

# The Promised Science

Vincenzo Peluso<sup>1</sup>

Present address: Via don Bosco, 11 00045  
Genzano di Roma, Rome Italy

August 12, 2022

## ABSTRACT

The aim of the paper is to unify the natural sciences with the human sciences.

Unification rests on the foundation of the original thesis at the center of this paper and which concerns the Ontology of Being. In reality, in the absence of an Ontology of Being, every science, insofar as it concerns reality, is up in the air, unaware of its foundation. The method of investigation consists in testing its explanatory and clarifying power by addressing the fundamental questions of both areas, in particular physics, philosophy and the mind-body problem.

A true Ontology of Being, in fact, must be able to bring all the sciences back to itself, and therefore to clarify their structure as they branch out, explaining them in their being identical and in their being different.

The result is that the proposed ontological thesis, which derives from the synergy of the acquired results of both sciences, reacts on them, purifying their foundations and therefore spanning the way to their safer advancement. Indeed, the natural and human sciences, each in their own domains and with their own methods, apparently so distant, concern the two opposite moments of the same being. In other words, they are complementary to each other, as the act is to the potency, as external is to internal, as dead is to life, as the consciousness is to the soul, as electricity is to gravitation, as each makes no sense without the other but needs the other and is completed in the other.

The promised science is the overcoming in the synthesis of these two opposite moments.

**Key words.** Ontology of being, Intention, Mirroring, Reflection, potency, act, entelechy, consciousness, mind, body, soul.

## 1. Introduction

Modern science is only a side of a broken bridge, that is the one that should have joined the Greek thought, lasted until the Renaissance, with the modern science, which was born in the West more than four centuries ago, in the "Age of Reason".

Greeks started from metaphysics, and from this, with a forward reasoning, tried to explain the experience. Modern science, on the other hand, starts from experience and from this, with a backward reasoning, tries to arrive at first principles.

Greeks knew that at the heart of physics, at its very first beginning, there is movement, being Nature a "*principle of motion and change*". Now, the problem of motion is placed even before the beginning of physics: it is metaphysics. Greek thought<sup>1</sup> placed it at the root of its philosophy.

Heraclitus insisted on an ever-present change. Parmenides, on the contrary, denied the motion in act: since every instant is timeless, change is impossible ("the way of truth"). The alteration, the movement, is only in the mind ("the way of opinion").

Indeed, the movement presupposes a comparison of the position of an individual between an instant and a subsequent instant. But the comparison, i.e. the recognition of the identity of an individual and the difference of the state, is an operation of the mind. Moreover, two instants are never simultaneously present in ac-

tion in physical reality, if not in a mind. On the other hand, in physical reality, what could connect the state of two successive instants, if the two instants are each closed in on itself and the abyss of infinity separates them?

Aristotle solved it by introducing the potentiality-actuality ontological dualism. The act takes place in the instant, the potency in the period. Potency, which is a period, which lasts, which connects the previous instant to the next instant, is the incubator of movement, it is the place of the possible. Potentiality-actuality, therefore, are not two sides of the same coin. They are, instead, two moments that alternate and follow each other giving rise to the movement, the actualization, from time to time, of one of the possibilities which sets a point from which the new possibilities open up and so on making a path since "the motion is the fulfilment of what is potential as potential" in one of its many possibilities. This so-called ontological dualism, which is rather complementarity, opens the door to consciousness, interiority, freedom, making it possible to see nature as a living being, ordered with its own ends as an organism. In fact potency is the opposite of determinism just as life is the opposite of death.

Which, among the many possibilities, will constitute the new act? Who/what will determine the choice?

Since potentiality excludes necessity, only two solutions remain: the blind chance or the free will of an individual who freely chooses in view of an end. Of the two, the first is incomprehensible since it contradicts the Principle of Reason. The second implies intentionality which leads directly to Aristotle's four causes.

The act is the sclerotic, lifeless surface. Potency, which is a period, is the abode of thought and of the interior life. It is not chaos but it implies the understanding of what opens up and

*Send offprint requests to:* V.Peluso, e-mail: fmsv.peluso@gmail.com

<sup>1</sup> The proposed interpretation of the thought of Aristotle, and of the Greeks more generally, is an attempt to revise and reinterpret their original thinking in the light of the results of modern science almost two and a half millennia later, in a special way the experimental results of quantum mechanics, in an instrumental way for the purposes of the following discussion.

opens up before us. Potency cannot be pure contemplation, it cannot last forever, it constantly confronts the individual claiming a choice. The individual must be able to understand the possibilities in order to make a choice and be able to freely decide based on an intention. The act is the fulfilment of the choice, the manifestation of the freedom present in potency, its sedimentation in an instant, the result of a decision, in which the world manifests itself as determined.

Greek metaphysics, which was also reliving a fruitful period in the Renaissance, in particular with Giordano Bruno and other philosophers, was suddenly and definitively supplanted, with the birth of modern science in the seventeenth century.

Modern science, on the other hand, jumped over the metaphysics, but it could not avoid it, simply because it is not possible.

The modern science, indeed, was born as a technique, since it is based on observation of reality and its reproducibility (functioning). Precisely for this reason, its original error is to have assumed the objective phenomenon as its only foundation, as if the objective phenomenon could somehow capture the whole being.

Indeed, modern science, uncritically, deludes itself that it can represent true movement and therefore real time in progress. Its mistake is that, heedless of Parmenides' warnings and objections, it does not realize that the objective phenomenon is a prisoner of the instant in which, in observation, it is photographed. That it cannot cross time, and therefore cannot grasp the living movement but only its reconstruction resurrected from memory. It made the mistake of representing motion in a space-time of the continuous act, as if it were capturing true movement, true time. Indeed, in the use of a temporal dimension for itself, alongside the spatial one, it proves to have confused the dead time of memory, which is just the other side of the metric space, with the living real time, which is instead an existential beyond its reach. Up to the philosophical thud of giving a physical reality to that intellectual construction which is Minkowski's spacetime.

Centuries of still enduring arid materialism and mechanism and reductionism were the consequences, as well as an unnatural, incomprehensible, and unjustifiably complicated physical theory. Up to the philosophical shipwreck of considering time a stubborn illusion. To the point that the collapse of the power wave of quantum mechanics, which brings to the fore the very real movement that has been denied from the beginning, is in turn stubbornly denied with the Many-Worlds Interpretation of Quantum Mechanics, where each of the foreseen possibilities occurs in act in one of the infinite universes simultaneously present.

### 1.1. *The origins of the philosophical shipwreck of modern science*

«What could connect the state of two successive instants, if the two instants are each closed in on itself and the abyss of infinity separates them?»

If the question is asked to a physicist, he would reply that the link between the various instants is given by the memory of the observer on the one hand, and by the laws of motion that he has found, on the other, and that these are in agreement between them, and that this is enough for him. If you ask him what the memory he talks about consists of, he would reply that it is the recording of events collected progressively over time by an individual through observations (measurements) and annotations (bookkeeping).

In reality, this explanation does not answer the question, but the physicist is not interested in metaphysics: all that interests him is the agreement between memory and its laws.

Now, the shipwreck of modern science derives from the fact that Parmenides' question, and the branch of metaphysics concerning the ontology of being more generally, is not idle, is not abstract and powerless over reality.

The problem, in fact, is that memory can be represented in several different ways. Each different way corresponds to a different metaphysics. In summary, representation requires geometry and geometry requires metaphysics. Different metaphysics, equal different geometry, equal different representation, equal different laws. Now, the trouble is that the metaphysics unknowingly chosen by modern science is the wrong one. Predictably, among the many, that "clearer and more knowable to us", not that "clearer and more knowable by nature".

The error of current physics, from its origins, has been to believe that it can resurrect the dead movement, implicit in memory, representing it as living in the act, i.e. in a space in itself and in a time in itself. But in doing so he has only confused the dead time of memory with real living time, which is beyond his reach.

In other words, apart from time, there are two types of movement:

1. a primitive horizontal movement given by the exchange of energy between the two individuals involved. It is the movement of light through which we make the observation;
2. and a derived movement, i.e. the reflexive relative movement towards/away between the two individuals involved, given by their evolution. It is the movement of the observed object.

If it were legitimate to represent movement in a time in itself and in a space in itself, as does modern physics, then everything should have a speed, and therefore also movement in itself, that is, the primitive movement which is light. But this is false, it is a fatal mistake.

If, on the other hand, the movement represented is only a reconstruction from memory, that is from the photo of an instant, then it is possible to attribute a speed only to the derived movement. The movement itself, that is the movement of light, cannot have a speed: it is path, that is the overcoming in the synthesis of distance and period, meter and clock.

The postulate of Special Relativity "*light is always propagated in empty space with a definite velocity  $c$  which is independent of the state of motion of the emitting body*" (Einstein (1905)) is necessary only in Euclidean geometry, where space in itself and time in itself are two distinct dimensions or, equivalently, meters and seconds are two distinct a priori units of measure. It is already implicit as the foundation of representation in the linear geometry, that emerges from the reconstruction of the path of light imprinted in the memory of an instant (see appendix A.1), where meters and seconds are alternative measures of a segment of the path of light.

True time, which is movement, cannot be represented, it is not part of physics, because it is an existential. It is not given. Equivalently it is the true space that separates and unites and places the individual from and into its own Universal. We all experience how, in life, a separation can seem infinite in both space and time. Space, time and individual-universal are existential, they are outside of physics, or rather, they are METAPHYSICS.

Parmenides could have warned them of this error: true movement, true time, are not present in objective observations.

## 2. The Intention MetaPhysics

Nature is a "*principle of motion and change*", but what moves is always and only a kind of energy ("currency").

## 2.1. 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 only in the fundamental form of universals, which is *Gravitational* mass or energy and its mirror in the other which is *Electrical* charge.

