda} = \left(1 - \frac{k_0}{r_k}\right)^2 \quad \textit{and} \quad e^{-\lambda} = 1 - \left(\frac{k_0}{r_k}\right)^2 \tag{49}$$

for both we get :

$$\frac{k_0^2}{r^4_{k\,\max}} = T_0^0 = \frac{1}{R_\omega^2} \tag{50}$$

where replacing k_0 with R_K, we have

$$c^2 d\tau^2 = \left(1 - \frac{R_K}{r_k}\right)^2 c^2 dt^2 - \frac{dr_k^2}{\left(1 - \frac{R_K}{r_k}\right)^2} - r_k^2 d\phi^2 \tag{51}$$

And

$$\frac{R_K^2}{r_{k\max}^4} = \frac{1}{R_\omega^2} \quad \text{from which} \quad r_{k\max} = \sqrt{R_K R_\omega} \tag{52}$$

To find the relation between the terms of the equation $r_k^2 + r_i^2 = r^2$, we can set, as well as $t = \frac{r_k^2}{R_K}$, the analogous equation $t = \frac{r_i^2}{R_I} = \frac{r_i^2}{r^2} R_\omega$ and therefore:

$$t = \frac{r_k^2}{R_K} = \frac{r_i^2}{r^2} R_\omega \qquad \text{or} \qquad \frac{r_k^2}{R_K} - \frac{r_i^2}{r^2} R_\omega = 0$$

$$\text{or} \qquad \frac{r_k^2}{R_K} - \frac{r^2 - r_k^2}{r^2} R_\omega = 0 \qquad \text{or} \qquad \frac{1}{R_K} + \frac{1}{R_I} = \frac{R_\omega}{r_k^2}$$

$$\text{and at last} \qquad r_k = \sqrt{\frac{R_K}{R_K + R_I}} r \qquad \text{and} \qquad r_i = \sqrt{\frac{R_I}{R_K + R_I}} r$$

and defining $\sin\xi = \sqrt{\frac{R_K}{R_K + R_I}}$ and $\cos\xi = \sqrt{\frac{R_I}{R_K + R_I}}$ we have:

$$r_k = r \sin\xi \quad \text{and} \quad r_i = r\cos\xi$$

Therefore $A = A_K = \frac{R_K}{r_k^2} = A_I = \frac{R_I}{r_i^2} = A_K \sin^2\xi + A_I \cos^2\xi = \frac{R_K + R_I}{r^2}$

At last, since $A_{K\_centrifugal} = \frac{v_{centrifugal}^2}{r_k} = A_{K\_gravitational} = \frac{R_K}{r_k^2} = \frac{R_K + R_I}{r^2}$

We have

$$v_{centrifugal} = \sqrt[4]{\frac{R_K + R_I}{r^2} R_K} \tag{53}$$

and the limits

$$r_{K_\infty} = \lim_{r\to\infty} \sqrt{\frac{R_K}{R_K + R_I}} r = \sqrt{R_K R_\omega} \qquad v_\infty = \lim_{r\to\infty} \sqrt[4]{\frac{R_K + R_I}{r^2} R_K} = \sqrt[4]{\frac{R_K}{R_\omega}}$$

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 [18]. In particular, we adopted the mass distribution model $R_K(r) = R_{K_{Tot}} \left(\frac{r}{r_c + r}\right)^{3\beta}$ 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 $R_{K_{Tot}}$ 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_k along the K axis, agrees exactly with the experimented values everywhere. In the figure 31 and figure 32 below, we have $r_k = f(r)$ where r_k, at first close to r, approaches asymptotically $r_{k_{max}}$ increasing r.

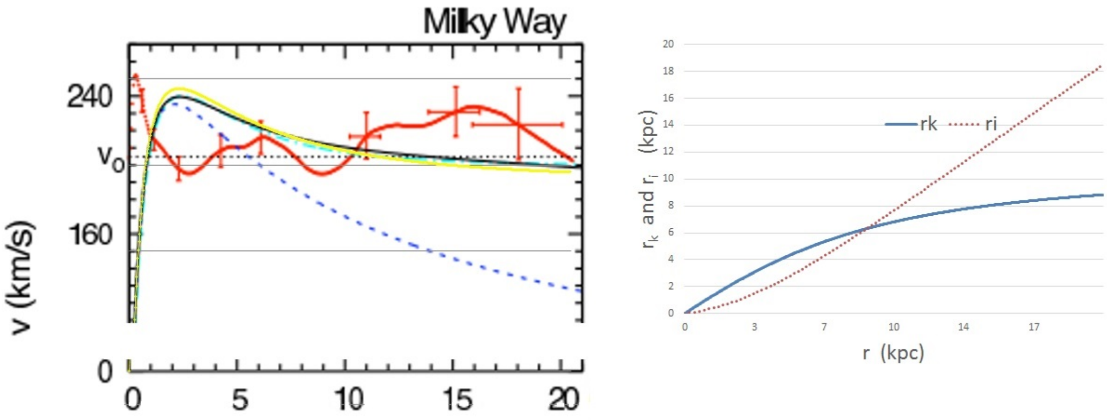


Figure 31: Rotation curve for the Milky Way. The red points (with error bars) are the observations. The solid yellow line is the rotation curve determined from Intention Physics (eq. 53), the short dashed blue line is the Newtonian galaxy rotation curve. Both rotation curves are the best fit to a parametric mass distribution (independent of luminosity observations) a two parameter fit to the total galactic Mass, $M = 9.12\ 10^{10}\ M_{\odot}$, and a core radius $r_c = 1.04$ kpc and $\beta = 1$. On the right the trend of r_k and r_i

