

Prologue

1

Sometimes we do not realize that our body and everything all around us is filled with (and probably is) a complex vibratory harmony, a kind of harmony with his musical consonances and dissonances that regulates the flow of the arrow of time.

We deduce that ultimately we are basically a set of nano-apparatus skilfully mixed and optimized. The information, submitted to a constant feed back, that we can emit and receive, as an open System, is contemporaneously an exchange of energy, matter and momentum: it is our autopoiesis. Our Systemic inside job and our Systemic outside job.

2

We are quite convinced that a change of state corresponds to a change of a point-event. It is irrelevant that this "does move" or not. It is that its "weight" in the universal web has changed and so the energy-momentum impulse varies: the same impulse acting on (or because of) that point. As a result we also need to give a topological definition of the entropy.

If any transformation occurs, because of the web existing among all the (adjacent or not) Systems, they are informed. This means that if there is an information that runs along the axes of the connection among the points, then any transformation will as well vary the amount of information that will be exchanged, varying also the entropy.

It is quite interesting to see to what this function is actually linked.

It depends only on the initial and final states and it should also give information on what type of path it is pursuing.

This is what happens in our nervous System, since the biochemistry is fully involved.

3

The biological speeds are of the order of meters per second. In reality, however, there are conditions of synchronicity that may lead to the conclusion that probably the physical conditions are not fully known.

These synchronicity conditions lead to the assumption that the parts of the System are connected to each other in terms of complementarity or subsidiarity, almost at photon frequencies.

We know that gaining speed is equivalent to make more and more rotate the space-time of a body in motion relative to an observer who lives in a four-dimensional universe .

At the limit, at the speed of light (i.e. the photons), the observation requires that the observer is perpendicular to the time axis rotation that is the fourth dimension.

By definition the photon moves at the speed of light. The universe is flat, a flat disk for him.

It arrives as soon as it departs, because for him there is no distance to cover.

It is not living because it has a null time, starting from somewhere (but there is no distance) it reaches the observer at zero time.

We have just only an apparent time expansion.

The photon is energy and therefore it is inertial mass; who emits it, is automatically a watch, and gives rise to masses.

From this the hypotheses of the biological synchronicities in our interior.

There must be *something*: a kind of mechanism, a physical law, a particular situation, which allows the body to create simultaneously neuro-transmitters in the different sub-volumes in which the body is divided.

And the information of this *something* must be of a photonic or a muonic kind, and moreover we have assumed Geometry as the source of gravitation, or better it is all the same with it: there is no gravitational relationship, there is a geometric space-time distortion.

Given these basic assumptions, we know, for example, that the inter-synaptic exchange takes place through matter, energy and information.

The set of neurons, we examine in this paper, can neither receive nor transmit matter.

So it has to by-pass this interchange: that is it will get information and energy immediately before the source of the neuron-transmitter and will give information and energy immediately after the receiver-neuron.

Biologically, the neuron is characterized by a large surface to facilitate this transaction.

Artificially this can be achieved only by increasing the number of probes in reception and in transmission, articulating and facilitating their mutual inter-relations and making as easier as possible the codification and the digitalisation.

It is important to specify that these are not digital signals but digitized: that is, the analogical artificial signals that the bionic set generates, are associated with the wave trains as series of standard nerve impulses and they so approach to reality.

There is a remarkable coincidence with the Reality if we take into account the nervous circuits and centres; but the artificial nervous tracks and centres, which are in growth and more and more specific, are not currently able to transform the various neuro-states in psycho-states.

In this work we consider the human body in general as a geometric structure, inside which there is the same configuration of the universe: i.e. the biological communicative signals move within the body as the photons outside the body, throughout the whole universe.

In short, "inside the same that outside".

4

Considering a generic informative signal in very high dilutions, we can preferably use the molecular quantum mechanics (QM). It allows the study of configurational changes of potential target macromolecules, due to energy flows that activate the Tunnel Effect in disturbance conditions.

That is that an informative electromagnetic flow, due to a very high dilution, has a very high probability of interfering on the information generated by the compounds (the target) that constitute the cell or whatever.

They are not substances but informations that their active forms are able to emit irradiating in a quasi-spherical space all around them.

If within this quasi-spherical space there is the target (the only one able to receive the message, while other types of target that interact with different information frequencies can't read it) then there is the unidirectional communication.

