The Geometry of the Act*

Vincenzo Peluso†
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At the heart of physics is the representation of movement. But what movement is and how we are given to represent it is a metaphysical question. This article attacks the metaphysics underlying current physics from its origins and points to a radically different one as true. On this new basis a new geometry is built, the Geometry of the Discrete Act, more primitive than the Euclidean geometry that actually arises from it, and therefore a new physics. Indeed, it allows the purification and unification of all current theories and opens the way to a total understanding of nature within the limits of knowledge.

INTRODUCTION

This article questions the correctness of the introduction a priori of two continuous and distinct dimensions, the spatial and the temporal one, as the system of representation of the reality, a metaphysical choice at the basis of current physics as it has been carried out since its inception.
Therefore forgive the unusual language of the discussion and in particular of the first two paragraphs of this introduction where the founding concepts of the new proposed metaphysics are exposed. The continuation, where the new theory is developed starting from the premise, must instead follow a strictly logical path.

A new Metaphysics: The universal Relationship

A Universal is a kind of currency and its totality, such that two individuals belong to this same universal if they possess this kind of currency and if they exchange this kind of currency. In fundamental physics we are interested in only one form of universal, which is *Gravitational* mass or energy and its mirror in the other which is *Electricity*.
The individual, who belongs to a Universal and is "a part of" its Universal, is completely determined by its own quantity of currency given by its Radius R (The Schwarzschild radius $R_\bullet$ for gravitation and the inverse $R^\circ = R_\bullet^{-1}$ in the other for electricity) which is "a part of" of the Radius of its Universal, and by the angle it forms with respect to its conjoined individual and with respect to its universal (the Universe for gravitation and electricity).
The exchange, that is, the giving-receiving which has as its object a quantum of this currency, is the relationship that binds two conjoined individuals and which we call Intention.

Therefore we can define the universal Relationship, the unique and sole relationship, which is the Intention. The Intention is composed by the cyclical alternation of two moments:

1. ACT: at the moment of Consummation, as a result of a decision, the individual donates/receives a part of itself to/from its other, which belongs to its own universal. This act takes place in the instant, that is, out of time. The Act, although instantaneous, breaks down in its turn into two logically distinct moments:
   - Radiation (radiant energy): the giving/receiving a part of itself to/from its other along the distance $r^\diamond$
   - Instance (particle): each individual manifests itself quantitatively determined in its **R**adius R and position
2. POTENCY or Universal (wave): at the Mirroring moment, which is the potentiality period between two Consummative acts, the individual mirrors in itself and is mirrored by its other, in other words, mirrors in itself and is mirrored by its entire Universal (the Universe for gravitation and electricity). During this period the individual sinks undetermined into its space of the potency. This period takes place in the true time of life, that is, it is not measurable in itself. Nevertheless, it assumes a measure determined a posteriori, in the act, as the time $\Delta t^\diamond = r^\diamond + R$ of memory in the reflexive historical reconstruction

It is assumed that everything consists of individuals in Intention to each other. Nothing else exists beyond Intention. In other words, light does not travel from the giver to the recipient in a continuum that is always in act, but both individuals emerge in the act in the instant of giving-receiving and then plunging into the period of potency that elapses until the next surfacing in the act.

REFLECTION and the birth of Knowledge and of the time of memory

Since the act is instantaneous, the radiant energy is instantaneous: the receiving side of the one face the parallel and opposite donating side of the other and vice-versa: in the act there are no distances or, more precisely, they are veiled and cannot be known (see fig. 1 left side), nor is the identity of the other known.

The universal mirroring of Potency contemplates all the possible modes (there and so) of the relationship that coexist simultaneously until the moment of decision. It can be described by the QED framework [50]. The mirroring of potency collapses, through the radiant energy (decision), into being determinate (being there and so) of the Act. The latter is the pixel of the image that emerges from the enormous number of underlying consummative acts and which we call Reflection.
While the two moments of the intention, i.e consummation and potency, are interior, existential, subjective, primitive, the reflection is exterior, objective, appearance.
What is veiled in the potency, is revealed in the reflection which appears in act in the present instant.
The reflection appears as an image and the image emerges from the organization, i.e spatial arrangement, of the other individuals intentions in the background. Since everything that exists, from the simplest to the most complex, must derive from the nesting and stratification of the same principle, increasingly complex reflective individuals emerge as a new and higher layer, since the individuals of every new layer too relate each other through consummation.
The superimposition of myriads of intentions, each determined by a free decision, gives rise to the reflective emergence of deterministic phenomena governed by laws. Memory, knowledge, logic, evolution, mechanisms, particles, theories, are all reflective.

A complex individual has a form, consisting of a typical spatial organization that evolves over time by laws or accidents. It is therefore vertical memory, evolution, reflection of itself in itself: its own reflective wristwatch. The radiant energy of reflection, on the other hand, carries with it a structured image which is the imprint of the shape of the world in the instant of the act from which it derives. It is therefore a horizontal memory, a reflection of the other in itself: the wristwatch of the other. And this image of the other, which is the radiant energy of the other, in turn leaves a mark on the recipient which, together with its own, it will transmit to others: the mirror. The complex reflective individual, therefore, acquires its own history, therefore its own identity, and is a wristwatch and a mirror.

The unveiling of potency, which allows for knowledge, requires the existence of reflective conscious individuals who, as such, no longer mirror the universe but reflect the universe in themselves through the mechanism of their senses and have only their own reflected representation of the world to which they can relate through their body.

In the relationship, the only meter and clock is the thread of the radiating energy, which is meter and clock together. In its path, between one individual and another, it marks the proper distances on the radial axis, and the proper time on the orthogonal time axis of the individuals it meet.
In the geometry of the act, time is not per se, it is space converted into time: *time* ≡ *space* or, more precisely:

$$\sum^{\bigcirc} = 0 \qquad \text{or} \qquad \Delta t^{\diamond}_{ab} = \sum_{i=a}^{b} s^{\diamond}_{i} = \sum_{i=a}^{b} \left(r^{\diamond} + R\right)_i$$

Consequently, for each of the two conjoined individuals in the relationship, the two dimensions of space and time represent different aspects of the one true dimension, which is the path of radiant energy, the only meter and wristwatch of the relationship.
In the representation of knowledge, starting from the current image (all the datum is in the snapshot of a single instant), it is possible the historical reconstruction of memory that consists in transforming the current thread of the radiating energy into a sequence (before-after or sooner-later) that recursively founds (in the past) and continues (in the future) the act.

Instantaneous does not mean infinite speed at all, since space and time are not two independent and continuous dimensions, and since each segment of the path has a spatial ≡ temporal length finite and not 0. Radiant energy, indeed, does not have a speed but it is the individual's space itself, be it in actuality or in potency (plane $t = t_{now}$). Similarly, the reflection of the path of radiant energy on the time axis is the individual's time of memory.
Speed, instead, is the angle of the relationship between two individuals, that is, the $\gamma^{\diamond}$ angle between the two time axes. For this purpose, since $A_{donating} \equiv B_{receiving}$, it follows that, for the representation of the relation, it is necessary to arrange the two conjoined individuals in the same donor-donor or recipient-recipient state (see fig. 1 right side).

To know position and time we need to know the $\gamma^{\diamond}$ angle that comes from the reflective mnemonic reconstruction. The Uncertainty principle springs from the lack of memory in the primitive intentions.

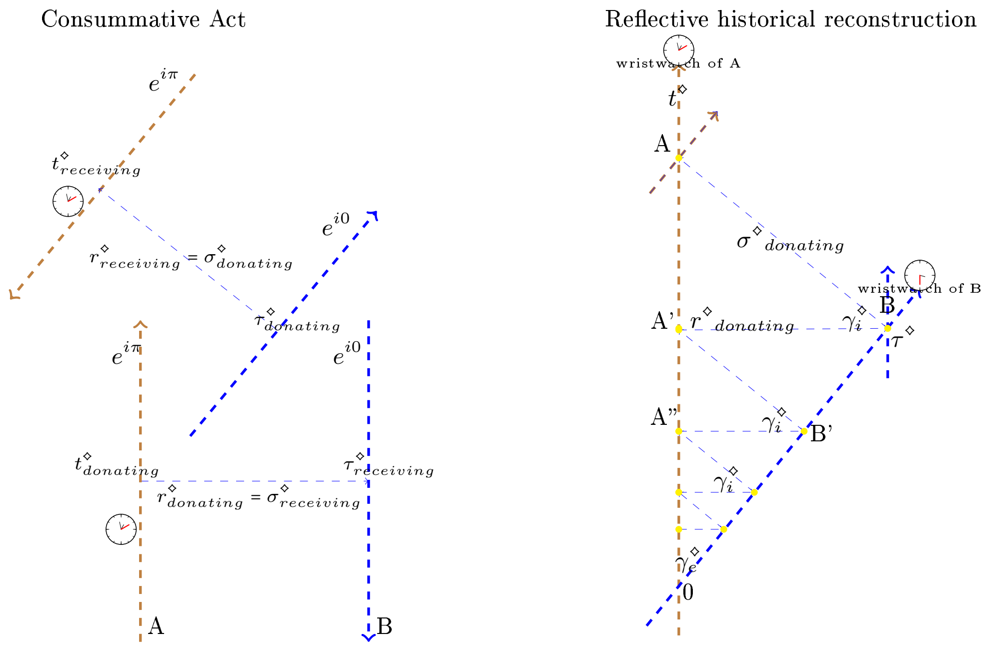


Figure 1. Uncertainty principle: In a measurement, while the measuring instrument A is necessarily classic and therefore reflective, so we know $P^\diamond = t^\diamond_{A_i} - t^\diamond_{A_{i-1}}$, the measured B could be non-classic, therefore we would not know the proper time $t^\diamond_{B_i}$ and therefore we would not know $\cos\gamma^\diamond = \overline{A'B}/\overline{AB} = \left(t^\diamond_{B_i} - t^\diamond_{A_{i-1}}\right)/\left(t^\diamond_{A_i} - t^\diamond_{B_i}\right)$.

THE RECURSIVE MIRRORING IN THE LINEAR PLANE OF THE ACT

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

$$s^\diamond_n = k s^\diamond_{n-1}$$

From the image present in the snapshot of an instant, it is therefore possible recognize a geometrical progression $\ldots 1, K, K^2, \ldots$.

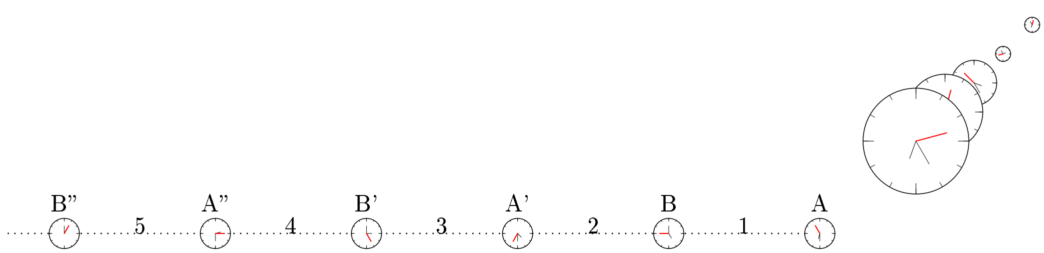


Figure 2. Recursive mirroring: two mirrors facing each other are reflected recursively. If there is a clock on each of them, from the reflected image present in every instant it is possible to reconstruct distances historically and therefore the velocities and accelerations over time, as far as the reflection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

We can represent this geometrical progression by introducing a reflective historical time. Indicating with s_0 the distance now on the spatial axis between A and B we have that (see fig. 1 right side):

$$T^\diamond = s^\diamond_0 + s^\diamond_1 + s^\diamond_2 + s^\diamond_3 + \ldots = s^\diamond_0\left(1 + k + k^2 + k^3 + \ldots\right) = \frac{s^\diamond_0}{1-k}$$

Therefore

$$\Delta\lambda^\diamond = T^\diamond - T^\diamond_{-1} = s^\diamond_0 \quad \text{and} \quad V^\diamond = \frac{\Delta\lambda^\diamond}{T^\diamond} = \frac{\overline{AB}}{\overline{0A}} = 1 - k \quad \text{with} \quad \left(k = \cos\gamma^\diamond\right)$$

The Linear Geometry of the plane of the Act

Vector oriented Space

$$\left|\vec{A}+\vec{B}\right| = \left|\vec{A}\right| \pm \left|\vec{B}\right| \qquad \sum^{\bigcirc} s_i^{\diamond} = 0$$

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

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

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

$$\triangle_e = \pi \qquad \triangle_i = \pi \qquad \triangle_e +^{\diamond} \triangle_i = 0$$

Up-Down Symmetry

$$\cos\gamma_{\pm}^{\diamond} = \cos^{\pm}\gamma^{\diamond} \qquad \sin\gamma_{\pm}^{\diamond} = 1 - \cos^{\pm}\gamma^{\diamond}$$

Left-Right (external-internal) Symmetry

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

Origin of Euclidean geometry

$$\left(\cos\gamma_i^{\diamond} + \sin\gamma_i^{\diamond}\right)\left(\cos\gamma_e^{\diamond} + \sin\gamma_e^{\diamond}\right) = \cos^2\gamma + \sin^2\gamma$$

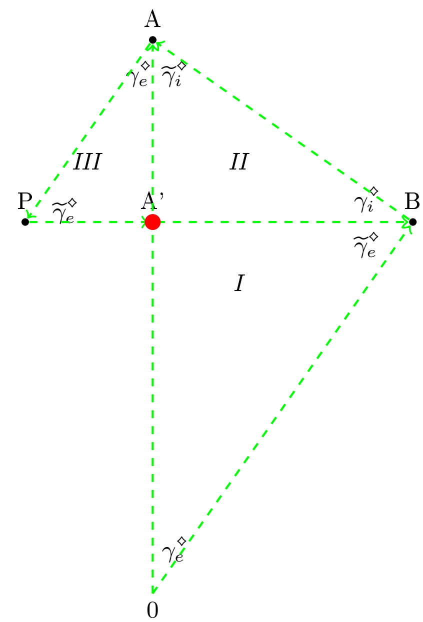


Figure 3. Linear spacetime of the act (on the path of instantaneous light): It is a Linear vector oriented space. The angles are γ_e between two vectors in concordant direction, vice versa γ_i, and they alternate each other.

