

AETHEROMETRIC VIEW OF BIOCENTRISM

MICROFUNCTIONALIST PERSPECTIVES OF LIFE AND AETHER



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Relativity confused with subjective relativism (Complementarity)

One frequently hears or reads that Relativity introduced the viewpoint of the observer in the relativizing of all actions and events; but this is trivially unfair to Einstein's view of Relativity, to the precise extent that all of his theories of Relativity simply limited themselves to demonstrating how all measurements are relative to systems that are in flux, even when one artificially treats them as being static - there being no system that alone serves as the absolute reference for all the others. If anything, Relativity limited itself to abrogate the independent rights of the source and the observer. By introducing an hiatus between them, it made the source less objective, and the observer a matter of perspective, of speed and geometry.

What introduced subjective relativism into physics, science and philosophy, was quantum-mechanics, in particular the understanding of quantum-mechanics subsumed under the Complementarity Principle or the Copenhagen agreement. The central thesis was that the act of observation interferes with the observed and thus that the observer, in some measure, creates the observed. Einstein thought, in fact, that this view was deeply corrosive of scientific knowledge. And it was - just as Einstein's fragmentation of times had been for the concept of a universal Time - for it put into question whether the world of nature really had an objective existence at all.

However, one cannot quite say that while Einstein's Relativity might be in error, this is only an objective error, anymore than one can hold that Born's notion of the electron as a wave of probability has no physical objectivity, only an ideal one. For, the fact is that there is also a physical reason for the probabilistic conceptualization (Born, Heisenberg, Bohr), even if it be one that this conceptualization itself was not able to grasp. We have explored this physical reason at length in our deconstruction of Heisenberg's Principle [1] and in our analysis of the electron as a deformable nanometric particle with a toroidal geometry of energy flux [2].

Thinking as an aetherometrist, one can easily pinpoint the ultimate (nano)physics of the

problem that led from Relativity to subjective relativism and fuzzy logic: the electron, being a toroidal energy circuit, occupies at all times the entire band of probability, and thus cannot be said to reside on a 'point' in space (at some moment in time) which can only indicate a small portion of its flux - for the mass of the electron is not a point, but a looped flux. Without treating it as a point, there is no wave of probability, no Complementarity Principle, no imaginable so-called influence from the observer. So, the probabilistic picture of the electron responds to a defined portion of physical reality but carries its own model of axiomatization (ie cannot conceive of others that may address the same defined portion of physical reality), and so runs the risk of being limited by preconditions that do not permit that picture to understand exactly what is, energetically and geometrically, the *actual* object of study: specifically, it is unable to realize that the physical electron is not a point (only an axiomatized electron can be such), nor the analogue of a planet going around the Sun, but a torus of energy that occupies the entire "valence band" with a very definite geometry of flux. In other words, in physics as in science, real mistakes are objective mistakes that can only be undone by a paradigmatic change; all other mistakes in science are not scientific ones. The whole question then revolves around how such change can be brought about - and the answer provided by the scientific method can only remain the same: an actually new understanding only comes about when functions pertaining to a deeper level, one with greater resolution than afforded by any reigning paradigm, are *empirically* uncovered or discovered.

It is not that the observed must - or even can - be reduced to the observer, but that the observed has not yet, in the language of science, fully achieved its status of independence, and this time because a certain autism of the subject has come to dominate thought, including scientific thought.

The consequences of subjective relativism: so-called Biocentrism

With the Complementarity Principle, the epistemological principle of science changed in a way that many scientists and philosophers consider pernicious. And it seems to us that once the principle was enlarged and generalized to apply to all natural interactions, it was the relationship of official science to "pioneering" science itself that changed. It is easy, indeed, to take the subjective relativism of the Copenhagen school to its extreme and absolute consequences. And that is, in a way, what Robert Lanza proposes to do with his theory of Biocentrism.

In his essay "*A New Theory of the Universe*" [3], Lanza suggests that despite quantum-mechanics having privileged the role of the observer, its concept of the subject is not radical enough for a new understanding of the universe based upon what he terms "biocentrism". Lanza points out that science has for too long suffered from "physicocentrism" in various forms, mechanism (Newton, of course, but he also lists Einstein under this rubric...) and even probabilism (Heisenberg, Born,

etc). That it is high time science adopted a biology-centered perspective. The essential epistemological step that, in his view, needs to be undertaken is a kind of realization (he calls it "revelation") - that there is no reality outside of consciousness, that "reality is not 'there' with definite properties waiting to be discovered". The usual Copenhagen "subjectivist relationism" is no longer sufficient: that the subject actually alters what is perceived or observed, is no longer sufficient. The observer actually creates the event, creates the observed, creates the reality that serves as object of study - claims Lanza.

