

# Introduction to the Ontology of Knowledge

Jean-Louis Boucon

*What we ignore is immeasurable to what we understand.  
The real is not a subset of the speakable.  
We have to give meaning beyond meaning.*

*"As we begin to glimpse the links between gravitation and electromagnetism, hitherto considered as two entirely different groups of phenomena, so we can hope that the physical and the spiritual forces will appear to us later unified in a higher synthesis, which will make the Spirit appear as one of the aspects of the forces of the universe."*

*Paul Langevin «Contribution de l'enseignement des sciences physiques à la culture générale», Conférence du 11 juin 1931, la pensée et l'action, Les Editeurs français réunis, 1950)*

## **Introduction**

To the classic ontological question "What is being?", The Ontology of Knowledge (OK) responds: "There is no being in reality. Reality is vacant of form. The knowing subject is Individuation, it is representation, it creates forms."

The OK will then have to answer the question "How is the knowing subject led to represent a universe populated by beings in the becoming?" "

## **Summary :**

Reality is pure logical interdependence, immanent, formless, unspeakable.

The Logos is a principle of order in this interdependence.

Individuation is the necessary asymptote of any instance of the Logos.

Each knowing subject is Individuation, a mode of order among infinities of infinities of possible modes of order.

Everything that appears to the subject as Existing participates in his Individuation.

This convergence in Individuation defines a perspective that gives meaning.

The subject is representation.

It is in this representation that the subject, the objects and the laws of the world exist.

Without a subject there are no objects, no laws, no framework.

The representation is not isomorphism but morphogenesis.

Physical world and Spirit have the same logical nature: they are categories of representation.

The representation is animated because the meaning is an Act.

Representation is limited by a horizon of meaning.

Below this horizon the subject represents the universe and himself.

Beyond this horizon, neither space, nor time, nor any form prevail.

The predicate expresses, below the horizon of meaning, a necessity whose source is beyond this horizon, unfathomable.

The OK is neither a materialism nor an idealism nor a neo-sophistic and is free from any psychological preconceptions.

The OK does not propose an "other reality" than that described by common sense or science but another mode of representation.

The OK is supposed to be compatible with the current state of science, while offering new avenues of interpretation.

OK differs from Ontic Structural Realism (OSR) in several ways:

Just like being, relation is representation,  
the knowing subject is present in all representations,  
the real is unfounded.

## Development:

### 1 The "I" of Cogito and reality:

The first proposition of the Ontology of Knowledge comes from the Cogito:

- Any statement proves to the "I / subject" his own existence, but does not prove anything of what is stated.

Then come two postulates:

-The "I / subject" is not all of Reality.

-The "I / subject" and the Reality are interdependent.

From these three premises, the OK develops the following reasoning:

Since "I / subject" and Reality are interdependent, at least the interdependence is a reality.

By virtue of Occam's principle, why then not make interdependence the sole essence of Reality, the sole ontological reality?

The meaning of the concept of interdependence could be stated:

-The probability of A knowing B is not zero and vice versa:

$\Pr(A | B) > 0$  and  $\Pr(B | A) > 0$

-Reality is Interdependence

Interdependence is not a being.

This Reality has no a priori frame of reference, no space, no time, no quality allowing it to be ordered.

No *a priori* form can be attached to Reality, no articulated attribute, such as Being, Unity, multiplicity, finitude, continuity etc.

The concepts of the present moment or simultaneity do not make sense.

The concept of state does not apply to Reality *per se*.

The absence of *a priori* forms of Reality can be based on two well-established concepts: one physical and the other philosophical.

*Physicist Albert Einstein wrote:*

*The distinction between the past, the present and the future is but a stubbornly persistent illusion.*

*In the block universe of general relativity, without the objectivity of an extended present moment, the concept of form or state of a physical object has no objective referent.*

*Let us quote the sentence of Franz Brentano:*

*Intentional in-existence (Editor's note: intentionality) belongs exclusively to psychic phenomena. No physical phenomenon presents anything like it.*

*It explicitly states that no physical phenomenon has intentionality.*

*So in a world of physical phenomena without a knowing subject there is no object and therefore no objects.*

**-Reality is formless**

**-The knowing subject is a necessary condition for any form.**

The immanence of reality does not contradict Interdependence: We will say that it is not "the-Reality-in-bloc" which owes its reality to "the-Reality-in-bloc", but "each part of Reality" which owes its reality to "all other parts".

**-Reality is immanent.**

The ontic version of structural realism (OSR) proposes to abandon not only the intrinsic predicability of being (one cannot know being) but also being itself. The OK takes up this proposition: "there is no being", and deduces that:

**-The reality is unfounded.**

ref. TRANS gives details on non-foundation that can be summarised with that proposition : reality beyond the horizon of meaning is immeasurable to the universe of our representations.

**Definitions:**

The OK defines 3 modes of order to reality

- The **En-act**: Formless, immanent, interdependent, unfounded reality
- The **Current**: What is made possible, although not existing, by the Existing
- The **Existing**: What has for the subject, a present, certain, necessary meaning.

These are modes of order: The Existing is nothing other than the Current which is nothing other than the En-act.

In the vocabulary of a language, let us consider that the concept of a word is defined only by other words: thus "snow" would be interdependent on the words "white" "cold" "wet" "Christmas" "ski" etc ...

The **interdependence** between the terms is neither causal nor conditional. Snow is neither a cause nor a condition of white. On the other hand, the statement of the word "snow", which makes it exist in a speech, makes possible the existence of the word "white" and vice versa.

Time appears through the Act of discourse, but the word in itself, In-act, is outside the time and place of discourse.

This vocabulary is unfounded not because giving a justification to each and every word would be an infinite task, not because there is no primary meaning, but because such a foundation would immediately get lost in a space immeasurable to the discursion.

The result is that the word has no reality of its own and could be replaced by the bundle of words which make it possible or which it makes possible. This bundle being infinite, the meaning of a word cannot be established absolutely.

There is no substance in reality.

Language supports thought not because its meaning is true but because it is idoneous, ie the probability of an irreducible hiatus in representation is negligible.

The language does not impeach itself.

Language is intercommunicable not because it is true but because it is reciprocally idoneous, ie the probability of an irreducible hiatus created by the exchange in the representation of each of the interlocutors is negligible.

Because the subject is Individuation and because Mankind is also Individuation, because we share a common becoming, the idoneity of language is necessity (cf Ref : TRANS)

A system of equations is made of En-act relations between undefined entities.

Under certain conditions, this system can have several solutions (see an infinity). By the fact that they are possible, these solutions have a certain mode of logical reality, prior and independent of the fact that an agent (Alice) would have calculated them.

On the other hand, these solutions will come to Exist progressively for the agent only through the Act of calculating. Note that the Existence of a result for Alice does not change anything in the In-act reality of the system of equations nor in the Actuality of the possible solutions. The Existence of the result for Alice does not imply its Existence for Bob.

On the other hand, for Alice and for her alone, knowing the progress of her computation (her state of representation  $C_{Ai}$ ), the effective probability law on the possible solutions is progressively modified: "Knowing  $C_{Ai}$ ", some solutions (or sequences of computation ) Current but not yet calculated, are more or less probable, even certain for Alice.

*The possible demands to exist by its nature, and does so in proportion to its possibility, that is, to its degree of essence [Leibniz, Die philosophischen Schriften (Gerhardt), VII, p. 194]*

The Actuality is a progressive mode and is relative to a state of representation of the subject.

This law of probability resulting from  $C_{Ai}$  is the Meaning of  $C_{Ai}$ .

It would be the same with the speech: as Alice utters her speech, certain words or phrases, from possible become probable, certain, then Existing for her and for her listener.

Let us note that the Meaning of  $C_{Ai}$  does not depend only on the system of equations but also on conditions of possibilities (the calculation rules for example) which are themselves Actual.

Note that since the Existence of a result does not change anything in the In-Act of the system, the simple fact that Alice informs Bob of the state of her knowledge causes Bob's Existing to evolve.

## **2- A heuristic model of reality and Logos**

The following lines will show what principle allows the unspeakable Reality to "know" itself.

Let us imagine for that the Reality in a discontinuous form.

Let us create two heuristic concepts: the element and the link of interdependence.

Denoted by  $A \leftrightarrow B$  with:  $\Pr(A | B) > 0$  and  $\Pr(B | A) > 0$

This link of interdependence is In-act, the sign  $\leftrightarrow$  does not have universal value here, it only applies to the relationship between A and B which themselves are In-act realities and not variables.

The relation  $A \leftrightarrow B$  has not the value of condition "if A then B"

Let us also consider the interdependencies  $B \leftrightarrow C$ ,  $C \leftrightarrow D$ ,  $C \leftrightarrow E$ , etc....

We can then build a network resulting from A (the Point of View) by adding to it, step by step, the interdependent elements. At the  $n^{\text{th}}$  addition, this network will naturally constitute a part of Reality, we will name such a network stemming from A: a Knowledge.

**- Knowledge is a structure of interdependencies from a point of view**

A Knowledge knows itself from the Point of View, following the relations of interdependence, by absorption of the logical neighborhood in an In-act reality.

Knowledge does not require any *a priori* law, only interdependence.

Now let's create the new heuristic concept of proliferation.

Proliferation: Means that an element is statistically interdependent from more than two (i.e.  $2 + \epsilon$ ) other elements (see figure 1 below).

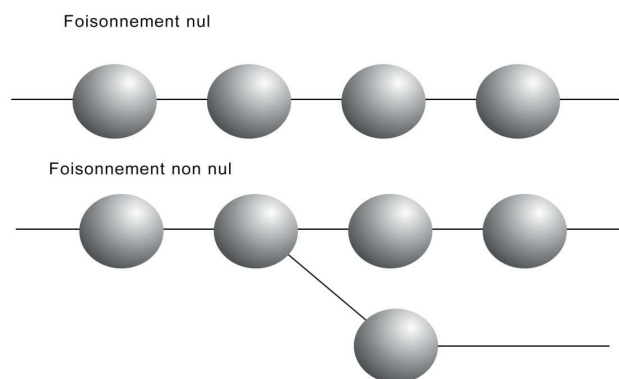


figure 1

Case 1: If the proliferation is zero, the Knowledge (the chain) stemming from A is obviously cuttable, by simply "cutting" both links. This cut by a countable set of links is of dimension zero. It is also through these links that the cut part is interdependent of the rest. The Knowledge stemming from A is monodimensionnal.

Case 2: If the proliferation is not zero, as soon as the number of interdependencies is high, not only the potency of the network stemming from A but also its complexity become infinite: the network of elements and interdependencies stemming from A exceeds any possibility of cut, because at the  $n^{\text{th}}$  iteration, the neighbourhood (the interface) of the Knowledge would contain  $(1 + \epsilon)^n$  elements. To "cut" the Knowledge stemming from A from the rest of Reality it would then necessitate a cut of

infinite dimension because:  $\forall N$ , when  $n \rightarrow +\infty$ ,  $(1+\varepsilon)^n / n^N \rightarrow \infty$ .

The number of links to the interface is always infinitely larger than would be what an N-dimensional "geometric" surface would allow, no matter how large N.

Shall we think that the Reality would be inseparable in parts, not cuttable?

In fact, no, we will see that a principle of aggregation tends to reduce the complexity of Knowledge.

To grasp this principle let's define the heuristic concept of **loop**:

- In the simple case of zero proliferation, if the chain  $A \leftrightarrow B \leftrightarrow C \leftrightarrow D \leftrightarrow \dots$  closes on A so that  $A \leftrightarrow B \leftrightarrow C \leftrightarrow D \leftrightarrow \dots \leftrightarrow A$  we say that this chain forms a loop.

- In the case of a nonzero proliferation, the notion of loop can be generalized to a case where the network of links of interdependence globally closes on itself (as a ball could we say).

In absolute terms, no wire would protrude from the ball, no link would cross the cut. The loop would then be an immanent reality in itself.

This element, having no "free" interdependence, could, however, only Exist for itself. Although its reality cannot be denied, it cannot exist in any representation. Its existence is of zero measure.

Apart from this particular case, we will say that the generalized loop of interdependencies is a statistically singular configuration, presenting a minimum neighbourhood, a number of links with Reality lower than the N mentioned above, that is to say constituting a part of Reality separable by a cut to N dimensions and therefore representable as an element of dimension N+1. (on the term of cut see ref: MON)

Let's now postulate that:

- the probability of loops in a Knowledge grows and tends to 1 when complexity increases.

Note: A similar result may have already been demonstrated by mathematics. However, the term 'postulate' is necessary because this principle claims to transcend mathematics. In a Knowledge stemming from A, a proliferation greater than 0 leads to complexity and therefore necessarily to the existence of loops, constituting "new elements", presenting a minimum neighborhood.

This aggregation of Knowledge applies *ad libitum*, as long as the complexity is not "exhausted", that is, until the proliferation tends to zero, without ever being able to reach it since when the complexity is exhausting, the probability of loops would tend to cancel out. Knowledge from A tends towards a single-dimensional chain.

We described two necessary and antagonistic phenomena:

- **A non-zero proliferation imposes complexity**

- **Complexity collapses metastably towards a zero proliferation**

The result is an asymptomatic balance between the expansion and aggregation of Knowledge from the point of view.

As it integrates the links toward its logical neighbourhood, Knowledge is aggregated towards the asymptote of a monodimensional future.

This asymptote ( $\varepsilon=0$ ) is the **Individuation**.

It should be noted that Individuation is a mode of pure logic, that nothing changes the In-act reality. The individual being is not the result of the Individuation, it is the process of it, the Act, an Actual probability infinitely close to one but infinitely repelled.