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), and by the angle it forms with respect to its conjoined individual and with respect to its universal (the Universe).

The exchange, that is, the giving-receiving of 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, as follows:

**Thesis 1** *Intentional principle: Everything consists of individuals in Intention to each other. Intention is the relationship of energy exchange between an individual and his other against the background of the external world, and 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. Although instantaneous, it breaks down into three logically distinct moments:*
  - (a) *Giver Instance (particle): quantitatively determined in his Radius  $R$  and position*
  - (b) *Radiation (radiant energy): the radiant energy, composed of a positive and a dual negative quantity in the opposite sense, which binds the donor, from which it is subtracted, to the recipient, to which it is added, along the distance  $r^{\diamond}$*
  - (c) *Receiver Instance (particle): quantitatively determined in his Radius  $R$  and position*
2. *POTENCY (power wave): at the Mirroring moment, which is the potentiality period of a giver or of a receiver between two Consummative acts, the individual mirrors in itself and is mirrored by each member of his universal (universe). During this period the individual sinks undetermined into its space of the potency unfolding from the dissolving of its Radius  $R$ . 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.*

The thesis 1 founds the whole physics and in particular the Intention Physics (see Peluso V. (13 jan 2019), Peluso V. (12 feb 2021), Peluso V. (16 apr 2021), Peluso V. (30 apr 2022)).

Now, during the period of every intention, changes occur in the external world in the background, and these interact with its power wave on the basis of a teleological principle. More precisely:

**Thesis 2** *Teleological principle: The intentions, and therefore the power waves, are all related to each other. (Relationship  $\equiv$  Mirroring). The teleological principle structures and organizes the underlying intentions, united by being related to the same universal, generating universals of a gradually higher level*

*whose duration is a multiple of the duration of each of the component power waves. (The power wave is the life of the universal). The power wave of the universal interacts with the component power waves which alternate, with a shorter period, over its period. In other words, the power wave of the universal, on the basis of its end, determines the choice of the component power waves and its final choice is in turn determined by all the choices of the component intentions that have followed one another.*

Where does the Being (being present, consistent and lasting) that gives life to the universe come from?

The universe is the universal of universals, the place of places. Nevertheless, since it too is a compound universal, it is destined to dissolve, and since its total energy is zero<sup>2</sup>, it dissolves in Nothingness. Therefore, the universe is not the Being, rather it is Nothingness.

The Being we seek is therefore transcendental:

**Thesis 3** *Transcendental principle: Being is the infinite intention, which has neither beginning nor end, always equal to itself, which in its becoming, in the circular transition giver-energy-receiver, accompanies itself while always remaining identical to itself. It is the potency in act.*

*Being places its place in Nothingness, relating to it.*

The discussion that follows is the development of the three above theses.

## 2.2. Clarifications and explanation of the oddities of quantum mechanics

From the above, light does not travel from the giver to the receiver in a continuous spacetime 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. The power wave is individual and is the relational space of the co-present individuals, which the individual has at hand. In other words, the space of an individual's power (of giving or receiving) coincides with his cone of light in the Minkowski space-time (of the future or of the past). Co-presence reveals that there is no real physical separation. The coexisting relational space of the individual is a whole that is revealed in the superimposition of the set of all possible spatial configurations. The power wave binds the giver to all possible receivers until the instant of decision, in which the power wave collapses and the energy passes from the giver to the receiver instantly.

This behaviour underlies and explains all the oddities of quantum mechanics, such as the double-slit experiment and the entanglement, since the power wave of all entangled systems collapses at the same instant, regardless of the place and time of the measurement of each of them.

In the thought experiment of Schrödinger's cat, there is a misinterpretation of the power wave. In fact, the period of an individual's power wave, in this case of the radioactive substance, does not hold the whole world in suspense awaiting its determination. On the contrary, the world is constantly changing in action and it is the power wave that adjusts accordingly. Only its collapse changes the world, but starting from the instant of the act and not retroactively. In other words, it is not the experimenter's mere observation that collapses the power wave. In the case of the double-slit or of the entanglement, the observer, with the measure, places himself directly in relation to the electron

<sup>2</sup> it is currently only a hypothesis of modern cosmology

and therefore collapses the power wave in the very act of measuring. He is not observing an external phenomenon but is part of the relationship. In the case of the cat, instead, the observer goes back to being a mere external observer of the phenomenon.

### 2.3. The foundation of the relationship: Necessity, Chance or Free Will?

Which, among the many possibilities, will constitute the new act? Who/what will determine the choice?

Since the observations of quantum mechanics have ruled out the necessity as the foundation of the fundamental interactions of nature, only two alternatives remain: the blind chance or the free will of an individual who freely chooses in view of an end. Modern sciences has not even taken into consideration the latter, which is also the principle posed by a large part of philosophy since its origins and by Aristotle himself, to cite an example. Now, change is the worst choice since:

- it is incomprehensible, since it contradicts the Principle of Reason
- pure chaos would reign. Unless you bring up the infinite. Eg. the infinity of the universes or the Multiverse
- it makes matter primitive but, on the other hand, “being-there” and consciousness inexplicable

On the contrary, the Intention places “being-there” as primitive and as the foundation of the relationship.

The MetaPhysics of Intention places the free will of an individual who freely chooses in view of an end as its foundation. Necessity and chance (i.e. “randomness”) are not ontological constituents of being. Necessity emerges reflexively, that is statistically, from the myriad of individual underlying choices. Chance is due to ignorance of the concatenations of choices (or necessities).

## 3. The Potency and the Act

Movement is based on identity and difference, and identity and difference are memory-based operations of the mind.

The memory that manifests itself in action as emerging from the mutual reflection between two reflective individuals is in any case a memory of the instant, that is, founded in the instant in which it finds space, and it is a memory of the individual. Each instant is a new instant and could give rise to a new memory (with no relation to the previous one). To give being to something is to make it last, survive the instant. What is it that gives being to memory, that frees it from the instant and gives it a lasting presence?

Now, to survive the instant, is to enter and go through the real time of life while maintaining one’s memory. That is, to enter in the mirroring period of potency, since to go beyond the instant is to enter in the period of potency, and memory is implied in mirroring.

There are therefore two memories: the memory of the Act and the memory of Potency. The exterior dead memory of the instant, and the living interior memory, which is present in the real time of life. It follows that there are two geometries, two identities, two relationship: the exterior one resurrected from the memory of the instant, and the interior one that is experienced in the real time of life and that enfold and unfold from living memory.

In the discussion that follows, universe and memory play a central role for the understanding of “being-there” and Being and

vice-versa. The universe, as it is the first universal in chronological and hierarchical order, the universal of universals, the place of places, the memory of memories. Memory, as it is the foundation of knowledge and therefore of sciences.

### 3.1. The Relationship

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 Feynman (1985). It can also be thought of as a power wave that collapses (decision), through the radiant energy, into being determinate (being there and so) of the Act.

Although elementary individuals emerge in act with a determined energy, period and mutual distance, nevertheless their identities and their measures are not already immediately knowable. In fact, elementary individuals do not yet have memory, and identities and measures are revealed by memory operations.

Reflection allows the birth of a reflective individual who is something new, a meta-level, which has its own identity that differentiates it from others, and allows the birth of its own history and therefore of its own memory and knowledge.

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, where the individuals of every new layer too relate each other through consummation. In other words, the superposition of myriads of intentions gives rise to the reflective emergence of reflective individuals endowed with memory and therefore able to measure and know objectively.

Although the intention is a single universal relation corresponding to a single universal geometric scheme, it can be logically declined on the basis of order (before-then) and nature (gravitational-electrical) as follows <sup>3</sup>:

- the *Constituent* relationship. It is the relationships between the elementary individuals, i.e. the Cold Dark Matter, where the gravitational and electrical nature coincide. It is founded on the equilibrium between the whole and its parts, that constitutes first of all the universe and therefore the leptons. In it there is no consummation, no exchange of energy.
- the *Dialogue* relationship between two individuals (peer to peer or part to whole). Each of the two individuals puts the projection of the radius of the other side by side with its own
  - the *Electrical Dialogue* is the weak and strong interaction inside the Radius, the electrical interaction outside the Radius. It is the unique relationship which is expressed through the exchange of energy (through bosons). It gives rise to the chain of electrically composite universals (baryon, atoms, molecule, ...)
  - the *Gravitational Dialogue* is the black hole inside the Radius, the gravitational relationship outside the Radius. It is only in potency, that is, shape of space. It gives rise to the chain of gravitationally composite universals (star, galaxies, ...)

The elementary individual emerges in the present vertically, along the historical path. The length of its Radius  $R_\alpha$  is equal to the thickness of the present line it is on. Its spatial distribution constitutes the shape of the space of power which is gravitation. The union of the elementary individuals that constitutes the lepton gives rise to the radius  $R_e$  which, by far exceeding the

<sup>3</sup> for the universal geometric scheme and for all the physics assertions see Appendix A and the aforementioned Intention Physics

thickness of the present line, is constituted as matter or as antimatter depending on whether it is above or beyond the line of the present (the boson is the matter-antimatter pair lying horizontally on the present line). The electron is therefore the individual who can exchange energy by taking it from his own breast. The electrical interaction, therefore, is a meta-level that rises above the gravitational one thanks to the nature of the electron. In other words, the electrical interaction, with its cyclical exchange of energy, rises against the background of gravitation. As we shall see shortly, this is equivalent to saying that the conscience stands on the background of the soul.

Both in the period of potency and in the instant of the act, individuals are in relation to each other. This relationship is the Reflection in the instant of the Act, it is the Mirroring in the period of Power.