Perhaps one should start by the end of Lanza's argument - precisely with the question of how an intelligent observer can creatively enter into an event, become an event in its own right or, on its own account, become a creator of events. Starting at the end is not an easy task - for one already needs definition of the criteria for what turns an observer into a subject, and a subject into a creator. Longstanding efforts like those of Spinoza (the creative principle of active joy in the "Ethics"), Nietzsche (the will to power that affirms an unconscious activity), Bergson (the principle of the creative emotion) or Reich (the unconscious libido as massfree orgone) immediately come to mind. But these are not what Lanza has in mind. Rather, what he proposes is a form of solipsism (a charge which he rejects), but not so much à la Bishop of Berkeley, as à la Schopenhauer. It is a mystical form of solipsism. When I move from my dining room to my sleeping room - in effect he says - the reality of the dining room does not go on through the night. It is not even there. Only when I wake up and go "back" to it to have my breakfast does the dining room re-appear, re-materialize as if by miracle, because I re-create it. The solipsism is not absolute, because he introduces a mystical element that 'relativizes the self', by allusion to the universal soul of hinduism - "banish the dream that sunders part from the whole"; thus, in a way, perverse and unconscious be it, it is the collectivity of all observers, all the tiny little "I's", who must dream my dining room, and also where I sleep, just so that I can return there. Indeed, one cannot be alone and be a solipsist, when so many brains (no mention of souls) dream the same dream.

So, while it may well be high time that physics considered the viewpoint of the living, the whole question hangs on what exactly is this viewpoint - what does it consist in? If the viewpoint of the living be taken as that of energy, energy of becoming and of all its possible and chosen becomings, then something appears to be very wrong with the way Lanza "centers" or focuses what he calls the *biological perspective* - or, should we already say, *the diversity* of all possible sentient *perspectives*.

It seems to us that what Lanza was lacking, to start from the beginning now - and not by the end - is to have answered his own question, an age-old question: how does a subjective experience emerge from a physical process? Though imprecisely formulated, such a question cannot be answered with what physics, chemistry and biology know today (excluding, that is, what

Aetherometry knows and teaches). Anymore than it can be answered with the abolition of Space and Time, just because physics (read Relativity and quantum mechanics) made such a mess of their concepts and all computations involving energy, Space and Time. Lanza says that the laws of physics and chemistry can explain the biology of living systems; yet the science of biology is so riddled with little ellipses, "glossings over", "discards", tiny jumps over veritable 'black holes' that no such laws as they exist at present can explain or even account for, that his categorical statement cannot be taken seriously. Moreover, Lanza believes that his approach is a logical sequence to quantum mechanics - that it is possible to unify all the disciplines of science on the basis that it is "the observer who in a significant sense, creates reality": "recognition of this insight leads to a single theory that unifies our understanding of the world". In fact, his mystical solipsism is still a mild one, to the extent that he accepts much of the mythology of modern science - including the notion that the universe had a beginning, in the form of the Big Bang, that charm and weirdness have some real significance, and so on. He is not an apostate. We may also add that, in the sense of "sign-making activity" (the activity of *signification*, wherein significant senses are made), any subject that engages in "making signs" is already creating reality - though it is hard to conceive a simple observer as one who makes signs, when an observer is defined solely and passively by the ability to simply sense or detect signs...

What we do not doubt is that it was the Copenhagen Complementarity Principle that opened the doors to the invasion of science, and physics in particular, by all forms of subjectivism, in particular psychological ones. However, we must understand how this came about and was 'necessary'. It all begins with a confusion of detectors, or observers, with subjects. And perhaps it is worthwhile here to try to clear up this confusion right away, all the more so as it is so precisely pertinent to the production of consciousness. Seizing the issue by the scruff of the neck: there is no science without subjectivity, without an intelligent subject. It is the intelligent subject, or the intelligence of a collective subjectivity - in an individual or in a group - that alone can utter what is or is not science or make discoveries and source inventions, and thus construct both a description of reality (physical, chemical and biological - which also means psychological) and a set of tools to probe, wield and manipulate that reality. This is, after all, just a realization that science is a cultural production, and even a culture. It doubles up the natural processes and natural signals, with its own signs and the logic of their assemblage and network in axiomatic thought systems that are cultural constructs. Now, perhaps in a daze, or at least bedazzled by what has been accomplished, one may conclude that it is this cultural utterance of a scientifically articulated reality that constructs natural reality. But that is mistaking the production of science for the production of natural reality - even if nowadays the production of social reality relies so much on science that, in its technological age, the world itself, including its natural reality, *appears* to be entirely produced by science.