Individuation is a necessary consequence of the principle described above. It does not require any law *a priori* or any *ad-hoc* constant.

We will name this principle the **Logos**

-**The Logos is sufficient cause of the Individuation.**

The Viewpoint is not "actually" the primary element of Knowledge. It is itself a cut in the individuation, a state of representation, necessarily composed, its components being themselves

composed and so on.

Under these conditions:

***-Knowledge is unfounded, without founding, without first element.***

***-The Point of View, is a cut in a Knowledge.***

In our heuristic model, the concept of element can be abandoned, replaced by a singular (cutable) configuration of interdependencies.

If elements A and B are unfounded, the  $A \leftrightarrow B$  link loses its foundation at the same time. It must be replaced by the interdependence between "the complex reality of A" and "the complex reality of B." The link of Interdependence is therefore itself unfounded.

***- In the In-Act Reality, there is no being, there is no interdependence, nothing that is One but only unfounded Interdependence and necessary Individuations.***

More generally, the concept of element of our heuristic model can be abandoned and replaced by a singular (culprit) configuration of interdependencies.

If elements A and B are unfounded, link  $A \leftrightarrow B$  is unfounded. We must substitute for it the Interdependence between "the complex reality of A" and "the complex reality of B".

- In the Reality In-act, there is no being in itself, there is no link of interdependence in itself, nothing which is One but only unfounded Interdependence and the principle of Individuals required. OK differs from Ontic Structural Realism in that the relationship between facts has no more reality than the facts themselves. Just like the fact, it is representation (see ref: MOND)

### **3-The Logos**

"Is the Logos immanent, can it be the formal cause of its object?"

This question does not need to be asked because the object of the Logos (reality) is unfounded.

Since the existence of objects and facts is only a judgment, the laws which connect them are themselves judgments and the principle which governs these laws is a judgment.

Although Logos is the primary principle of meaning, although it transcends meaning, whenever we designate Logos we designate it as an object of meaning.

The thought we may have of Logos (and its attributes) is not more founded than any other Fact of Knowledge.

Despite the very special place that our culture gives to the Immanent, immanence is a judgment, a meaning, a category.

***-The immanence of an unfounded reality is itself unfounded.***

The Logos is a principle of application of Reality to Reality

The Logos is a principle of aggregation, separation and order.

The principle of Logos, essentially logical and mathematical, is simple, uncreated, universal.

The Logos in no way modifies the In-act Reality.

In this formless Reality, the principle of the Logos feeds on Interdependence to statistically reveal infinities of infinities of surfaces (or N dimensional cuts) of minimal interdependence which delimit logical parts.

Each part is linked to its logical neighborhood through the cut that delimits it and which is therefore the place of its logical expansion.

A Knowledge is nothing other than an Individuation, a part of Reality with a singular, individuated mode of order.

A singularity that appears in a Knowledge is called "Fact of Knowledge"

The Facts of Knowledge are not new realities but modes of order, the only reality remains Interdependence

***- The Logos orders a Knowledge of Facts separable by cuts***

To apply, the Logos does not require any frame of reference, no order, no a priori space in relation to which an ordering would take place.

Any Fact of Knowledge is potentially a Point of View.

From a Point of View, the rules that determine separations and aggregations are non-deterministic. It follows that a Point of View is in fact the origin of infinities of infinities of Current order modes. Reality has infinities of infinities of Viewpoints, each one being the possible origin of infinities of infinities of modes of order (of Knowledge).

***-Reality has infinity of infinities of modes of order, infinity of infinities of Knowledges.***

The Logos does not affect Reality in any way, nevertheless once represented a mode affects the possibility of the modes of order which are interdependent on it.

***- Given a state of representation, all modes of expansion of the order are not equally probable.***

On the one hand, being-Individuation is unfounded, on the other hand Individuation is asymptotic, the proliferation is never zero. It follows that Individuation is a balance between divergences and convergences of contingent links which themselves are individuations and this indefinitely.

There is a great temptation to compare this logical structure to a string made up of strands, then threads, then fibers, etc. but we shall defend against it because it would be to transform Knowledge into a thing, which it is not as we will see it soon.

***-Individuation is necessity but takes infinitely contingent paths.***

#### **4- The transcendental subject is Individuation**

The Point of View has no reality in itself.

The true subject of Knowledge is not "something real", it is not a being.

The "I" of Knowledge is the asymptote that we have described previously, a mode of order whose proliferation would be zero, the vanishing point towards which the ordering of this Knowledge seems to converge.

The transcendental subject is **Individuation**, to use the concept developed by G. Simondon (ref ILFI)

If the subject is not "something real", Knowledge is nonetheless relative to the subject.

The subject is his Knowledge.

It is from a "state" of representation that the subject's representation extends.

Only the Knowledge of which he is the subject can make sense for one subject and no other. see ref TRANS.

#### **5 The main concepts**

##### **5-0 logical judgment**

Judgment is the psychic act by which we affirm a propositional content eg "the stone is green".

Now we know that in the world in vis-à-vis, the color green is not "something".

The sensation of "green color" which appears to the subject associates the composition and the temperature of the sun, the position and the rotation of the earth, the composition of the atmosphere, the crystalline structure of the stone, the shape, the nature of my eye etc ... None of these parameters Exist as such ( material or thought experiences are nevertheless possible to reveal them). It is only in the sensation of "green color" that their association comes to Exist for the subject.

Whatever the limit that one gives it, it is certain that the "psyche" of the subject does not carry out " in himself ", all the judgments which reduce this complex and unfathomable In-act in the relatively simple space of the represented colors.

Logical Acts, outside the psyche, which can be qualified as judgments, participate in the ordering of the In-Act towards the Existing. Since the Existing himself is relative to the subject, these judgments outside his psyche are nevertheless Facts of his Knowledge.

The reality of the Knowledge of the subject and of the judgments which give it meaning extends well beyond its psychic or physical limits.

These arrangements of the Knowledge of the subject occur by logical singularities, they are quantified. This explains the terms Act, Judgment, Fact.

Just as the judge brings out the simplicity of a verdict out of the intangible universe of circumstances, logical judgments reduce by leaps the complexity of an equi-possible reality (disorder) into the speakable certainty of an Existing (revealed order).

Judgment is not a causal relation: on the one hand what is in disorder is not "another thing" than what is in order, on the other hand the meaningless has no Existence in the space of meaning (everything that makes color does not exist in the space of colors) and finally the Act and the object of the judgment are of the same nature (the judgment itself results from circumstances that OK designates as its conditions of possibility).

Contrary to the causal relation which occurs in time, the judgment is out of time but contributes to making time emerge in the form of the present certainty of the Existing.

#### 5-1 judgment of necessity<sup>1</sup> :

If Alice enters the casino with a finite amount of money (as large as you like) and the intention of playing roulette indefinitely, then her ruin is a judgment of necessity.

There is a judgment of necessity in that the probability of the ruin of Alice, "knowing" an initial state of affairs, is infinitely close to 1 although the calculation of the term and of all the sequences which lead to it is impossible.

On the surface, the judgment of necessity looks like a simple necessity.

In detail, however, and since reality is unfounded, the ways and the end of the judgment of necessity remain infinitely contingent and this non-calculability is essential.

The entering into the casino is therefore not the limit but the horizon on which Alice's ruin appears. The Act of entering the casino makes the meaning of Alice's ruin Exist as a judgment of necessity, as a probability infinitely close to 1.

The term "judgment of necessity" owes nothing to understanding or intuition or any act of faith on Alice's part. Alice and chance have nothing to do with it because all the possible sequences of the game are Actual.

-The proposition "I am ruined" appears on the surface like a present truth, like a predicate which would be attached to Alice as soon as she passes the door of the casino.

-But in detail it reveals "something" between entering the casino and the ruin.

Simple necessity is therefore a particular case of judgment of necessity in which no cut reveals the contingent paths which lead to necessity.

A proposition such as <this stone is green> differs from <Alice is ruined> (said to the third person) in that nothing contingent seems to separate the stone from its color in our representation. In such case, the stone and its colour emerge as " One Fact " on the logical horizon of meaning. Colour appears as a " simple necessity " and not as a " judgement of necessity ".

However, the horizon of meaning of that proposition can be pushed to let contingencies appear that fulfill this necessity, it will then be obvious that the conditions of possibility of the " colour " do not belong to the present moment of the "stone" Fact. Indeed, the " colour green " does not " belong " to the stone.

This shows that *the copula which attaches copula to the state of Fact* and *the law of probability on the contingent order modes of individuation of the Fact* are also judgements emerging from unfounded reality : without cuts the predicate appears attached to the state of Fact, if cuts are possible the predicate appears detached from the Fact to become a *law* in the subject's representation.

**- Distinction between the meaning of the Fact as a " state " or as a " becoming " is only judgement. The distinction as the properties of meaning.**

NB : Recognize the identity of essence between " state " and " becoming " will help correcting a major epistemic problem of the Logic as a theory and theories that stem from it and particularly to reconcile logic and geometry (Ref TRANS & LAMG)

Exemple :

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<sup>1</sup> A notion close to the «contingent Truth» due to Leibnitz.



***-The existence of a particle is a judgement of necessity.***

It is the cuts (the experiment) or more precisely the experimental device, ie the subject's perspective, **specific to the subject**, that let (or not) appear the contingent paths of fulfilling the necessity of Existence.

What determines the apparent spatial nature (wave or corpuscle) of the particle does not belong in the particle itself but in the perspective of the knowing subject. And then it is globally out of that perspective that all Facts of representation emerge. The apparent spatial nature of the particle is meaning, it has the properties of meaning: it is a probability distribution law on possible experiences, interdependent of all Facts in the subject's representation.

We can't help it. This epistemological problem has no solution: the domain of validity of any language (and of any conscious thought) is necessarily limited by the horizon of meaning. To describe a necessity we only have the extensional predicate (was it in a four-dimensional continuum). To represent more than the necessity, it is necessary to practice cuts in the Fact (by mental or physical experience) which partly reveal to us its true nature as a judgment of necessity. The extensional multiplicity in which we are forced to describe the world: a world of interacting objects in space-time, does not apply beyond this horizon.

As a consequence :

***1- Any predicate that one attaches to a Fact of Knowledge is a judgment of necessity.***

2- The predicate does not belong "in reality" to the state of Fact but only in representation: the position of a particle on its trajectory, its mass itself do not belong to the particle "in reality" but only in representation. The position of a particle which appears to the subject as a simple necessity is in reality a judgment of necessity whose contingent paths do not appear to the subject.

3-The quasi-certainty anticipated by the judgment of necessity does not depend essentially on the initial state of Fact but above all on the conditions of possibility of the logical sequences which lead to it: in our example it is the rule of the game of roulette that fixes essentially the ruin of Alice as a necessity and not her nest egg at any given moment. These conditions, which do not appear as such to the subject, nevertheless form the perspective of his judgment. This perspective is In-act, not subject to the time of the subject. It is from this global perspective that all the judgments of necessity emerge for the subject.

4-The judgment of necessity of the ruin of Alice represents in turn one of the contingent paths participating in the judgment of necessity of her Individuation. This string-shaped structure of judgments of necessity is ultimately just another way of describing the mode of structuring by the Logos (cf. §2).

The image of the string is attractive but it should not make us forget that the contingent paths (the strands of the string) do not belong to the same space as the necessity (the string). The wires that make up the strand are not in the space of the strand. For the space of the strand is that of its extensional representation.

5-The logical set that the predicate replaces is In-act, it is not subject to Space-time and in general to the structures which order the variety in which the predicate has meaning. The intensional reality of the Fact does not belong to the variety in which its extensional sense appears.

6-The subject's perspective is unfounded. The set of conditions of possibility of Individuation would be infinitely separable into contingent paths, but this infinite complexity would be, by definition, unrepresentable.

7-The judgment of necessity is only quasi-certainty. There is always a probability, however small it may be, that the represented necessity does not arise because some of the contingent paths do not lead to it. The possibility of this rupture of necessity depends essentially on the conditions of possibility.

8- In an unfounded reality, there is no primary object, no primary law, no primary predicate. The judgment of necessity is not "another thing" than its object. There is a less complex presentation: The green color of the stone is not another thing than the stone which is green, the mass of the

particle is not another thing than the massive particle. The reverse is also true: the object is not another thing than the judgments of necessity which are attached to it: the massive particle is not another thing than its mass.

9- Since the individuation of the representation is the first constraint, the structure of the contingent paths which lead to it is a separation and not a synthesis. (see ref TRANS)

10-The association between Fact and attribute is a Fact of representation, a judgement, it has the properties of meaning.

The distinction between simple necessity and judgment of necessity is the basis of the difference in representation between the predicate attached to being in itself (intensional, its proper nature) and the predicate attached to its relation to the world (extensional, improper).

-The predicate on the intensional nature, although it is a judgment, does not present a cut allowing to reveal the contingencies to the subject, to make them Exist in the world of the subject. It is typically the "proper name" of the object, label of a set of non-Existent possibilities. This predicate is non-contradictory.

-The predicate on the extensional being-in-the-world is a judgment of necessity, cuts are represented there through which the possibility of contingent paths is Acted. It is typically the position of the object, a predicate certain, present and necessary, but whose contingent paths appear in representation. By definition, the contingent paths which realize the necessity of a judgment are, at least partially, contradictory.

Example:

-The existence of a particle is a judgment of necessity.

It is the cuts (the experiences) or more precisely the experimental device, that is to say the perspective of the subject, specific to the subject, which reveal the contingent paths of this necessity under the aspect of a simple proper name without extension or a particle or a wave.