Mirroring is the foundation of reflection and this is the foundation of knowledge. Now, reflection is the unveiling of what is veiled in power. Mirroring does in potency what reflection does in the act. Mirroring and reflection are dual, one is the form (the universal) and the other is its fulfilment (an instance).

### 3.1.1. The Relationship of Potency : The Mirroring

A mirroring universe is 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. From the external point of view, that is, mathematically, the condition necessary and sufficient for the equilibrium of a mirroring universe is the mirroring function  $f(R) = 1/R$ , or  $R^\circ = f(R_\bullet) = 1/R_\bullet$ , where  $R_\bullet$  is the gravitational Radius and  $R^\circ$  its reflection in the other which is the electric Radius.

The inverse function is also the relationship between inside and outside. In fact, the potential  $V = \sin \gamma$  corresponds to  $V_{outside} = R/r$  outside the radius and  $V_{inside} = f(V_{outside}) = r/R$  inside the Radius. Gravitation and Electricity, therefore, mirror each other as the inside and the outside.

The universe is born from nothing, therefore it is perfect symmetry: duality as negative and positive, matter and antimatter, increasing entropy and decreasing entropy. It arises as a number  $N^2$  of elementary individuals identical to each other.

The Universe  $R_\omega$  has a mirror, we name it the Amorone  $R_\alpha$ . Since the universe is the maximum, the amorone is the minimum. Each amorone is gravitationally, that is, as in itself, equal to  $R_{\bullet\alpha} = N^{-1}$ , and as a mirroring in another, that is electrically, equal to  $R_\alpha^\circ = N$ , which coincides with the Radius of the universe  $R_\omega = \sum R_{\bullet\alpha} = N$ . In other words, the electrical relation between the amorone and its other coincides with the gravitational relation between the amorone and the whole universe. It is the union of gravitation and electricity.

The set of amoroni forms the gravitational fund of the universe and is pure power without action. It is the Cold Dark Matter, always potency, never present in act.

### 3.1.2. The Relationship of Act : The Reflection

The electron (the lepton more generally) arises as the sole individual that is in equilibrium with universe, since it is the sole individual whose gravitational Radius corresponds to the amount of amoroni (CDM) enclosed in its electrical Radius  $R_{\bullet e} = R_e^{\circ 2}/R_\omega$  end vice-versa. Now, with the electron entering the scene, on the one hand there is the amorone and the universe which are the interior, gravitation, power, on the other hand there

is the lepton (and therefore the baryon matter) which is the exterior, the electricity, act and at last reflection.

What matures in the potency, and is still veiled in every elementary act, is finally revealed in the reflective phenomenon that appears taking place in the present instant. The reflection appears as an image and the image emerges from the organization, i.e spatial arrangement, of the other intentions in the background. Reflection is the image that emerges from the enormous number of underlying consummative acts, where each of these acts corresponds to a pixel.

When, in the statistics of large numbers, the randomness due to the freedom is cancelled out, the phenomenon becomes deterministic.

Memory, knowledge, logic, evolution, mechanisms, particles, theories, are all reflective.

## 3.2. Geometry

Therefore, Intention Physics transforms the above principle of motion into "*Nature is everything and only what is on the path of energy*".

Indeed, all energy moves along a vertical path that goes from the Big Bang to the present, and which we therefore call the historical path. In addition, the radiant energy makes an additional horizontal path that goes from the donor to the recipient, which is opposed by the perpendicular path of the power with which it forms the space of the present to the hand of the individual in intention. The vertical path and the radiant horizontal path form the historical pseudo two-dimensional Act-Act plane, while the radiant horizontal path and its perpendicular path of power form the two-dimensional Act-Potency plane of the present. Since the Act of giving is opposed to the Act of receiving, both the Act-Act and the Act-Potency planes have a version of giving and one of receiving.

The collapse of the power wave occurs cyclically in conjunction with the alignment of the axis of giving with the axis of receiving of the two individuals involved. Therefore, the electric spin corresponds to the rotation of the plane of the Act-Potency of the individual around its vertical axis. The ratio between the length of the overall Radius and a multiple of its path in the plane of power, as it makes a turn by spinning, is indicated by  $R_{Total}/r_a^\diamond = \sin^\diamond \gamma$ . In the electrical relation, this ratio is the fine-structure constant  $\alpha$ .

The geometric scheme of the relation (see fig. A.4) is unique and is determined by the Radii  $R_a$  and  $R_b$ , and the angle  $\gamma$  between them<sup>4</sup>.

The three different possible arrangements of the individual's triad on the universe's triad give rise to the three generations of matter.

### 3.2.1. The Linear Geometry of the Act

In the historical reconstruction of the path of light, therefore, while the two shorter sides of a triangle represent the horizontal path of the light going from oneself to the other and back, the

<sup>4</sup> the suffix  $\diamond$  indicates that the operator operates in the plane of power, where  $\sin^\diamond \gamma = \sin \gamma$ . Vice-versa, in the pseudo two-dimensional Act-Act plane, we must use the suffix  $\circ$  where  $\sin^\circ \gamma = 1 - \cos \gamma$ . Therefore, in the electrical Act-Act plane, the distance  $r_a^\diamond = R_{Total}/\sin^\diamond \gamma = R_{Total}/(1 - \cos \gamma)$  where  $\gamma = \pi - \alpha/n$  or  $\pi/2 - \alpha/n$  or  $\alpha/n$  respectively in the weak, strong and electrical interaction. In cosmology, vice-versa, we have  $R_{CDM} = r^\diamond \sin^\diamond \gamma$ , and since in the plane of potency of universe  $r^\diamond = R_\omega \sin^\diamond \gamma$ , at last  $R_{CDM} = R_\omega \sin^{\diamond 2} \gamma = R_\omega \sin^2 \gamma$  where  $R_\omega = c/H_0$ .

longer side represents the vertical path, of equal length, made in the meantime by one's own energy, along the historical path that goes from the Big Bang to the present. The lengths corresponding to the single segments of the path must be summed as vectors in the historical pseudo two-dimensional Act-Act plane. For this reason, the geometry of nature in action is linear:  $\sin^\diamond \gamma + \cos^\diamond \gamma = 1$  and quantized (the Radius is the quantum of the relationship) see Appendix A.

The use of the manifold is not in itself wrong, since there is an isomorphism between the two geometries, but it involves a complication in the drafting of the laws of nature that is so great as to make it incomprehensible.

### 3.2.2. The Euclidean Geometry of the Potency

On the other hand, since an exchange of energy between a giver and a receiver can happen in a variety of different ways, the probability amplitudes, corresponding to each possible path, must be added as vectors in the Euclidean two-dimensional Act-Potency plane of the present (see Feynman (1985)). In fact, this state of affairs conforms to what happens in Euclidean geometry, which places all the points of a figure at the same instant on a plane formed by two heterogeneous dimensions. For this reason the geometry of the QED is Euclidean.

### 3.3. The Memory

Movement is based on identity and difference, and identity and difference are memory-based operations of the mind.

#### 3.3.1. The Memory of the Act

A complex individual has a form, consisting of a typical spatial organization that evolves over time with the rhythm of the underlying intentions. It is therefore vertical memory, evolution, reflection of itself in itself. In the instant it is the current state, its own reflective wristwatch.

Even the radiant energy of reflection, on the other hand, carries with it a structured image arising from mutual recursive reflection. It is therefore horizontal memory, reflection of the other in itself. The image in which the entire historical succession of the states of the two individuals appears, of their wristwatches, captured in the historical instants in which they have been linked by the thread of reflection. It allows the comparison of its own evolution with that of the other, that is, the change of configuration (approach/departure) with respect to the other.

The complex reflective individual, therefore, is a mirror that gives rise to both one's own wristwatch, thanks to vertical reflection in itself, and to one's own historical memory of interaction, thanks to the horizontal reflection of the other.

#### 3.3.2. The Memory of Potency

The act makes history and flaunts it, but power preserves it. The principle of reason claims that the present is based on the historical reconstruction of the past up to a starting point, this starting point is what we know as the Big Bang. The line of the present, on the opposite side, is the set of the points where matter coming from the Big Bang, after a period of potency lasted  $R_\omega$  years, emerges in act and reverses and begins its return journey as antimatter. The line of the present is the place where matter meets anti-matter and forms the baryonic matter (ordinary matter). The center of the line of the present, on the opposite side, is the point

where all energy meets the anti-energy and gives rise to the Big Bang.

In other words, 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. The memory of the past that moves away from the present is the other face of the future that approaches, and is immersed in the potency.

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. In every instant the universe, looks like as the result of a Big Bang that took place  $R_\omega$  years ago.

The ever-present memory is therefore the sign present in the act and founded in power, as a past that is moving away, and entrusted to power, as its future that is approaching. The future is not something that is not yet present but that it will be. This is an intellectual future that does not exist in nature. The natural future is the time of the maturing of the present, of the approaching time. Power is therefore a double face, a past that, while moving away, informs the future that is approaching and that is being realized now. The seed sown is both the past and the future of the flower that I collect now, the past that is moving away from the present and the future that is approaching until it ripens in the present.

Thus, looking at a distant object is observing its power that founds its present, and a possible dialogue between two individuals would take place between the present in act of the transmitter and the power of the receiver.

### 3.4. The Mind Body problem

The slogan of Intention Physics is "*Nature is everything and only what is on the path of energy*".

Now, each act, insofar as it involves exchange of energy, is also an act of consciousness. In particular, qualia (colors, sounds, all sensations) are present in the energy and carried by the energy. Qualia, in fact, carry self-awareness with them. The energy in act corresponds to the qualia of consciousness. Now, while the flow of energy in act is flow of consciousness (in a reflexive perception), the flow of energy in the potency is mood of soul, unconscious thought (in a mirroring feeling).