Conventions: to distinguish the operators and quantities of current physics from the homologues of the linear geometry of the act, we will adopt the convention of denoting the latter with the mark $^{\diamond}$.
Consequently we denote by $\cos\gamma$ the usual cosine of Euclidean trigonometry, while with $\cos^{\diamond}\gamma^{\diamond} \equiv \cos^{\diamond}\gamma \equiv \cos\gamma^{\diamond}$ (mark on the operator or angle or both) the corresponding cosine in the linear geometry of the act.

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

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

Properties:

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

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

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

   (b) *the elementary path*: the right triangle is the elementary path. The elementary triangle is of type SST while the TTS triangles are always the summation of the geometric series of the previous elementary triangles. Since it is curl-less, it necessarily has two sides concordant (++ or - -) and one discordant (- or +),

(c) *left-right symmetry of Linear Trigonometry*: two like-axis (SS or TT) can cross in a node forming an angle $\gamma_e^\diamond$ if they are discordant (+ -) (both enter or both exit); $\gamma_i^\diamond$ otherwise. This involves a symmetrical splitting of the geometry into two right-left versions:

$$\mathbb{G}\left(\triangle_e^\diamond\right) \to \cos\gamma_e^\diamond + \sin\gamma_e^\diamond = 1 \qquad \mathbb{G}\left(\triangle_i^\diamond\right) \to \cos\gamma_i^\diamond + \sin\gamma_i^\diamond = 1 \tag{1}$$

The product of these two versions gives rise to Euclidean geometry

$$\mathbb{G}\left(\triangle_i^\diamond\right)\cdot\mathbb{G}\left(\triangle_e^\diamond\right) = \mathbb{G}\left(\triangle_{Euclid}\right) \qquad \text{or} \qquad \left(\cos\gamma_i^\diamond + \sin\gamma_i^\diamond\right)\left(\cos\gamma_e^\diamond + \sin\gamma_e^\diamond\right) = \left(\cos\gamma^2 + \sin\gamma^2\right) \tag{2}$$

where the mapping between the two geometries is:

$$\begin{array}{ll} \cos\gamma_e^\diamond = \cos\gamma & \sin\gamma_e^\diamond = 1 - \cos\gamma \\ \cos\gamma_i^\diamond = -\cos\gamma & \sin\gamma_i^\diamond = 1 + \cos\gamma \end{array} \tag{3}$$

Since the linear operators ($\sin^\diamond$, $\cos^\diamond$) are defined as the same ratios of the sides of a right triangle as the corresponding trigonometric functions, the rules for adding angles do not change. Indeed, denoting by $+^\diamond$ the reflective sum of two angles, we have $(\varphi +^\diamond \psi) \neq (\varphi + \psi)$

$$\begin{array}{ll} \sin\left(\varphi_e \pm^\diamond \psi_e\right) = \sin^\diamond\varphi_e \pm \sin^\diamond\psi_e & \sin\left(\varphi_i \pm^\diamond \psi_e\right) = \sin^\diamond\varphi_i \pm \sin^\diamond\psi_e \\ \sin\left(\varphi_e \pm^\diamond \psi_i\right) = \sin^\diamond\varphi_e \mp \sin^\diamond\psi_e & \sin\left(\varphi_i \pm^\diamond \psi_i\right) = \sin^\diamond\varphi_i \mp \sin^\diamond\psi_e \\ \cos\left(\varphi_e \pm^\diamond \psi_e\right) = \cos^\diamond\varphi_e \mp \sin^\diamond\psi_e & \cos\left(\varphi_i \pm^\diamond \psi_e\right) = \cos^\diamond\varphi_i \mp \sin^\diamond\psi_e \end{array} \tag{4}$$

In particular, denoting with $\Gamma_e = \left(\gamma_e -^\diamond \epsilon_e\right)$ and $\Gamma_i = \left(\gamma_i -^\diamond \epsilon_e\right)$, from the (4) we have:

$$\begin{array}{ll} \sin^\diamond\Gamma_e = \sin^\diamond\left(\gamma_e -^\diamond \epsilon_e\right) = \sin^\diamond\gamma_e - \sin^\diamond\epsilon_e & \cos^\diamond\Gamma_e = \cos^\diamond\left(\gamma_e -^\diamond \epsilon_e\right) = \cos^\diamond\gamma_e + \sin^\diamond\epsilon_e \\ \sin^\diamond\Gamma_i = \sin^\diamond\left(\gamma_i -^\diamond \epsilon_e\right) = \sin^\diamond\gamma_i - \sin^\diamond\epsilon_e & \cos^\diamond\Gamma_i = \cos^\diamond\left(\gamma_i -^\diamond \epsilon_e\right) = \cos^\diamond\gamma_i + \sin^\diamond\epsilon_e \end{array} \tag{5}$$

and at last, applying the (2) we have:

$$\sin^2\Gamma = \sin^\diamond\Gamma_i\sin^\diamond\Gamma_e = \sin^2\gamma - \sin^2\epsilon \qquad \cos^2\Gamma = \cos^2\gamma + \sin^2\epsilon \tag{6}$$

Hereafter some notable examples:

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

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

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

Note:

More generally, in the mapping between two geometries, we can have two cases:

$$\begin{array}{lcl} \cos\gamma_e^\diamond = \cos\gamma & \text{and therefore} & \sin\gamma_e^\diamond = 1 - \cos\gamma_e^\diamond = 1 - \cos\gamma \\ \sin\gamma_e^\diamond = \sin\gamma & \text{and therefore} & \cos\gamma_e^\diamond = 1 - \sin\gamma_e^\diamond = 1 - \sin\gamma \end{array}$$

We must use the first case in all the interactions between two individuals, that is in the vast majority of practical cases (for this reason, this is the case implicitly assumed throughout this article), while the second case is relegated to the relationship between the parts and the whole as in cosmology.

(d) *up-down symmetry of Linear Trigonometry*: trigonometry, in the geometry of the act, is symmetrical with respect to the sign of the exponent. That is, denoting with $\cos\gamma_\pm^\diamond = \cos^\pm\gamma^\diamond$ and $\sin\gamma_\pm^\diamond = 1 - \cos^\pm\gamma^\diamond$ we have:

$$\mathbb{G}\left(\triangle_{\pm e}^\diamond\right) \to \cos\gamma_{\pm e}^\diamond + \sin\gamma_{\pm e}^\diamond = 1 \quad \mathbb{G}\left(\triangle_{\pm i}^\diamond\right) \to \cos\gamma_{\pm i}^\diamond + \sin\gamma_{\pm i}^\diamond = 1 \qquad \mathbb{G}\left(\triangle_{\pm i}^\diamond\right)\cdot\mathbb{G}\left(\triangle_{\pm e}^\diamond\right) = \mathbb{G}\left(\triangle_{Euclid_\pm}\right) \tag{7}$$

more generally: denoting with $\Gamma_{\pm e} = \left(\gamma_{\pm e} -^\diamond \epsilon_{\pm e}\right)$ and $\Gamma_{\pm i} = \left(\gamma_{\pm i} -^\diamond \epsilon_{\pm e}\right)$, from the (4) we have:

$$\begin{array}{ll} \sin^\diamond\Gamma_{\pm e} = \sin^\diamond\left(\gamma_{\pm e} -^\diamond \epsilon_{\pm e}\right) = \sin^\diamond\gamma_{\pm e} - \sin^\diamond\epsilon_{\pm e} & \cos^\diamond\Gamma_{\pm e} = \cos^\diamond\left(\gamma_{\pm e} -^\diamond \epsilon_{\pm e}\right) = \cos^\diamond\gamma_{\pm e} + \sin^\diamond\epsilon_{\pm e} \\ \sin^\diamond\Gamma_{\pm i} = \sin^\diamond\left(\gamma_{\pm i} -^\diamond \epsilon_{\pm e}\right) = \sin^\diamond\gamma_{\pm i} - \sin^\diamond\epsilon_{\pm e} & \cos^\diamond\Gamma_{\pm i} = \cos^\diamond\left(\gamma_{\pm i} -^\diamond \epsilon_{\pm e}\right) = \cos^\diamond\gamma_{\pm i} + \sin^\diamond\epsilon_{\pm e} \end{array} \tag{8}$$

and at last, applying the (2)) we have:

$$\sin^2\Gamma_\pm = \sin^\diamond\Gamma_{\pm i}\sin^\diamond\Gamma_{\pm e} = \sin^2\gamma_\pm - \sin^2\epsilon_\pm \qquad \cos^2\Gamma_\pm = \cos^2\gamma_\pm + \sin^2\epsilon_\pm \tag{9}$$

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

The scheme of intention is the recursive unfolding, starting from each of two radii $R = \Delta t^\diamond - r^\diamond$, of new space and time segments that respect the proportion:

$$R : r^\diamond = r^\diamond : \tau^\diamond = \sin\gamma_e^\diamond \tag{10}$$

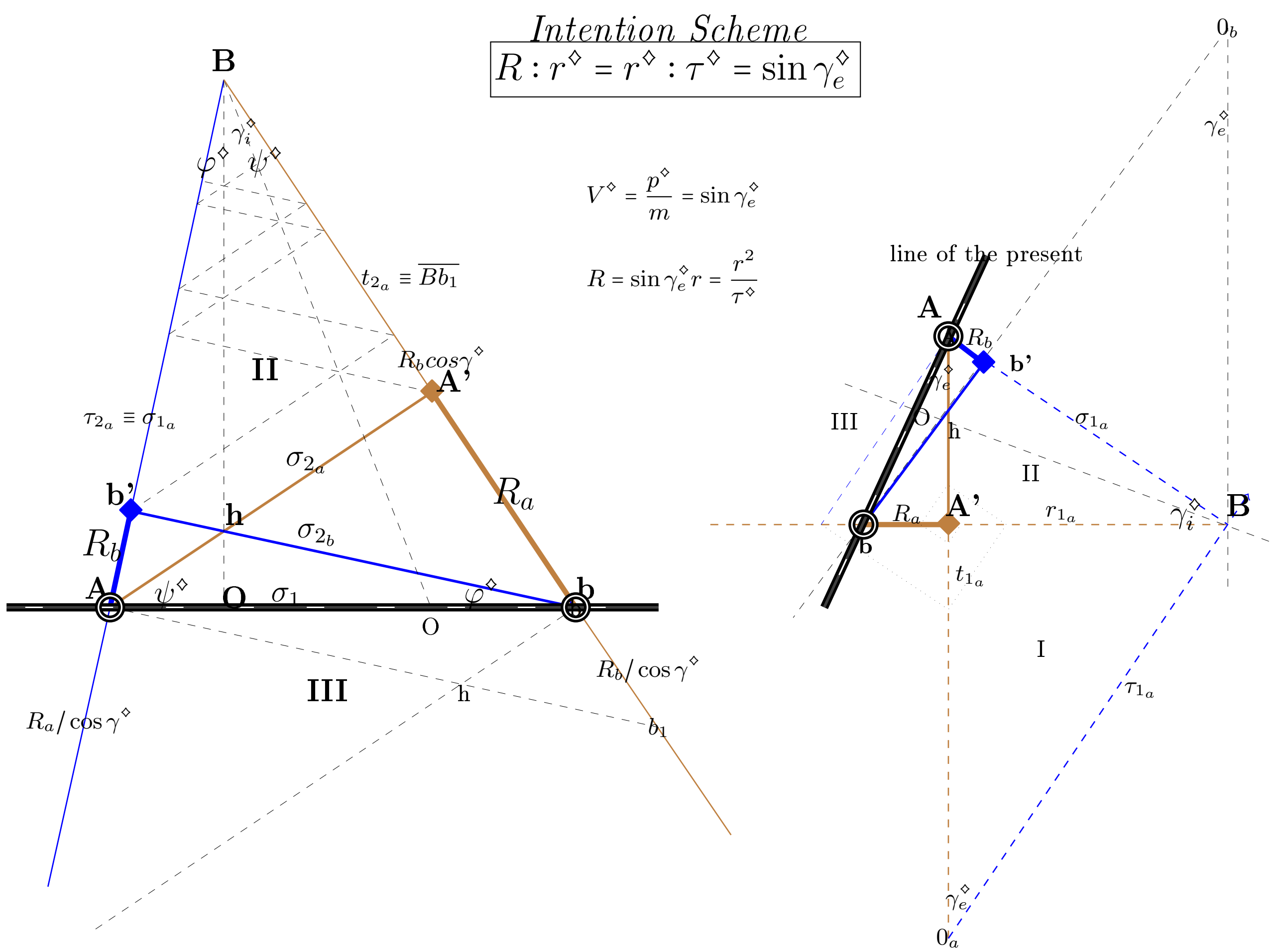


Figure 4. The whole relation is enfolded and unfolds from the Radii of the two conjoined individuals. The schema of intention is recursive since to every angle follows its opposite and is governed by the relation $R : r^\diamond = r^\diamond : \tau^\diamond = \sin\gamma_e^\diamond$. Indeed the three quadrants represent time, space and Radius and recursively follow one another. The Intention Schema, which emerges reflectively, represents all the possible knowledge on the relation and it is just a knowledge representation.
In fig., two $\overline{Oh}$ segments have been reported indicating the position of the center of gravity. Obviously the center of gravity is unique and coincident for both the gravitational and electrical relationship. In fact, where the largest gravitational Radius is also the smaller electric one and vice versa. In the diagram in the figure, therefore, an electrical relationship is represented, recognizable for having the (darker) center of gravity where the Radius is smaller.