What fixes the apparent spatial nature of the particle does not belong to the particle itself but to the perspective of the knowing subject, relative to the subject. However, it is from this perspective that all the facts of the representation of the subject emerge. In this sense, the apparent spatial nature of the particle is interdependent on all the facts of the representation of the subject.

### 5-2 Knowledge.

The reality of Knowledge is beyond the horizon of meaning and no language is legitimate beyond this horizon. What could we say about Knowledge?

Reality and Knowledge are immeasurable.

It would be pointless and misleading to describe Knowledge as "something".

Only the subject can say "I Exist" and any proposition that he enunciates proves to him his present Existence as a necessity.

We know that the Individuation of the subject is a necessary solution of the Logos.

The Knowledge of the subject is the set (In-act, unfounded) of the conditions of possibility of his Individuation and therefore of his Existence.

A **state of representation** is a cut in the Knowledge of the subject, through which the judgment of necessity of his Individuation is Acted.

- The law of probability on the contingent paths which lead to "I will be" is the meaning of the state of representation.

- The state of representation is subsumed in a "I Exist" at the first personne, the meaning of which is the simple necessity of the "I become myself".

Knowledge is not of another nature than In-Act Reality, it is an Individuation of it.

We could use the ancient Greek texts and say that In-Act Reality is KHAOS and representation is KOSMOS, that is, KHAOS ordered by LOGOS. Except that according to the OK there is not a KOSMOS but infinity of infinities of representations of KOSMOS.

### 5-3 Cut and Horizon

A singularity is a structure of minimal Interdependence, minimal entropy.

Since Knowledge is unfounded, a singularity cannot be rigorously defined by either a logical "content" or a "limit".

Why the term of **cut**?

- The cut designates the act and the result at the same time,
- Cut is a way to find out what is hidden from the thing
- The notion of cut is used by Poincaré to define the dimensions of a geometric space (ref S&H).

A singularity defines a Fact of Knowledge, the cut is the set of judgments of necessity logically associated with this Fact, the set of logical Acts which predicate this Fact.

Each judgment of necessity replaces an intensional, unfounded set of contingencies with a necessity extensionally expressible in the representation of the subject.

The predicate does not "actually" belong to the cut. In this sense the cut is a horizon and not a limit. In an unfounded reality, the cut is not "another thing" than the Fact. It is a meta-fact which can in turn be associated with others to constitute a singularity of singularities.

The cut is relative to the subject and emerges from his perspective.

***-The cut of a Fact of Knowledge is not a limit but a horizon***

***-A Knowledge does not have a limit but a horizon***

### 5-4 Fact of Knowledge

The Fact of Knowledge is "in reality" neither a being nor a state of being in the present.

Interdependence is the only reality and the Fact is only a singularity as it appears to a subject.

The example of a vortex illustrates this: the vortex on the surface of the water is not a being in reality but indeed results from a singular organization of speeds. It does not have water for its substance because the water molecules pass while the vortex remains. The example is nevertheless misleading because the vortex seems to have an objective reality whereas the Fact of Knowledge appears only to the subject.

It does not happen to the Fact of being interdependent but, on the contrary, it is the Fact that results from a particular structure of interdependence.

The intensional reality of a Fact is immeasurable to its extensional appearance in the multiplicity of the subject.

The intensional reality (In-act) of a Fact is not subject to the space-time of its predicates.

A Fact Exists for the subject insofar as this Existence contributes in a necessary way to the Individuation of the subject. Existence of A can be symbolized in  $I \rightarrow A$

The Existence of Fact P resides in the necessity  $P \rightarrow P$  but since the Fact is unfounded,  $P \rightarrow P$  is a judgment of necessity

The contingent trajectories which fulfill the necessity  $P \rightarrow P$  are "constitutive" of the necessary Individuation. These contingent trajectories are Actual, that is to say possible, but do not Exist for the subject. To make them Exist in his representation, the subject must create cuts. These cuts replace the contingent (the possible, the Actual) by the necessary (the certain, the Existing). They then make Individuations Exist in Individuation.

These Facts of the Facts are a state of Fact and ultimately contribute to the state of representation of the subject.

***-The Logos ordains the Facts of Knowledge***

### 5-5 Act

In 5-3 we write: *the cut is the set of logical Acts which predicate the Fact.*

The cut is the set of interdependencies between a Fact of Knowledge and its neighborhood. This interface is not geometric but logical. The cut does not separate the exterior from the interior but the Existing from the non-Existing, the certain from the possible.

*Let us take as an illustration a sentence describing a situation:*

*"White sheep graze on the green meadow"*

*The whole of the sentence defines a perspective which fixes the relation of each semantic element to the other elements and to a space-time represented.*

*Sheep Exist in the representation. For sure .*

*As a semantic element in the sentence, the word sheep which appears as One, is in fact the logical locus of an Act which makes possible other contingent semantic Facts (all the concepts which can define a sheep for a given subject). These other Facts, although Actual, do not Exist in the representation and above all they are in no way located in space-time, in the moment or in the volume of the sheep represented.*

*On the other hand, a specific cut made by the sentence makes the predicate of whiteness certain in the representation. Whiteness is a simple necessity here.*

*The sheep are white in the representation. For sure.*

*We understand that the word white is itself the logical locus of an Act which makes possible other contingent semantic Facts (all the concepts which can define whiteness for a given subject) and which themselves are immeasurable to the represented situation.*

It is through cuts that a representation expands into the In-act reality.

From each State of representation, several paths of expansion are possible, which would result in several modes of aggregation into new Facts of Knowledge.

***-The cuts of a Knowledge carry the Act by which it extends and directs its expansion.***

***-The cut carries the law of probability on the contingent paths of the individuation of the Fact.***

The term Transaction can advantageously replace that of Act in that it carries the idea of crossing (the horizon).

## **6 Representation by the subject**

The subject is the representation of the world. The world is representation by the subject.

### **6-1 Individuation**

If one can describe Individuation as a concept, the error would be to conceive of instantiated "individuations" as universal truths, as objects-which-become or as containers of Knowledge.

Individuation is a mode of ordering reality In-act but does not change anything.

Individuation is not in the world, the world is a mode of order of an individuation.

The subject's individuation principle transcends the principles that govern the elaboration of meaning and hence the representation of the world. It is transcendent in this that the laws of elaboration of meaning are deduced from the individuation principle and not the opposite.

The only Existing world is that which the subject represents and of which all the Facts, in principle, contribute to his Individuation. This implies that the predicate "I become myself" subsumes all the predicates which describe the Universe represented by the subject.

It follows that the fusion of all the certainties which the physical or psychic experiences of the subject reveal cannot exceed the certainty of his existence.

Any representation of the subject is subsumed in the affirmation of his existence.

***- "I" am the sum of all that Exists.***

***- The probabilities of all that Exists or can Exist merge into my certainty of being.***

### **6-2 perspective**

Sensation is not an external datum transcribed by the understanding, isomorphic, for the use of reason. Our Knowledge expands its meaning in a diffuse way. Our global faculty to give meaning lets emerge out of it, the Fact of sensation, as part of a Whole, conceived and ordered globally in the I/object.

The Fact of sensation, in its form and also its relation to the other Facts of our representation, is determined by the laws resulting from the Logos and not by possible facts and laws of the world.

Invariances are meta-facts which only appear and take on meaning *a posteriori* as laws and geometry of the world.

**- The sensations and all the Facts of Knowledge co-emerge from our global capacity to give meaning.**

The world, its Facts and its extensional laws are not represented by the addition of sensations *a priori* but by separation of the becoming of the subject.

Objects do not "by themselves" have position, mass, inertia, speed etc ... but these properties emerge from the Global representation of the subject.

In such a concept of the universe, we can understand how the ideas of mass, inertia, gravitation, relativity can take on meaning:

For example: The inertial mass of an object means "If I move an object in my representation of the universe, the entire representation is affected" "To move an object, I must change my entire representation of the world"

The subject's Existence is the judgment on the necessity of his Individuation.

The existence of the subject takes on meaning in the structure of the contingent paths towards this necessity.

There is only common sense in this: To exist is to become oneself. Only what determines us as Existing and therefore contributes to our Individuation can Exist in our representation. Everything that appears to the subject as Existing participates in his Individuation, these are the paths of his Individuation and it is the meaning of the world and of his existence.

The meaning of the world (and of ourselves) is subsumed by the necessity of our individuation.

The ways of our individuation merge into the necessity of our Existence.

The modes of this convergence are the **perspective** of the subject: certain Facts of his Knowledge Exist as such and in their reciprocal relations (this is the conscious state of representation) while others, although Actual, are only possibilities (made possible by the underlying perspective).

Perspective designates the possible modes of instantiation of the Logos from a state of representation.

Perspective owes nothing to understanding, which is only a category of representation.

The structures, the object-of-probability pathways are Actual there. Cuts (experiences) give them (or not) Existence.

Perspective is the set of conditions of possibility of Existence of each Fact, but it should be specified that all Facts participate in return to the perspective and are therefore conditions of possibility to each other. The Fact and its conditions of possibility are the same reality.

The Fact emerges from the conditions of possibility by separation.

From the in-act reality of Individuation emerge the conditions of possibility of Individuation, ie perspective.

### 6-3 The meaning

The difficulty is that we can only access the real through consciousness while consciousness itself comes from the real.

Meaning is necessary for us to say what meaning is and how it happens.

The consciousness of reality is built in us through the Logos, which imposes the Fact on us as a semantic element.

**- The Fact of Knowledge is born in our Knowledge with the representation.**

What is the Reality of meaning, apart from its psychological or cultural sense and without presupposing that the Facts of the world have meaning by themselves?

We will start from the general axiom of meaning which is "*My Existence is certain, my Individuation is necessity*" from which we deduce by separation: "*The Subject's Existence takes on meaning in the structure of the contingent paths towards the necessity of his Individuation.*" .

Meaning emerges from a Whole by separation and not by synthesis from atoms of meaning (as Western metaphysics supposes).

The meaning of a state of representation of the subject is the **law of probability** on the contingent paths towards his individuation.

The meaning of my representation of the world and of myself is: "*What new experiences does it make possible and according to what probabilities?*"

There is no universal language (vocabulary and syntax). A language is only valid within the multiplicity that defines it. Objects, laws, words and syntax co-emerge from- and co-found- a single multiplicity of which the subject is the epicenter.

**- *There is only extensional meaning***

This lack of a basis for logic does not, however, make it a simple syntax of meaningless propositions. The syntax itself and by extension the meta-logic, should not be considered as external, or overhanging the logical Facts which would form the vocabulary. All the links between Facts are singularities, as are Facts. The conditions of possibility of Facts of Knowledge: Syntactic Facts and Meta-logical Facts at all levels are singularities, ie. Facts of Knowledge.

The judgment of necessity  $P \rightarrow P$  which states the Existence of P is a Fact of Knowledge.

**- *The meaning of a fact is the law of probability on the Facts on which it is interdependent***

The Fact and its meaning are not two different "things". The {judgment of necessity} and the {law of probability on the contingent paths towards this necessity} designate the same logical reality.

The meaning of a Fact of Knowledge has the same nature as the Existence of the Fact.

**- *The meaning of a logical fact is a logical fact***

An unfounded Knowledge, that is to say without a first semantic fact, can in spite of this make sense because it necessarily presents singularities which are Facts. These Facts are interdependent and the structure of this interdependence (which we have described as a probability relation) again exhibits singularities which are meta-Facts.

**- *A class of Logical Facts is a Logical Fact***

Because the ultimate meta-fact is the Subject's Existence, this structure is hierarchical relative to the subject's "I".

This structure is therefore a mode of order, that is to say of meaning, without law, without relation of membership or order. Nothing but interdependence.

**- *The meaning is not of another nature than reality.***

*There is nothing surprising about this: In a probabilistic Universe, an event (a part of the Universe) takes on meaning relative to an extensional predicate of elementary eventualities, independently of their proper (intensional) meaning. Expectation is then the extensional sense of the event.*

*The Universe does not need to be founded: The elementary eventualities do not need to be "something", they can in turn be singularities to which the extensional judgment of an expectation would be attached, and this indefinitely.*

*The only condition is that this Universe is interdependent.*

*In an opinion poll the predicate "for or against" is extensional while the set of Knowledge Facts that make up an individual's response (the intensional) is unfounded. The opinion he expresses is a judgment of necessity.*

*Nevertheless, if the knowledge of n answers allows a conjecture on the answers to come it is because, in the unfounded of their conditions of possibility, the common becoming of individuals imposes a certain interdependence. The common becoming of individuals, in its reality, shows an a priori mode of order of which the space of possibles would be "for or against". The probability expectation is a meta-fact of this interdependence.*

It is our common becoming that makes intersubjective meaning possible

**- *It is his Individuation that makes meaning possible for the subject.***

The Existence of the Fact of Knowledge, its Unity and the predicates attached to it do not have their reality in the place and in the present of the Fact (there is neither place nor present in reality). This In-act reality is masked and transformed by the judgment of necessity into an individualized semantic content.

The **Existence of the Fact** in the representation of the subject is a judgment of necessity.

The **meaning of Fact** is the law of probability on the contingent paths towards this necessity.

We have seen that Knowledge Facts emerge from complexity.

The appearance of a Fact of Knowledge does not reduce complexity in Reality. Nevertheless, by replacing the In-act of the Fact by a judgment, by the Meaning, it tends to "mask" this complexity to the subject.