We are not saying that there is no constructive, creative role for an active subjectivity - only that abolishing in thought the reality of nature, of energy, desire, Space and Time, is not the way to reach for that creativity or to grasp that subjectivity. In fact, it appears to us to be only a misconception of how "things work" (in nature, in physical and biological nature), and it makes one also "naturally" suspicious of what is meant by the activity of the subject in creating a world. For it is creation itself that is misunderstood, not just subjectivity.

What of observers, subjects and creators?

There are many ways to misunderstand 'the subject', or the functions of subjectivity. The subject is misconstrued when it is first reduced (or equated) to a detector or observer, and again when it is somehow forced to expand into a creator. After all, conscious thought is not all the thought there is, and awareness, even heightened awareness, is hardly a human prerogative in the biological cosmos. Loren Eiseley imagines that the moth passing by "does not know", as it cannot appreciate "the beauty of opera", etc, or is simply a blunderer - as Lanza imagines that the glowworm, or the beetle it develops into, may "not be able to pinpoint his location in space", and is therefore another blunderer. Where do we humans get off imagining that we see what other lifeforms cannot see, or even that we see better than they do? A becoming-wolf: what does a wolf hear that the human mind does not grasp? Do wolves blunder the way we do? Every lifeform is a complex of different "seeings", and "hearings", of n senses that receive and n sexes that create and proliferate.

Such shallow comparisons ("appreciate the beauty of opera", etc) are poor metaphors that explain nothing about basic facts. Fundamental facts such as:

- that it is in the nature of a detector to relate to a process, to discern a source capable of signal emission and receive that signal, all from its own viewpoint - that of a specific observer, a partial observer, a fragmentary perception of the world;
- but also that the detector only exists within *cellular and multicellular* frames of parameters that relate processes, signal emission and reception, to an "internal world" that perceives, compares, experiments, remembers and evaluates these processes and their effects. Every living system has its own form of awareness.

The second of these facts turns every detector into a converter that exists on two planes, at their interface - the connection with an outside, and the connection to an inside (the inside as a fold of the outside, as a self-enveloping outside, to speak the language of Leibniz and Deleuze [4]). The moment one considers that a detector is supposed to transmit a new set of signals - the signs of a system network - the system that makes these signals possible (as well as makes possible, or rather, desirable, the detector itself) comes into play. It is the internal network that brings the subject into

the fray, as a prospect (a lurking prospect that haunts all neural networks), as the prospect of an emerging subjectivity.

A detector, a partial observer, is a passive sense, a sensory receptor. It relates to a source (whatever the physical phenomenon), and to relay its signal, it "thinks through" a response that translates a signal into a sign, into a signal of a different kind. Whereas subjectivity is what haunts all systems of detections, what comes into play in the framing of the parameters of reference as the director of the processes: what emerges from that framing to shape the detectors and their functioning by its own acts of self-creation. A network of detectors (or of any other micro-organ), or even of relays, does not by itself constitute either a body or a mind. And subjectivity is not a locus, a definite entity, but a constantly changing and unitarian process of expression and creation - one engaged in the constant and synchronous production of *a* body and *a* mind.

On the adequate concepts of Life, the living and the universe

An adequate concept of Life or of the living requires a fundamental understanding of what Life is, and this is only possible - we contend - when taken from the viewpoint of energy. The production of a body and a mind is first and foremost the cellular event that scopes and assembles the molecular machinery. This can only be grasped in terms of conjunctions of energy fluxes which permit the emergence of systems that are capable of autonomously increasing their internal energy to heighten their order - and *by* heightening their order.

Stating this calls for explaining just what the parts are from the viewpoint of the whole, and the whole from the viewpoint of the parts. This dual movement is a reciprocal operation that yields results exactly contrary to what biocentrism suggests. Indeed, the viewpoint of Life can never be the viewpoint of the universe. On the basis of the Conservation Law of Physics, which is also the First Law of thermodynamics, the universe as a system cannot increase its energy content (there is no outside from which it can draw), whereas every living system functions on the basis of a steady increase of its energy content, and one that is effectuated at the expense of its surroundings. Life's particularity lies in the fact that it can increase its energy content over time, something that the universe cannot.