A minimum quantity of information can excite the reception, and can obtain a higher result avoiding what in chemistry is called the "activation barrier", which would require a higher energy to get the same (Tunnel Effect).

In this paper we don't deal with a quasi-spherical space but with the analogy with the flux-cone of an arc-jet that is emitted.

With the directionality, which can vary in intensity in function of the three spatial dimensions, this flux-cone guarantees the informative certainty on the target (receiving axon and its around i.e. the various collateral axons that are also receiving, even if in diversified quantities).

The guarantee is given by the same conditions as above.

With the artificial information exchange, obtained using nanotechnologies, we simulate the presence of:

- the transmitting sources,
- the neurotransmitters,
- the receiver wells,
- the astrocytes' action in the natural exchange,

just to analyze only the inter-synaptic space.

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In our Weltanschauung it is not available the absolute NOT (i.e. the *false* in itself), but only the *true* NOT, that is what might be negative (i.e. *false*, but in certain conditions).

On the other hand "falsum" -etymologically- designates what has fallen from a higher position to a lower one. Then the falsehood is not the untrue, but simply what is deprived of the true.

That is the word falsehood contains the previous state, where the real and the true coincided and where, now, the true does not appear.

We derive that if, from a logical point of view, the connotation "Real" precedes that of "True", from the phenomenological point of view, that of "Not True", follows.

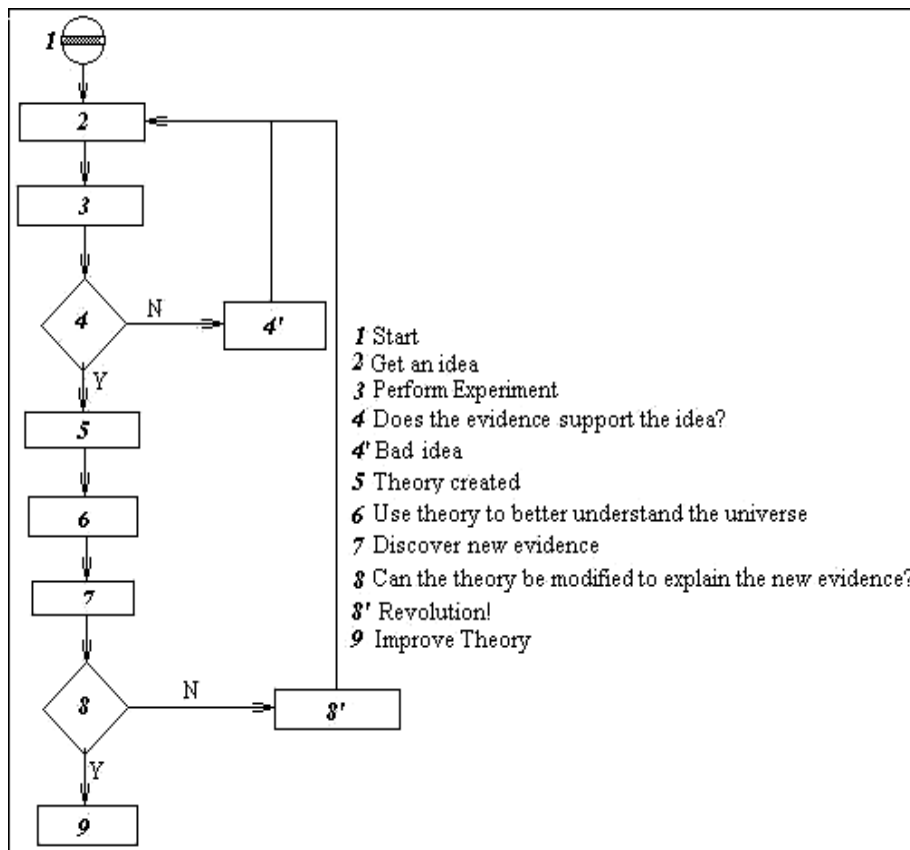
The "Real" gives continuity between what appeared to be True and now seems (is) to be False, but the False appears *after* false passed over. So the False is past, and the Real is a Present in which "it is true" and it may also appear "not true".

In the Logic of our global vision the law of inclusion is valid as in QM and also in the String Theory and in Sociology. So we speak of an and/and Logic, and not of or/or Logic, and also of the translation from the uncertainty principle (in QM) to the principle of indifference (*in the biological and social action*).