The opinion poll example above illustrates this concept of unification through meaning:

*The polled population carries with it a diffuse opinion in time and space. No individual carries a meaning of the opinion. There is really no state of opinion. The opinion poll (playing the role of cut) will however give a unitary meaning in the form of a conjecture on a future result of the experiment.*

Each Fact of Knowledge constitutes a horizon "towards its intensionnality" such that all that is beyond seems to have evaporated to be replaced by meaning, by the Fact Existing below the horizon.

As an exercise, I suggest that the reader apply this principle to their vision of the world: The present moment of the world is the cut that delimits the present state of my representation. On this cut, the unthinkable complexity of its causal content is replaced by attributes and laws. The meaning of these attributes and these laws is the basis for the conjectures about my future sensations.

With this proposition, the OK updates the allegory of Plato's cave.

**- The meaning of the world is on the horizon of representation.**

Note that the meaning of the proper name *diamond* is not an enumeration of already Existing Facts such as {transparency, hardness, richness, beauty, carbon, etc .....}, it is not a conscious bet of the subject, it is a law of probability on the concepts made possible by the representation of the concept of diamond.

It is a meta-fact by which the concept of diamond is associated with others.

The necessity of the concept of diamond in a state of thought emerges from the same conditions of possibilities which make probable, although contingent, the emergence of the concepts of transparency, hardness, richness, beauty, carbon.

For these contingent paths to Exist as a fact of Knowledge, the subject will have to make them necessary by cuts, by experience, of thought or physical.

Let us note that the cut (the experience) which makes necessary a way which was only possible, is connected with a condition of possibility, a new rule of the game such as the outcome, of probable becomes certain.

If my Existence were the simple necessity  $I \rightarrow I$ , the world and myself would not have meaning for me, I would exist as a pebble exists for itself.

But the world and I take on meaning for me because my perspective allows cuts that make some of the ways of my necessity appear necessary.

Facts seem to me to Exist which themselves make possible other Facts etc.

We therefore need to correct a little the previous definitions of meaning:

The **meaning of the subject's Existence** is the law of probability on the cuts which would make necessary the contingent paths towards his Individuation.

The **meaning of the Fact** is the law of probability on the cuts which would make necessary the contingent paths towards its necessity.

And always the meanings of the Facts of my Knowledge converge in the sense of my own Existence.

Here is what answers Everett and in a general sense gives direction to the collapse of the wave function:

*-If the Existence of the Fact (the predicate)  $F$  is, for Alice, a judgment of necessity ( $Pr(F) = 1$ ), achievable according to two Actual paths  $F1$  and  $F2$  ( $Pr(F | F1) = 1$ ) and  $Pr(F | F2) = 1$ ), contingent and contradictory in the sense that two cuts  $C1$  and  $C2$  are possible such that ( $Pr(C2) = 1 - Pr(C1)$ ) that would make to Exist  $F1$  or  $F2$  respectively.*

*-If the cut  $C1$  causes  $F1$  to Exist for Alice, then  $C1$  becomes certain  $Pr(C1) = 1$*

- Then  $(Pr(C2) = 1 - Pr(C1) = 0)$  since  $F$  cannot exceed the necessity.
- The Existence of  $F1$  makes the existence of  $F2$  impossible.
- $C1$  is a Fact of representation and not a physical fact; It is enough that  $F1$  Exists for Alice for  $F2$  to be unknowable to her and it is enough for Alice to give Bob the evidence of the Existence of  $F1$  to make  $F2$  unknowable to him.

### Meaning as a becoming.

We have seen that the meaning of the Fact of Knowledge is a law of probability on possible becomings.

This remark highlights a semantic and epistemological problem which affects logic (and the theories built from logic): The logical propositions <the stone>, <the stone is black> or <the stone breaks the scissors> have the form of truths without temporal thickness, that is to say which could be both true and present.

This form attributed to truth contradicts the fact that information is an individuation, a becoming, an act. Such a form allows concepts of logical grains whose meaning could be both true and present (hence the term graining).

But these grains would be strictly meaningless since meaning is a becoming.

#### ***There can be no meaning present.***

There is confusion between the world of representations in which Facts Exist in the present and the transcendental subject in which Facts take on meaning by contributing to his becoming.

Logical information can only take on meaning in the subject and only as a participation in his future.

Proposition A denotes in the subject not "the object A" but "the becoming-self of A".

In this sense, if a proposition A denotes the Unity of a complex or a judgment of necessity, it is of logical stringing that one should speak (and not of graining). It is according to this string (or this strand) that the logical Fact can be assimilated as individuation to the information it carries. The meaning of logical Fact is a necessary *a priori* balance between expansion towards the complex and fusion towards unity, with the Individuation as monodimensionnal asymptote.

#### ***Meaning has at least one dimension.***

Let's note however that the asymptote of becoming of a Fact is not necessarily that of another Fact, although all becomings emerge by separation of the becoming of the subject.

Replacing the Fact/object by the Fact/becoming allows to reconcile logic and geometry:

- 1) The logical Fact has at least one dimension that carries the meaning of its necessity.
- 2) The meaning of the logical Fact is a law of probability on all the possible modes of fulfilling this necessity, on the various contingent paths of accomplishing this necessary becoming. Each of them having at least one dimension.
- 3) Contingent Facts are contradictory. Only certain, Existing Facts are non-contradictory.
- 4) All possible Facts are subsumed in the necessity of the subject's Existence. All becomings merge into the subject's becoming

From the 4 points above it results that, by the logical nature of meaning, the structure of the logical space of possibles is geometrical.

The logical space of possibilities is also the perspective of the subject which determines what experiences are possible, ie which meanings can come to Exist for the subject.

Hence the subject represents a world in a logical space that " closes " around the dimension of his becoming

### Meaning as a measure

We can try to give Existence and Sense the form of a measure:

The journey of Knowledge is complex.



In a complex journey, if all the paths were equiprobable, the average probability of "going through" such a link of interdependence, from such a state of representation, would be zero ( $1 / \infty^\infty$ ).

But a Fact of Knowledge constitutes a singularity (a loop, an attractor) whose links have an infinitely greater probability of being traversed from certain states of Knowledge.

We see the appearance of a quantitative character (a measure) allowing to qualify the Actuality of the Fact for a state of representation :

**- A Fact is Actual in a state of representation if its probability to appears is not-zero.**

The Fact of Knowledge is not a substance. It is not a universal reality, its Existence is relative to a state of representation.

The Fact of Knowledge, the attractor, is not a particular disposition, In-act, of the interdependencies constituting its Reality. The attractor is a singularity in a path of Knowledge from a state of representation (The state of representation plays here the role of initial condition of the path). This singularity is a necessary consequence of the probabilistic laws of the Logos.

To say that the Fact of Knowledge has an Actuality of non-zero measure, is also to say that there is a non-empty domain of states of representation for which this Fact appears to be Existing.

**- A Fact of Knowledge is Actual if it Exists for a non-empty set of states of representation.**

The Actuality of a Fact for a state of Knowledge is therefore also a law of probability on the Existence of this Fact in other states. This law of probability draws the probabilistic contours of a logical proximity. The states thus associated form what we can call a (logical) basin of initial conditions from which the path of the links of interdependence leads to the attractor that is the Fact. The Existence of a Fact is therefore a Fact: the meta-fact which unites the states which represent it, a class of states. We see that the Representation thus defined has nothing psychological. The Existence of a Fact in representation is a class of states of representation affected by a judgment of necessity.

### Equal meaning

The Facts of knowledge being unfounded, propositions such as  $A = B$  or even  $A = A$  would be unprovable. They nevertheless have an operational value, testable by experience: "*A = B means that the Existence of Fact A or B for a state of representation, carries the same law of probability of expansion. A and B make possible the set of senses {C1, C2 ... Ci} according to the same law of probability*"

The truth of the proposition  $A = B$  relates to the state of representation of a subject.

It is unprovable since it refers to an infinite series of probabilities.

Like Existence, meaning is judgment.

**-Several Knowledge Facts can have the same meaning.**

There are therefore classes of Facts of the same meaning, logically united.

The Meaning of a Fact of Knowledge is the meta-fact that there is a probability distribution over new Facts that it makes possible.

This meta-fact Exists because it associates every possible Fact with Facts of the same meaning.

The meaning of a Fact of Knowledge revealed by the Act makes it possible to represent its reality by sets of infinitely less complexity (laws of probability) and to order them into Knowledge.

**-Meaning reduces the complexity of the Fact**

*If we try to "think our thinking": by its underlying chaotic nature, the expansion of thought has continuities. The new sensations are not independent of the present state of thought, which is what allows conjecture.*

*A state of sensations carries within it laws of singular probabilities on other sensations.*

*Among the possible future sensations, some are more likely than others.*

*The reality of meaning is the existence of these singular laws of probability, of an interdependence between a sensation and those that will follow. These continuities make possible conjectures about future Knowledge from current Knowledge.*

*Thus, the sign "Socrates" has for meaning the conjecture of the upcoming sensations of old, wise, ugly, generous.*

- *Meaning is a conjecture.*

- *The reason for Meaning is that it anticipates without hiatus the future sensations, the future increases in the knowledge of the subject.*

Let us note that these paths towards the "I" to come are "Actual", already possible, already probable before having taken Meaning. Individuation does not result from an extraordinary chance, it is not an extraordinary machine resulting from evolution, Individuation is a necessary solution of the Logos, necessary and Actual.

The Meaning thus defined refers to Knowledge itself and in no way to a form of the real in itself, for which it is enough precisely to have no form in reality. It does not matter that there is no Socrates/object having in reality the formal attributes of old age, ugliness, wisdom and generosity, what matters is the persistence of the specific links of probability between a state of representation and the following.

The form is the label (the symbol?) of the conjecture that can be drawn from this semantic attractor. It is the meta-knowledge of the meaning of a knowledge.

We note then that, just as for the signifier of language, the formal label attached to the concept is arbitrary. Just as the acoustic image associated with the concept of Socrates is arbitrary, the formal image associated with the concept of red is arbitrary, only the efficiency of the conjectures, the persistence of the singular relations of probability, in their individual and relative truth.

*-The form of the sensation is arbitrary, the Meaning is in the persistence of the links.*

#### The quantification of meaning:

Individuation is necessity.

At a certain level of detail, the contingent paths which realize the judgment of necessity associated with the Fact will necessarily be individuated.

The law of probability on these contingent paths will therefore necessarily tend towards a countable set of probability values.

This law of probability is the Meaning.

The meaning is therefore divided in numerable éléments.

It doesn't mean that elements are disjoint in reality but that all possible cuts can only reveal singularities.

The Fact is the equivalent to an attractor in a chaotic evolution, its Existence will be as sensitive to the state of representation playing the role of point of view as the chaotic attractor is sensitive to initial conditions of the dynamic system.

To say that the meaning is quantified in the sense of quantum theory is beyond my competence.

Fact is the equivalent of an attractor in chaotic evolution; its Existence will present the same sensitivity to the state of representation playing the role of point of view that the chaotic attractor presents to the initial conditions of a dynamic system.

## **7 The Shape of the World**

### 7.1 The primacy of the Logos - Morphogenesis

The representation of the world is neither a file of points nor the register of all our sensations. The representation makes sense. Its conscious and unconscious parts integrate much more than a simple description: sensations, emotions, memories, metabolic reactions ...

How can we believe for a single moment that the phenomenon which represents, of which we recognize the complex, abundant and chaotic structure, would have such a plasticity that it could at any moment and in an instant adapt to the represented phenomenon, to produce the representation experienced as present, integrated by the knowing subject to all his knowledge.

"The mind extrapolates! You will say.

But what then, in the new image, is the role of extrapolation and that of genuine actualization ? Extrapolation projects endogenously, according to internal laws, the knowledge present in the form of conjectures on new sensations.

Actualization takes place through sensation and we have just shown that apperception is only an emergence out of the global capacity to know. What is then in the sensation the role of the new effective (exogenous) signal and the role of the perspective?

The laws of the world relate one state of the world to the next state of the world.

The laws of representation relate one state of representation to the next state of representation.

Through our dreams, we know that laws of representation are capable of autonomous functioning. Now the phenomenon which represents (the conditions of possibility) is of a complexity out of proportion to the represented phenomenon (the forms of the world as they appear to us). The laws of representation have a much higher authority than any laws of the world in imposing their forms on the represented phenomenon.

The laws of the world are in fact not necessary for representation.

What determines the form of change are the laws of representation;

**- It is the laws of representation that govern the world of our representations!**

It is they who determine, from the present representation, which new Facts could appear.

It is therefore not the change in the Reality of the world that brings with it the change in an infinitely adaptable representation of the subject; but it is the representation which feeds on the Reality vacant of form, it is the Knowledge of the subject which at each moment absorbs its logical neighborhood and gives it forms according to its own laws.

**-Our representation of the world is morphogenesis.**

### 7-2 The Anima

Kant and Schopenhauer have shown that change in representation is the *a priori* necessary condition for all meaning.

A representation is not a "thing", it can Exist, that is to say, take meaning only as a law of probability on possible experiences that will give Existence to other Facts of Knowledge.

**- A representation takes on Meaning, comes to Exist through the Act of its expansion.**

This dynamic relationship between a Knowledge and its Meaning strictly deserves the name of Anima (that which animates the meaning).

The Anima results from the complementarity of the Existing and the Act: The In-act comes to Exist through the Act which gives it Meaning, the Act follows a law of probability based on the Existing. Without the Act, the In-act would have no **Power** to Exist; without the Existing, the Act would have no **Necessity** to direct it .

There is in Anima nothing mysterious or new : The cross influence between power and necessity could as well take the mathematical form of the dynamics of a wave .