If, like Spinoza, we call God or universe the totality of all that there is in nature, then the viewpoint of this totality must, of necessity, be found beyond that of Life, even though it must include all the viewpoints of the latter just as well. Moreover, if, as scientists, we dispute the evidence and strength of the arguments that suggest that the universe had a beginning and an end (the Big Bang, or big bangs and crunches...,etc), and philosophically concur with Bruno and with Nietzsche that the universe is infinite in Time, then a universe with no outside(s) can only vary the structure of its internal energy content, and not increase or decrease this content. It can only

convert this type of energy into that other type, and comport different indices of local order everywhere within itself. We can, as Aetherometry suggests, conceive of this universe as being at once finite in Space at any moment in Time, and indefinite in the variation of that finiteness [5]. This indefiniteness and its relation to the constant passage of Time is precisely what threatens every living system with death, with disorder. No living being is eternal, only the universe is - but this simple fact must be culturally exorcized even by (dominant) science, as it is the ultimate thought and fear whose experience no (reactive) human being wants to endure (one might even say that, for the most part, humans react to and run from just the fear of death, of its meaninglessness - of death ultimately demonstrating the meaninglessness of their lives).

The "centrism" of the universe surely could never be a mechanicism - the viewpoint of mechanism. But just as well it is not a biocentrism. If Spinoza is to be considered, the viewpoint of the universe can only be the viewpoint of 'God' or Aether, a substance that thinks to exist qua energy, that creates all there is by thinking it, where thought is not separable from the ultimate principle of creation of all there is (Matter, Light, Gravity and Life). As Deleuze often put it - Thought or Desire are the reality principle.

The viewpoint of "physiocentrism" (or better, "materiocentrism") is not the viewpoint of the universe, only the perspective afforded by closed systems that are reducible to mechanisms and probabilities, dominated by entropy, and inevitably tending towards disorder. With the advent of stochastic theories, systems displaying mass behaviour were amalgamated to mechanical or analog systems. Eventually, the fragmentation of Time brought about by Relativity and the probabilistic approach to physical objects promoted by the Uncertainty and Complementarity Principles *appeared* to reduce all mechanisms to processes analogous to those of fuzzy logic. And it is here that our epoch is stuck, in a kind of "fuzzycocentrism", one that underlies even Lanza's alternative.

Scientific thinking, and in particular its mathematical treatments, are sorely in need of going beyond this "fuzzy physics" and the limitations it imposes on mathematical thought and biological science. There is good reason indeed, if not reason itself, to introduce into science the viewpoint of the living, the viewpoint of open systems that employ mechanisms, but are not reducible to mechanisms or mechanical processes. The perspectives of the living must be considered but without centrism, and the perspective onto which they all open, the universe to which they belong, will emerge of its own. For only the viewpoint of the living is open enough onto the universe as to be able to consider in thought (besides the universe itself as a whole) what it is that the viewpoint of the universe *cannot be*, and what it is that it *might most likely be*. For only the living, like the universe, may come to consider what a subject is, and think like one.

Will the real subject please stand up?

There is an irreducible unity to the living - of awareness, and thought, with action. A detector must transmit - but to whom? How? With what kind of a signal? A receptor already supposes another receptor, another emitter, a relay with various directions in a "rhizomatic network". And this sensorial network cannot be said to constitute an "experience" (sense-experience) unless it interfaces, not just with a motor network, or even a mere effector network, but with what that motor network also interfaces with - a unity of perception and action, an emotive center of awareness, a system of energy with a growing superavit. Spinoza saw that the energy surplus process that led the mind to adequate concepts lay in the emotion of joy - passive at first, forced by natural conditions and the (teaching) experience of pain and sadness, but creative once consciousness seizes its essence *as excess energy*; as energy flux capable of grasping the real in its innermost nature, and creatively changing the real whenever the forces of consciousness are placed in the service of the forces of an active unconscious, in the service of the living and Life, in the service of an intelligence of reality. "Intelligent beings" are, in this sense, only those that learn to think and conceive of *adequate* notions, not just in a relative but in an absolute sense, of concepts "such as they are in God".

We must therefore distinguish between the subjective properties of awareness and intelligence, even as the latter is the biological achievement of the former. Awareness must be expanded before it yields intelligence. To be aware of something, even oneself, is not the same as knowing something, as understanding that something or self. To perceive something is distinct from conceiving something, irrespective of whether either or both are adequate or inadequate. Perception, as awareness of detection, already implies a subject, a thinking subject, but the expression of this subject can only reach substance when its thinking is adequate to the nature of its object, which is the same as the subject's own nature as Desire. The perspective of all living is not necessarily intelligent, but if its thought is adequate to the nature of its object, and empirically consistent with it, it is necessarily intelligent. It is only then that the perspective of Life can reach, through science and effective cognition, for the perspective of the Aether or thinking universe, while aware of their fundamental difference.