Summing up, Nature, which is flowing of Energy, is therefore mind. *While potency, is interior, subjective, mood of soul, the act and its reflection is exterior, objective, appearance in the consciousness.*

More precisely, the intention, which is movement of energy, is the cyclical repetition of three moments: the period of Potency (*δύναμις* *dunamis*) which begins and ends with a decision, which gives rise to the exchange of radiant Energy (*ενέργεια* *energeia*) between a donor and a recipient (*εντελέχεια* *entelechy*) in Act. In the consummative moment of the relationship, the two individuals emerge in act and, insofar as in act, one can give its energy and the other can receive it. Although the two moments, Act and Energy, occur at the same time, they are logically distinct. At last, between an act of giving and the subsequent act of receiving, the period of potency opens up.

The reflective individual is therefore in himself threefold: entelechy (universal), *energeia*, potency. Analogously the universe is threefold: **Baryonic Matter**, **Radiation** and **Cold Dark Matter**. Analogously the living individual is threefold: **Brain(Body)**, consciousness, unconscious thinking. Analogously the space of intention is threefold: the historical vertical dimension from the big bang to the present, the horizontal dimension of the give-take

act between conjugated individuals, the dimension perpendicular to the act, that is, of power.

POTENCY	ENERGEIA	ENTELECHY
present power	present act	historical
Cold Dark Matter	Radiation	Baryonic Matter
mirroring	reflection	memory
Gravitation	Electricity	universal
Soul	Consciousness	Brain(Body)

The potentiality-actuality ontological dualism is paired with the continuous-discrete, infinite-finite, wave-particle, interiority-exteriority, mirror-wristwatch, ....., soul-brain dualism. In other words, these dualisms represent not two sides of the same coin. They are, instead, two moments that alternate and follow each other giving rise to the movement. A power wave in the period of potency that collapses in a determined particle in the instant of the act or, in other words, mental behaviour in the period of potency, a determined state of the brain in the following instant of the act.

Nevertheless, in the reflective individual, which emerges from the superimposition of myriads of intentions, the mirroring of the soul and the reflection of consciousness and the materialization of body are continuous and concomitant. Similarly, in the reflection, where takes place the phenomenon, the three dimensions of the linear geometry of the intention lose their identities and are transformed into the three dimensions, homogeneous and amorphous, of Euclidean space.

#### 4. The reflective individual

##### 4.1. The questions to be answered

The body of a living being is made up of billions of cells that continually die as they are replaced by new cells. The body is therefore, in a certain sense, a universal, like a people, whose population is renewed continuously and totally and repeatedly throughout its life.

What is the identity of the person and the identity of a people? In other words, if an interior corresponds to each exterior and vice versa, in what sense and to what extent does a person and a people exist and have an I?

How this inner identity, i.e. this unity, is to be understood: does it remain the same throughout the life span, or does it arise new and different with each actualization of one of its parts?

##### 4.2. The inner identity of the reflective individual

The mirroring between members and universal is the constituent relationship or intention. A universal exists to the extent that it is mirrored in its members, or, equivalently, to the extent that its members mirror it (which in turn mirrors its universal). Each universal has its own effigy, which is the hallmark of its parts. For the parts, mirroring a universal means composing its specific spatial and temporal form, coordinating, specializing, organizing and giving life to the vital processes of the universal. The universal is therefore the soul of every being.

The universal is animated by its own specific way of evolving, by a possibility that it tends to put into effect. Every change in nature is therefore a passage from power to reality, by virtue of an entelechy, of an internal reason that structures and makes each organism evolve according to its own universal.

Differently from an elementary individual, a reflective individual may have a lot of intentions contemporaneously. Fundamental trait of consciousness, whether elementary or reflective, is that of being a one, an individual. The profound identity, that I that remains identical to itself throughout the entire span of life, therefore, cannot be linked to a single component or to a set of them. The profound identity is like a symphony played by an orchestra, where the symphony is reflected in every single orchestrator and in doing so emerges as a conductor and directs the same orchestrants who are playing it. In parallel, the reflective power waves, each corresponding to an intention, are structured and layered. The higher level intention coordinates the lower level intentions from which it emerges causing their collapse. All are included in the one, the main power wave, the very individual's identity, that begins with conception and ends with the death of the individual.

It is a form of entanglement, a little more complex. In this case, in fact, a single power wave arises from the superposition of innumerable systems of entangled power waves, and, in its long period, it feeds back with each of them. Throughout its period of potency it sees the birth of all the innumerable power waves on which it stands, from which it draws its existence, and determines their collapse (their choice) and, vice versa, its final collapse will be determined by all the collapses (choices) of its components that preceded it.

The living mirroring/reflective individual, therefore, lives according to its entelechy, and to live is to be immersed in an intention in which it takes a foundation. And living is the modulation of the stream of energy, that is mood/consciousness, that occurs mirroring/reflecting, modulated by the universal. Life is always already there, it is the flow of energy, it is not created by the universal, it is only modulated by the universal.

All natural bodies, insofar as they are organized and give rise to processes, are minds that are born. The first universal is the universe itself. It emerges from all its matter and in all its form, which includes its entire history from birth from a big bang to the present in progress. The universe is composed of galaxies, in turn composed of solar systems, in turn composed of planets, in turn composed of nucleus, mantle, crust, oceans, lands, volcanoes, atmosphere, rivers, lakes, in turn populated by living beings and so on. Thus the sun, the earth, the moon, the oceans, the volcanoes, the rivers, are alive, they are minds. They do not create their own representation of the world, since they cannot see, because they have no eyes, they cannot hear, because they have no ears, they cannot move at will, because they have no arms or legs, but since they emerge as universal, they still have a soul and a consciousness. They live in immediacy, like a wave of power that is continually updated giving rise to their phenomenon, as a coincidence of soul, consciousness and body in continuous movement.

With animal life the universal no longer behaves like a ring in the gear of the universe, but leaves the world and faces the world. With the animal the other of the universe is born. The animal's brain is like a mini-universe that reflects the universe as it dialogues with the universe. It has the sense organs to make its own representation of the world and the limbs to interact with the world. As his level of awareness increases, he is freer and freer to accept or reject life. The individual person is therefore a new level, the first level that comes out of the immediacy of the world and is outside of it. The animal individual, therefore, has a vegetative soul, given by the processes and organs that emerge from the reflection and constitute his body. To this is integrated a sensory animal soul and an appetitive animal soul. This reflexively emerging soul is not only passive, that is, sensitive, but also active appetitive, as it is capable of guiding the actions of one's

body reflexively. The animal (the universal), consequently, is in power as long as it lives, only at death it becomes determined.

To every external universal corresponds an internal mind. The reflective individual, as involved in many intentions, in each of which as an instance of a particular universal, mirrors as many universals and each universal lives through it. So a family, a team, a state, a people, ancient Rome, humanity, is a mind that lives to the extent and as long as its members mirror it, and lives through them. It is born as a main wave that emerges from the superposition of the component waves that mirror it, according to an entelechy, and dies when its component waves cease to mirror it. An entelechy is just a way that the parts have of mirroring the universe. A universal that mirrors and composes the universe harmonizing with the rest, or that is opposed to a more or less extended part of the rest, to the point of replacing the universe by opposing it.

Analogously, conscious thought gushes, appears, is phenomenal. Conscious thought is the result of the coordinated activity of a team of billions of neurons, therefore it is an ongoing phenomenon, which corresponds to a potential soul-driven unconscious thought. A single power that arises from the powers of the components and determines the choices of the components, and perceives and operates through the components. A single universal that is reflected in all components and reflects all components in itself.

#### 4.3. *The internal side of the Universal Relationship and The constitution of the soul*

The soul is the mirror in which the universal that appears and towards which one tends or moves away is revealed and veiled.

To love is to mirror. The decision is the choice, made by an individual, of one of all the possibilities and is guided by mirroring (by love).

Since a spiritual interior corresponds to every material exterior, an internal side also corresponds to the Universal Relationship reported in the thesis 1 :

*An intention is cyclical and takes place between two conjoined individuals, one of whom is the universal of the other who makes himself his son. The intention consists of two moments connected by the decision that finds space between them:*

- *the mirroring moment of separation, in which the father and the son are distant and mirror each other in the period that precedes the consummation. In this period:*
  - *one yearns to give a part of oneself, one's body, to one's Universal. The donor does not see the other, he must have **hope**, moved by love he must go out of himself, he must jump in the dark towards the other he does not see to give him self.*
  - *the other yearns to receive a part of himself, of the body of these, from his Universal. The recipient does not see the other, must have **faith**, moved by love must listen, must be seduced by the other, open up to the other, welcome him.*
- *the moment of union in the spirit, of **joy**, that occurs in the decision through the gift of oneself, of one's own body. At the moment of union, distances and times are cancelled.*

Love, desire, dream, lack, loneliness, hope, faith, trust, confidence, joy, happiness, are all feelings of the soul in the period of power. They are inseparable from the structure of intention, of which they show the inside. They can only be amplified or reversed or distorted in the individual's interaction with the world. Contrary to sensory perceptions, which are determined

and punctual (electrical phenomenon), they are indeterminate and persistent (gravitational space background).

Mood, feelings and emotions reflect the quantity and quality of the intentions one is involved in, and these depend not only on the context in act, but on the memory and on the type of universal we have chosen/forged and the intensity with which we love it. Memory places constraints on power. Indeed, in the period of potency, in view of our intentions, that is, our goals and aspirations, memory determines the interpretation of the present and expectations of the future. We memorize above all what we love, that it is relevant in the light of our intentions. Memory and emotions are therefore closely linked, as both are explained in the light of intentions.

