

Article

Aether: The God of Physicists (Part III)

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ABSTRACT

In this four-part article, I argue, as many others do, that the aether is the physical but non-material substance from which the universe came to exist. To exist, things must be in spacetime, but the aether is not in spacetime, it is before spacetime. It is, but does not exist as matter. It is all permeating and non-dimensional; it is inside and between particles; it is everywhere. Everything is made from it, even the space that surrounds us. It is indivisible, or it would not be the aether as it was defined thousands of years ago. Wholeness in space and time is what allowed Nature to evolve. Holistic awareness, or self-reference, emerges from an inward necessity which is satisfied as information is chosen from the context in which a system evolves. Human consciousness evolved from the same holistic awareness property all matter has shown to possess. Human consciousness is spacetime dependent, just like matter. No brain equals to no human consciousness.

Part III of this four-part article includes: 8. Holistic Awareness; 9. Consciousness; 10. Thought and Determinism; 11. Syntropy and Evolution; and 12. Being, Will, and Purpose.

Keywords: Aether, immaterial substance, human consciousness, physics, God.

8. Holistic Awareness

Instead of -- *to be is to be perceived* -- (George Berkeley, consciousness precedes matter), it should have been -- *to be is to perceive* -- (matter precedes consciousness).

According to present day theory, the total energy available to the universe was pre-set at the moment of its emergence, and the force of inertia tells us that each of its parts must register how much energy is being used in relation to the whole. Each object that moves in space must follow the laws of energy conservation. But how else could the universe register how much energy was being used by an object moving at nearly the speed of light if it wasn't through momentum space (aka., aether)?

As Ernst Mach explained inertia, he came to the conclusion that energy usage by objects within the universe is instantaneously registered through momentum space. This is where phenomena like inertia come from. Particles sense other particles as they complete the state information exchange and realize the spatial relationships required to collapse the wave packet from hyperspace, as they crystallize into spacetime. Holistic perception is an intrinsic function of matter explained by the aether's oneness.

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The observer, in the present theory, must refer to any object that is able to interpret environmental information brought in by EM waves. Observation with the only purpose of establishing the particle's spatial parameters (speed, distance, mass...) in any given inertial frame. The particle must first be perfectly synced with the environment before it can exist as matter in spacetime, that is the law.

John Von Neumann was right when he said that the evolution of the Schrödinger wave depends on quantum mechanical observables, implying that this information can only come from spacetime. Yet since the theory considers brains to be quantum measuring devices, it also includes human observers as efficacious agents. The only reason human brains entered the equation was that, as they received light (EMR) coming from the particle, just as all objects in spacetime do, information about momentum and location of the particle, which is vital to maintain energy conservation laws, became known to the particle/system; allowing it to complete the feedback control loop and continue to condense.

So Quantum Mechanics' big mystery was: why do I have to observe Schrödinger's cat in order for it to live or die? The answer is that our brains are quantum measuring devices, just as the rest of all matter is. We are the best quantum measuring device that ever emerged from all the information processing that has transpired in our neighborhood to this date. Interactions within a system, like in a brain for example, depend on more than the information it gets through the senses.

Perception is a very old natural function inherent to all matter, not some exclusive human ability. In their endless quest for thermal efficiency and equilibrium, particles in spacetime perceive, select, and integrate into their wave function only that information which is important or useful to them. Our mind, with all of its mental waves and accompanying frequencies, became the modern version of that same holistic awareness function after 14 billion years of information processing, autopoiesis, and evolution.

Wholeness in space and time is what allowed Nature to evolve.

9. Consciousness

What role does light (EMR) play in determining Schrödinger's cat's state (dead or alive)? Is light itself the only important factor closing the loop, or is the observer's conscious acknowledgment which causes the final determination of the cat's fate? In other words, is the wave packet collapse a function defined by the structures of matter, a result from the interactions and relationships of its parts, independent from human observers, or is objective reduction a function of the human mind? The answer is yes to both questions, there is no contradiction, self-observation is a function intrinsic to all self-organized systems.

Perception is key to the crystallization of 3D reality. Every particle and object is accompanied by a wave that informs it about its shape and exterior environment. The particle exists in 3D only during actuality, at the now moment. EMR feeds molecules with information about the environment (information that represents the molecule's past, as it exists in a point-like 3D actuality). In a spacetime continuum, solidity and volume manifest only at present, or actuality. There is no material past, nor future.