The derivative and integral operators in the geometry of the discrete Act

The derivation operator is reflexive, as it is based on memory, and discrete as the act is discrete and periodic. Given the linear mnemonic historical reconstruction of the spacetime of the instant, we have:

$$\frac{dl_x^\diamond}{dl_y^\diamond} = \frac{l_x^\diamond}{l_y^\diamond} \tag{11}$$

When the angle γ varies instant by instant, that is, interaction by interaction, the linear historical reconstruction is valid only for a single segment $l_i^\diamond$. Therefore, in the reconstruction along the changing of instants, we are forced to change spacetime at each interaction, that is, at each perhaps very small, but not infinitesimal, discrete segment $l_i^\diamond$.

$$l_{crossinstant} = \sum_{i=instant_i}^{instant_n} l_i^\diamond \tag{12}$$

Therefore, curving is not part of the geometry of the act since the integral is a sum of discrete and finite segments.

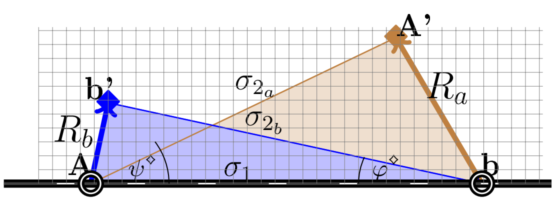
THE FUNDAMENTAL CONSUMMATIVE THREAD

In the linear plane of the Act, the space of the relationship, which develops in the three quadrants of fig. 4, unfolds starting from the Radius of the two conjugated individuals placed at a given distance within the Radius of the universal (see fig.5).
In this original relationship, the circulation along a closed path is zero:

$$R_a + \sigma_{2_a} = R_b + \sigma_{2_b} = \sigma_1$$

Denoting by $\Delta t^\diamond = \sigma_1 = \left(\sum s_i\right)/2 = \left(R_a + \sigma_{2_a} + R_b + \sigma_{2_b}\right)/2$ and $r^\diamond = \left(\sigma_{2_a} + \sigma_{2_b}\right)/2$ and $R = \left(R_a + R_b\right)/2$ we have that in the linear plane of the Act, every intention, and therefore all physics, must respect the linear consummative thread equation:

$$d\left(\Delta t^\diamond = r^\diamond + R\right) \qquad \text{or} \qquad d\Psi\left(t^\diamond, r^\diamond\right) = \frac{2\pi}{R} dR_{(\gamma^\diamond)}\,\Psi \qquad \text{or} \qquad E^\diamond - P^\diamond = m \tag{13}$$



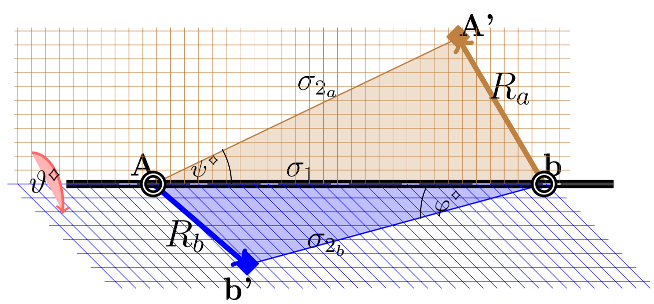


Figure 5. The entire movement of the relation is composed by the cyclical alternation of four traits: $R_a + \sigma_{2_a} + R_b + \sigma_{2_b}$. Although the four different moments follow one another sequentially, in the figure, for reasons of representation of knowledge, they are represented as a continuous all present at the same time.
The relation is determined by the Radii and the rotation angle $\gamma^\diamond = \phi^\diamond + \psi^\diamond$ and the weaving angle θ. Note that, in the linear plane of the Act, any path joining the same two points has the same length.

The II-III quadrant of the reflective spacetime arises from the extension of the two Radius up to the point of intersection B, where they form the time axis and the angle γ_i.
Analogously, the I-II quadrant of the reflective spacetime arises from the extension of the two spatial axis r_{2_x} up to the point of intersection 0_x, where they form the time axis and the angle γ_e.

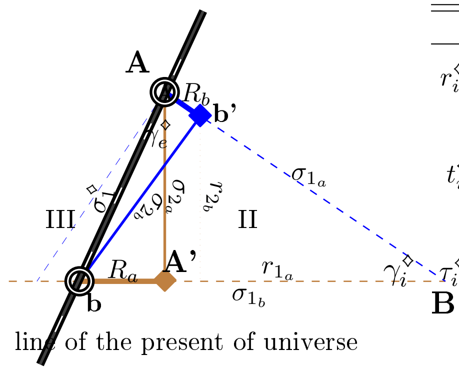
	Fundamental quadrant	II-III quadrant $\left(\triangle_i^\diamond\right)$	I-II quadrant $\left(\triangle_e^\diamond\right)$
$\gamma^\diamond$	$= \gamma_e^\diamond$	$= \gamma_i^\diamond$	$= \gamma_e^\diamond$
S	$= R_{tot_a}$	$= \sigma_{2_a}$	$= \sigma_{1_a}$
$T = S\sum_{i=0}^{n}\cos\gamma^\diamond$	$= \sigma_{2_a} = R_{tot_a}\sum_{i=0}^{n}\cos\gamma_e^\diamond$	$= \sigma_{1_a} = \sigma_{2_a}\sum_{i=0}^{n}\cos\gamma_i^\diamond$	$= t_{1_a} = \sigma_{1_a}\sum_{i=0}^{n}\cos\gamma_e^\diamond$

The derived II-III quadrants of consummation $\left(plane \, \triangle_i^\diamond\right)$

The R-r plane is the origin plane of the intention: the whole relationship enfolds and unfolds from the Radii of the two conjoined individuals.

The internal plane $\triangle_i^\diamond$

$$\boxed{\textit{Consummative Thread: } r_i - \Delta t_i = R_{i_{Tot}} \quad \equiv \quad \sigma_2 - r_2 = R_{2_{Tot}} \quad \equiv \quad V_i\left(\sigma_1 - r_1 = R_{Tot}\right)}$$



$E_i^\diamond = t_i^\diamond/\tau_i^\diamond < 1$	$E_i^\diamond = t_i^\diamond/\tau_i^\diamond > 1$
$r_i^\diamond = \sigma_2 = \dfrac{\sigma_{2_a}^\diamond + \sigma_{2_b}^\diamond}{2} = R_{Tot}\dfrac{1+\cos^\diamond\gamma}{1-\cos^\diamond\gamma}$	$r_i^\diamond = r_2 = \dfrac{r_{2_a}^\diamond + r_{2_b}^\diamond}{2} = R_{Tot}\cos^\diamond\gamma\dfrac{1+\cos^\diamond\gamma}{1-\cos^\diamond\gamma}$
$t_i^\diamond = r_1 = \dfrac{r_{1_a}^\diamond + r_{1_b}^\diamond}{2} = R_{Tot}\dfrac{\cos\gamma^\diamond}{1-\cos^\diamond\gamma}$	$t_i^\diamond = r_1 = \dfrac{r_{1_a}^\diamond + r_{1_b}^\diamond}{2} = R_{Tot}\dfrac{\cos\gamma^\diamond}{1-\cos^\diamond\gamma}$
$\tau_i^\diamond = \sigma_1 = \dfrac{\sigma_{1_a}^\diamond + \sigma_{1_b}^\diamond}{2} = R_{Tot}\dfrac{1}{1-\cos\gamma^\diamond}$	$\tau_i^\diamond = r_1' = \dfrac{r_{1_a}'^\diamond + r_{1_b}'^\diamond}{2} = R_{Tot}\dfrac{\cos^2\gamma^\diamond}{1-\cos\gamma^\diamond}$
$V_i^\diamond = \dfrac{p^\diamond}{m} = \dfrac{r_i^\diamond}{\tau_i^\diamond} = 1+\cos\gamma^\diamond$	$V_i^\diamond = \dfrac{p^\diamond}{m} = \dfrac{r_i^\diamond}{\tau_i^\diamond} = \dfrac{1+\cos\gamma^\diamond}{\cos\gamma^\diamond}$

Indicating with R_x the radius of the individual x, we introduce the following symbolisms:

$$R_{Tot_a} = R_a\cos\gamma^\diamond + R_b \qquad \text{and} \qquad R_{Tot_b} = R_b\cos\gamma^\diamond + R_a$$

$$R_{Tot} = \frac{R_a + R_b}{2} \qquad R_{i_{Tot}} = R_{2_{Tot}} = \frac{R_{Tot_a} + R_{Tot_b}}{2} = R_{Tot}(1+\cos\gamma^\diamond)$$

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

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

$$r_{2_b} = \sigma_{2_b}\cos\gamma^\diamond \qquad r_{1_b} = \sigma_{1_b}\cos\gamma^\diamond$$

Since from fig. 4 : $\sin\gamma^\diamond = \dfrac{R_b}{\overline{Ah}^\diamond} = \dfrac{R_a}{\overline{bh}^\diamond}$ we have that the point h represents the barycenter of interaction, and $\sigma_1^\diamond = \overline{Ah}^\diamond + \overline{bh}^\diamond = \dfrac{R_a + R_b}{\sin^\diamond\gamma}$ (note that the segment $\bar{A}b$ is not a vector of the plane of the Act).
Note that

$$\overline{hO}^\diamond = \sin\varphi^\diamond\overline{bh}^\diamond = \frac{R_b}{\sigma_1^\diamond}\frac{R_a}{R_a + R_b}\sigma_1^\diamond = \frac{R_aR_b}{R_a + R_b} = \mu \tag{14}$$

since it doesn't depend on $\gamma^\diamond$, it is an invariant of every intention. The point of view of the barycentre coincide with the point of view of an inertial system.

The derived I-II quadrants of space-time and movement (phenomenon) $\left(plane \, \triangle_e^\diamond\right)$

Energy carries with it a structure which is the imprint of power of the world from which it derives and which is reflected in the mind of a conscious individual and appears there as an image: the photo of the world in the instant.

Time therefore arises only later, as a fundamental constituent of the phenomenon, in the mind of a conscious individual who extrapolates the current determinacy of the act by reiterating it both backwards, thus reconstructing the memory of the past, and forwards, building predictions of the future.

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

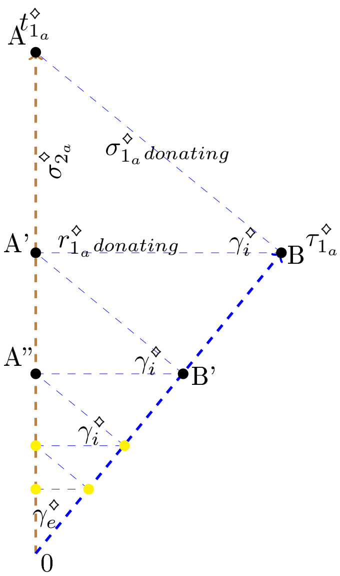
In the instant of the act, there is no difference between an inertial and a non-inertial system. Even in a purely inertial relationship each individual assumes a Radius R given by the fundamental equation of the geometry of the Act

$$V^\diamond = R_{Tot} : r^\diamond = r^\diamond : \tau^\diamond = p^\diamond$$

that is $R_{Tot} = p^\diamond r^\diamond$.
The difference with a non-inertial system lies only in the fact that in the first the radius is a function of the distance while in the other it is fixed.