#### 4.4. *Ideas and universals in the Intention*

The universal, which emerges from the union of parts, like a power wave given by the superposition of the power waves of the components, is always a concrete, contingent, new, different, never abstract universal. It is a concrete and contingent way of relating to the whole in the intention. Nor do abstract ideas exist, such as beauty, justice, etc. Rather, they correspond to the emotions that accompany the intention. Beauty is in reality a particular type of emotion that communicates a phenomenon made of sounds, colours, words, with their rhythm, their combination, their textures. Colours, sounds, words and emotions correspond as the exterior and interior, the act and the power, and are part of the communication inherent in the intention and which represents the ontology of being.

#### 4.5. *The Realm of Potency: the frightening and fascinating mysterious ocean of the unknown*

Consciousness, which is the fruit of the electrical activity of the brain, emerges in the space of the power of its universal which in turn mirrors the space of the power of the universe.

The space of power, that is the realm of dark matter, is the realm of fantasy, of the unknown that leaves room for:

- historical psychological investigations: what a person, in a given circumstance, might have thought, believed. About his possible mood.
- historical reconstruction: how things could have gone, and how they could have gone otherwise if ...
- ...
- stories of lives, of entities, of possible places, up to the boundaries of the impossible, the unthinkable.

But it is also the source of art that tries to express with its own means the realm of emotions, moods, the deepest fears and the most intense desires.

#### 4.6. *The Freedom*

The individual, to the extent that he is engaged in an intention, is one and is free and has a soul where its universal is mirrored. Freedom is founded on the ability to mirror more or less faithfully its own universal. That is, the individual is free to forge his own universal out of the universal which is the whole universe or God.

Mirroring is free to mirror or not any single part of the whole. On the basis of the extension and localization of the rejected parts, he can obtain a more or less reduced, more or less distorted version of the whole, that is his own universal. A universal that



mirrors and composes the universe harmonizing with the rest, or that is opposed to a more or less extended part of the rest, to the point of replacing the universe by opposing it.

Mirroring is antecedent to choice and characterizes the individual.

## 5. The principle of reason

Nothingness is not a constituent of being. "Being there" (dasein) is not being, being does not belong to him, but is continually given to him. Indeed the reflective individual is not substance but arises as a meta-level, borrows a substance over which he is given power. "Being there" is like a mirror that reflects this life-giving energy. The individual cannot therefore identify the being that is the Foundation or the energy from it, but can open or close to it. The word identification, with this warning, must always be understood as a filter lowered onto being, or as the closing of "Being there" to being.

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

But the individual exists in that it is placed by the Foundation in an intention, as invested with love. The individual cannot exist outside an intention, and an intention unites the Founder and the founded placing them in the same species. Being there comes into existence already endowed with an essence, mutual that of its Foundation, reflects it. This essence is love fulfilled through charity. The founded individual is then free to amputate up to totally distort his nature. Depending, the possible distortion of conscience, which correspond to the possible falsifications of charity, on the different degrees and different places of the structure of charity which can be obscured.

Existence, then, is not before essence.

A reflective life requires a reflective body and a meaning, that is a role to play in the Universe from which it arises.

Entelechies, as well as the logic that governs them, are not a priori forms that exist per se, in a hyperuranium, but they emerge reflexively and are contingent, they change over time as the epoch changes, they are the symbols of the epoch, the words and grammar, which respond to the immutable need to give substance to the dialogue between the entity and the being, that is, the intention.

*The Geschick of being: a child that plays... Why does it play, the great child of the world-play Heraclitus brought into view in the aion? It plays, because it plays. The "because" withers away in the play. The play is without "why". It plays since it plays. It simply remains a play: the most elevated and the most profound. But this "simply" is everything, the one, the only... The question remains whether and how we, hearing the movements of this play, play along and accommodate ourselves to the play.* Heidegger (Martin 1991)

Now, on the contrary, we know that history is guided by an intention in view of an end. Epochs change, musics change, but there is a common thread that remains in the background, immutable. It is the eternal logos, whose saying is "*Being is Love fulfilled through Charity*".

## 6. The Promised science

What at first glance might seem a solid and incontrovertible method of investigation placed at the foundation of nascent modern science, in reality hid a fateful change in the attitude of man

who passed from feeling part, son, of a being to be understood, starting primarily from oneself, to feel different in front of an alien being to crack (decipher, steal secrets) and then take possession of it until it is folded as it pleases. Modern science gained objectivity, but it lost its interiority and modesty. The promised science must be the overcoming in the synthesis of these two opposite moments. Before this happens, it is necessary that each of the two preparatory moments has reached the end of its path and has touched its limits and felt its inadequacy.

At last, the promised science requires a new language and a new mind.

It is in fact characterized by the recovery of the relationship with life, in contrast with the distance from life that is typical of modern science. Its form of representation, however rigorous it may be, is completely different, qualitatively different from

*"that sort of «indifferent» science which is modern science, whose sublime heroism is a inhuman sort of curiosity. The high aloofness of this indifferent science, far from being seriousness, is foolery and vanity. A court jester in the guise of a pure man is not heroism, nor is having fun with the history of the world as with a game of surprises.*

*True heroism is to venture wholly to be oneself, as an individual man, this definite individual man, alone before the face of God, alone in this tremendous exertion and this tremendous responsibility. . . .*

*All knowledge, however rigorous its form, must be anxious; and this anxious concern is precisely what edifies, as long as it implies relationship to life."*<sup>5</sup>

As rigorous as they may be, there are essentially two different languages. One is the technical one used by natural sciences, it takes place in the context of reflection. Its task is to define the entity without leaving room for ambiguity and to demonstrate its laws without leaving any way out for reasoning. It is closed, finished, dead. It proceeds in tight steps along a continuous path.

The other, no less rigorous, is that used by artists, historians, poets and philosophers. It takes place in the realm of power and mirroring, its task is to bring you into the appropriate mood and from there point out as accurately as possible. It is open, infinite, alive. It stops on the edge of the definable and from there it invokes, waiting for a revelation.

The promised science must know how to use both, the first in view of the second and vice versa, and walk with both legs, aware that neither can be so arrogant as to presume to be self-sufficient: science requires both eyes and heart. More precisely, since each has its roots in the ontology of being, they are complementary, each making no sense without the other.

## 7. Apologies

I apologize to the reader if the discussion and treatment of the subject, the most fundamental, most concrete and most important problem for man, which has not been made to live like a brute, is still far from the clarity and completeness that would be desirable.

Nevertheless, its merit is that of being a radical change of direction and of indicating the way with sufficient clarity. Therefore, I appeal to the reader's good will to favor the dissemination of this paper to the extent that it edifies by virtue of that anxious concern that the relationship with life implies.

It is an extreme attempt to humanize modern science, which has made the principle of the authority of the so-called science

<sup>5</sup> freely drawn from the Preface of "The Sickness Unto Death" by Søren Kierkegaard (1848)

tific community, totally closed in on itself and self-referential, the criterion of truth. Which, already suspicious by its nature of thought, drunk with the triumphs of technology, has killed what remains of thought. It is not human to give up sublime harmony and be satisfied with a cookbook.

## References

- Parmenide, On Nature (V century BD)*  
*Plato, Parmenides (IV century BD)*  
*Aristotle, Metaphysics (IV century BD)*  
*Aristotle, Physics (IV century BD)*  
*Aristotle, On the Soul (IV century BD)*  
*Euclid, Elements, (IV century BD)*  
*Giordano Bruno: La Cena de le Ceneri, 1584*  
*Giordano Bruno: De la causa, principio et uno, 1584*  
*Giordano Bruno: De l'infinito, universo e mondi, 1584*  
*G.Galilei, Dialogo sui due Massimi sistemi del mondo, 1632*  
*Isaac Newton, Philosophiae Naturalis Principia Mathematica, 1687*  
*G.W.F. Hegel, Logic (1830)*  
*Sören Kierkegaard: The Sickness Unto Death (1848)*  
*Heidegger, Martin: The Principle of Reason. Bloomington: Indiana University Press, 1991.*  
*Jean-Paul Sartre: Existentialism Is a Humanism, Lecture given in 1946*  
*Martin Heidegger: Conference of the Academy of Sciences at Heidelberg, July 26, 1958*  
*Albert Einstein (1905) "Zur Elektrodynamik bewegter Körper", Annalen der Physik 17: 891*  
*Einstein, Albert (1907), "Über das Relativitätsprinzip und die aus demselben gezogene Folgerungen", Jahrbuch der Radioaktivität und Elektronik, 4: 411*  
*Einstein, Albert (1915), "Die Feldgleichungen der Gravitation", Sitzungsberichte der Preussischen Akademie der Wissenschaften zu Berlin: 844–847*  
*Einstein, Albert (1916), "Die Grundlage der allgemeinen Relativitätstheorie", Annalen der Physik, 49: 769–822*  
*Einstein, Albert (1917), "Kosmologische Betrachtungen zur allgemeinen Relativitätstheorie", Sitzungsberichte der Preußischen Akademie der Wissenschaften: 142*  
*Born, M.(1927). Physical aspects of quantum mechanics, Nature 119: 354–357*  
*Bohr, N.(1928). "The Quantum postulate and the recent development of atomic theory". Nature. 121: 580–590*  
*Heisenberg, W. (1930). The Physical Principles of the Quantum Theory, translated by C. Eckart and F.C. Hoyt, University of Chicago Press.*  
*Heisenberg – Quantum Mechanics, 1925–1927: "The Uncertainty Relations".*  
*Schrodinger, Erwin (1926). "Quantisierung als Eigenwertproblem". Annalen der Physik. 384 4: 273–376.*  
*Dirac P. A. M., Proc. R. Soc. London A267, 148 (1938).*  
*Wheeler J. A. and Feynman R. P., Rev. Mod. Phys. 17, 157 (1945); and Rev. Mod. Phys. 21, 425 (1949).*  
*Feynman R. P., 1985, QED: The Strange Theory of Light and Matter*  
*Peluso V. 13 jan 2019 Intention Physics viXra:1811.0391*  
*Peluso V. 2021-02-12 Intention not Theory: the Vertigo of Love viXra:2003.0606*  
*Peluso V. 2021-04-16 The Geometry of the Discrete Act viXra:2104.0097*  
*Peluso V. 2022-04-30 The Cosmology of the Instant Reconstruction of the Path of Light viXra:2204.0175*

## Appendix A: The discrete one-dimensional geometry of the Act

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. A.2), nor is the identity of the other known.