Light particles transcend time and space. Photons bring us the past. Because traveling at the speed of light causes time to virtually stop, information from the past is locked into photons. This is how we can see what the universe was like billions of years ago. Our capacity to see is closely related to consciousness and our ability for self-reflection, just as EMR is closely related to state vector reduction and matter's ability for self-reflection.

We are constantly choosing the present out of an infinitude of possibilities through a mechanism of quantum wave superposition. Thoughts are formed very much the same way particles are, and just like particle systems depend on matter waves and wholeness in space and time, so does our mind. Processes forming ideas are very much like the processes that form matter. Mind and matter, both depend on phenomena like wave superposition, non-locality, and parallel information processing. Phenomena which ultimately gives all matter the possibility and the ability to self-organize into ever more energy efficient systems.

Holistic awareness, or self-reference, emerges from an inward necessity which is satisfied as information is chosen from the context in which a system evolves. That is why experience/perception is fundamental in the development of all matter, but especially in intelligent beings: because we need it in order to be able to choose. This is why Nature (self-organized matter) transformed into brains with eyes: to more efficiently carry out this self-reference function. How could matter get organized if it could not observe itself? Matter, in order to evolve, had to communicate in any way naturally possible (e.g., surface vibrations, air vibrations, EM radiation, and non-local communications). Biological organisms evolved to use light to their benefit very slowly. As we already know, it took Nature billions of years (from the Precambrian to the Cambrian era) just to develop eyesight.

Human consciousness evolved from the same holistic awareness property all matter has shown to possess. The evidence suggests that the objective universe was here before human observers, and that wave function collapse is a very old function of matter, which through a self-reference mechanism inherent to all self-animated matter, evolved to what our consciousness is today.

Human consciousness is spacetime dependent, just like matter. No brain equals no consciousness. First, there had to be matter before there could be any brains, and matter is spacetime dependent. Brains emerged from the evolution of information that existed in spacetime. Thus consciousness appears with the emergence of matter, not before. Spacetime is where experience takes place.

There can be no evolution outside of spacetime. Now, after billions of years, this information exchange between matter and the environment in which it evolves has produced ever more complex self-organized systems. Human beings have evolved to take full advantage of this holistic awareness function of Nature, which is what enables us to think outside the grip of time. Allowing us at the same time to remember the past and imagine the future. Thought and self-awareness can then be conceived as the products of that same holistic awareness function through which all matter started self-organizing almost 14 billion years ago. Consciousness comes from the same holistic awareness function found in all matter.

The difference between humans and the rest of the animal kingdom is self-awareness. Animals, with the exception of human beings, are bound by time, they exist frame by frame, and react accordingly. Humans, on the other hand, have the ability to voluntarily go back and forth in time, we call it imagination, foresight, or insight, and that is what gives us our sense of wholeness in space and time... which is what human consciousness is all about.

Human consciousness is the ultimate product of a natural, energy balancing mechanism, determined and regulated by the laws of Thermodynamics. Because energy is finite, each object's energetic requirements have to be measured before entering any given spacetime metric. Before going from its subtle quantum matter state, or wave state, to its objective material state, or particle state. As described by Quantum Mechanics, these information requirements are met through wave interactions and the mechanisms governing wave superposition.

Brains are these little bio-mechanical tools that emerged with evolution for the only purpose of enabling us to interpret and interface with reality. In order to become more thermally efficient, the universe needed to improve its abilities to observe and perceive the environment. After billions of years, matter evolved into brains that could take advantage of the properties of spacetime. Brains exist because there is spacetime, not the other way around. Human sentience is the actual evolutive result of all the sensing matter has been doing through time. Matter is aware of its surroundings, but that does not mean that it can think, not unless it had been previously formed into a brain.

Nature would still be able to exist and observe itself without the human observer, it would just be a more primitive process. Our brains then, are seen as Nature's best developed self-reference tool on this part of the universe. Human consciousness being an extension of the same holistic awareness function self-organized matter always utilized to observe itself. Therefore in a very real sense, human consciousness is still Nature observing itself.