The external plane $\triangle^\diamond_e$

$\boxed{\textit{Consummative Thread: } \Delta t_e + r_e = R_{e_{Tot}} \quad \equiv \quad \sigma_1 + r_1 = R_{Tot}}$



$E^\diamond_e = t^\diamond_e/\tau^\diamond_e < 1$	$E^\diamond_e = t^\diamond_e/\tau^\diamond_e > 1$
$r^\diamond_e = \sigma_1 = \dfrac{\sigma^\diamond_{1_a}+\sigma^\diamond_{1_b}}{2} = R_{Tot}\dfrac{1}{1-\cos\gamma^\diamond}$	$r^\diamond_e = r_1 = \dfrac{r^\diamond_{1_a}+r^\diamond_{1_b}}{2} = -R_{Tot}\dfrac{\cos\gamma^\diamond}{1-\cos\gamma^\diamond}$
$t^\diamond_e = \tau_1 = \dfrac{\tau^\diamond_{1_a}+\tau^\diamond_{1_b}}{2} = R_{Tot}\dfrac{\cos\gamma^\diamond}{(1-\cos\gamma^\diamond)^2}$	$t^\diamond_e = \tau_1 = \dfrac{\tau^\diamond_{1_a}+\tau^\diamond_{1_b}}{2} = R_{Tot}\dfrac{\cos\gamma^\diamond}{(1-\cos\gamma^\diamond)^2}$
$\tau^\diamond_e = t_1 = \dfrac{t^\diamond_{1_a}+t^\diamond_{1_b}}{2} = R_{Tot}\dfrac{1}{(1-\cos\gamma^\diamond)^2}$	$\tau^\diamond_e = t'_1 = \dfrac{t'^\diamond_{1_a}+t'^\diamond_{1_b}}{2} = R_{Tot}\dfrac{\cos^2\gamma^\diamond}{(1-\cos\gamma^\diamond)^2}$
$V^\diamond_e = \dfrac{R_{Tot}}{r^\diamond_e} = \dfrac{p^\diamond}{m} = \dfrac{r^\diamond_e}{\tau^\diamond_e} = 1-\cos\gamma^\diamond$	$V^\diamond_e = \dfrac{R_{Tot}}{r^\diamond_e} = \dfrac{p^\diamond}{m} = \dfrac{r^\diamond_e}{\tau^\diamond_e} = -\dfrac{1-\cos\gamma^\diamond}{\cos\gamma^\diamond}$

And at last

$$A^\diamond = \frac{d^2r}{dt^2} = \frac{dV^\diamond}{dr^\diamond} = -c^2\frac{V^{\diamond 2}}{R_{tot}} = -c^2\frac{R_b+R_a}{r^{\diamond 2}} = \frac{V^\diamond}{r^\diamond} = \frac{1}{\tau^\diamond} \tag{15}$$

Since each segment of the fig. 4 is the sum of a geometric series

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

and therefore

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

More generally, since $l_{x_a} = R_a f_x(\gamma)$ and $l_{x_b} = R_b f_x(\gamma)$, if we define $l_x = \dfrac{l_{x_a}+l_{x_b}}{2}$ we have :

$$\frac{l_{1_a}}{l_{2_a}} = \frac{l_{1_b}}{l_{2_b}} = \frac{l_1}{l_2} = \frac{f_1(\gamma)}{f_2(\gamma)}$$

and since both the potential, the velocity, the momentum and the energy are given by the length ratio of the same individual, we are free to choose as the reference system, indifferently A (l_{x_a}) or B (l_{x_b}) or the barycentric point (l_x).

In the case of inertial evolution, it's easy to find that the only constraint is $\gamma^\diamond$ constant. Vice versa, in the intention, the angle $\gamma^\diamond$ varies, but $V^\diamond r^\diamond = R_{Tot}$ must be a constant of the intention which manifests itself according to the scheme of fig. 4. It is natural to identify both the electric potential and the gravitational potential with $V^\diamond$.

The isomorphism between the derived I-II quadrants of the Act and the Minkowsky spacetime

We can represent the events A, B, A', B', ... of 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. 6).
The historical plane of the geometry of the act is composed only of the points of the mirroring sequence placed along the path of light. The segment of the light path, which is the object of the exchange, is itself the spatial dimension and the temporal dimension, orthogonal to it, which defines the individual subject of the exchange.
In the Minkowski spacetime, on the other hand, we have a continuous a priori spatial and temporal dimension, symmetrical to each other, both per se, both independent and alien to each other, which implicitly imply an infinite unnatural speed (mental infinite speed $dr/dt = \infty$), which constitute the absolute scenario, the background of the representation of reality, pre-existing and other from the represented reality. It necessarily follows that the representation of the only reality, which is the one-dimensional light path, is symmetrical with respect to the two symmetrical dimensions or, in other words, that the speed of light is constant and equal to c.

In the geometry of the act, reality is the relation of the Intention in its entirety. We look at the photo taken in one of the events of the sequence to trace the coordinates of all the previous events. In particular, the temporal and spatial coordinates of the events, in the geometry of the act, correspond respectively to the proper times $t^\diamond$ indicated by the wristwatches and to the difference between two successive times $x^\diamond = t_a^\diamond - \tau_b^\diamond$ that appear in the recursive mirroring photo.
In particular, for each individual in the relationship, if we number the events starting from vertex 0 towards the current event "n", since first we receive and then we donate, we have that, when $t^\diamond = T_n^\diamond = \tau_1$:

- when $E = t^\diamond/\tau^\diamond < 1$:
  - in the removal, the axis of historical time is that of donating and the subsequent event is donating at time $T_{n+1}^\diamond$ and therefore the distance is $x^\diamond = \sigma_1^\diamond = T_{n+1}^\diamond - T_n^\diamond$ and $\tau^\diamond = t_1^\diamond = T_{n+1}^\diamond$
  - in the approach, the axis of historical time is that of receiving and the previous event is receiving from time $T_{n+1}^\diamond$ and therefore the distance is $x^\diamond = \sigma_1^\diamond = T_{n+1}^\diamond - T_n^\diamond$ and $\tau^\diamond = t_1^\diamond = T_{n+1}^\diamond$
- when $E = t^\diamond/\tau^\diamond > 1$:
  - in the approach, the axis of historical time is that of donating and the subsequent event is donating at time $T_{n-1}^\diamond$ and therefore the distance is $x^\diamond = r_1^\diamond = T_{n-1}^\diamond - T_n^\diamond$ and $\tau^\diamond = t_1'^\diamond = T_{n-1}^\diamond$
  - in the removal, the axis of historical time is that of receiving and the previous event is receiving from time $T_{n-1}^\diamond$ and therefore the distance is $x^\diamond = r_1^\diamond = T_{n-1}^\diamond - T_n^\diamond$ and $\tau^\diamond = t_1'^\diamond = T_{n-1}^\diamond$

In other words, in the transition between the two cases, the temporal and spatial axis of the two individuals exchange.

In the space-time of Minkowski, on the contrary, there is a deconstruction of the reality of the intention, which loses its centrality and wholeness to give way to events per se. Indeed, we must use the local coordinates of the stationary particular reference system. As a result, while in the Geometry of the Act we use natural coordinates, with an immediate physical meaning, independent of the particular reference system, in the Minkowski spacetime coordinates vary as the reference system used varies.

The distance used by current physics is defined as half of the path taken by light to go from A to B and then, reflected, back, while, *by definition, the "time" required by light to travel from A to B equals the "time" it requires to travel from B to A.* (see. Einstein 2005 [28]).
From definition:

$$r = \sigma_2^\diamond/2 = \left(\sigma_1^\diamond + r_1^\diamond\right)/2 \qquad t = \left(t_1^\diamond + t_1'^\diamond\right)/2$$

Finally, next to the plan $\triangle_e^\diamond$ of the act, from the combination of the two planes $\triangle_i^\diamond \triangle_e^\diamond$ (2) unfolds the Euclidean spacetime of the Act where, in the consummative thread, $d\left(R_i = \Delta t_i^\diamond - r_i^\diamond\right) d\left(R_e = \Delta t_e^\diamond + r_e^\diamond\right) = d\left(R^2 = \Delta t^{\diamond 2} - r^{\diamond 2}\right)$.
Indeed in a field, where the angle $\gamma^\diamond$ varies point by point with $r^\diamond$, the thread equation is valid only along an extremely small, but not infinitesimal, segment $dr^\diamond$.
About the mapping between the coordinates of the Euclidean Spacetime of the Act and the Riemannian manifold of GTR, since in the metric R and r are constant, we have $dr = dr^\diamond$ and $dt = dt^\diamond$.

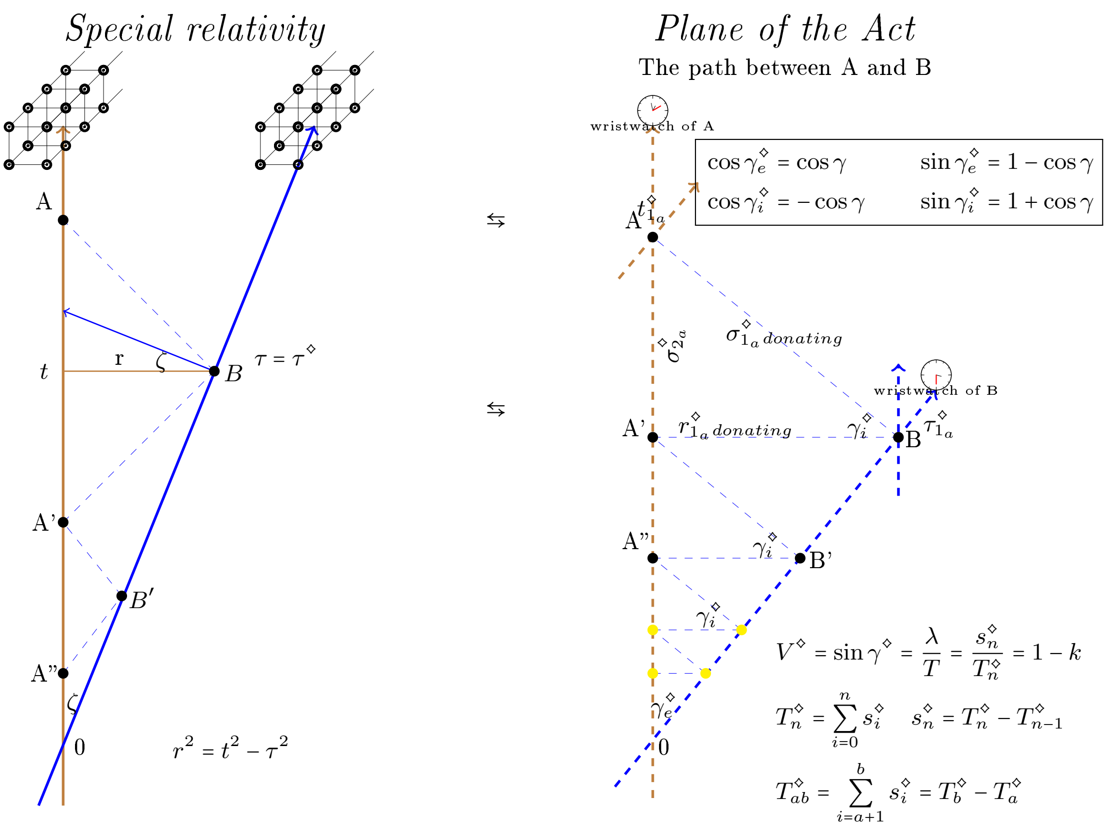


Figure 6. isomorphism: in comparison the representations of the geometric progression A, B, A', B', A'', B'', ... with $k = \cos\gamma$ as the common ratio, deriving from the recursive mirroring of individuals A and B (see fig. 2).

	MINKOWSKI SPACETIME *Inertial*	Field	*LINEAR IP SPACETIME* $\triangle_e^\diamond$ *(Inertial ≡ Field)* $E_e^\diamond = dt_e^\diamond/d\tau_e^\diamond < 1$	$E_e^\diamond = dt_e^\diamond/d\tau_e^\diamond > 1$
R	$R = R_{Tot} = (R_a + R_b)/2$			
r	$r = \left(\sigma_1^\diamond + r_1^\diamond\right)/2 = r^\diamond \pm R/2$	$dr = dr^\diamond$	$r_e^\diamond = \sigma_1^\diamond$	$r_e^\diamond = -r_1^\diamond$
t	$t = \left(t_1^\diamond + t_1'^\diamond\right)/2 = t^\diamond \pm r$	$dt = dt^\diamond$	$t_e^\diamond = \tau_1^\diamond$	$t_e^\diamond = \tau_1^\diamond$
τ	τ	$d\tau = d\tau^\diamond$	$\tau_e^\diamond = t_1^\diamond$	$\tau_e^\diamond = t_1'^\diamond$
v	$v = r/t = \tanh\zeta$		$v_e^\diamond = r_e^\diamond/t_e^\diamond = \tan^\diamond\gamma_e$	$v_e^\diamond = r_e^\diamond/t_e^\diamond = -\sin^\diamond\gamma_e$
Potential		$V = \pm R/r$	$V_e^\diamond = R/r_e^\diamond = \sin^\diamond\gamma_e$	$V_e^\diamond = R/r_e^\diamond = -\tan^\diamond\gamma_e$
g_{00}		$1 - 2V$	$\left(1 - V_e^\diamond\right)^2 = \cos^2\gamma_e^\diamond$	$\left(1 - V_e^\diamond\right)^2 = 1/\cos^2\gamma_e^\diamond$

(16)

In fig 4 the two temporal axes of the two individuals in relation lie in the same plane. In the most general case, the two temporal axes lie on parallel planes. Indicating with r_0 the point of maximum proximity:

$$\sin\lambda^\diamond = \frac{r_0^\diamond}{r_e^\diamond} \qquad \cos\lambda^\diamond = 1 - \sin\lambda^\diamond \tag{17}$$

and therefore

$$v^\diamond = \left(\sin\lambda^\diamond + \cos\lambda^\diamond\right)\sin\gamma^\diamond \qquad \text{or} \qquad \frac{L}{m\,r_e^\diamond} = \sin\lambda^\diamond \sin\gamma^\diamond \qquad \frac{dr_e^\diamond}{d\tau_e^\diamond} = \cos\lambda^\diamond \sin\gamma^\diamond$$

Both the linear Plane of the Act $\triangle_e^\diamond$ and the Euclidean spacetime of the Act that unfolds from the two planes $\triangle_i^\diamond\triangle_e^\diamond$ are isomorphic to the spacetime of current physics, both the Minkowski and the Riemannian manifold.

$$\boxed{dl^\diamond = dl^\diamond G(\triangle_e^\diamond) = f_\mu^\diamond(\gamma_e^\diamond)ds_{e_\mu}^\diamond \xrightarrow[Euclid]{} dl^{\diamond 2} = dl^{\diamond 2}\mathbb{G}(\triangle_i^\diamond)\mathbb{G}(\triangle_e^\diamond) = f_\mu^2(\gamma)ds_\mu^{\diamond 2} \xrightarrow[Minkowski/manifold]{isomorphism} dl^2 = f_\mu^2(\zeta)ds_\mu^2} \tag{18}$$

Furthermore, from the (16) we have:

$$V = \frac{V^\diamond}{1+V^\diamond/2} = V^\diamond\left(1-\frac{V^\diamond}{2}\right)\frac{1}{1-V^{\diamond 2}/4} = V^\diamond\left(1-\frac{V^\diamond}{2}\right)\left(1+\frac{V^{\diamond 2}}{4}\right)\frac{1}{1-V^{\diamond 4}/16} = \cdots \tag{19}$$

and therefore, for $|V| \ll 1$, stopping at the infinitesimals of the first order we have:

$$g_{00} \simeq \left(1-2V^\diamond\left(1-\frac{V^\diamond}{2}\right)\right) = \left(1-V^\diamond\right)^2 = g_{00}^\diamond \tag{20}$$

Note that, in the current theory of gravitation, the determination of the component of the metric tensor $g_{00} = (1 - constant/r)$, depends on the assumption of a centrally symmetrical field in a vacuum, that is, far from the masses that generate it, setting the stress energy tensor equal to zero.
We now know, from cosmology, that in addition to baryonic matter there is a further component of matter of universe called cdm (cold dark matter). We can therefore say that there is no vacuum in the universe or that the stress energy tensor does not actually reset moving away from the center of the field. It is indeed possible to show that setting the Radius of the cold dark matter $R_{cdm} = \frac{r^{\diamond 2}}{R_\omega}$ (according to the fundamental relation $R : r^\diamond = r^\diamond : \tau^\diamond$), we have $g_{00} = \left(1-\frac{constant}{r^\diamond}\right)^2 = \left(1-\frac{R_{Tot}}{r^\diamond}\right)^2$ as required by the Intention scheme.