6

A last general (for Social Systems and Cybernetic Systems) consideration.

We know that the usually recognized scientific method, which is described and criticized in the Philosophy of Science is ichnographically represented by this scheme:



In the phenomenal and cognitive reality, this model is not exactly the one followed by the scientific community in basic researches. Usually, we know that:

1. the expression that binds the measure of a phenomenon to the parameters that determine it, is almost never explicitly known, and, in addition, it is quite never simple and much less

resolvable with traditionally recognized methods;

2. the parameters that determine a phenomenon, for example the social one, are generally much more than one, and perhaps the ones we chose are less important than the excluded.

Furthermore we know the validity of Tarski's theorem extended to non-formalized languages, which states that for semantically closed theories there is the need to limit the expressive power of the theories themselves, admitting that it is possible to define them an only "partial" statement of truth, i.e. related to "areas of speech" for which the truth conditions of the proposition do not coincide exactly with what it expresses.

It is clear that facing these situations, the PDE of various orders that we obtain, become, for points 1 and 2, almost completely unsolvable or useless and, for Tarski, also communicatively difficult because if, for example, the statement "the grass is green" is true, it is true if (and only if) the grass is green. But we can't calculate it fully, especially (and above all) for the lack of the real knowledge of the boundary conditions .

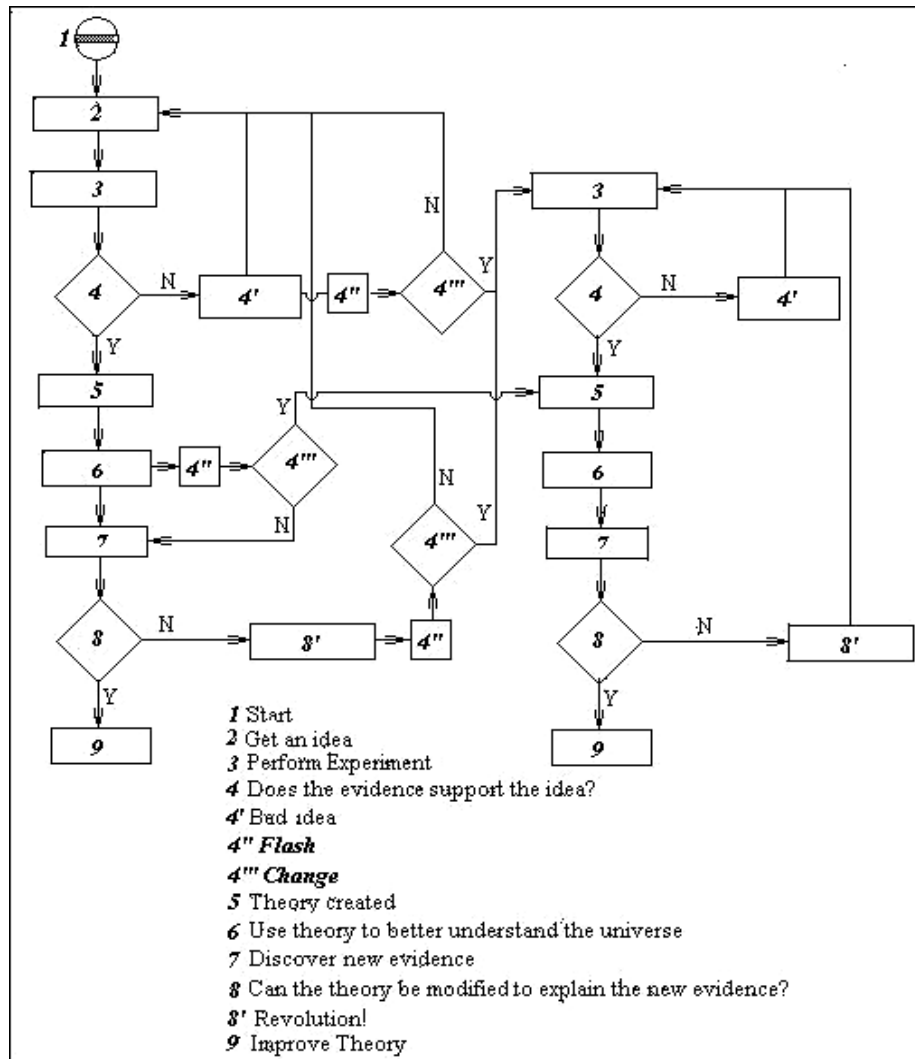
And also for the difficulties of the equations that causes restrictive solutions with reductive hypothesis. See for example assumption of the existence of an (internal and/or external) intelligence within the System; in this way it is possible to convert the chaos in a deterministic way: an obvious oxymoron.