At last, since

$$V = \frac{R_K}{r_k} = \frac{R_K}{r}\frac{1}{\sqrt{\frac{R_K}{R_K+R_I}}} = \frac{R_K}{r}\sqrt{1+\frac{R_I}{R_K}} = \frac{R_K}{r}\sqrt{1+\frac{r^2}{r^2_{k_{max}}}} \tag{54}$$

and therefore

$$L = g_{00} = (1-V)^2 \tag{55}$$

the dark matter R_I gives reason of orbital velocity in galaxies and lensing.
Very interesting is the determination of the barycentre. From

$$\sum_{i=1}^{n}(M_{K_i}\ddot{r}_{k_i}) = M_{K_{Tot}}\ddot{r}_k$$

we have the barycentre coordinates:

$$r_k = \frac{\sum_{i=1}^{n} M_{K_i} r_{k_i}}{M_{K_{Tot}}} = \frac{\sum_{i=1}^{n} \frac{M_{K_i}^{3/2}}{\sqrt{M_{K_i}+\frac{r_i^2}{R_\omega}}} r_i}{M_{K_{Tot}}} = \sum_{i=1}^{n} \frac{M_{K_i} r_{k_{max_i}}}{M_{K_{Tot}}} \frac{r_i}{\sqrt{r^2_{k_{max_i}}+r_i^2}} \tag{56}$$

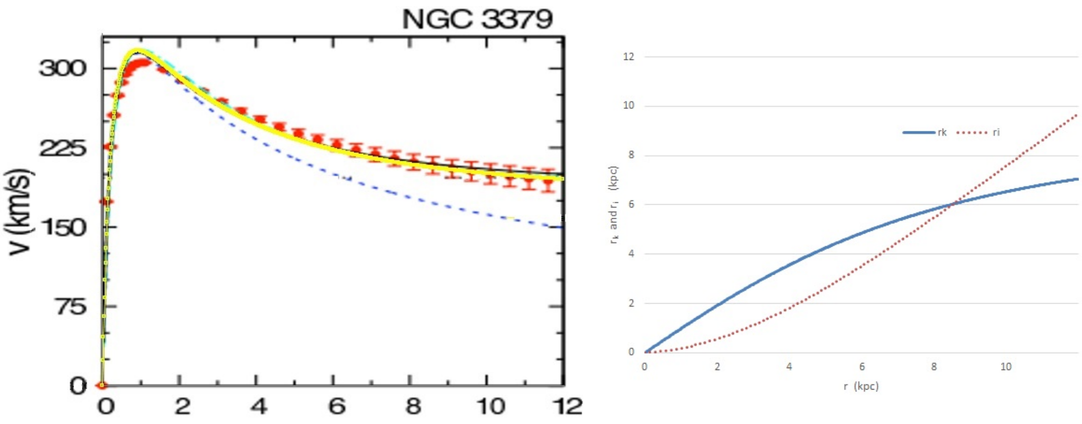


Figure 32: Rotation curve for the elliptical galaxy NGC 3379. The red points (with error bars) are the observations. The solid yellow line is the rotation curve determined from Intention Physics (eq. 53), the short dashed blue line is the Newtonian galaxy rotation curve. Both rotation curves are the 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_k and r_i

Where the barycenter, outside the $r_{k_{max}}$ 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.

3 SECTION III Metaphysics

Does not exist the individual in se and per se, independent, but exists the eternal Relation between the Amorone and the Universe, which, not being composed, are absolutely beyond the range of physics. The Relation itself is incognizable.
From the temporal succession of interactions spring the $\aleph = R_\omega/R_\alpha$ number of amoroni that, interacting gravitationally, form the space of potency of the universe and the emergent composite individuals. First of all, the electron, therefore all the

mirroring universe scale.
In the instant of the present snapshot, which is the datum of physics, in not present the life or the live true time. Besides the Principle of reason, that establishes the logical coherence and the foundation of the present on the past, we should believe in a principle of reality that establishes the existence (continue over time) of individuals in relations and the existence (continue over time) of the live true time and the reality of the previous instants as historically reconstructed from the reflective snapshot of the present instant.
This principle should be based on ourselves. The life is more primitive of the space and the life is the subject of the space.
Physics, and theories in general, as based on reflection, cannot indagate on the life in self. 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.