Our thought is it not the expression (in its etymological sense) of our thought ? life is it not the expression of life ? a logical theory does it not require a wider theory to express its truth ...?

### 7-3 Continuity of Existence

The purely logical nature of the principle of Individuation according to the OdC distinguishes it from the principle of Individuation stated by G. Simondon (ref ILFI). According to the OdC, the principle of Individuation is neither spatio-temporal, nor physical, nor material, nor psychic, but purely logical.

For the OdC Individuation is a direct consequence of the Logos, without any other a priori immanent assumption.

Without this constant reminder, our ontological reflection would be lost in confusion and would find itself finally digested again by the theology of immanence.

In § 3 The Logos we wrote:

*Although the Logos transcends meaning, we have no choice but to designate it as an object of meaning. Yet our thought of it (and all of its attributes) is no more grounded than any other Fact of Knowledge.*

We have to give meaning beyond meaning.

The OdC must come to terms with this paradox.

In this effort we have shown what is a Fact (of Knowledge) A .

We have shown what the meaning of Fact A is and that the meaning itself is a meta-fact: ie a judgment of necessity emerging from an unfounded reality.

We have shown what the Individuation of Fact  $\rightarrow A$  is and that this Individuation is a meta-Fact.

Likewise for the Existence of Fact  $A \rightarrow A$ , for the necessity of Existence, for the relation between two Facts  $A \leftrightarrow B$  etc ...

The attribute of Existence and all the other attributes that we use in our logic are unfounded. The notion of truth must be replaced by a statistical expectation which always refers to the possible experiences in the subject and never to a reality opposite.

NB: The transcendental subject and its Individuation are themselves unfounded concepts.

We must also recognize the non-foundation of the attributes of **continuity of Existence** and **presence of the Fact** in a state of representation.

The judgment of Existence of the Fact emerges from an unfounded reality: A not being founded, the relation of Existence  $A \rightarrow A$  is itself unfounded.

Likewise the continuity of Existence of A imposes itself on us by the singularity of a mode of order but has no meaning beyond the horizon of meaning.

Just as the possible cuts cannot get to the bottom of the complexity of the reality of the Fact, the possible cuts cannot get to the bottom of the reality of the relation of Existence nor of the reality of the continuity of the relation of Existence.

The reality of the continuity of the Existence of the Fact is immeasurable to its meaning.

To say that the Existence of a particle P is continuous is only to say that the reality of its Existence is unfounded, immeasurable to its monodimensional meaning.

If , in a R1 representation, P Exists (resp. is present) and shall necessarily Exist (resp. be present) in the representations that R1 makes possible, its Existence (resp. its presence) is continue. But apart the cuts, the Existence of P is only conjectures.

It is therefore not useful to cut time into tiny sections, the continuity of Existence is meaning and its reality is not in the time of possible experiences.

The continuity of Existence is a Fact of representation and not the attribute of an object of the world, which means that it applies equally well to the mathematical Fact: Thus, the line can be said to be continuous because any cut between two Existing points would reveal a point, but apart the cuts the Existence of points is only conjectures.

Nevertheless no possible cut could completely split the reality of the interdependence between two points would they be mathematical Facts

*NB: One could undoubtedly conclude in the same way with the continuity of the real numbers starting (for example) from the non-foundation of the concept of length.*

\* Because the non-foundation is essential and not, as Gonsseth wrote, because mathematics would be based on an empirical aesthetic intuition (and therefore approximate) of the point and consequently of the number.

***The continuity of the Existence of a Fact is a meta-fact of representation.***

#### 7-4 The Co-Existence of Facts

The joint Existence of several Facts for a subject is itself a meta-Fact with all properties of it.

It is meaning for the subject and not a truth attached in itself to the Facts. It is not the Facts as such that Exist together (which has no meaning) but their co-existence which, for the subject, emerges as

a Fact from unfounded reality.

Like all Facts, co-existence has for meaning a law of probability on possible experiences having *a priori* meaning in the multiplicity of the subject.

By its logical nature it is geometric, animated and continuous.

If we take as an example the totality of all individual objects Existing for the subject, the meaning of their co-existence is the judgment of necessity of their co-presence in all the experiences (i.e. in any representation by the subject) rendered possible by a representation. Each representation will have for meaning (of the co-existence) a law of probability on the contingent modes of filling this necessity, i.e. on all the trajectories whose experience would be possible under the *a priori* constraints of the necessity of co-presence and individuation of the subject.

The meaning of the Fact of co-existence of objects is the space-time of their representation.

We see here that:

- 1) Space-time is of the same semantic nature as the objects which occupy it
- 2) Its meaning is a law of distribution of probabilities stemming from any representation, under the global constraint of the Individuation of the subject.
- 3) Space-time, which is the meaning of co-presence, is interdependent on the meaning of the objects of this co-presence.

It is then possible to give meaning to the general properties of this semantic space-time.

This meaning should be compatible with general relativity and quantum mechanics.

NB: These few conclusions of an ontological nature are drawn from an analysis of representation by the transcendental subject. May they authorize a new mathematics and geometry, inseparable from probabilities, which would allow a transcendental physics.

#### 7-5 The irreversible change of meaning

The relation of a representation to the representation which expresses it is irreversible by nature and not by accident. It is not the complexity of the links of interdependence from one state of representation to another that makes any turning back improbable, but the logical principle that a truth can only be expressed (Exist) through expansion towards a wider truth who com-prehends it.

What I am takes on meaning in what I could be.

The attribution of Meaning is also the gradual passage from the contingent (the probable) to the necessary (the certain)

***-The attribution of meaning appears to the representation as an irreversible flow.***

The result is an orderly relationship with a content and a semantic container, what is understood and the judgements wich com-prehend.

***-The attribution of meaning orders the expansion of the representation.***

***-It is not the reality that changes irreversibly but the representation.***

#### 7-6 The present moment.

The present moment contains in itself an apparent paradox:

The sensation appears as One and present to the thought/subject,

The whole world appears present to the thought/subject

The subject appears to himself as One and present.

And yet sensation, like the concept of the object of the world, like the subject himself, are diffuse wholes according to their intensional nature.

Unification through meaning does not suddenly and en bloc transform the In-Act into Facts, it must be considered as an extended flow of unification whose asymptotic target will be the Cartesian "I/subject", the Individuation.

Sensation and any state of Fact are therefore never a synchronous phenomenon in reality.

If the Fact, as an object appears present to the subject, it is because the present moment of the subject and his State of mind (of representation) designate one and the same signifier.

The present moment is not defined for Knowledge but only for the "I". It is a semantic asymptote where all meanings coincide.

The present moment of a Fact is not an external reference but is included in its concept One.

***-The present moment of a Fact is the asymptotic Unity of its Meaning, it is the Act which states the Existence of the Fact.*** (See Ref CNT)

The In-act of a Fact is not simultaneous with the present moment of the Act that represents it.

***-The Reality of an object is not in the present moment of its meaning.***

Not that the reality of the object would be in an instant other than its meaning, but the time which prevails for the extensional meaning does not prevail for the intensional reality.

The Act which states each Fact is a present moment and it is the semantic interdependence of these Acts, the Individuation, which causes the convergence of all these present moments towards a present moment of the knowing subject, of the "I".

It is then no longer necessary to consider the "I" as situated in a present moment which would be opposite to it and would impose itself on all the Facts of this state of mind, but on the contrary to consider the present instant as constitutive of the "I", as immanent to the "I".

The idea of the present moment is already included in the "I" of the Cogito.

The synchronicity of representation results from the very nature of what we call the subject's state of mind: the meanings of Facts (considered as containers, logical attractors of thought) are gradually subsumed towards this purely semantic whole which is the representation of the world by the "I".

***-The present moment of the subject is the asymptotic individuation of his Meaning, it is the Act which states the "I am, I become".***

At each step of this semantic grouping, the present moment of the "compound" does not refer formally to the present moment of the "components".

There is not a present moment that would bathe the fusion of the components in a compound, but the creation, for the compound, of a present moment.

***-The "I/subject" is the only one to know his present moment.***

***-The present moment of Facts is not the present moment of the subject.***

The present moment of the subject's world contains only the "Acts" that Exist for him. These Acts are certain, present, necessary.

There is in reality no synchronicity nor of sensations, nor of Facts, nor of thought but creation of a semantic present moment of the subject as asymptote of the process of individuation of his Knowledge.

Interdependence being the only ontological reality, we must give up the common vision of a world made up of "beings present at what happens to change of state".

Change is not an "accident of the being" but, on the contrary, it is the Fact which is a singularity of interdependence. One could almost say that being is a singularity of change and that its present moment is one of the attributes of its Existence.

The subject is not the result of a synthesis but a singularity, his unity and his present moment are his virtual focal point.

The present moment of the world is a logical cut which logically delimits a State of representation and not a present state of the World.

The logical "simultaneity" of this cut that appears to the subject is in no way imposed on the In-act of the Knowledge.

If there is a present moment of the "I/subject", the "I/object" is not concerned with this present moment.

### 7-7 Subject's time

The transcendental subject is not a being "in reality" but Meaning. He is the Act which at the same time extends and individualizes the Meaning of his Knowledge, the judgment of necessity of another myself.

The persistent Existence of the world is in the persistent Existence of the subject.

The expansion of the meaning of Knowledge is the very essence of the subject: The Fact contains in itself and In-act the law of probability of other Facts but Exists only through individuation of these other Facts. Meaning is the meta-fact of possible, that is to say Actual, interdependencies but which will only come to Exist by their fusion within the subject in the unveiling of himself.

This disclosure is irreversible, although the links of interdependence are reciprocal.

Since the "I" of the thought/subject is, in essence, the present moment of the world, the necessary and irreversible unveiling of new Facts is interpreted by the thought/subject as a change of the world, whereas it is a question of his own extension which is his essence.

***-Anima animates the subject's representation of himself and the world.***

***-The relation of what understands to what is understood ordains the representation.***

***-Anima creates a subjective time that appears to the subject to be the time of the world.***

***-The time form is consubstantial with meaning.***

### 7-8 The form

There is no form *per se* but only the forms as pictured by the knowing subject.

Representation is not a transposition of the forms of the real but creation of predicates. The concept is not fusion of meaning but creation of a semantic entity.

***-The form of the compound Fact is not the fusion of the forms of the component Facts.***

Each step of unifying the representation of the world is the creation of new forms.

We find here a principle already present in the theory of multiplicities: According to Husserl, the "objects" of a multiplicity are defined and actually exist not as a function of a "proper" reality, but as a function of their relations to other objects of the multiplicity, the reality that Husserl (and before him Brentano) qualifies "unproper".

**The existence of an object is only speakable in an extensional way and according to the language of the multiplicity.**

With regard to the objects of the world as they appear to us, the space-time in which we describe their "extensional" appearance is not valid for describing their "intensional" reality. Note also that this extensional language has nothing *a priori* or universal, it is none other than the structure of my perspective of the world as a knowing subject. My perspective of the world is the structure of the multiplicity in which "I" represents myself.

*We think we know "the shapes" of what makes up the objects we represent. We must not confuse "intensional" and "interior". We can make the "interior" of a Fact of Knowledge appear through Acts, additional cuts through which a new "extensional" meaning will appear in the multiplicity (in space-time) where we stand. This "interior" is not the intensional reality but an extensional sense.*

### 7-9 Idoneity of form.

Here is Gonsseth's definition of idoneity: "Idoneity is the quality of statements that, in a given situation, best match the circumstances, conditions, requirements, and means of investigation of the situation. "

For Gonsseth, knowledge is not true, it is only idoneous.

According to the definition of Gonsseth himself, being idoneous for a model, is not a simple qualifier. A model is not idoneous. A model reveals to be idoneous at use: by the consistency of the actions that result from it or rather by its ability to eliminate inconsistencies on the run.

The essence of idoneity is much more a principle of exchange between {the model (the Meaning) which directs the Act} and {the effect of the Act which corrects the model (the Meaning)}.

Idoneity does not qualify the model so much as the common nature of Meaning and Act. Our spatial sensations are idoneous by the very fact that our gestures go to their goal, that Meaning and Act co-operate and whether they are spatial or not doesn't matter.

As long as Meaning and Act co-operate, Truth is irrelevant. The Act makes the model idoneous just as much as the idoneous model allows the Act to be efficient.

Why are our representations idoneous, what principle justifies the probabilistic expectation on the possible meanings based on the revealed meaning?

My representations are generally idoneous because my Individuation is necessary.

The Individuation of the subject logically precedes his representation.

Individuation pertains to In-act reality, it is not subjected to time.

The subject is Individuation of Knowledge and Individuation is the very principle by which the meaning of Knowledge is made, for the subject himself and with certainty, coherent and complete, idoneous.

Because Individuation is necessity, Meaning and Act do co-operate.

Individuation, the idoneity of meaning, the existence of the subject designate the same necessary consequence of the Logos.

Idoneity precedes Meaning : long before consciousness happens the co-operation of Facts and perspective ensures the idoneity of our representations.

Idoneity is not the result of an adjustment of perspective to some reality, Individuation is not a formal property of Becoming.

The idoneity of meaning is due neither to chance nor to evolution.

We are solutions of the Logos long before we can designate ourselves as such.

There is no need for a world in vis à vis of which our representations would be isomorphic. The Logos erases the hiatus and ensures the idoneity of our morphogenesis, of our representations.

Idoneity does not bear an universal value. A model judges its idoneity from the inside.

We can extend the reasoning to the idoneity of inter-subjective exchange, based on the Individuation of Humanity, on its common destiny.