Moreover being the solutions to the PDE of higher order almost impossible, they are reduced to solutions with numerical analysis, where the differentials become differences, and so what is continuous (analogical) in the biological or social behavior, becomes discontinuous (digital) and therefore not natural and therefore still not plausible.

But there is another way to deal with the problem of Modeling

It is accessible by the lateral thinking, that is the thought that does not favor one or the other cerebral lobes, but uses them both and at the same time, implementing a constant oscillation between one's inner knowledge and one's experience, one's Logic and one's imagination and intuition.

For these reasons, the iconographic representation of the Method seems to be the following:



The *Figures*, in addition to the pictorial, show also a substantial difference. The first represents the method that seems traditionally used in the research, the other captures the specific moments of the scientist's activity allowing him to approach also to the scientific method itself, but in a lateral way.

This depends on our ability of learning to listen to our intuition, giving less and less importance to what "appears" as real and which is often different from what we have "accidentally let arise".

Only in this way we can perform, at the same time, complex and simple things. We must learn to work in parallel and not sequentially. We also need to know the power of the analogical lateral thinking, that is well above the rational and the irrational thought because it reconciles and exalts them.

The analogical-lateral thought follows "peaks" values and doesn't move along complete paths which are sometimes, or better often, misleading. We must also learn how to get into it and don't be afraid of what we find out. We must have the courage to delete in order to build. We must have the courage to doubt everything, especially the obvious.

And we must have the courage to go our own way, despite every-thing. This is the Method whose resulting Ritual consists of signs, symbols, numbers, words, ideas and concepts, in any way expressed, allowing the realization of what the Method itself induce to implement and perform.

It is not only the presence of mathematics as a support of social analysis but the real necessity of a scientific method supported by mathematical simulations that are real and in accordance with the factual reality, as it is indispensable in the modern physics context.

Now that we already know the existence of new dimensions that integrate the Einsteinian space-time, such as the Calabi-Yau's manifolds which are subject to the Quantum Mechanics, we must

turn to the underlying symbolic Logic.

The new physical theories, so planned and constructed, prove as-sonant for the symmetry and dissonant for the asymmetry, but, on the whole, they involve either the harmony of the same physical nature of the universe and, especially, the counterpoint of human life and the deriving Social one.

Social Systems in which the preponderance (the only possible) of chaos and complexity lead us to discover and build new simulation models that can explain the transformation from a liquid to a gaseous society in containers with more and more deformable walls.

Social Systems in which the simulation must move from political or economic or financial projects to internal and/or external processes.

Social Systems in which the global Model simulation must no longer approach to a sphere that everything cancels due to globalization, but which presents an iper-polyhedron description of a real diverse society.

The Boolean Logic, as we want to apply in social Systems, is not predictive except in technological Systems, in which we can see the sub-Systems working in isolation or cooperatively; but this Logic is exclusively statistical in social Systems and then "ex post ": that is it says nothing more than what is already known or presumed.

The only existing Logic which can be probabilistic and so "ex ante" is only the Fuzzy Logic which is able to propose the existence of new flow lines for non predictable activities, even in a context of Empire, such as the financial one.

Empire, that is a word designating the single largest condition of complexity reduction.

These are only some of the many resources that the new physics, mathematics, Logics and informatics sciences make available to let us know the true, and not virtual, reality in all fields of knowledge.

With what I said above I want to emphasize the need to build "ex novo" a Sociology that finally become a true science, where *there is no place for opinions, intuitions, particular personal point of view*, as Husserl underlines (*Philosophie als strenge Wissenschaft*, 1910).

A new sociologic (and cybernetic) science with a solid foundation in which it is finally and definitively recognized the similitude between the "*Potilikòs*" of Aristotle and the "*Civilis*" of Cicero.

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For more informations, see also: Errigo D.P., *Sentieri Sistemici*, Loffredo Editore - University Press, Napoli 2011, p. 371-401 (in Italian Language).