Nevertheless, reflective individuals arise from the superposition, stratification and nesting of innumerable elementary intentions, interacting with each other through reflective intentions.

Every reflective individual in the intention is mirror and wristwatch: mirror in the period of potency, wristwatch in the historical reconstruction which takes place in the instant of the present in act. The mirrored world in the period of potency leaves the place to the historically reconstructed metric world of the instantaneous act. Indeed, physics is only possible because the reflective individual is a wristwatch and a mirror. The photo captures the recursive reflection between two reflective individuals in an instant, and this constitutes the memory.

The reconstruction of the path of energy (light) is the only operation allowed starting from the memory contained in the photo of an instant. The path of radiant energy consists of a sequence of segments that alternate between the two individuals involved. This property allows to interpret the length of each single segment as the measure of the mutual distance at a different instant in the past, the length of the path composed of several contiguous segments as the temporal period, and thus to assign a speed of approach or departure to the two involved individuals. Therefore it is not legitimate to attribute a speed to energy, thereby assuming a space in itself and a time in itself, as modern physics has mistakenly done since its birth.

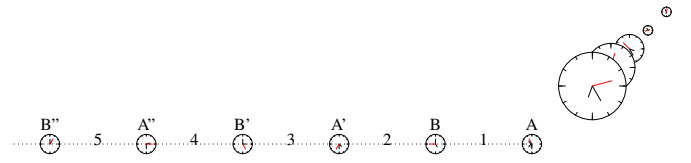
The light, indeed, does not have a speed but is itself the space proper to the individual, the space of the potency of giving or the space of the potency of receiving that is transformed into light in the act that carries the object of the gift with it. Speed, instead, which is reflective, gives an account of the evolution of the involved individuals. It is the angle of the relationship between two individuals, that is, the  $\gamma^\diamond$  angle between the homologue time axes (donating-donating or receiving-receiving) of the two individuals in relationship.

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 change of configuration in the space and time of memory. In the relationship, the only meter and clock is the thread of the radiating energy, which is meter and clock together. The geometry of the Act is therefore linear: the disentangling of a unique path.

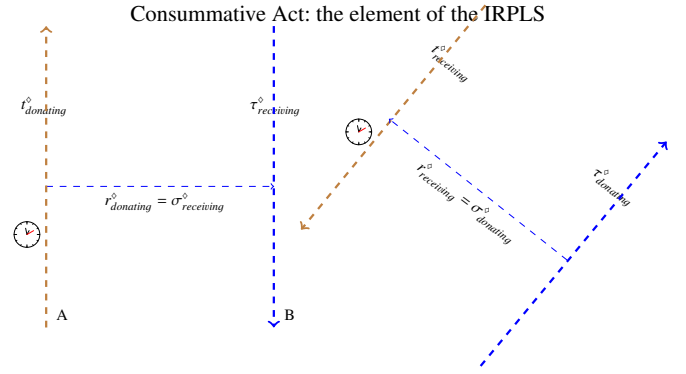
If in the universe the elementary individual manifests itself in act as a quantum, then, in the true representation of the universe, in act there are only integers and the numbers given by their ratio, that is, rational numbers, as was already clear to the Pythagoreans. In the instant of the act there is no infinite, neither consequently infinitesimal nor consequently curving.

### A.1. The Linear Geometry

The IRPLS (Instant Reconstruction of the Path of Light Space-time) or (Intention Relationship's PLS) is only and not other than the reconstruction, starting from the present instant, of the path of the intermediaries of the interaction (i.e. the bosons) that takes place between two individuals in relationship. This is the same



**Fig. A.1.** Recursive mirroring: two mirrors facing each other are reflected recursively. If there is a clock on each of them, in 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.



**Fig. A.2.** Consummative Act (not the event) is the element of the IRPLS: light does not have a speed, each segment of the path of light itself constitutes the space axis and determines the time axis, orthogonal to it, constituting the frames of the two individuals who oppose each other in the interaction. Consequently, for each individual, one frame corresponds to the act of giving and another frame corresponds to the act of receiving. The two frames are rotated to each other by a real  $\gamma$  angle. The determination of the  $\gamma$  angle is subject to the Uncertainty principle. Indeed, in a measurement, while the measuring instrument A is necessarily classic and therefore reflective, so we know  $P^\diamond = t_{A_i}^\diamond - t_{A_{i-1}}^\diamond$ , the measured B could be non-classic, therefore we would not know the proper time  $t_{B_i}^\diamond$  and therefore we would not know  $\cos \gamma^\diamond = \frac{t_{B_i}^\diamond - t_{A_{i-1}}^\diamond}{t_{A_i}^\diamond - t_{B_i}^\diamond}$  and vice-versa.

path as the light between two mirroring individuals: each one reflects and is reflected by the other recursively.

In fact, if we place a clock on each of the two individuals involved in the interaction, we can historically reconstruct distances and time intervals from the sequence of times that appears in the mirror image. If we denote by  $s_n^\diamond = t_n^\diamond - t_{n-1}^\diamond$  the distance between the two individuals at time  $t_n$ , we discover (see fig. A.3) that the historical reconstruction of the distance series forms a geometric progression

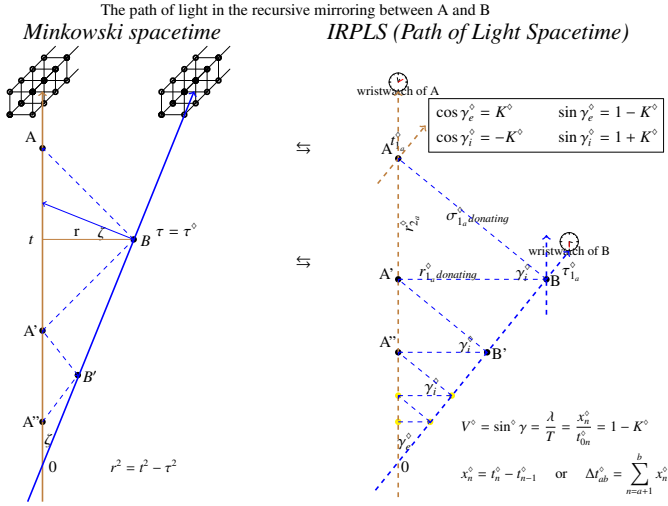
$$t^\diamond = s_0^\diamond + s_1^\diamond + s_2^\diamond + s_3^\diamond + \dots = s_0^\diamond (1 + K^\diamond + K^{\diamond 2} + K^{\diamond 3} + \dots) = \frac{s_0^\diamond}{1 - K^\diamond}$$

where  $s_0^\diamond$  is the scale factor and  $k = \cos^\diamond \gamma$  is the common ratio. Therefore

$$\Delta \lambda^\diamond = t^\diamond - t_{-1}^\diamond = s_0^\diamond \quad \text{and} \quad V^\diamond = \frac{\Delta \lambda^\diamond}{t^\diamond} = \frac{\overline{AB}}{OA} = 1 - K^\diamond$$

Figure (A.3) compares the representation of the progression of events  $A, B, A', B', \dots$  in Minkowski's spacetime with that in IRPLS.

In contrast with the Minkowski's spacetime, in the IRPLS



**Fig. A.3.** isomorphism: in comparison the representations of the geometric progression  $A, B, A', B', A'', B'', \dots$  with  $K^\diamond(\gamma)$  as the common ratio, deriving from the recursive mirroring of individuals A and B (see fig. A.1). The IRPLS diagram emerges from the historical reconstruction that connects the act of giving with the previous act of receiving and so on. Consequently, In the IRPLS diagram the homologous frames, and therefore the homologous axes, face each other forming an angle  $\gamma$  (the heterologous frames, and therefore the heterologous axes give-receive are in fact always parallel to each other).

- the individual manifests itself determined (particle) only in the act, i.e. only in the instant of giving/receiving energy, while it is in potency (power wave) otherwise. In other words, movement takes place not in act, but in the continuum of the potency which extends between one act and the next act of the relationship
- there is not a Time per se, other of space, the only dimension is the path of light in a relationship. Time is only the measure of the length of the total path of light. Light therefore does not have a speed and the metric is linear
- the element of the IRPLS is not the event, but the entire segment that unites the donor to the recipient (see fig. A.2). Since light does not have a speed, each segment of the path of light itself constitutes the space axis and determines the time axis, orthogonal to it, constituting the frames of the two individuals who oppose each other in the interaction. represents the historical reconstruction of the relation donating-receiving of energy between two individuals starting from the current Act in the current instant. A reflective individual (i.e. a classic observer) extracts all the information from the image that reflexively emerges (i.e. from a sufficient number of concomitant acts) from and within the energy received. In other words, it always represents a single instant: the entire spacetime of a relationship photographed in an instant
- the metric is linear  $\Delta t^\diamond = \sum s_i^\diamond + R_i$ . That is, time is the period of potency that extends between two acts and therefore is equal to the length of the path of light, which takes place partly in space and partly in the Radius (here the gravitational one)
- The circulation along a closed path is zero (zero curl). In a closed path, time is therefore the antilight, in the sense that it is of equal modulus and opposite sign to the light path.
- distance asymmetry: called  $\overline{A'B}$  and  $\overline{BA}$  the round trip of a signal between A and B, we have  $\overline{A'B} = K^\diamond \overline{BA}$ . Each segment of the path is  $K^\diamond = \cos^\diamond \gamma$  times the previous one.