Except for the above approximation (20), the Riemannian manifold of <u>General Relativity coincides</u> point by point with the Euclidean geometry of the Act. Conversely, <u>Special Relativity diverges</u> remaining isomorphic.

About the mapping between the angles ζ of Special Relativity and $\gamma^\diamond$, since

$$\begin{cases} t_1^\diamond = t + r = \tau_1^\diamond/\cos\gamma^\diamond \\ t'^\diamond = t - r = \tau_1^\diamond\cos\gamma^\diamond \end{cases} \quad\Rightarrow\quad \begin{cases} t_1^\diamond = \tau\cosh\zeta + \tau\sinh\zeta = \tau_1^\diamond/\cos\gamma^\diamond \\ t_1'^\diamond = \tau\cosh\zeta - \tau\sinh\zeta = \tau_1^\diamond\cos\gamma^\diamond \end{cases}$$

we have:

$$e^{-\zeta} \quad \equiv \quad \cos\gamma^\diamond \tag{21}$$

THE THREE SYMMETRIES OF THE GEOMETRY OF THE DISCRETE ACT

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

$$R = \Delta t_e^\diamond - r_e^\diamond \qquad \text{or} \qquad R = E_e^\diamond - P_e^\diamond \qquad \text{and} \qquad R^2 = \Delta t^{\diamond 2} - r^{\diamond 2} \qquad \text{or} \qquad R^2 = E^{\diamond 2} - P^{\diamond 2}$$

$$R : r^\diamond = r^\diamond : \tau^\diamond \quad \text{that is} \quad V^\diamond(\gamma -^\diamond \epsilon) \equiv P^\diamond(\gamma -^\diamond \epsilon) = V_\gamma^\diamond + p_\epsilon^\diamond$$

and the three fundamental symmetries:

1. Symmetry *gravitation ↔ electricity* or $R_\bullet R^\circ = 1$
2. Symmetry *attraction ↔ repulsion* or $E_{attraction}^\diamond E_{repulsion}^\diamond = 1$
3. Symmetry *inside ↔ outside* or $V_{inside}^\diamond V_{outside}^\diamond = 1$

The First Symmetry: Gravitation - Electricity

The relation between gravitation and electricity is that they are each the mirror of the other:

$$R^{\circ}{}_a = 1/R_{\bullet b} \tag{22}$$

The Intention demands that the period of the two individuals in intention be the same (see fig. 4).
From the De Broglie relation $\lambda = h/p$, imposing $p_a = p_b$ (momentum conservation) and then $\lambda_a = \lambda_b$ we have:

$$\begin{aligned} \lambda_a = \; & 2\pi \frac{R^{\circ}{}_b}{\sin^{\diamond}\varphi} = \lambda_b = 2\pi \frac{R^{\circ}{}_a}{\sin^{\diamond}\psi} = 2\pi r \quad \text{(from intention schema)} \\ \lambda_a = \; & 2\pi \frac{\hbar}{p_a} = \lambda_b = 2\pi \frac{\hbar}{p_b} = 2\pi r \quad \text{(from De Broglie relation)} \end{aligned} \tag{23}$$

And therefore (the term $\hbar$ depends on the unit of measure adopted):

$$p_a^{\diamond} = m_a \sin^{\diamond}\varphi = R^{\circ}{}_b^{-1} \sin^{\diamond}\varphi \quad \text{or} \quad R_{\bullet a} = R^{\circ}{}_b^{-1} \qquad p_b^{\diamond} = m_b \sin^{\diamond}\psi = R^{\circ}{}_a^{-1} \sin^{\diamond}\psi \quad \text{or} \quad R_{\bullet b} = R^{\circ}{}_a^{-1}$$

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

$$\frac{R_{\bullet b}}{\sin^{\diamond}\psi} = \frac{R_{\bullet a}}{\sin^{\diamond}\varphi} \quad \text{in the gravitational case} \qquad \frac{R^{\circ}{}_b}{\sin^{\diamond}\psi} = \frac{R^{\circ}{}_a}{\sin^{\diamond}\varphi} \quad \text{in the electrical case}$$

$$V_{\bullet}^{\diamond} = \frac{G}{c^2}\frac{(M_a + M_b)}{r^{\diamond}} = \frac{R_{\bullet Tot}}{r^{\diamond}} \qquad V^{\circ\diamond} = n_a n_b \frac{Q^2 c^2}{4\pi\varepsilon_0}\frac{\left(M_a^{-1} + M_b^{-1}\right)}{r^{\diamond}} = n_a n_b \frac{R^{\circ}_{Tot}}{r^{\diamond}}$$

The gravitational radius mirrors itself in the other as the electrical radius $R^{\circ} = 1/R_{\bullet}$ and both, always joined, share the same intention schema. Since both the gravitational radius $R_{\bullet a}$ and the electric radius $R^{\circ}{}_a = 1/R_{\bullet b}$ are in the same place, the center of gravity of electricity and gravitation is the same.
The law of the equality of the inertial and gravitational mass is therefore equivalent to both the assertion:

- that the acceleration imparted to a body by a gravitational field is independent of the nature of the body;
- that the electric field and its acceleration imparted to a body depend only on the nature of the body itself.

This overturned parallelism is the same between $R_{\bullet}$ and its mirror on other R°.

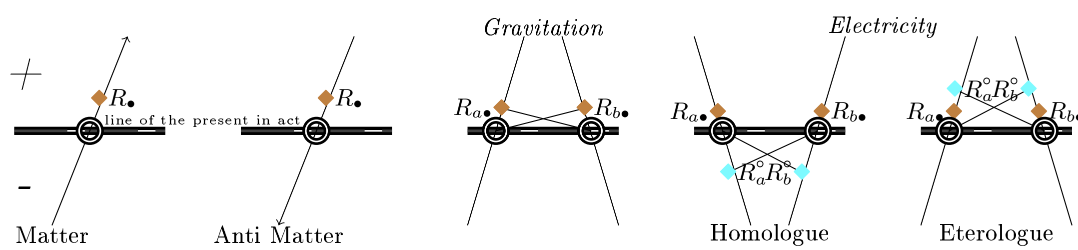


Figure 7. The sign of acceleration: The $R_{\bullet}$ is advanced and therefore positive for matter. The mirror R°, being reflected into the other, appears on the opposite side if the two conjugated individuals in the intention are homologue, on the same side elsewhere.

The Second Symmetry: attraction ↔ repulsion

In the geometry of the Act, there is no difference between an inertial system and a non-inertial system, since what matters is the moving away-approaching direction and the giving-receiving direction.
Therefore it must be possible to formulate the metric of a field, as well as the metric of an inertial system, starting from the Lorentz transformation, and it must be possible to demonstrate that the two metrics are two particular aspects of a more general one.

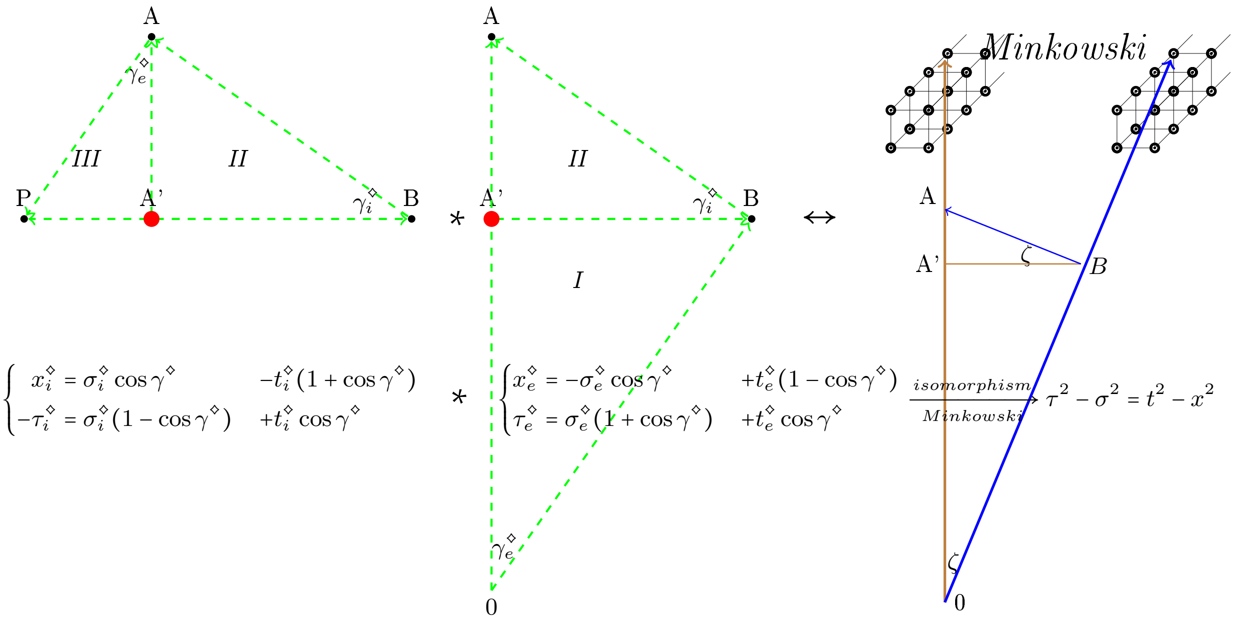


Figure 8. the energy plane (III-II quadrant) is the primitive plane. The plane of movement (I-II quadrant) comes from the historical reconstruction of consummation backward and forward in time. The combination of these two planes of the Act generates Euclidean spacetime where the phenomenon emerging from the intention takes hold.

The Geometry of the Act, thanks to its left-right and up-down symmetries, presents four Lorentz transformations:

Velocity Plane (I-II quadrant) $\leftrightarrow$ Potential Plane (II-III quadrant)

$$\text{ATTRACTION: } \frac{E^\diamond}{m} = \frac{t^\diamond}{\tau^\diamond} < 1 \quad \leftrightarrow \quad \begin{cases} x_e^\diamond = & \sigma_e^\diamond \cos^\diamond \Gamma_i + t_e^\diamond \sin^\diamond \Gamma_e \\ \tau_e^\diamond = & \sigma_e^\diamond \sin^\diamond \Gamma_i + t_e^\diamond \cos^\diamond \Gamma_e \end{cases} \quad \leftrightarrow \quad \begin{cases} x_i^\diamond = & \sigma_i^\diamond \cos^\diamond \Gamma_e - t_i^\diamond \sin^\diamond \Gamma_i \\ -\tau_i^\diamond = & \sigma_i^\diamond \sin^\diamond \Gamma_e - t_i^\diamond \cos^\diamond \Gamma_i \end{cases} \tag{24}$$

$$\text{REPULSION : } \frac{E^\diamond}{m} = \frac{t^\diamond}{\tau^\diamond} > 1 \quad \leftrightarrow \quad \begin{cases} \sigma_e^\diamond = & x_e^\diamond \cos^\diamond \Gamma_i + \tau_e^\diamond \sin^\diamond \Gamma_e \\ t_e^\diamond = & x_e^\diamond \sin^\diamond \Gamma_i + \tau_e^\diamond \cos^\diamond \Gamma_e \end{cases} \quad \leftrightarrow \quad \begin{cases} \sigma_i^\diamond = & x_i^\diamond \cos^\diamond \Gamma_e - \tau_i^\diamond \sin^\diamond \Gamma_i \\ -t_i^\diamond = & x_i^\diamond \sin^\diamond \Gamma_e - \tau_i^\diamond \cos^\diamond \Gamma_i \end{cases} \tag{25}$$

The difference between an inertial ($\gamma = 0$) and a non-inertial steady static ($\epsilon = 0$) system is that in the first the distance varies with time, while in the second it does not. Yet in the instant there is no difference and the inertial system can be assimilated to:

- a repulsive field with $\dfrac{E^\diamond}{m_0c^2} = \dfrac{1}{\cos^\diamond \epsilon_0}$ and $\dfrac{P^\diamond}{m_0c} = \tan^\diamond \epsilon_0$ when the specific energy is greater than 1;
- an attractive field with $\dfrac{E^\diamond}{m_0c^2} = \cos^\diamond \epsilon_0$ and $\dfrac{P^\diamond}{m_0c} = \sin^\diamond \epsilon_0$ when the specific energy is less than 1.