## **8 Conclusion**

### **8-1 Power and Necessity**

Let us take for granted that there is no formal "reality" to which to refer our propositions and our concepts. The Meaning of our propositions and our concepts is a probability distribution on the experiences (sensations or thoughts) to come:

The Meaning of my Knowledge is only the putting into Facts of the infinite and diffuse system of common causes which themselves are only the putting into Facts of other causes etc ... The singular distribution of the Facts of my Knowledge is a meta-fact of my Knowledge.

That from a singular distribution emerges a judgment of necessity is also a meta-fact of my Knowledge.

#### ***-The Conjecture is a Fact of Knowledge***

The Fact of Knowledge "snow" integrates In-act, the conjecture of the sensation of white, cold etc.

The act of thinking about the concept of "snow" gives rise to expectation in the subject, that is to say the concept of the sensations of "white" "cold" "pleasure" etc.

#### ***-The Act reveals what is In-act in proportion to its probability, to its Actuality.***

The Sense is not the helpless wait for an unveiling:

-The expansion of the representation is necessary, it contains In-act the **Power** which animates its expansion

-The State of Knowledge contains In-act the laws of probability which rule its expansion, it contains In-act the **Necessity** which Individualizes the expansion of the representation.



- *The representation contains In-act the Power which animates its expansion and the Necessity which directs it.*
- *The object of the Necessity comes into existence through the Act of expansion of representation.*

There is therefore no difference in nature between representation, meaning, conjecture, desire, necessity, power, Act.

It is necessary to redefine the meaning of the **Will** in an In-act Reality: not only because the potentiality of future Facts of Knowledge are in my present representation but also because their relative probabilities are linked by the necessity of my Existence.

At the highest degree of abstraction, my Individuation is a principle of order, a bundle of probabilities of knowing, of which the Logos alone ensures the persistent unity.

Meaning, conjecture, belief, desire, will, Act are integrated within representation. Representation is integrated within Individuation. Individuation is a necessary solution of the Logos.

***The same Act by which I necessarily become myself, represents, animates and directs my Knowledge.***

Yet we want to believe that the world is populated by Beings who persist and become.

Component Facts contain In-Act the conjecture of their Interdependencies, and the Compound Fact is nothing more than the meta-fact that makes Actual this "reciprocal expectation" of component Facts. The In-act of Component Facts contains the need for the Individualization of the compound Fact.

Thus, the unity of the compound is not due "in reality" to interactions between the components, in a space-time external to them, but to the judgment of necessity of Individuation, buried in the In-act of components.

The Unity, the Existence of the compound and the components, their interactions, are only meta-Facts of representation of this unfathomable In-act.

### 8-2 The truth

The concept of "snow" for example, is associated with sound sensations (něj), visual (white), physical (cold), emotional (pleasure), etc.

Each of these sensations contains within it a small probability of the other sensations, and the concept of "snow" is nothing other than the circulation of these reciprocal probabilities.

This reciprocal expectation between each sensation and the others is the concept of snow.

The concept of snow is not "composed" of these sensations, nor is it the "container" of these sensations.

The form of the concept of snow is not related to those of its constituents.

We have seen in particular that the Fact of Knowledge creates its own present moment.

This circulation of probabilities disappears in the extensional time of the compound Fact. It seems without duration, simultaneous, present. It is no longer a question of the circulation of probabilities, of expectations, or of conjectures, but of a truth which determines itself, of a logical, semantic unity, of a judgment of necessity.

The truth of a compound is not based on the truth of the components: of the sensations, the signs, the concepts that it unites but on the circulation, on the reciprocal idoneity of their interdependencies.

***-All Knowledge Fact is judgment of its own truth.***

This construction of truth continues throughout the union of Facts by their interdependencies, until the eternally present truth of the "I" and its representation of the world.

The truth of the "I", the cogito, is the asymptotic truth following this principle of union of the Facts of Knowledge.

Once again, let us underline the brilliant intuition of G. Simondon:

***-The truth of "I" is Individuation***

From this definition of truth it follows that the propositions "The snow is white" and "It is true that the snow is white" are equivalent: they affirm that they do not contain a hiatus.

### 8-3 The power of the Logos

We could find it implausible that logical Interdependence, put in order by the Logos from simple laws of probability, could confer on logical Facts a Power or a Necessity which would explain the phenomena of the world we represent.

How can we believe that we are the plaything of our representations?

By the very laws of our mind, we are led to consider logical facts, beings as One. As a result, the statistical interdependence of one logical fact to another appears weakly constraining to us, the same for a countable infinity of logical facts, perhaps even still for a continuum of finite dimension (once the Interdependence in a continuum has been formalized).

But for the OK, the Fact is unfounded. Facts A or B for example, contain In-act infinities of infinities of component Facts. The Interdependence between A and B brings into play all the combinations of Interdependencies between the component Facts of A and B. It is to these fantastic infinities, strictly unthinkable, that the statistical laws of the Logos apply.

***-The statistical interdependence in an unfounded Reality is infinitely stronger than in any continuum, regardless of the number of dimensions.***

We then understand which Power and which necessity the laws of the Logos confer on a Fact or a State of representation to determine its Becoming.

We can only repeat:

***- The principle of the Logos, which regulates the evolution of representations, is infinitely more powerful than the physical laws which regulate the evolution of the world.***

***-A representation, regulated by the principle of the Logos is infinitely more persistent than the world it represents regulated by physical laws.***

### 8-4 The anthropocentrism of our representations

In a Darwinian fashion we might think that the laws of the Logos give us "luckily" a selective advantage: the ability to represent.

We might also think that the reduction of the complexity of the world by Facts is indispensable to us and that "luckily" the laws of the Logos necessarily lead to the Facts of Knowledge.

The OK obliges us to deepen this reflection and make the epistemological remark:

***-Science sets out the principles that allow us\* to state it.***

However, according to the Cogito: the truth of the proposition "I exist" is made necessary by any proposition which represents and not the reverse, because my first certainty is to think the world. Raised to the level of principles: "the principle which makes me exist is transcended by the principle which makes me represent".

***-The Logos transcends my\* existence.***

***-I\* am Logos***

The "I / object" is Logos In-act and the "I / subject" is the asymptotic Act of Logos\*.

The "I / object" is Knowledge In-act and the "I / subject" is the Act which gives meaning to my\* Knowledge.

This is the clarity that Kant and Schopenhauer lacked : The duality of the " I " is not {Spirit vs Matter} but {In-act Knowledge vs Act of Meaning}

This epistemological remark applies to our representation of the world and its laws:

It then reads:

***-The laws of the world state the principles which allow us \* to state them.***

Which leads us to state:

***-The Logos transcends the Existence of the world***

and finally :

***-The world is the Act of understanding my\* Knowledge***

It follows that, despite our efforts and beliefs, any representation of the world is anthropocentric. Not out of lack of rigor or pride or belief but in a necessary way.

\* Everyone understands that there is an "I" of humanity and beyond even an "I" of all consciousness on earth and maybe even an "I" of the systems of all kinds that we have made interdependent. (Ref: SOLI)

#### A weak anthropocentrism.

Because the subject is Individuation, all Facts of Knowledge are interdependent.

Paragraphs 6-1 and 6-2 require us to reconsider our perspective (in common sense this time):

Whatever direction I look, "I" am at the vanishing point of my perspective. My perspective, the geometry of the world that I represent, is closed on myself.

All the becomings of all the beings that I represent (in a four-dimensional space-time) converge towards my (one-dimensional) becoming.

At each of my moments my universe extends towards my future.

All the Facts of my representation contribute to my becoming.

***-The representation of his Knowledge by the subject is necessarily centered and closed on his future.***

The article "Is the OK a solipsism?" »Ref SOLI shows that intersubjective sharing does not help us to establish either the objectivity or the universality of our representations. The compatibility of our discourse on the world simply reveals to us that the Individuation of each of us participates in the individuation of Humanity and of the conscious on earth. Nothing in this proposal that we do not already know.

***-The representation of its Knowledge by Humanity is necessarily\* centered and closed on its future.***

*General Relativity describes a space-time possibly closed on itself. The above proposition is quite far from the RG, on the metaphysical background (the why) as on the formal aspects (it is not the space-time in itself which is closed on itself but all geometry and all logic as representations).*

*The Article " The Ontology of Knowledge, logic, arithmetic, sets theory and geometry " Ref LAMG, gives details on this point.*

\*It will be noted that the necessity evoked transcends the concept of space.

#### 8-5 The subject is Representation.

The Act of making sense of a Fact of my Knowledge is also one of the Acts which "update my perspective", which Individualize my Knowledge.

We must renounce the usual distinction between: on the one hand a capacity to know that we could consider as a perspective (see ref LAMG) specific to the subject, a kind of "piping" leading the Meaning to converge on the subject, and on the other hand, a flow of determinations, which would follow these converging pipes to finally form a present representation of the world.

There is not: on the one hand the knowing subject and on the other hand what he knows. The knowing subject and what he represents are one and the same Act, one and the same process. And especially not a thing or the state of a thing.

*The mistake is to think of the subject's intensional reality in the terms and especially in the space-time of his extensional representation.*

*Even though we know that it is impossible, we want to believe (could it be otherwise?) that "the reality which represents" belongs to the present of "the representation".*

The persistence of the Fact in my representation is also my persistence.

The propositions that appear to me are my existence.

This expression can be transposed in an even more obvious way to Humanity: "*The Act of giving common sense to the Facts of our Knowledge is also the Act by which we Exist as Humanity*". Or again: "*A Humanity and its works are one and the same dynamic*".

And since Individuation transcends meaning, we can say: "*It is the Individuation of Humanity that makes language possible and not the other way around*". Common becoming is a prerequisite for language.

Annex I :  
**Mathematical fact - Syntactical fact**

Idea Force: The absence of a foundation of mathematics or logic does not mean that it is a mere syntax, because Syntactic Facts and Meta-logical Facts at all levels arise from the Logos and are of the same nature as Logical facts.

This text refers to the article "Gödel: Des théorèmes d'incomplétude à la théorie des concepts of Jacqueline Boniface" review Noesis .

The "dispute" between Gödel, who defends the existence of the mathematical fact and Carnap, who considers mathematics as a simple syntax, can be transposed at the ontological level. The question would be: "If we cannot find a basis for the being (a first being, a substance, a logical Fact) may it be that the world is nothing more than the arrangement (the syntax, the order) of meaningless symbols, of nothing at all?" "Can we separate order and meaning?"

To see that more clearly, some precisions:

-First, for the OK, the subject carrying the point of view can not isolate itself from its object. This is particularly true in a conceptual domain such as logic. As long as logic has an object, a logical proposition makes sense only in the (logical) relation between the subject who states it and what it claims to qualify. It follows that the universality of a proposition can only be a profession of faith, because the theory to which the proposition belongs, was it coherent, is constructed by and in the point of view. We must not confuse "invariance" and "universality". So there is only meta-logic proposition.

-It also follows that a logical being can not have a limit, a defined boundary. The logical being is itself a point of view on what gives it meaning; it represents its logical "neighbourhood". Its neighbourhood is its universe. But in topology, if each element of a logical set is surrounded by a neighbourhood, this set can not contain, i.e. represent, its own boundary. Being can have only a horizon.

*NB : These remarks show the ontological character of Gödel's demonstrations.*

-The term "mathematical fact" is misleading. A mathematical fact is a concept. But every concept is in essence constructed. A concept is not the recognition of a universal truth by nature but the attribution of meaning to a multiplicity by a subject. The attribution of meaning is not a pure activity of the mind but a process of reality, of which the mind is a part. The mathematical fact is a meta-mathematical concept in that it recognizes the validity of the process that gives it meaning.

-The syntax is not a set of arbitrary rules. If it were a free creation of the human mind, it would nevertheless find its origin in the relation between the object and the subject. Syntax is a modality of designation of invariants identified by a subject (Science is a point of view) in a logical system. The effectiveness of this mode of designation is itself based on invariance. The identification of this invariance is a process of reality.

The syntactic rule qualifies the relations between designated mathematical facts, in the same way that the mathematical fact qualifies the relations between logical propositions.

Unity in fact, whether mathematical or syntactic, is not in itself, as an intrinsic characteristic, but expresses a singularity in the organization of a set of inferences.

It is not necessary that the propositions connected by these inferences be founded by primary constituents, by a substance. The "fact" (whether logical or syntactical) is not founded by a substance; it is born of the- and in the structure, at all levels.

In this sense one can speak with as much legitimacy of the "syntactic fact" as of the "mathematical

fact". Both are of the same conceptual nature. There is neither more nor less arbitrariness in the statement of a syntactic fact than in the recognition of a mathematical fact.

In conclusion, the lack of foundation of a set of logical inferences does not preclude the existence of "facts" that will not be meaningless or arbitrary creations. These facts will nevertheless be concepts, relative to a subject, built step by step.

Being and order are two modes of designation of the same reality.

## Annex II

### Reality is a logical system In-act

Reality is Interdependence In-act, "out of time", a concept very different from that of "eternity" which means: "to last all the time".

Interdependence In-act (A because B and vice versa) is a concept very different from the logical causal relation between two facts (A is the cause of B).

Reality is logically unfounded; there is no being in reality.

We do not have adequate mental images in the physical world for these concepts, in fact unthinkable as facts of the physical world with attributes. But these strange attributes are not unthinkable.

To think of them, one must think of the world as a logical and not a physical system.

Let's take as an example of logical system: a language (dead). A dead language is «out of time» in this that the relationship between word and concept are without reference to time. The interdependence between terms is neither causal nor conditional. Snow is not the cause of white. A language is unfounded since there is no first word. Except for the reference to an object vis-à-vis, any word can and must be justified by other words, infinitely.