- the cipher of the linear geometry of the IRPLS diagram are the right Triangles  $\Delta_e^\diamond$  and  $\Delta_i^\diamond$ , which correspond respectively to the rotation  $\{\gamma_e \mid \sin^\diamond \gamma_e + \cos^\diamond \gamma_e = 1\}$  and  $\{\gamma_i \mid \sin^\diamond \gamma_i + \cos^\diamond \gamma_i = 1\}$ . In other words, there are two versions of the angle  $\gamma^\diamond$

$$\cos \gamma_e^\diamond = K^\diamond(\gamma) \quad \sin \gamma_e^\diamond = 1 - K^\diamond(\gamma) \quad (\text{A.1})$$

$$\cos \gamma_i^\diamond = -K^\diamond(\gamma) \quad \sin \gamma_i^\diamond = 1 + K^\diamond(\gamma) \quad (\text{A.2})$$

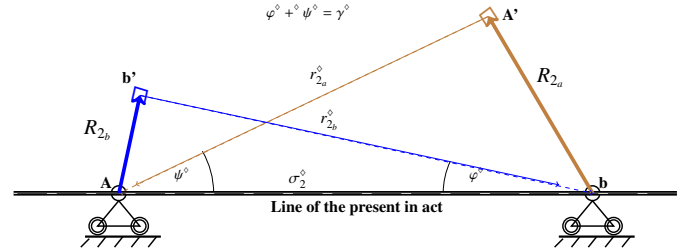
It is easy to verify that:

$$\sin(\varphi_e \pm \psi_e) = \sin^\diamond \varphi_e \pm \sin^\diamond \psi_e \quad (\text{A.3})$$

$$\cos(\varphi_e \pm \psi_e) = \cos^\diamond \varphi_e \mp \sin^\diamond \psi_e \quad (\text{A.4})$$

The right Triangles  $\Delta_e^\diamond$  and  $\Delta_i^\diamond$  are the atoms and the compounds of the IRPLS diagram and they unfold recursively from each other alternating. Indeed, in a IRPLS diagram, each segment arises from a geometric progression which has as its common ratio  $\cos^\diamond \gamma$  and as scale factor a segment of a more primitive nature. Below the genesis of the spacetime (fig. A.4):

- The genesis of the spacetime: *The core of a IRPLS diagram consists of the radius of the two interacting individuals linked by the path of light during their interaction. In the interaction, the light path cyclically connects the head of each radius with the tail of the opposite radius, crossing the same radii.*



starting from the above schema, indicating with:

$$R_{2a} = 2 \frac{G}{c^2} M_a \quad R_{2_{tot}} = R_{2a} + R_{2b}$$

Since for each observer A, its proper mass at rest is opposed to the remaining masses B placed in their centre of gravity and subjected to the total gravitational field, the global energy-momentum Radius of A and B is

$$R_{2_{Ab}}^\diamond = R_{2a} + R_{2b} \cos^\diamond \gamma \quad R_{2_{Ba}}^\diamond = R_{2b} + R_{2a} \cos^\diamond \gamma$$

and since a round trip route passes through both A and B, it descends that space and time proceed from mass-energy as follows:

$$R_2^\diamond = \frac{R_{2_{Ab}}^\diamond + R_{2_{Ba}}^\diamond}{2} = \frac{R_{2_{tot}}(1 + \cos^\diamond \gamma)}{2} = \frac{R_{2_{tot}} \sin^\diamond \gamma_i}{2} \quad (\text{A.5})$$

$$r_2^\diamond = \sum_{-\infty}^0 R_{2_i}^\diamond = R_2^\diamond (1 + \cos^\diamond \gamma + \cos^{\diamond 2} \gamma + \dots) = \frac{R_2^\diamond}{\sin^\diamond \gamma_e} \quad (\text{A.6})$$

$$r^\diamond = \sum_{-\infty}^0 r_{2_i}^\diamond = r_2^\diamond (1 - \cos^\diamond \gamma + \cos^{\diamond 2} \gamma - \dots) = \frac{r_2^\diamond}{\sin^\diamond \gamma_i} \quad (\text{A.7})$$

$$\tau^\diamond = \sum_{-\infty}^0 r_i^\diamond = r^\diamond (1 + \cos^\diamond \gamma + \cos^{\diamond 2} \gamma + \dots) = \frac{r^\diamond}{\sin^\diamond \gamma_e} \quad (\text{A.8})$$

where

$$r_2^\diamond = \frac{r_{2a}^\diamond + r_{2b}^\diamond}{2} \quad r^\diamond = \frac{r_a^\diamond + r_b^\diamond}{2} \quad \tau^\diamond = \frac{\tau_a^\diamond + \tau_b^\diamond}{2}$$

At last, indicating with

$$R_x = \frac{R_{2x}}{2} \quad R_{tot} = \frac{R_{2tot}}{2} = \frac{R_{2a} + R_{2b}}{2} = R_a + R_b = \frac{G}{c^2} (M_a + M_b)$$

from the eq. (A.5, A.6, A.7, A.8) descends the fundamental relation:

$$V^\diamond = R_{tot} : r^\diamond = r^\diamond : \tau^\diamond = \sin^\diamond \gamma_e = p^\diamond / m \quad (\text{A.9})$$

– geometry of the relation: in the instant the geometry is linear: A IRPLS closed polygonal chain corresponds, locally, to a manifold differential equation valid at that point.

– “principle of equivalence, in the instant, between inertial and not inertial systems” :

from the (A.9) the potential is equivalent to the momentum  $V^\diamond \equiv p^\diamond / m$  and both correspond to a rotation, through a real angle  $\gamma = \arcsin(V^\diamond)$ , of the respective reference systems.

The sine of the  $\gamma$  angle between rotating Radii (or any other pair of axes) corresponds to the potential or the momentum ( $V^\diamond \equiv p^\diamond / m \equiv \sin^\diamond \gamma$ ). In the IRPLS space, therefore, there is no difference, in the instant, between an inertial and a non-inertial system, since both are characterized by a rotation angle  $\gamma$ . In an inertial system, in fact, the two radii are symmetrical and fictitious and translating (approaching or moving away) they do not rotate ( $p^\diamond(\gamma)/m = r^\diamond/\tau^\diamond = \text{const}$ ) but their modulus grows as  $R = V^\diamond r^\diamond$ . On the other hand, in the gravitational or electrical interaction, the two Radii are real and their modulus is fixed and for both “freely falling”  $\equiv$  “rotating” :  $V^\diamond(\gamma) = R_{tot}/r^\diamond$ .

– The genesis of the three spatial dimensions: The genesis reported here, shows that space emerges from matter. In particular, matter is in three different states, each of the three dimensions emerges from one of the three states of matter:

1.  $r_c$  from potency, that is CDM;
2.  $r_r$  from energy, that is radiation;
3.  $r_b$  from act, that is baryonic matter.

These three states of matter correspond to the three inner dimensions of space.

– the reflective birth of Euclidean geometry:

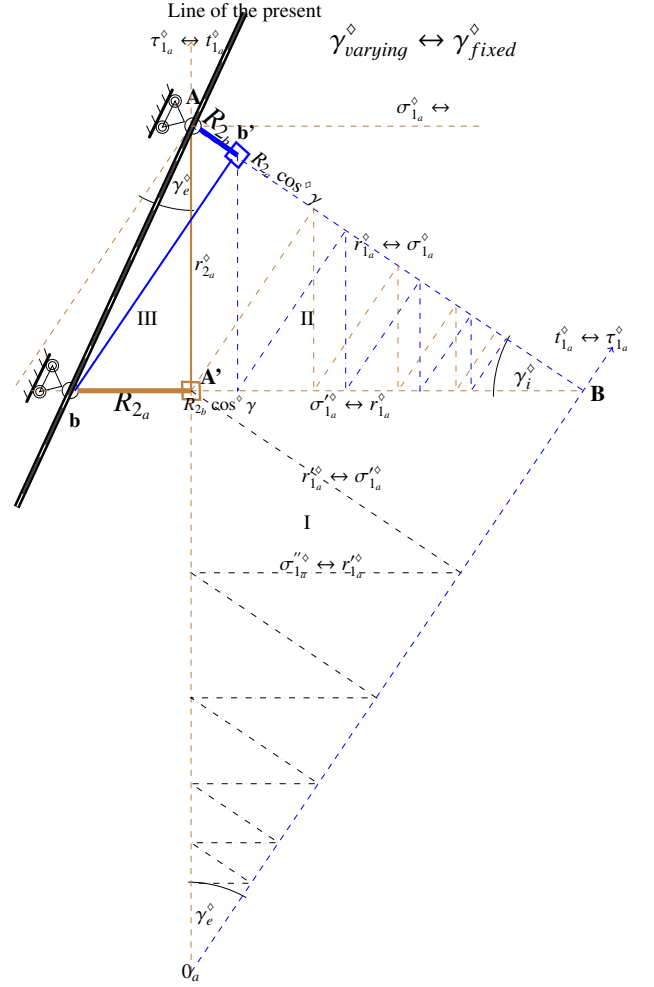
$$\mathbb{G}(\Delta_i^\diamond) \cdot \mathbb{G}(\Delta_e^\diamond) = \mathbb{G}(\Delta_{Euclid}) \quad \equiv \quad (\cos \gamma_i^\diamond + \sin \gamma_i^\diamond)(\cos \gamma_e^\diamond + \sin \gamma_e^\diamond) = (\cos \gamma^2 + \sin \gamma^2) \quad (\text{A.10})$$

From the physical point of view, the (A.10) corresponds to the general energy-momentum relation both in the linear version and in the usual quadratic version. Indeed it's possible to show that for each physical equation, there are two dual forms, a linear one in the IRPLS plane and a quadratic one in the manifold.