To find the particular metric of a inertial system, we start from the (25) where $\Gamma = \epsilon^\diamond$ and $\sin^\diamond \epsilon$ is the speed:

Minkowski space-time	$\leftrightarrow$	Velocity Plane (I-II quadrant)	$\leftrightarrow$	Potency Plane (II-III quadrant)

$$\begin{cases} \sigma = & x\cos\zeta - ict\sin\zeta \\ ic\tau = & x\sin\zeta + ict\cos\zeta \end{cases} \quad \leftrightarrow \quad \begin{cases} \sigma_e^\diamond = & x_e^\diamond \cos^\diamond \epsilon_i + \tau_e^\diamond \sin^\diamond \epsilon_e \\ t_e^\diamond = & x_e^\diamond \sin^\diamond \epsilon_i + \tau_e^\diamond \cos^\diamond \epsilon_e \end{cases} \quad \leftrightarrow \quad \begin{cases} \sigma_i^\diamond = & x_i^\diamond \cos^\diamond \epsilon_e - \tau_i^\diamond \sin^\diamond \epsilon_i \\ -t_i^\diamond = & x_i^\diamond \sin^\diamond \epsilon_e - \tau_i^\diamond \cos^\diamond \epsilon_i \end{cases} \tag{26}$$

which immediately gives the metric for an inertial system:

$$dl^2 = dt^2 - dx^2 \qquad \leftrightarrow \qquad l^\diamond = t_e^\diamond - x_e^\diamond \qquad \leftrightarrow \qquad l^\diamond = t_i^\diamond + x_i^\diamond$$

The four relations of the plan of the act represent the four variants (four components of the wave-function) of the equation:

$$t_e^\diamond = x_e^\diamond \sin^\diamond \epsilon_i + \tau_e^\diamond \cos^\diamond \epsilon_e \quad \Longrightarrow \quad \frac{t_e^\diamond}{\tau_e^\diamond}\frac{1}{\cos^\diamond \epsilon_e} - \frac{x_e^\diamond}{\tau_e^\diamond}\frac{\sin^\diamond \epsilon_i}{\cos^\diamond \epsilon_e} = 1 \quad \Longrightarrow \quad E_e^\diamond = \frac{t_e^\diamond}{\tau_e^\diamond} = \frac{1}{\cos^\diamond \epsilon_e} \quad p_e^\diamond = \frac{x_e^\diamond}{\tau_e^\diamond} = \frac{\sin^\diamond \epsilon_e}{\cos^\diamond \epsilon_e} \tag{27}$$

On the other hand, to find the particular metric of a non-inertial system, we start from the (24) where $\Gamma = \gamma^\diamond$ and $\sin^\diamond \gamma$ is the potential $V^\diamond$:

$$\begin{cases} \sigma = \dfrac{x - vt}{\sqrt{1-v^2}} \\ \\ \tau = \dfrac{t - vx}{\sqrt{1-v^2}} \end{cases} \quad \leftrightarrow \quad \begin{cases} \sigma_e^\diamond = \dfrac{x_e^\diamond - V_e t_e^\diamond}{1 - V_i} \\ \\ \tau_e^\diamond = (1 - V_e) t_e^\diamond + V_i \sigma_e^\diamond \end{cases} \quad \leftrightarrow \quad \begin{cases} \sigma_i^\diamond = \dfrac{x_i^\diamond + V_i t_i^\diamond}{1 - V_e} \\ \\ -\tau_i^\diamond = -(1 - V_i) t_i^\diamond + V_e \sigma_i^\diamond \end{cases}$$

where since

$$x = vt - r \qquad \leftrightarrow \qquad x_e^\diamond = V_e t_e^\diamond - r_e^\diamond \qquad \leftrightarrow \qquad x_i^\diamond = -V_i t_i^\diamond + r_i^\diamond$$

we have at last:

$$\begin{cases} \text{Minkowski s.-t.} \\ \\ \sigma = \dfrac{r}{\sqrt{1-v^2}} \\ \\ \tau = \sqrt{1-v^2}\,t + v\sigma \end{cases} \quad \leftrightarrow \quad \begin{cases} \text{Velocity Plane (I-II)} \\ \\ \sigma_e^\diamond = \dfrac{r_e^\diamond}{V_i - 1} \\ \\ \tau_e^\diamond = (1 - V_e) t_e^\diamond + V_i \sigma_e^\diamond \end{cases} \quad \leftrightarrow \quad \begin{cases} \text{Potential Plane (II-III)} \\ \\ \sigma_i^\diamond = \dfrac{r_i^\diamond}{1 - V_e} \\ \\ -\tau_i^\diamond = (V_i - 1) t_i^\diamond + V_e \sigma_i^\diamond \end{cases} \tag{28}$$

Now, in an inertial system we have $\sigma^\diamond = V^\diamond t^\diamond$, that is, the distance varies with time. Instead, in an inertial system, no.
In other words, since in a field the Radius $V^\diamond r^\diamond = R = constant$, the term $d(V^\diamond \sigma^\diamond)$ in the second rows of (28) cancel. Analogously, in the manifold of current physics, $v\sigma$ cancels, therefore $dt = dt^\diamond$ and $dr = dr^\diamond$ and $\sqrt{1-v^2} = 1 - V_e = \cos\gamma$.

$$dl^2 = dt^2 \cos^2\gamma - \frac{dr^2}{\cos^2\gamma} \quad \leftrightarrow \quad = dl^2 = dt^{\diamond 2} \cos^2\gamma - \frac{dr^{\diamond 2}}{\cos^2\gamma} \quad = \quad \begin{cases} \sigma_e^\diamond = \dfrac{r_e^\diamond}{V_i - 1} \\ -\tau_e^\diamond = (1 - V_e) t_e^\diamond \end{cases} \quad * \quad \begin{cases} \sigma_i^\diamond = \dfrac{r_i^\diamond}{1 - V_e} \\ -\tau_i^\diamond = (V_i - 1) t_i^\diamond \end{cases} \tag{29}$$

More generally, the complete universal metric is

$$\begin{bmatrix} x_e^\diamond \\ \tau_e^\diamond \\ \sigma_{e\perp}^\diamond \end{bmatrix} = \begin{bmatrix} [\varphi^\diamond] \cdot & [\vartheta^\diamond] \cdot & [\psi^\diamond] \end{bmatrix} \cdot \begin{bmatrix} \sigma_e^\diamond \\ t_e^\diamond \\ r_{e\perp}^\diamond \end{bmatrix}$$

$$\begin{bmatrix} x_e^\diamond \\ \tau_e^\diamond \\ \sigma_{e\perp}^\diamond \end{bmatrix} = \left[\begin{bmatrix} \cos\varphi^\diamond & \sin\varphi^\diamond & 0 \\ -\sin\varphi^\diamond & +\cos\varphi^\diamond & 0 \\ 0 & 0 & 1 \end{bmatrix} \cdot \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos\vartheta^\diamond & +\sin\vartheta^\diamond \\ 0 & -\sin\vartheta^\diamond & \cos\vartheta^\diamond \end{bmatrix} \cdot \begin{bmatrix} \cos\psi^\diamond & \sin\psi & 0 \\ -\sin\psi^\diamond & +\cos\psi^\diamond & 0 \\ 0 & 0 & 1 \end{bmatrix} \right] \cdot \begin{bmatrix} \sigma_e^\diamond \\ t_e^\diamond \\ r_{e\perp}^\diamond \end{bmatrix} \tag{30}$$

where $\varphi^\diamond +^\diamond \psi^\diamond = \gamma^\diamond$, and:

$$\tan\vartheta = i\frac{(L+J)/m}{r} \tag{31}$$

where (L+J) is the Total angular momentum operator.
Since $x_e^\diamond = r_e^\diamond + a_{12} t_e^\diamond + a_{13} r_{e\perp}^\diamond$ where $r^\diamond$ is the axis of nodes, we can replace $x_e^\diamond$ with $r_e^\diamond$ and set $r_e^\diamond = a_{11}\sigma_e^\diamond$.
Also, since the distance does not vary with time and $\perp$, the terms a_{21} and a_{31} also cancel out.

$$\begin{bmatrix} r_e^\diamond \\ \tau_e^\diamond \\ \sigma_{e\perp}^\diamond \end{bmatrix} = \begin{bmatrix} a_{11} & 0 & 0 \\ 0 & a_{22} & a_{23} \\ 0 & a_{32} & a_{33} \end{bmatrix} \cdot \begin{bmatrix} \sigma_e^\diamond \\ t_e^\diamond \\ r_{e\perp}^\diamond \end{bmatrix}$$

At last, when the angle $\varphi^\diamond = 0$ (that is, $\gamma^\diamond = \psi^\diamond$)

$$\left[l\right] = \begin{bmatrix} \sigma_e^\diamond \\ \tau_e^\diamond \\ \sigma_{e\perp}^\diamond \end{bmatrix} = \begin{bmatrix} 1/\cos\psi^\diamond & 0 & 0 \\ 0 & \cos\psi^\diamond\cos\vartheta^\diamond & -\sin\vartheta^\diamond \\ 0 & \sin\vartheta^\diamond\cos\psi^\diamond & \cos\vartheta^\diamond \end{bmatrix} \cdot \begin{bmatrix} r_e^\diamond \\ t_e^\diamond \\ r_{e\perp}^\diamond \end{bmatrix}$$

which gives :

$$dl = \mathbb{G}\left(\triangle_e^\diamond\right) = \left(1 - V^\diamond\right) c dt_e^\diamond - \frac{dr_e^\diamond}{(1 - V^\diamond)} - r_{e\perp}^\diamond \qquad dl^2 = \mathbb{G}\left(\triangle_i^\diamond\right)\cdot\mathbb{G}\left(\triangle_e^\diamond\right) = \left(1 - V^\diamond\right)^2 c^2 dt^{\diamond 2} - \frac{dr^{\diamond 2}}{\left(1 - V^\diamond\right)^2} - r^{\diamond 2} d\phi^2 \tag{32}$$

or equivalently:

$$\left[d\vec{l}\right] \equiv \frac{dr^\diamond}{1 - V^\diamond}\hat{\mathbf{e}}_r + \left\{idt^\diamond\left(1 - V^\diamond\right)\cos\vartheta - r^\diamond d\phi\sin\vartheta\right\}\hat{\mathbf{e}}_t + \left\{idt^\diamond\left(1 - V^\diamond\right)\sin\vartheta + r^\diamond d\phi\cos\vartheta\right\}\hat{\mathbf{e}}_\phi \tag{33}$$

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

$$\mathbf{U}^\diamond = \frac{1}{2}mc^2\left[\frac{E_0^{\diamond 2}}{m^2c^4} - 1\right] = \frac{1}{2}mc^2\left[-2V^\diamond + \left(V^{\diamond 2} + \left(\frac{dr^\diamond}{d\tau^\diamond}\right)^2\right) + \frac{L^2}{m^2R^2c^2}V^{\diamond 2}\left(1 - V^\diamond\right)^2\right] \tag{34}$$

Equivalently, the linear and quadratic quantum form:

$$\left(i\frac{\partial}{\partial x^\diamond} + i\frac{\partial}{\partial t^\diamond} + \frac{2\pi}{R}\right)\Psi^\diamond = \left(E_{e_\mu}^\diamond + P_{e_\mu}^\diamond - m\right)\Psi_\mu^\diamond = 0 \qquad \frac{d}{d\tau^\diamond}\Psi^\diamond = \left(i\frac{\partial}{\partial x^\diamond}\frac{dx^\diamond}{d\tau^\diamond} + i\frac{\partial}{\partial t^\diamond}\frac{dt^\diamond}{d\tau^\diamond} + \frac{2\pi}{R}\right)\Psi_\mu^\diamond = \left(E^{2\diamond} - P^{2\diamond} - m^2\right) = 0 \tag{35}$$

The General Metric and General energy–momentum relation

Finally, the generalization of the energy-momentum relationship is equivalent to saying that any relationship (any system) in free natural motion is characterized by the (24 or 25) and the constancy of the angle $\Gamma_{\pm e} = \gamma_{\pm e} -^\diamond \epsilon_{\pm e}$.

$$\left(\frac{\partial}{\partial x^\diamond} + \frac{\partial}{\partial t^\diamond}\right) f(x^\diamond, t^\diamond) = E_x \pm P_y = m \quad x \neq y \text{ and } x, y \in \{e, i\} \tag{36}$$

$$\frac{\partial}{\partial \mu^\diamond}\frac{d\mu^\diamond}{d\tau^\diamond}\Psi^\diamond = \mathbb{G}\left(\triangle_i^\diamond\right)\cdot\mathbb{G}\left(\triangle_e^\diamond\right) = E^{\diamond 2} - P^{\diamond 2} = \left(m_0c^2\right)^2 \tag{37}$$

From the (8) and (9)

$$\begin{aligned} P_e^\diamond &= \sin^\diamond\Gamma_{\pm e} = \sin^\diamond\gamma_{\pm e} - \sin^\diamond\epsilon_{\pm e} \qquad E_{\pm e}^\diamond = \cos^\diamond\Gamma_{\pm e} = \cos^\diamond\gamma_{\pm e} + \sin^\diamond\epsilon_{\pm e} \\ P_i^\diamond &= \sin^\diamond\Gamma_{\pm i} = \sin^\diamond\gamma_{\pm i} - \sin^\diamond\epsilon_{\pm e} \qquad E_{\pm i}^\diamond = \cos^\diamond\Gamma_{\pm i} = \cos^\diamond\gamma_{\pm i} + \sin^\diamond\epsilon_{\pm e} \end{aligned} \tag{38}$$

$$P^{\diamond 2} = \sin^2\Gamma_\pm = \sin^\diamond\Gamma_{\pm i}\sin^\diamond\Gamma_{\pm e} = \sin^2\gamma_\pm - \sin^2\epsilon_\pm \qquad E^{\diamond 2} = \cos^2\Gamma_\pm = \cos^2\gamma_\pm + \sin^2\epsilon_\pm \tag{39}$$

and thanks to unique proportion of the intention schema, we can express trigonometric functions as a function of distance and time:

$$E_e^\diamond = \cos^\diamond(\Gamma_{\pm e}) = \cos^\diamond\left(\gamma_{\pm e} -^\diamond \epsilon_{\pm e}\right) = \cos^\diamond\gamma_{\pm e} + \sin^\diamond\epsilon_{\pm e} = 1 - P_e^\diamond = 1 - V_e^\diamond + T_e^\diamond = 1 - \frac{x_{\gamma_e}^\diamond - x_{\epsilon_e}^\diamond}{\tau_e^\diamond} \tag{40}$$

It is evident that, in the presence of a field, the kinetic moment $\frac{x^\diamond_{\epsilon_e}}{\tau^\diamond_e}$ is gradually translated into a field moment $\frac{x^\diamond_{\gamma_e}}{\tau^\diamond_e}$ so that the global specific moment $\frac{P^\diamond_e}{m_0 c} = \frac{x^\diamond_{\gamma_e} - x^\diamond_{\epsilon_e}}{\tau^\diamond_e}$ and global specific energy $E^\diamond_e = 1 - \frac{P^\diamond_e}{m_0 c}$ are conserved.