#### Return on the In-act and the Act

The example of the book also introduces the concept of Act.

Indeed, a language, a book, a posited calculation, a logical theory In-act do not make sense as such, they only make sense by the Act: the act of speaking, reading, calculating, inferring. The sounds, the words, the propositions of the language are In-act but make sense only by the Act which defines a certain mode of order, according to certain rules.

Note that the In-Act is not the result of the Act; the In-Act is not the sum of the Acts.

*For OK, what we are is not the cumulative result of our actions **but the Act by which we become.***

The story told by the book is not the result of reading **but it Exists by the Act of reading.**

In an interactive book, the reader, by the Act of reading, selects the story that happens among In-act stories. We see that the In-act (the book) is out of time and that it is the laws of the Act (the process of reading) that impose a dynamic of expansion on Knowledge.

This example (in its limits of validity) makes it possible to visualize the relation of the In-act to the Knowledge through the Act: There is the substance of the book which would be the **In-act** of the printed letters. There is the **Act** of Reading, by letter after letter expansion of what is read. Finally, there is **Knowledge**, which is the accumulation of what is read and ordered in the form of **Facts of Knowledge**.

Interdependence In-act, which constitutes in a way the substance of Reality, is true before being comprehended by the expansion of a Knowledge, that is to say before the Act which understands it. One could push a little more the use of this example by noting that a major part of the Act of reading is for the reader to conjecture the next words out of his actual knowledge. This shows that the In-act of the reader's knowledge already contains a distribution of probabilities on its future expansion.

There ends the validity of the example of the book, because if the book contains In-act a narrative already formalized (organized in series of letters); the Reality is vacant of forms and it is the laws of Logos which, in guiding the expansion of Knowledge, build its story step by step.

Annex III  
Consciousness

**Wolfgang Ernst Pauli** is an Austrian physicist known for his definition of the principle of exclusion in quantum mechanics, which earned him the Nobel Prize in physics in 1945. Pauli (like so many others) wondered much about the meaning of the principle of complementarity and the role played by the observer and the observation device.

*(Ref PM & P ) p. 183 It is easy to come to the idea of comparing the inner process of sensible perception and, more generally, any appearance of a new content of consciousness, with observation in physics, because the measuring instruments of these can be considered as technical extensions of the observer's sensory organs. In the case of sensible perception, however, the new content of consciousness becomes an integral part of the perceiving subject. As the unconscious escapes the quantitative measure and therefore the mathematical description, and as any increase in consciousness (or conscientization) modifies by necessity, by action in return, the unconscious, we must expect in this case (of the unconscious) a "problem of observation", a problem which certainly has analogies with that of observation in atomic physics (NDLR at the quantum scale), but involves even more considerable difficulties.*

It seems obvious that a "state of consciousness" can represent to itself only part of the reality that constitutes it; A potentially tiny part of this reality.

This is not a psychological or metabolic question, but a pure question of logic; A mathematical question.

As Gödel has shown for the restricted domain of arithmetic, there must be, in the logical theory of consciousness, true propositions that consciousness can not represent as true; Semantic elements not conscious.

To continue the analogy with Gödel's work, one could say that consciousness is the meta-logic of our "states of consciousness". The one that states the propositions, the one that declares "this is a thought" "this is true".

The rest is in a way the language of the utterance, which is real as the logical substance of "consciousness" but does not appear, "does not exist" as such for consciousness. This is, inter alia, the network, the extraordinarily complex field of interdependencies which connects the signal to the sense and meaning.

Though, consciousness, this part that "takes shape", presents itself to us as the "present self".

Then the question arises: where, in what space is the logical substance of consciousness, and in what temporality?

Does the proposition "I am" contain (logically) the language by which it is pronounced?

We do not know very well to distinguish the container from the contents of this kind of bottle of Klein.

As W. Pauli writes, *"measuring instruments can be considered as technical extensions of the observer's sense organs."* (Ibid)

Can not sensory organs themselves be considered as extensions of consciousness, and all the physical or logical phenomena that "make a step" between the observed object and the consciousness of the observing subject ?

To illustrate this, a few quotes from CG Jung about what he calls *The Archetype*, borrowed again from W. Pauli (ibid):

Psychologische Typen (1921)



- *The primordial image, which I have called elsewhere "archetype" is a preliminary stage of the idea, it is the mother cell.*

- *Über die Energetik der Seele (Psychologische Abhandlungen, 1928)*

*Archetypes are typical forms of the grasping of the real, and everywhere we see the regular recurrence, in the same way, of certain modes of this seizure, it is an archetype ...*

- *Psychology und Religion (1940)*

*(We admit) That a certain unconscious conditioning is present as a priori received by heredity. By such a hypothesis, I naturally do not mean the hereditary transmission of representations, which it would be difficult or impossible to prove. I suppose rather that the inherited characteristic must be something like the formal possibility of reproducing the same ideas or at least similar ideas.*

*By the notion of archetype, I mean a property or a structural conditioning peculiar to the psyche in its relation to the brain, whatever it may be.*

- *Von der Wurzeln der Bewusstseins (1954)*

*We must always remain aware that what we mean by "archetype" escapes in itself from the direct grasping by the representation, but rather produces effects that make possible representations, which are the archetypal images.*

*... .. the psychic "Ultra Violet" that is the archetype, is an area which on one hand has no physiological characteristics and also can not be considered either as ultimately psychic although it manifests itself in terms of the psyche*

*... the archetypes have a nature that can not be described as psychic*

*... Archetypes only appear in observation and in experience, and by organizing representations, which always happens unconsciously and, for this reason, can never be found a posteriori.*

- *Aion (1951)*

*... certain complex factors of representation, which I call archetypes, of which the existence as unconscious organizers of representations can be assumed.*

- *Wurzeln*

*The word "Archetype" is an explanatory reformulation of the Platonic eidos (the Idea)*

The definition of the "archetype" given by CG Jung through these lines corresponds quite precisely to what the Ontology of Knowledge (OK ) refers to as the "eigen solutions" of the Logos.

The Logos is a mode of self-organization of interdependence links. His nature is mathematical. Although essentially unpredictable, it presents specific solutions that, applied to a field of interdependence, define singularities. These singularities are the constitutive elements of the representation of the real, in the form of Facts, carrying attributes, in an ordered state space.

To be clear, we must distinguish 4 concepts :

- The principle Logos, which is no more than a statistical law, possibly transcending all reality, which should be compared to the principle of organization of thought in the form of archetypes proposed by CG Jung.

- The generic eigen solutions of this law, which should be compared with generic archetypes or Platonic Ideas (eg the circle, distance) or the concept of attractors of the mathematics of dynamic systems.

- The eigen solutions instantiated by a given course, from a given point of view, which will then have to be related to instantiated archetypes (eg the moon that I see seems to me round and far) or an attractor appearing for a given application iterated from a given initial condition.

- The complex assemblages of eigen solutions or eigen vectors (whether general or instantiated) which constitute the forms, the attributes of the Facts.

For the OK, from the moment when the "organizing principle " by archetype concerns the metabolic, neuropsychological processes of thought, even if its own nature is not physical; its field of action can not be limited by either the brain, the material body of the subject, or the physical vectors of its observation. Because any attempt to define a precise boundary between the physical

world and thought is hopeless: The evolution that created my capacity to perceive, the hereditary or cultural component of the archetype, the circumstances that placed me in relation to the observed object, all this must be considered as one of the aspects, in the very long term it is true, of this process of constitution of meaning. All of this is part of the substratum prior to conscious representation.

The gap between the logical "substance" of consciousness and the reality it observes is indefinite. If, therefore, the Logos extends its field of application to all reality, we have no reason to consider the constitution of meaning as limited to Human, nor to the individual in his spatial extension, and human species, or even the living.

Meaning elements, instantiated "archetypes", are possible in all reality depending of the "initial condition" of the path (i.e. the Point of view or individual consciousness as far as CG Jung is concerned). They are the singularities, the germs of potential forms.

We are today convinced that the retrospective path from the consciousness of the subject to the "Reality" that it represents, will never meet with a substance, a primary particle or a first truth. This "substance" is therefore "absolutely infinite"; it is an unfounded whole in the sense of set theory. Consciousness, the meta-proposition that expresses "I am and I represent the real" has as its substance all the logical interdependencies that plunge into the real, endless journey, infinite set because unfounded.

Here is what sheds light on the vision of the fathers of Quantum Mechanics : Pauli, Bohr, Heisenberg ... concerning the observation of phenomena at the atomic scale.

To quote W Pauli again (ibid, p.157)

*" The indivisibility of elementary quantum processes (finite value of the quantum of action) is manifested in the indeterminate character of the interaction between the means of observation (the subject) and the observed system (the object); .... Indeed, any observation is an interference of indeterminable magnitude which modifies both the device of the experiment and the system to which it relates, and this interference interrupts the causal relations between the phenomena that precede it and those that follow it. "*

We have seen that it is not the observed system which is affected by the means and conditions of observation (and therefore by consciousness) but the course of knowledge which depends on its initial conditions. Nothing changes in the observed reality.

It should be noted that

- on the one hand, the path presents a " *sensitive dependence on the initial condition* ", which means that a representation by a State of Consciousness has necessarily a random part,
- on the other hand, the attractor is a quantized singularity of the path, which means that the representation of Facts: beings, forms, states, will appear, disappear and change in a quantified way.

Let us now turn our gaze towards the "downstream" path of consciousness:

Consciousness is such a logical theory that is diffused through its logical neighbourhood, just as a mathematical theory gives birth, from deductions to deductions, to a new theory.

The new logical theory all at once "contains" the old and represents it as its "previous state".

Note that all "new" inferences were true before being demonstrated by the new theory, only their meta logical status changes from "true" to that of "demonstrated" that is logically integrated with the (logical) existence of the subject who states it.

The transition from an old theory to a new one must not be considered as a change but as the diffusion of a meta-logical status on an immutable logical substratum.

We note that each "demonstration" of a new truth is an irreversible act.

The Becoming of Consciousness is therefore not a change but the irreversible diffusion of a meta-logical Point of view that "gives shape" gradually to new truths.

The substance that flows "downstream"; becoming consciousness is the same immutable reality and without defined limits as the substance that is travelled "upstream" by the consciousness that observes.

Annex IV  
**Systems without state**

The first condition to define the state of a system as defined by Clausius or Boltzmann is the idea that there is a present moment of the system.

For the OK this idea does not correspond to any reality.

What is real in the simultaneity of the microstates of a system?

How to conceive a state that would be in reality "without temporal thickness"? On what foundations could we define in a system a surface that could be called a state while the reality of a thermodynamic system is a set of interdependencies?

In reality, there is no present moment of a closed and isolated system, except that of the observer, resulting from a choice of point of view; through means of observation which themselves result from his knowledge and his works.

An observation (the physical means and the psychic act) consists in integrating new interdependencies into the Observer's Knowledge. Observer Knowledge is self-representing in a time and space created by him to "tidy up" all its Facts of Knowledge.

There is no state of the system but only a state of knowledge of the system.

There is, in fact, no initial state, nor final state, nor evolution "with time" of the system, but only an initial state of Knowledge and its evolution by increasing Knowledge.

The system is not in time, it is our Knowledge of the system that is in time.

Our Knowledge is the Trojan horse that introduces time (and space) into an isolated and closed system.

The meaning is only applied to the system by the Knowledge of the observer through the observation device.

Within an isolated system, the state as present moment but also the state as quality, have no reality. These are pure concepts attached to the Knowledge of human; anthropocentric by definition.

If we do not want to prejudge the space-time in the system, we must see the system as a set of true interdependencies "outside of any referential"; as an All In-act.

A "past" of the system is a meaningless notion. There can be no physical initial state (no more macroscopic than microscopic)

The initial state is thus not an initial property of the system but an initial Fact of Knowledge, an initial ordering of the Knowledge of the system, defined by the observer's own work.

The state of the system appears to a Knowledge with the asymptotic form that it gives it, limited by its horizon.

This form is fully integrated and ordered in the total knowledge of the universe acquired by the observer at the moment he calls the moment of Knowledge.

In the universe of our Knowledge, we seem to have physically "manipulated" the system to create an initial state.

In deed the real system "without reference" is immutable.

Our Knowledge, by the experimental device which it has itself conceived and realized, has turned itself towards a State of knowledge statistically improbable to lead to what it will call "an initial state of the system, out of equilibrium".

The observer has himself brought his Knowledge to a Point of view where the system appears to him in imbalance.

Then, what we call system evolution is actually the increase of our knowledge of the system, by its expansion into the immutable reality of the system; As if each Fact of Knowledge newly acquired revealed to us a little of its own structure and brought out other Facts of Knowledge.

In this perspective, the second law of thermodynamics does not relate to the evolution of systems

but to the development of our knowledge of systems.

It then appears to us in all its simplicity:

The Knowledge of the system increases cumulatively by its diffusion in the system and integrates with our global knowledge of the world.

Whatever the initial state of Knowledge, it can only evolve globally towards a form corresponding to the most probable Facts of Knowledge, the least singular.

*"This is not the world that becomes, it is our Knowledge that travels a reality In-act"*

## Appendix V

### **Logos' eigen-solutions are the forms of the world**

The following lines include different solutions of Logos associated with different formal concepts of our world.