It seems to us, as biologists, that Spinoza came very close to stating the conditions for thought, for its experience in the form of a subject. If the living were simply the coupling of sensorial and motor networks, then awareness and self-regulation - essential energy properties of open systems - would not have been possible, let alone biological creation or invention. The unity of the living lies precisely in what the living can do that no mechanical or probabilistic system can do; something that not even Spinoza's God itself can do: it can, for a brief instant in "aethernity", increase its internal energy content, and employ this "machinism" to increase its internal order. The

universe cannot increase its energy content over Time. The universe is both finite at any moment in Time, and infinite in Time, but its total energy is a conserved quantity (Leibniz' "God self-same identical").

It also seems to us that Life may not have the sole claim to open systems. We do not know enough about stellar and galactic processes to assert that they are not open systems capable, for defined times, of increasing their energy content. In principle (not in reality) every living being is given the chance ("by God" undoubtedly, in the Spinozian sense) to increase its energy content, *that which God cannot do - other than locally through open systems*. And that is exactly how the living "look in the eyes of God" - as challenges to create a soul, as challenges to reach Thought, or the adequate thinking that is at once creating and understanding, acting and perceiving.

So, the subject is an excess of the living, an excess that is required for all living and that alone may reach intelligence. Awareness comes from a superfluidity of energy, an excess of energy that is liberated to exert regulation, an energy function that is both passive (receives) and active (creates). And what it creates is a principle (a pulsating or pulsatory principle) of accumulation of internal energy, both as massfree energy and in the form of ordered molecular materials. Living is all about order, and not organization. Organs and tissues are the products of self-ordering processes, whereas the body dies from organization, from processes that replace the fluidity of a body with the survivalistic scheme of an organism.

Awareness itself is not sufficient to make a subject conscious, let alone intelligent. We can think of our organic functions, our biological processes, as forming a domain of sensed, effected, regulated interactions that constitute our unconscious activity. We can collectively call them "body", because they happen in the space of a body, or one co-extensive with a body, but they are the mind processes of the body, they are the body with its unconscious mind, the body with its unconscious and preconscious minds: respectively, a mind of connections and activity, and a mind of adaptations, mnemonic traces and reactions. That (split) mind and that body approach together the threshold of consciousness by forming their own sign systems (universal, like the DNA/RNA systems; or specific, like neuronal mediators or effectors) and detaching a flux of energy to seize those signs and their natural signals in the moment they occur (what one calls the present, that "animal sensation of the now" so invested by consciousness, and in particular by the nervous cortex). That is what is meant by awareness: beyond detection and its traces, beyond sensing and perceiving - a seizing of the moment, by perception *and* by action, by not-doing *and* by doing, that permits thought to arise. But this awareness is fledgling; it is too dependent upon the preconscious mind, too eager to react, unable to continue to seize the moment - be it the object of perception or that of intellection. Its energy is insufficient for the creation of consciousness, let alone heightened awareness.

Nietzsche argued that there was something outside the logic of Life itself: culture, which Life employed to link the creation of conscious awareness to the unconscious forces of activity, thereby liberating the conscious from the yoke of the preconscious mind. Its task was to strengthen awareness, to provide consciousness with a consistency it sorely needed. It was the work of a certain violence - Nietzsche calls it, like Artaud, "Cruelty" - a violence done to the minds of human beings: forcing them to think, by forcing them to name, to designate, to promise, to remember with words, to articulate desire as thought.

While a subject emerges with the living long before subjectivity becomes conscious, a detector or partial observer is not yet a subject. Lanza's theory confuses and conflates every one of these differences in the development of biological subjectivation. All the critical qualitative jumps are either lost or misplaced in Lanza's approach, and that shows that his centrism cannot really be the logic of a biological perspective that would apply to any and all living systems. Moreover, if "the logic of God as substance of all reality (of the universe) is pantheistic" - or, stated differently, if the logic of energy as substance of all that is and becomes is determinant of all systems, open and closed, there simply can be no valid biocentrism. After all, biology is all about decentering the subject, raising its awareness to nonordinary realms, giving the subject a chance to "develop a soul" and to come, on its own, to perceive and apprehend all there is as energy in flux, as the play of Aeon with itself in all of its many forms.

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