Conclusion
We assert that our world is a mirroring world. That is a world where exist only individuals in relations, whose only effect is to mirror, and whose only object of mirroring is their potentiality or space-time which is all that they have and, therefore, their only characteristic. Now, the starting point of intention physics is the evidence that in a mirroring world, the unique newness, which every time renovates the world making it entirely new, is the donation, as result of a decision, by a donor to a receiver of its own potentiality, which turns in energy in the act of donation. Although the act of donation is outside the mirroring world, this last one is entirely shaped by and functional and waiting for this donation. In the mirroring world, still in the instant, this act is the presumed jump that ties together this world with the presumed predecessor or successor. This jump is the mystery, as it goes beyond the being and the essence, outside space-time and logic from which leaves and to which comes back, going through the freedom that takes place in the live true time of existentialism.Indeed the Intention structure predicts two parallel and alternating paths closely intermeshed, that each presumes the other, each affects the other, each is incomprehensible without the other. The first is the live true time that opens in the succession of actualisations where, as result of a decision, an individual donates its own potentiality to the conjugated other. The second, ground of the decision, is the intermediate period of the absolute potentiality which, mirrored in the conjugated individuals, discloses in a quadruple form. In particular, mirrored in the hinc and nunc of an individual it gives rise to the relative time of memory and of expectative (as the identity of the “self”) and to the relative space of potentiality of donating and receiving (as the difference of the “other”). In the potentiality period of intention, the other is different and

external to the self, separated by an abyss, while in the reflective vision the space reveals all the different individuals contemporaneously present and external to each other. 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.

At last, Hegel defended himself from criticisms saying "*Newton gave physics an express warning to beware of metaphysics, it is true, but to his honour be it said, he did not by any means obey his own warning. The only mere physicists are the animals: they alone do not think: while man is a thinking being and a born metaphysician. The real question is not whether we shall apply metaphysics, but whether our metaphysics are of the right kind: in other words, whether we are not, instead of the concrete logical Idea, adopting one-sided forms of thought, rigidly fixed by understanding, and making these the basis of our theoretical as well as our practical work.*" (Hegel's Logic) Nevertheless, the sole principle of everything cannot rest on a logical idea, beyond the range of both objective and existential experiences: the dialectic must be the revelation of some more profound principle. Indeed, to the Hegel's dialectic of mirrors, inside the Idea, we substitute the mirroring dynamic of Intention between two distinct individuals that freely make themselves each mirror of the other. The sole principle, which must mirror itself in everything, even if, in itself, cannot not be beyond the range of objective experience, nevertheless it must gain its legitimacy from its being an existential, directly at the hearth of our consciousness. Better still, it must be the sole principle of the true existential philosophy, the sole capable at last to unify interiority and exteriority showing that objective experiences correspond to subjective experiences as the external to the internal, being each the reflection of the other. 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. The seed of our external world is the same seed of our consciousness, and we know, in the innermost of our consciousness, that to live is overcoming abyss separating ourselves from the other. The laws of physics, at last, are only the emergent flowering of the seed below, and this seed is love fulfilled through charity.

References

[1] Parmenide, *On Nature*

[2] Aristotle, *Physics*

[3] Aristotle, *Metaphysics*

[4] G.Galilei, Dialogo sui due Massimi sistemi del mondo

[5] Einstein, Albert *(1907),* "Über das Relativitätsprinzip und die aus demselben gezogene Folgerungen"*, Jahrbuch der Radioaktivität und Elektronik, 4: 411*

[6] Einstein, Albert *(1915),* "Die Feldgleichungen der Gravitation"*, Sitzungsberichte der Preussischen Akademie der Wissenschaften zu Berlin: 844–847*

[7] Einstein, Albert *(1916),* "Die Grundlage der allgemeinen Relativitätstheorie"*, Annalen der Physik, 49: 769–822*

[8] Einstein, Albert *(1917),* "Kosmologische Betrachtungen zur allgemeinen Relativitätstheorie"*, Sitzungsberichte der Preußischen Akademie der Wissenschaften: 142*

[9] Born, M.(1927). Physical aspects of quantum mechanics, *Nature* **119**: 354–357

[10] Bohr, N.*(1928). "The Quantum postulate and the recent development of atomic theory". Nature.* ***121****: 580–590*

[11] Heisenberg, W. (1930). *The Physical Principles of the Quantum Theory*, translated by C. Eckart and F.C. Hoyt, University of Chicago Press.

[12] Heisenberg – Quantum Mechanics, 1925–1927: "The Uncertainty Relations".

[13] Schrodinger, Erwin (1926). "Quantisierung als Eigenwertproblem". Annalen der Physik. 384 4: 273–376.

[14] Dirac P. A. M., Proc. R. Soc. London A267, 148 (1938).

[15] Wheeler J. A. and Feynman R. P., Rev. Mod. Phys. **17**, 157 (1945); and Rev. Mod. Phys. **21**, 425 (1949).

[16] Feynman R. P., 1985, QED: The Strange Theory of Light and Matter

[17] Milgrom, M. 1983, ApJ, 270, 365

[18] J. R. Brownstein and J. W. Moffat, astro-ph/0506370 v4 22 Sep 2005

[19] Peter Rowlands viXra:0702.0058 *submitted on 25 Feb 2007*

[20] G.W.F. Hegel, *Logic*