- If a part of Reality is completely closed on itself, then there is no need for a cut. Being cut off from Reality, this part would exist only for itself.
- If a part of Reality is such that a cut brings to the representation each of its interdependencies, our representation offers us the event with its causes and consequences.
- Then comes the solution with zero proliferation, which could be symbolized by  $A \leftrightarrow A \leftrightarrow A \leftrightarrow A \leftrightarrow A \dots$  in which A determines itself indefinitely. The cut that would isolate such a chain would be without dimension (2 points) which defines, in our geometry, a one-dimensional space. We recognize the concept of Individuation here.
- Then comes the solution with a non zero proliferation, but weak enough to be cut off by a continuum of finite dimension, such that the law of probability on possible Facts is distributed according to a continuum with 1.2.3 dimensions.

Let's give a special mention to the case when the cut is a 3-dimensional continuum.

According to our geometry, this case corresponds to the concept of four-dimensional space-time, the 3-dimensional cut being a "present of a space representation". At each point of this 3D cut, the cut interdependence defines a 1-dimensional "becoming" (time) vector.

Note that the 3D-continuum has the minimum dimension that allows to connect all points by a single-dimensional line, i.e. to aggregate interdependence into a set of individuations

These examples certainly have no mathematical value, but they show us that Logos' eigen solutions contain the form and laws of the universe. The laws of the world, as they appear to us, are like a residue of the attribution of meaning, what remains of Interdependence after the Logos has made all beings Exist.

Annexe VI  
The sources

Some references to "great" thinkers will locate OK among existing ontological proposals.

▪ Since the OK inverts the sense of intelligibility, our first reference will be **Descartes'** Cogito. The OK refers to this translation of Descartes' "metaphysical meditations"

*"..This proposition: I am, I exist, is necessarily true, whenever I pronounce it, or when I conceive it in my mind. » .*

The formulation chosen has many advantages on the famous "ego cogito, ergo sum":

It defines existence as a logical statement (a proposition), acted out by a conscious thought (thought is therefore not a mere proof of existence) and whose truth is not universal but limited to the subject.

The existence of the subject is not a state but an act, the act that enunciates self-knowledge. So much so that as soon as the act ceases, the subject's existence ends.

It is a meta-ontological as much as a meta-logical judgement. It proves no more than a mere "I/subject".

The OK does not claim that this interpretation corresponds to Descartes' thought. But what about the ontological thoughts of Descartes, knowing that in view of Galileo's woes, he had expressed his resolve to protect and partly conceal his thoughts?

The evidence then imposes a more general formulation of the Cogito such as: "... the proposal 'I am, I exist', is necessarily true, whenever I pronounce or come to my mind a (any) proposal"

The existence of the subject would not be a state but an act, the act by which the subject gives meaning to his knowledge.

To give meaning to my knowledge would be a sufficient condition for my existence.

▪ Our second reference will be **Kant** and the "Critique of Pure Reason"(ref CRP) where Kant operates a metaphysical revolution by reversing the roles between the object and the knowing subject, as this extract shows :

*" Until now it was assumed that all our knowledge had to be settled on objects; but, in this hypothesis, all the efforts tried to establish on them some judgment a priori by concepts, which would have increased our knowledge, did not lead to anything. So let's finally try to see if we will not be happier in the problems of metaphysics assuming that the objects have to be adjusted to our knowledge, which already fits better with the desired possibility of an a priori knowledge. "*

Kant does not exclude a reality in itself, but the only reality that can be the subject of knowledge is phenomenal, that is to say as it appears to our minds after passing through the filter of a priori elements and after being categorized and classified by pure concepts.

*«Experience itself is a mode of knowledge that requires the concurrence of the understanding of which I must presuppose the rule in myself before the objects be given to me, therefore a priori, and this rule is expressed through a priori concepts on which all the objects of experience must necessarily be adjusted and with which they must agree (...) we know a priori of things only what we put ourselves. "*

Most of what the OK takes from Kant is in these two quotes and boils down to :

**-If there is a "reality in itself" it is unspeakable as such.**

**-We know of reality only the forms that our understanding gives us.**

**-The laws of knowledge apply before the laws of the world as we represent it.**

▪ The third genius to which we refer is that of **Schopenhauer** which, on the premises posed by Descartes and Kant, produced the logical edifice that would have (and we will return to this conditional) end 14 centuries of errors in Western metaphysics.

The first excerpt will be borrowed from "The quadruple nature of the principle of sufficient reason"

:

Ref QNPR P212: ... *the proposition "I know" is the last abstraction of which we are capable, but this proposition is identical to this one "There are objects for me", and the latter is identical with this other "I am subject", which contains nothing more than the simple "me".*

This is the meta-ontological judgment that states the identity of "I am" as subject of Cogito and "I know" as the subject of the representation of the world.

**-“I am”=“I know”**

The second quote will be:

Ref QNPR P212: *As if supposing a subject, the object is assumed at the same time, and conversely, the object being supposed, the subject is found at the same time; as, therefore, being subject means exactly the same thing as having an object, and being an object the same as being known by a subject; similarly, when an object is determined in any way, immediately the subject is stated as knowing absolutely the same way.*

Expressing the identity of object and subject, this quote associated with the previous, sets out that the "I am" and "I know" have the same object. It states in substance:

**- I am what I know and what I know, it's me.**

The identity of nature between the "I" and "the world I know" is the opposite of an idealism that denies existence to the objects of knowledge. However, it does not postulate their material or even physical nature.

The third quotation, borrowed from "*The world as representation and as will*", confirms:

Ref MCRV P48 *"There is causality only in and for the understanding; thus the real world, that is to say active \*, is always as such conditioned by the understanding, without which it would be nothing.*

*But this reason is not the only one, as, in general, no object can be conceived without a subject, we must refuse to the dogmatists the very possibility of the reality which they attribute to the external world, founded according to them, on its independence from the subject. The entire objective world is and remains representation, and for that reason is absolutely and eternally conditioned by the subject; in other words, the universe has a transcendental ideality. It does not follow that it is an illusion ... "*

\* Author's note : Schopenhauer considers material reality as a series of causalities without origin which he names "activity"

These quotations, which summarize quite well what the OK takes from the theories of Kant and Schopenhauer, also make it possible to reveal the contradiction, the lack of focus of their theories, which gives to any attentive reader a feeling of vagueness, of a failed act, that of theories left somewhere between a pure idealism of which they defend themselves and which would in fact say nothing of the nature of the Spirit and a realism which would say nothing of the Reality defined as indescribable.

This feeling is all the more painful because any reader with a mind free from prejudices perceives in these texts the potentiality of a prodigious leap for the understanding of our relation to the world. It is perhaps because of their lack of clarity about the real nature of the Spirit and the World that neither Kant nor Schopenhauer could upset as much as they would have of science and common sense. Perhaps Kant and Schopenhauer, given the magnitude of the revolution induced by their ideas, lacked freedom and abandonment vis-à-vis old ideas and left too many scoria which have fragilized the steel of their thought.

The lack of focus of Kant's theory was emphasized in 1816 by Maine de Biran (Ref NoK ), who criticized him for artificially separating the primitive will from the understanding.

The blur of Schopenhauer's vision appears, for example, when he describes causality as the origin of the change from one state to another state of the object :

Knowing that the object is the "unified" representation of a multiplicity of forms a priori, conceived by the understanding, and that the state of the object is the representation of that multiplicity in a state of knowledge, it follows that the causal relation is itself the unified representation of a multiplicity of causal relationships linking one state of knowledge to another.



Schopenhauer even writes: Ref QNPR *"When a state, to be the condition of the production of a new state, contains all the determining conditions except one, it is customary to call it the ultimate cause. This is true, in that we stick to the last change, which is decisive here; but this reserve once made, note that a determinative character in the causal state, by being the last, has no superiority over the others to establish in a general way the causal union between the objects . .... However, it is the entire state that is the cause of the next state, and then it is in deed indifferent in what time order these determinations have effected a junction"*

It follows that what is represented as the causal relationship from a state to the next state is in fact the "unified" representation of the set of all determinations of all prior states to the next state\*.

Schopenhauer should have better differentiated "the causal link as a form" from "an activity vacant of form". The "formal causality" being the product of the subject's understanding and "the activity vacant of form" being what really deserves the name of Reality *independent from the subject*.

\* The notions of time, state, previous and next will be revisited in their turn.

The distinction between "formal causality" and «activity vacant of form" would help dissipating the vagueness of Kant's and Schopenhauer's theories in the sense that it becomes possible to state that: first: *The world in its form is entirely conditioned by the understanding*, and second: *Reality is "activity vacant form"*, which the OK designates as *"Interdependence"*

On this consolidated basis, the OK then shows how the "Reality vacant of form" represents itself and knows itself, according to transcendent principles of extreme simplicity.

Schopenhauer just as Kant, although they have shown that the understanding is prime, i.e. it intervenes as a priori condition of any experience, have not crossed the Rubicon with a true merger of Spirit and World, they also failed to reverse the direction of intelligibility.

This is what Paul Langevin said: ( ref CESP)

*"Planck suggested that the quantum of light is something to which the notions of spatial and temporal extension do not apply. Man must learn to see space and time not as objective realities, but which must now be transcended. They are not objective realities, independent of consciousness, and perhaps no such thing exists."*

Let's concede however, that some errors in Schopenhauer's statements are related to notions not yet known at his time; for example:

(Ref QNPR P 228) By condemning reciprocation (reciprocal causality) as giving only vicious circles when it relates to notions that are not equivalent, Schopenhauer presumes the arrow of time and thus lets unseen the concept of causal attractor.

(Ref QNPR §20) Schopenhauer writes that *"...the change occurs and it appears to the subject by the understanding"* which leads to another impasse because if the change is causality without reciprocation, that is to say bound to the arrow of time and if the causality is without beginning then this imposes on him the theology of infinite time.

▪The fourth genius to which we will refer will be that of **Henri Poincaré**.

A key contribution to the OK is in this short excerpt from his book: " Science and the hypothesis" (Ref S & H: Page 80 )

*"When we say that we localize such object in such point of space, what does it mean?*

*It simply means that we represent to ourselves the movements that must be done to achieve this object; and please do not say that to represent these movements, we must project them in space and that the notion of space must, therefore, pre-exist.*

*When I say that we represent these movements, I mean only that we represent to ourselves the muscular sensations which accompany them and which have no geometrical character and which, consequently, do not imply the pre-existence of the notion of space"*

This sentence is fundamental in that it deconstructs any link between mathematical concepts (such as the space) by which science formally describes the world and an assumed form of reality.

Poincaré's conception goes far beyond Relativity popularized by Einstein.

The formalisms of Einstein's theory operate directly on objects of representation: position, point, line, distance, time, geodesic ... on mathematized forms; although Einstein defended himself of that.

This operational, demonstrable, verifiable aspect, satisfies the science of today that has detached itself from the ontological question, but it tends to make us think unduly of space as something physically existing, described by means of geometry; to make us forget the constructed and conceptual aspect of space.

At the end of the 19th century, H. Poincaré laid the foundations for a new branch of mathematics, the theory of dynamic systems.

This theory shows that systems of step by step action, by repeated application of the same law of transformation, governed by deterministic and reversible laws, could evolve over the long term in an intrinsically indeterminate way, or lead to chaos.

It then shows us that the resulting chaos could have definite general statistical properties, universal and stable.

Poincaré even showed that the chaotic character of an evolution was a condition for the appearance of what must be called a universal order that can be represented in an ordered space. Let us understand that: relations of order, relative cardinalities appear, without reference to absolute referential, in the form of comparative probabilities. These relationships are universal in that they embrace elements that do not have immediate or traceable interactions with each other.

Could it be that the vacuity of order that a formless reality would present be precisely the condition of its ordered representation, according to the laws of large numbers?

Then the question arises:

"Is the order of the world we represent an isomorphism of a world "in reality" ordered, or is it a property emerging from the chaotic flow of logical relationships that bind the knowing subject to reality?"

Are the laws that order the universe the **physical** laws of a world in vis-à-vis, or are they the **mathematical** properties of the chaos of logical interdependencies that constitute Knowledge of the subject? "

•Our last quotations are borrowed the **Buddha** and his exegetes, when they try to make us understand the concept of **Vacuity**.

Extract of a Buddha's Soûtra "... *absolute truth transcends all conventions; it is truly unborn, incessant and beyond the form and meaning of words, beyond the subject who knows and what he knows.*"

Extract from "The walk towards enlightenment" from Pandit Shantideva. "*We affirm that there are two truths concerning all things included in samsara and nirvana: a relative truth in the apparent mode, in which realities, as much as they are, only appear, and an absolute truth in real mode, where the Real, as such, is the very emptiness. Each of these two truths is indisputable at its level. If they were different in the absolute and identical in the relative, each of these propositions would present four defects, as we learn in the absolute commentary of the meaning, which specifies that they are neither identical nor different.*"

*"Forms are empty, there is no emptiness other than forms or forms other than emptiness."*

These texts solicit from the reader neither belief nor interest in their exoticism, but reasoned understanding. They must be studied for what they are: a true metaphysics, just like those of Plato and Aristotle and it is in that capacity that they were taken over by great Western philosophers such as W. Schopenhauer or the founders of quantum theory as W. Eisenberg.

The quotes above illustrate two notions that the OK takes up:

- There is on the one hand: an absolute reality, uncreated, beyond all forms, beyond the knowing subject and on the other hand: formal relative truths that appear and disappear (note : for the subject) along time.

-This absolute Reality and these relative truths are not "two realities" but only one: Reality being unspeakable at its level can only be said by means of relative truths, and these truths, which appear to the mind, are only modes of order of absolute Reality.

### The author:

Jean-Louis **Boucon**

E-mail : [boucon.jean-louis@neuf.fr](mailto:boucon.jean-louis@neuf.fr)

Blog : <http://jlboucon-philosophy.over-blog.com/>

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