In other words, the conservation of momentum and energy in free motion involves the conservation of:

$$\frac{R_\gamma}{x^\diamond_\gamma} - \frac{R_\epsilon}{x^\diamond_{\epsilon_e}} = \frac{x^\diamond_{\gamma_e} - x^\diamond_{\epsilon_e}}{\tau^\diamond_e} = V^\diamond_0 \qquad \text{or} \qquad \frac{R}{r^\diamond_e} = \frac{r^\diamond_e}{\tau^\diamond_e} = V^\diamond_0 \tag{41}$$

At last, the general equations (37), valid for any system regardless of whether it is inertial or immersed in a field, can be made more explicit in the following linear and dual quadratic form :

$$E^\diamond_e = m_0 c^2 \left(\left(1 - V^\diamond\right) + \frac{dr^\diamond_e}{d\tau^\diamond_e} + \frac{(J+L)}{(m_0 r^\diamond_e)} \left(1 - V^\diamond\right) \right) = m_0 c^2 \left(\cos \gamma^\diamond_\pm + \sin^\diamond \epsilon^\diamond_\pm \left[\sin^\diamond \lambda + \cos^\diamond \lambda \right] \right) \tag{42}$$

$$E^\diamond = m_0 c^2 \sqrt{ \left(1 - V^\diamond\right)^2 + \frac{dr^{\diamond 2}}{d\tau^{\diamond 2}} + \frac{(J+L)^2}{(m_0 r^\diamond)^2} \left(1 - V^\diamond\right)^2 } = m_0 c^2 \sqrt{ \cos^2 \gamma_\pm + \sin^2 \epsilon_\pm \left[\sin^2 \lambda + \cos^2 \lambda \right] } \tag{43}$$

Within the limits of the approximation (20), $g_{00} \simeq g^\diamond_{00}$, we have $E^\diamond = E$, that is, agreement with GTR, both in the free fall when $\Gamma^\diamond = 0$, that is $E^\diamond = m_0 c^2$, and when $dr = 0$. In the first case, we have $\gamma^\diamond = \epsilon^\diamond$ and $p^\diamond = p = m \sin \epsilon$. In the second case we have the circular motion and the static relationship at rest.

In the remaining cases, i.e. when $\Gamma^\diamond \neq 0$ or in inertial systems, in fact, they diverge from the parallel equations used by current physics, since $E = \cosh \zeta \neq E^\diamond = 1/\cos \epsilon$, although the relative measures are convertible into each other thanks to isomorphism of Eq.21). This divergence highlights that, in current physics, the energy of an inertial system (SR) does not harmonize with the field energy (GTR).

The Third Symmetry: Inside-Outside

The Taxonomy of Relationship

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

The amorone $R_\alpha = R_\omega^{-1}$ is the unique elementary individual and is the substance of universe. All the gravitation and the mirroring is between and by means of amoroni. The amorone is the unit of measure of universe. It is the Graviton and the Cold Dark Matter.
The curvature of light shows that even light, although instantaneous, interacts gravitationally through the exchange of amoroni according to the scheme of fig.4). The Amorone consummates with a period R_ω (i.e. the age of the universe); the Universe, vice-versa, consummates with a period R_α. In the period of a single Amorone, therefore, the Universe consummates $\aleph = R_\omega / R_\alpha = R^2_\omega$ times, keeping in existence all the $\aleph = R^2_\omega$ amoroni. The amoroni are therefore all in potency except one at a time.

Now, from the communion of the amoroni, only two elementary individuals emerge. We will indicate these two elementary individuals by R_{univ}. In details, R_{univ} is the gravitational radius of the universe R_ω or the electrical radius of the electron R°_e. The relationship $V = R : r = r : \tau^\diamond$ specializes in these two relations which reveal the symmetry between inside and outside:

$$V^\diamond = R(r) : r^\diamond = r^\diamond : \tau^\diamond_{max} \qquad \text{when} \quad r^\diamond \leq R_{univ} \quad \textit{and} \quad \tau^\diamond_{max} = R_{univ} \tag{44}$$

$$V^\diamond = R : r^\diamond = r^\diamond : \tau^\diamond(r) \qquad \text{when} \quad r^\diamond \geq R_{univ} \tag{45}$$

We have now three special applications of this relation :

1. **the Inertial relationship**: By keeping constant the angle γ, it describes the relation of approaching or moving away between two individuals in an inertial space. In the inertial relationship each of the two individuals assumes a moving Radius $R_{cdm} = r^\diamond V^\diamond = r^{\diamond 2}/\tau^\diamond$ with respect to the other, where $\tau^\diamond_{max} = R_\omega$ or $V^\diamond_{min} = r^\diamond/R_\omega$.

2. **the Communion relationship**: ($R_{univ} = R_\omega$ see eq.44) is the constituent relationship between the matter and the emergent individual. It includes:

   (a) **the Constituent relationship**:

   The amorone $R_\alpha = R_\omega^{-1}$ is the unique elementary individual and the communion of amoroni gives rise to only two emergent compound individuals: the Electron and the Universe.

   Indeed, amoroni attract each other immensely because each one sees in the other the entire universe, until the resulting agglomerate, which is the electron, is such that its reflection in every single amorone member, added for the number of all the members, equals the Radius of the universe R_ω.

$$R_\omega : R_\epsilon{}^\circ = R_\epsilon{}^\circ : R_{\bullet\epsilon} = R_{\bullet\epsilon} : R_\alpha \tag{46}$$

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

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

   Therefore, apart from leptons and universe, the proportion $R_\omega : R_{whole} = R_{whole} : R_{part}$, starting from $R_{part} = R^\circ_\epsilon$, applies recursively through $R_{whole} \to R_{part}$, providing all the mirroring universe scale giving rise to stars $R_{\bullet s}$ and galaxies $R_{\bullet g}$ and clusters and so on.

   (c) **the relationship between mass and space** : if the individual does not exists per se, but only in the relation between two individuals conjoined, the mass also does not exists per se, but only in the relation between two individuals. Thus, from the eq. (44), arises the cdm, that is the substance of the universe, as $R(r) = r^2/R_\omega$. It is symmetrical and depends only on the distance between the two individuals.

3. **the Dialogue relationship**: ($R_{univ} = R^\circ_\epsilon$) it is a peer to peer relationship. It includes:

   (a) **the Interior relationship**: (see eq.44) By keeping constant the time $\tau^\diamond = \tau^\diamond_{max} = R^\circ_\epsilon$, it describes the relation between individuals inside the radius in the Weak ($r << R^\circ_\epsilon$) and Strong ($r \simeq R^\circ_\epsilon$) interaction.

   (b) **the Exterior relationship**: (see eq.45) By keeping constant the radius $R_\bullet$ or R°, it describes the gravitational or electrical relation between two individuals outside the radius.

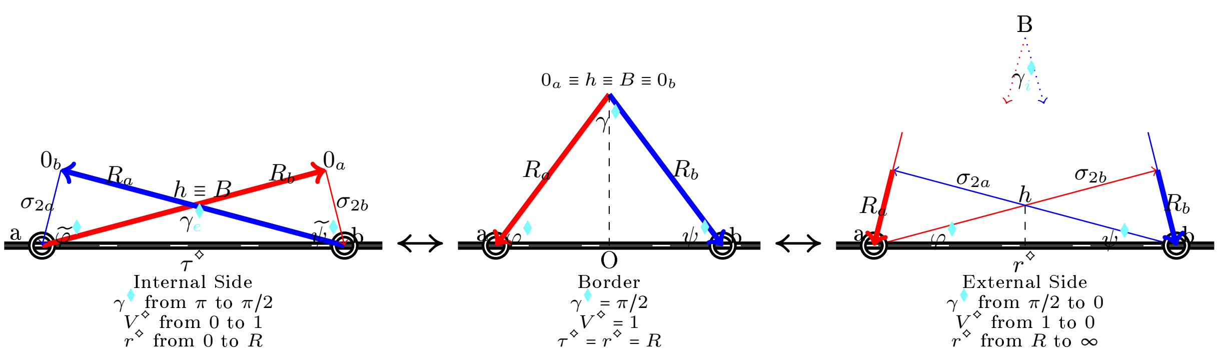


Figure 9. The intention schema when the interaction takes place respectively: On the internal side, on the border and on the external side.

The whole range of the relationship is covered by the only equation (43 or 34) (see fig. 10) .

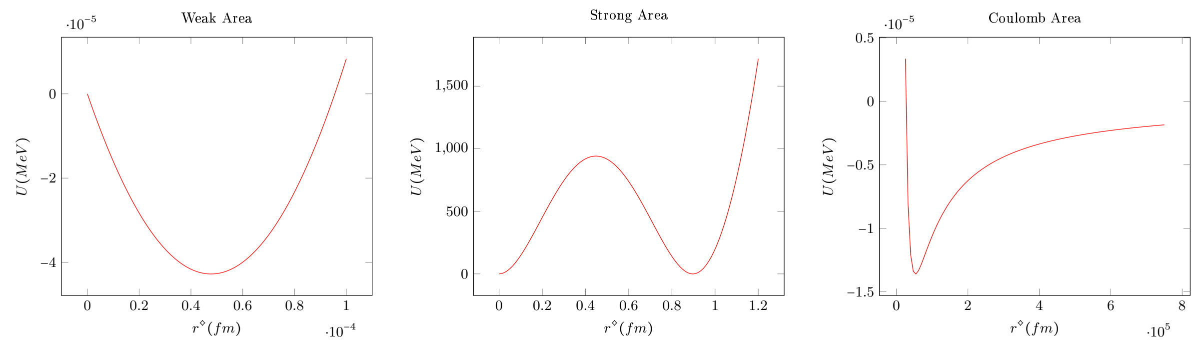


Figure 10. The electrical relationship is governed by the universal equation (see 43 or 34) where: $\dfrac{L}{c} = n\alpha^{-1}$ and $m = m_e$ in the Coulomb area or $m = m_\epsilon = \pi m_e$ in the strong area ($R^{\circ}_{\epsilon} = R^{\circ}_{e}/(2\pi) = 0.896978$ fm)

The fundamental equation inside the Radius

It is important to emphasize that the above eq. (43 or 34) are valid for both electrical and gravitational interactions, both outside and inside the Radius R_{univ}.

In the (43 or 34) $V^{\diamond}$ stands for $(R/r)^j$ where $j = \pm 1$ changes, crossing the border $r^{\diamond} = R$, from $+1$, when $r^{\diamond} > R$, to -1, when $r^{\diamond} < R$, and vice-versa.
Indeed, from the fundamental proportion of the intention schema $V^{\diamond} = R : r^{\diamond} = r^{\diamond} : \tau^{\diamond}$, the potential $V^{\diamond}$, which is always $V^{\diamond} = \sin\gamma^{\diamond} \leq 1$, reverses from outside $V^{\diamond} = R/r^{\diamond}$ to inside $V^{\diamond} = r^{\diamond}/R_{univ}$.
Regarding the denominator of the centrifugal potential, it is $m_b R_a = mM$ in the external side of the gravitational interaction but $mR = 1$ in the electrical interaction and in the internal side.
Indeed when $r^{\diamond} < R_{univ}$ we have $R = r^2/R_{univ}$ and $m = R_{univ}/r^2$ for both gravitational and electric relationships.

Furthermore, the pseudo potential V^* in the $\vec{p_\phi} = mLV^* = m\sin\vartheta^{\diamond}$ term must be always equal to R_{univ}/r when the native seat of the relationship is outside R, to r/R_{univ} otherwise, since its formula, contrarily to the true potential V which must be always less or equal to 1, does not reverse but continues to grow when the distance r, overflowing its seat, crosses the threshold R_{univ}.
It is the conservation of angular momentum, therefore, that determines the confinement of the relationship on one side or the other of Radius R.