– the isomorphism between SR, GTR and IRPLS.

From the previous definitions, differentials represent proper coordinates while segments represent reduced circumferences more or less the Radius.

Indeed, from fig. A.4 and since, for the Schwarzschild coordinates,



**Fig. A.4.** The whole relation is enfolded and unfolds from the Radii of the two conjoined individuals with the dual angles  $\gamma_e$  and  $\gamma_i$  alternating each other. It is governed by the relation  $R : r^\diamond = r^\diamond : \tau^\diamond = \sin^\diamond \gamma$ . Indeed the three quadrants represent time, space and Radius and recursively follow one another. In particular the III-II quadrants represent the internal energy-space plane, while the II-I quadrants the external space-time plane.

The diagram represents the historical reconstruction of the relationship starting from the current instant. It coincides with real history only when  $\gamma$  is constant.

“by definition, the “time” required by light to travel from A to B equals the “time” it requires to travel from B to A” (Einstein 1905) we have:

$$d\tau = d\tau_1^\diamond \quad d\sigma = d\sigma_1^\diamond \quad (\text{A.11})$$

$$r = \frac{\sigma_1^\diamond + r_1^\diamond}{2} = r^\diamond \pm \frac{R_{tot}}{2} = r^\diamond \pm R \quad t = \frac{t_1^\diamond + t_1^\diamond}{2} = t^\diamond \pm r \quad (\text{A.12})$$

Since in gravitation

$$K^\diamond = 1 - \sin \gamma \quad (\text{in electricity } K^\diamond = \cos \gamma) \quad (\text{A.13})$$

defining  $V^\diamond = \sin \gamma$ , we have:

$$K_e^\diamond = K^\diamond \quad K_i^\diamond = -K^\diamond \quad (\text{A.14})$$

$$V_e^\diamond = 1 - K^\diamond = V^\diamond \quad V_i^\diamond = 1 + K^\diamond = 2 - V^\diamond \quad (\text{A.15})$$

and the (A.11, A.12) become:

$$d\tau_e^\diamond = d\tau \quad d\tau_i^\diamond = -d\tau \quad d\sigma_e^\diamond = d\sigma \quad d\sigma_i^\diamond = -d\sigma \quad (\text{A.16})$$

$$t_e^\diamond = t + r \quad t_i^\diamond = t - r \quad r_e^\diamond = r + R \quad r_i^\diamond = r - R \quad (\text{A.17})$$

$$d\tau_x^\diamond = d\tau_x^\diamond (1 - V_x^\diamond)^k \quad d\sigma_x^\diamond = \frac{dr_x^\diamond}{1 - V_x^\diamond} \quad x = e, i \quad (\text{A.18})$$

where  $k = 1$  when  $d\gamma = 0$ ,  $k = -1$  in a free falling frame ( $d\gamma \neq 0$ ).

Therefore, in a static frame ( $dr = 0$  and therefore  $d\tau_x^\diamond = dt$ )

$$d\tau^2 = -d\tau_e^\diamond d\tau_i^\diamond = -d\tau_e^\diamond d\tau_i^\diamond (1 - V_e^\diamond)(1 - V_i^\diamond) = g_{00} d\tau^2 \quad (\text{A.19})$$

in a free falling frame ( $dr \neq 0$ )

$$d\tau_e^\diamond = \frac{dt_e^\diamond}{1 - V_e^\diamond} = \frac{\frac{E d\tau}{mc^2} - \frac{dr}{c}}{1 - V_e^\diamond} \quad d\tau_i^\diamond = \frac{dt_i^\diamond}{1 - V_i^\diamond} = \frac{\frac{E d\tau}{mc^2} + \frac{dr}{c}}{1 - V_i^\diamond} \quad (\text{A.20})$$

$$d\tau^2 = d\tau_e^\diamond d\tau_i^\diamond = \frac{dt_e^\diamond dt_i^\diamond}{(1 - V_e^\diamond)(1 - V_i^\diamond)} = \frac{\frac{E^2}{m^2 c^4} d\tau^2 - \frac{dr^2}{c^2}}{1 - 2V} \quad (\text{A.21})$$

$$\left( \frac{E^2}{m^2 c^4} - 1 \right) + 2V = \frac{dr^2}{c^2 d\tau^2} \quad (\text{A.22})$$

Since, from the above, it must be:

$$g_{00} = 1 - 2V \equiv -(1 - V_e^\diamond)(1 - V_i^\diamond) = (1 - V^\diamond)^2 = V_e^\diamond V_i^\diamond \quad (\text{A.23})$$

it follows that IRPLS physics is isomorphic to GTR via:

$$V \equiv \frac{V_e^\diamond V_i^\diamond}{2} = V^\diamond \frac{1 + \cos^\diamond \gamma}{2} = \frac{\frac{1}{2} R_2^\diamond}{r^\diamond} = V^\diamond \left( 1 - \frac{V^\diamond}{2} \right) \quad (\text{A.24})$$

About the mapping between the angles  $\zeta$  of Special Relativity and  $\gamma^\diamond$ , since, from the (A.17)

$$\begin{cases} t_1^\diamond = t + r = \tau_1^\diamond / \cos^\diamond \gamma \\ t_1^\diamond = t - r = \tau_1^\diamond \cos^\diamond \gamma \end{cases} \Rightarrow \begin{cases} t_1^\diamond = \tau \cosh \zeta + \tau \sinh \zeta \\ t_1^\diamond = \tau \cosh \zeta - \tau \sinh \zeta \end{cases}$$

we find that IRPLS physics is isomorphic to Special Relativity via:

$$e^{-\zeta} \equiv \cos^\diamond \gamma \quad (\text{A.25})$$

IRPLS physics, therefore, subsumes unifying Einstein's field equations and special relativity on a new ground.

## A.2. The meaning of IRPLS and its relationship with Minkowski's spacetime

We saw in the previous paragraph that the physical representation in Minkowski/Riemannian manifold spacetime and that in the IRPLS, although completely different, as deriving from two completely different metaphysics, are isomorphic to each other. Which of the two is the real one (or the more primitive) is not a matter of taste, rather of criteria of naturalness, simplicity and generality.

According to the physicist John Wheeler, Einstein's general theory of relativity can be summed up in just 12 words: "Space-time tells matter how to move; matter tells space-time how to curve".

IRPLS removes absolute spacetime: "matter tells matter how to move in the potency". More precisely, IRPLS also removes matter. In fact, the universe is the set of the totality of individuals in relation to each other where each individual (the elementary individual is the quantum of matter) is distinguished by its position with respect to the others.

The IRPLS diagram is only a knowledge representation system, it emerges reflexively (probabilistically) from the potency by means of the same theory on which QED is based, when the uncertainty inherent in IRPLS (see. fig. A.2) dissolves. It is therefore the reality that lies beneath the Riemannian manifold that reflexively (phenomenologically) emerges from it, and the ground that unifies gravitation with quantum mechanics and inertial systems.

## A.3. The universal metric

At last, the complete universal metric is

$$\begin{bmatrix} dx \\ id\tau \\ \sigma d\phi \end{bmatrix} = \begin{bmatrix} \cos \varphi & \sin \varphi & 0 \\ -\sin \varphi & +\cos \varphi & 0 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos \vartheta & +\sin \vartheta \\ 0 & -\sin \vartheta & \cos \vartheta \end{bmatrix} \begin{bmatrix} d\sigma \\ idt \\ rd\phi \end{bmatrix} \quad (\text{A.26})$$

where  $\phi + \psi = \gamma$  is the total opening angle of the relation and  $\vartheta$  the weaving angle between the two semi-planes of the act.

In particular, when  $\phi = 0$  we have :

$$[dL] \equiv \frac{dr}{V_i - 1} \hat{\mathbf{e}}_r + \{idt(1 - V_e) \cos \vartheta - rd\phi \sin \vartheta\} \hat{\mathbf{e}}_+ + \{idt(1 - V_e) \sin \vartheta + rd\phi \cos \vartheta\} \hat{\mathbf{e}}_\phi \quad (\text{A.27})$$

and squaring:

$$dL^2 = (1 - V^\diamond)^2 c^2 d\tau^2 - \frac{dr^2}{(1 - V^\diamond)^2} - r^2 d\phi^2 \quad (\text{A.28})$$

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

$$\mathbf{U} = \frac{1}{2} mc^2 \left[ -2V^\diamond + V^{\diamond 2} + \left( \frac{dr}{d\tau} \right)^2 + \frac{L^2 V_\vartheta^2}{m^2 R^2 c^2} (1 - V^\diamond)^2 \right] \quad (\text{A.29})$$

where

- for gravitational interactions, the  $V^\diamond$  is usually replaced by the  $g(V)$  via the A.24 giving the Schwarzschild metric;
- the potential  $V^\diamond = \sin \gamma^\diamond \leq 1$ , reverses from outside  $V^\diamond = R/r$  to inside  $V^\diamond = r/R$ ;
- for electrical interactions, and for the inside of gravitational interactions, it holds  $mR = R_e R^\diamond = 1$ ;
- the pseudo potential  $V_\vartheta$  term is equal to  $V_\vartheta = R/r$  when the native seat of the relationship is outside  $R$ , to  $V_\vartheta = r/R$  otherwise. But, contrarily to the potential  $V^\diamond$ , its formula does not reverse but continues to grow when the distance  $r$ , overflowing its seat, crosses the threshold  $R$ .

*It is the conservation of angular momentum, therefore, that determines the confinement of the relationship on one side or the other of Radius  $R$  in the strong interaction.*