THE THREE DIMENSIONS AND THE THREE ARRANGEMENTS OF THE RELATIONSHIP WITHIN THE UNIVERSAL

The three moments of the Relationship of Intention: energy, act and power, give rise, in order, to the three components of the Radius (r,b,c): **r**adiation, **b**aryon matter, **c**old dark matter (or amoroni); to three axes of spacetime: r, t and $r\phi$; to the three areas of the relationship: strong, Coulomb and weak; to the three epochs of cosmology: radiation, baryon matter, CDM.

Moreover, In the gravitational relationships, each component of the Radius gives rise to its own space with its own triad of axes.
In the electrical relationships, on the other hand, the three possible arrangements of the Radius of the individual on the axes of the universe give rise to the three generations of matter.

GRAVITATION

In the gravitational relationships, each component of the Radius gives rise to its own space with its own triad of axes.
The eq. (43 or 34), indeed, are valid independently also for each of the three components (r,b,c). This means that:

$$\frac{r^{\diamond}_x}{\tau^{\diamond}_x} = \frac{r^{\diamond}}{\tau^{\diamond}} = V^{\diamond} \qquad \text{and} \qquad \frac{R_x}{r^{\diamond}_x} = \frac{r^{\diamond}_x}{\tau^{\diamond}} = V^{\diamond}_x \quad \text{or} \quad \frac{R\,\Xi^2_x}{r^{\diamond}\,\Xi_x} = \frac{r^{\diamond}\,\Xi_x}{\tau^{\diamond}} = V^{\diamond}\,\Xi_x$$

$$R = \sum_{x=1}^{3} R_x \qquad r^{\diamond 2} = \sum_{x=1}^{3} r_x^{\diamond 2} \qquad \tau^{\diamond 2} = \sum_{x=1}^{3} \tau_x^{\diamond 2} \qquad V^{\diamond 2} = \sum_{x=1}^{3} V_x^{\diamond 2}$$

therefore

$$\left\{\begin{array}{lll|ll} \tau^{\diamond}_{max} & = R_{univ} & (R_\omega \text{ or } R_\epsilon) & R_x & = V_x^{\diamond} r_x^{\diamond} = \dfrac{r_x^{\diamond 2}}{\tau^{\diamond}} \\ V_x^{\diamond} & = \dfrac{R_x}{r_x^{\diamond}} = \dfrac{r_x^{\diamond}}{\tau^{\diamond}} & & r_x^{\diamond} & = \sqrt{R_x \tau^{\diamond}} = \sqrt{\dfrac{R_x}{R}} \cdot r^{\diamond} = \Xi_x r^{\diamond} \\ A_x & = \dfrac{R_x}{r_x^{\diamond 2}} = \dfrac{R}{r^{\diamond 2}} = \dfrac{1}{\tau^{\diamond}} = A & & \dfrac{p^{\diamond}_{\perp_x}}{m} & = \sqrt{V_x^{\diamond}} = \sqrt{\dfrac{r_x^{\diamond}}{\tau^{\diamond}}} = \sqrt[4]{\dfrac{R_x}{\tau^{\diamond}}} = \dfrac{p^{\diamond}_{\perp}}{m}\sqrt{\Xi_x} \end{array}\right. \tag{47}$$

Indeed, the tangential velocity (47) for baryonic matter accounts for the rotation of galaxies.
On the other hand, in cosmology, the fundamental thread equation $0 = \tau^{\diamond} - \left(r^{\diamond} + R_{cdm}\right) = \tau^{\diamond} - r^{\diamond}\left(1 + \sin\gamma^{\diamond}\right)$ where $\sin\gamma^{\diamond} = r^{\diamond}/R_\omega$, gives a first approximation of the co-moving distance, that is neglecting the contribute to R due to baryonic matter and radiation which are quite small up to $z =< 10^2$.

$$D_M^{\diamond} = \frac{c}{H_0}\left(1 + \sin\gamma^{\diamond}\right)\sum_{i=0}^{\gamma^{\diamond}} d\gamma_i^{\diamond} = \frac{c}{H_0}\left(1 + \sin\gamma^{\diamond}\right)\gamma^{\diamond} \tag{48}$$

In this range of $z < 10^2$ we have $\dfrac{D_M^{\diamond}}{D_{M_{\Lambda CDM}}} = 1 \pm .03$.

ELECTRICITY

In the electrical relationships, $R_{univ} = R_e$, depending on the three possible arrangements of the Radius R_e on the three components of the Radius of the universe R_ω we have the three generations of matter:

$$\vec{R} = \begin{bmatrix} R_c \\ R_b \\ R_r \end{bmatrix} = \begin{bmatrix} \left[\varphi^{\diamond}\right] \cdot \left[\vartheta^{\diamond}\right] \cdot \left[\psi^{\diamond}\right] \end{bmatrix} = \begin{bmatrix} \Xi_{cc}{}^2 & \Xi_{cb}{}^2 & \Xi_{cr}{}^2 \\ \Xi_{bc}{}^2 & \Xi_{bb}{}^2 & \Xi_{br}{}^2 \\ \Xi_{rc}{}^2 & \Xi_{rb}{}^2 & \Xi_{rr}{}^2 \end{bmatrix} \begin{bmatrix} R_\parallel \\ R_\perp \\ R_\dagger \end{bmatrix} \tag{49}$$

$$\vec{R}_I = \begin{bmatrix} \Xi_{cc}{}^2 & \Xi_{cb}{}^2 & \Xi_{cr}{}^2 \\ \Xi_{bc}{}^2 & \Xi_{bb}{}^2 & \Xi_{br}{}^2 \\ \Xi_{rc}{}^2 & \Xi_{rb}{}^2 & \Xi_{rr}{}^2 \end{bmatrix} \begin{bmatrix} R_\parallel \\ 0 \\ 0 \end{bmatrix} \quad \vec{R}_{II} = \begin{bmatrix} \Xi_{cc}{}^2 & \Xi_{cb}{}^2 & \Xi_{cr}{}^2 \\ \Xi_{bc}{}^2 & \Xi_{bb}{}^2 & \Xi_{br}{}^2 \\ \Xi_{rc}{}^2 & \Xi_{rb}{}^2 & \Xi_{rr}{}^2 \end{bmatrix} \begin{bmatrix} 0 \\ R_\perp \\ 0 \end{bmatrix} \quad \vec{R}_{III} = \begin{bmatrix} \Xi_{cc}{}^2 & \Xi_{cb}{}^2 & \Xi_{cr}{}^2 \\ \Xi_{bc}{}^2 & \Xi_{bb}{}^2 & \Xi_{br}{}^2 \\ \Xi_{rc}{}^2 & \Xi_{rb}{}^2 & \Xi_{rr}{}^2 \end{bmatrix} \begin{bmatrix} 0 \\ 0 \\ R_\dagger \end{bmatrix} \tag{50}$$

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

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

In other words, Y represents the matter generation and x the matter component.
There is therefore a close correlation between the three generations of matter and the three components of the universe's Radius.

UNNATURALNESS OF MINKOWSKI SPACETIME

True time, which is movement, cannot be represented, it is not part of physics, because it is an existential. It is not given, it is the indefinite space that passes between an alleged previous instant from which it starts, and which is no longer, and a presumed subsequent instant towards which it tends, but which is not yet. It is the time of the decision that is not yet. Equivalently it is the true distance that separates and unites and places the individual from and into its own Universal. Space, time and individual are existential, they are outside of physics, or rather, they are METAPHYSICS. The instant, which is not time and has no movement, has instead in itself the representation of the movement that unfolds as space and time of the MEMORY. In the representation of the instant, therefore, there is no movement but the reconstruction of movement in its unfolding AS the space and time of memory.

The error of current physics, since its origins, has been to believe that it can represent true space and true time. The introduction of an absolute space and of an absolute time first, of an absolute space-time then, are in fact the children of this wrong choice, and it is a metaphysical choice.

The consequences of this choice are the introduction, unlike geometry of the Act, of following abstract, intellectual, unnatural concepts and of inconsistencies:

1. *Absolute Scenario*: introduction of an absolute scenario a priori, for the sole purpose of representing knowledge, different and separate from the object represented.

2. *Incompleteness due to absence of mass dimension*: In representing knowledge, the scenario must already contain all the elements of knowledge. Knowledge is in fact only a relationship between the elements and the scenario must already contain all the elements in order to be the place of their representation. In other words, the elements must constitute the dimensions of the scenario for this to be the place of their representation.
   Although mass-energy (the Radius) plays a key role in defining the lattice of reality, it is not an element of Euclidean spacetime.

3. *Mental signal with infinite speed*: The addition of the temporal dimension, distinct from the spatial one, implies the coexistence and independence, in the act (here one can place act ≡ real event), of space from time. Every spatial place is always and forever in act and, vice versa, every moment is in act everywhere. Since the spatial and temporal dimensions are continuous, the act is thus a space-time continuum.
   The continuum of spacetime is forged by a hypothetical infinite speed.
   The plane $t = const$, in fact, is the set of points united by the same instant, that is, all the points that can be connected by a hypothetical or mental signal with infinite speed.

4. *Unnatural space*: The space of an individual, according to nature, must be the set of events at hand, that is, the set of possible relationships that can involve him in the now, that is, the locus of the totality of waveform possibilities which become, in the Act, the real radiant energy between two real and particle like individuals.
   In the representation of knowledge, this locus should occupy the plane at the point t_0.
   In the representation of current physics, instead, it corresponds to the cone $s = ct$ which expands along the entire temporal axis of the individual, from $t = -\infty$ to $t = +\infty$.
   This inconsistency is at the basis of the incomprehensibility of the entanglement in current physics. Indeed, if two individuals share the same plane of potency, they manifest themselves in act at the same instant, whatever their distance, as is evident from the point of view of the geometry of the act. From the point of view of the spacetime of current physics, instead, they manifest themselves inexplicably in two interrelated events not connected to each other by light.

5. *Separation of the event from the unity of relation*: Every event is inseparable from the individual (donor or recipient) as well as being only one of the two ends (the conjugated event) that make up the entire event that unites the donor to the recipient.
   In other words, the event is not an independent point in itself, but it is the event of an individual's giving or receiving which presupposes a dual, that is, the corresponding event of receiving or giving, and consequently and above all two individuals in relationship: a donor and a recipient.
   In reality we therefore have not a space-time of points, but a space of individuals in relation, where each individual is in itself a space and vice versa.

6. *Introduction of the local time t of the event with no physical meaning*: It is dictated by the geometric vision of spacetime that separates the event from the individual. Indeed, the concept of simultaneity used in current physics, and the consequent concept of space, is based on the use of a grid of meters and clocks at rest with respect to the observer that measure local time. The time of a moving body, however, is not this local time but that of its wristwatch. In the image of the object that is coming to us by means of the light, we can see not our local time but its own time on its wristwatch (which is different from our local time), and it is the object in the state given by the its proper time that is acting on us, is interacting with us. The time of nature, therefore, is always the time proper to an object while local time is only a mental construction imposed by the use of Euclidean geometry.

7. *curving in act and Absence of quantization*: The universe has a finite number of years a finite dimension and even a finite number of baryons. In the reality, everything is discrete and finite. If the act is determined and in

the instant, neither the infinite number nor the infinitesimal exist in act. Both are just a word that indicates an endless cyclic operation.

To deny the actual infinite is also to deny the actual infinitesimal and is therefore to affirm the quantum.
To deny the infinitesimal in act is to deny the curving in the act and, vice-versa, to affirm linearity in the act.

Victim of this basic error is the representation of movement and therefore special relativity which is therefore wrong. In fact, it does not harmonize with general relativity which, on the other hand, despite its epistemological and interpretative errors, such as the use of infinitesimals or the idea of a curved space-time in action, is correct in terms of results within the limits of approximation (20). This is not surprising because general relativity intends to describe not movement but relationships, point to point, in the presence of a Radius. Quantum mechanics which, like special relativity, has adopted Minkowski's spacetime, in its wanting to highlight the strangeness of nature in reality does nothing but highlight the inconsistency of its adopted metaphysics.
But if you think about it, hadn't the oddities already started right away, with the invariance of the light speed?

The geometry of the act is the dream pursued by Einstein in his entire life, and by all true physicists. It allows the purification and unification of all theories and opens the way to a total understanding of nature within the limits of knowledge.

CONCLUSION

The unveiling of potency, which allows knowledge, requires the existence of conscious reflective individuals engaged as such in reflective relationship with the universe. Since these alive reflective individuals too emerge from the fabric of intentions of universe, and are conscious, it is necessary that the living is an intrinsic property of the intention and that the energy corresponds to the qualia of consciousness (conscious thinking, as all sensations, are qualia, i.e energy) and that the thinking, to the extent that we are not aware of it, is of the same substance that mirroring, that is potency.
Indeed the Intention structure predicts two parallel and alternating threads, 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. It is interior, existential, subjective. It is radically out of the reach of physics;

- the second is the act of consciousness or qualia. It is immediate and instantaneous.
  Nevertheless, the sum and stratification of a huge number of acts gives place to the reflective phenomenon, which is exterior, objective, and to the reflective individual, where the phenomenon appears. Reflection is thus the subject and object of physics.

Since we have the concept of infinity, and since everything that falls within the domain of physics is finite, it follows that we have to look for the origin of infinity elsewhere, that is, in the true time of life.

Euclidean spacetime, which unfolds from the geometry of the act, is the scenario in which the intention takes shape and manifests itself as a phenomenon. However, if on the one hand, with its equations, it allows us to correctly represent the phenomenon, on the other, since it is not primitive, it hides the intelligence of simplicity and beauty and the profound meaning of life.

* fmsv.peluso@gmail.com
† Present address: Via don Bosco, 11 00045 Genzano di Roma, Rome Italy

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