Experience is fundamental to existence, but it is not reality. Berkeley was wrong. Reality is the process through which Nature is constantly becoming. As Sir Roger Penrose explains quasicrystal development in *The Emperor's New Mind* (p. 564), he writes that while constructing

their "*randomly forbidden, very complex icosahedral symmetries*", and using wave superposition as a self-reference mechanism, it appears as if the whole crystal is observing itself, registering all atom configuration patterns embedded into its pilot wave. Their present state being compared to past states and all the possible outcomes, all at once, until the right atom configurations are found as quantum decoherence takes place.

Experience plays an important role in the correct development of the crystals, as well as in all self-organized systems. The crystals are able to carry out their self-observation by following information contained in their pilot wave (Bohm-de Broglie), which contains past and even future information about the crystal as a whole. Proto-qualia, or state for a quasicrystal, would be like how all the possible atom configurations would feel as they remain in superposition until the right one is found. Then, and only then, could the collapse of the wave packet finally occur. Build a machine which can follow its pilot wave and fully register its quantum state, and we may finally have a self-organized, and maybe even, a self-aware machine.

From the moment the first self-organizing systems appeared in Nature to the moment the first human brain appeared it has been a few billion years, but in both occasions the purpose has been the same: to experience existence. Penrose's quasicrystals do not have a brain, but they follow their morphic matter wave as the measure by which they must exist, and if by any reason they were to stop following it as they added new atoms to their body, they would end up becoming a totally different type of material. The objective state a human being follows, or the measure by which a human being exists, is also defined by its brain wave-function.

Quantum Entanglement

John S. Bell was right. As already confirmed by Quantum Mechanics, the universe violates locality at the quantum level. Local realism applies only at the classical level.

The collapse of the wave packet on the EPR and Aspect experiments doesn't just come from human knowledge acquired during the measuring process, but from a holistic awareness property intrinsic to all matter. And, as Eugene V. Stefanovich contends: interactions, not forces, are instantaneously registered throughout space.

Many are amazed at Wheeler's Delayed Choice experiment results, but that is because they want to understand it from their own perspective. They want to understand it applying spacetime rules, and that is the problem. At the quantum level, you need to toss away the notions of time and distance. For you, who live at the spacetime level, the photon may have traveled billions of miles while taking millions of light years to arrive, but at the quantum level, its emission, detection, and measurement, all happened almost instantaneously. In our world, it appears that, as we *measure* the particle, we are deciding the path the photon had taken millions of years before, when in reality, the emission and detection of the particle happened almost instantaneously. After emitted, the photon remains timelessly suspended in hyperspace until detected, or measured. Then, as its state is decided and the state vector collapses, it materializes into spacetime: our level of existence. So, it is not our knowledge which collapses the state vector, it

is perception. What perceives it could be anything, dead or alive, the particle's state will be defined either way.

As we already know, matter and space are one and the same thing (Einstein), matter tells space how to bend and space tells matter where to go (Mach). The way science sees it, matter is nothing more than condensed space. And, in my view, when I talk about a particle, I might as well be talking about a human being. To me, a man is nothing more than an uber particle, so to speak. That is because I believe in the evolution of matter. Matter, in my view, is synonymous to information, active information.

Also, as we should know, there is a wave-particle duality (de Broglie, Schrödinger, Bohm). The particle is always accompanied by a self-scanning, standing wave, where most of the information concerning the geometrical properties of the particle is contained. This wave is called a matter wave, and can be mathematically described by a wave function. Each time the wave function collapses or we have a state vector reduction, the point-like state of that particle is defined in spacetime, as required by spacetime laws. This process is known as quantum decoherence, and works through wave superposition. The particle existing in a point-like state only at the now moment. Which is why it vibrates.

At the quantum level, motion occurs in a similar way it is created on a TV screen. As you may know, a TV screen refreshes 60 times per second or so, that is how motion is created. Imagine the fundamental particle as a vibrating 3D system refreshing its structure over a trillion times per second (Planck time). A standing, self-scanning, spherical wave with a point-like particle at the center. [Motion and time may seem like illusions, but the process that is reality is certainly not. Now, quickly rolling a film in front of the lens inside a movie projector in order to produce a *motion picture*... that is an illusion!]

So, each time there is a wave packet collapse, the *now* state of the particle is defined. Then and only then, can the particle materialize into spacetime, where the laws of Thermodynamics and Relativity apply. Without the information required for the wave packet to collapse, there can be no particle in spacetime; it may exist virtually, but not in spacetime.

Unified Consciousness Field

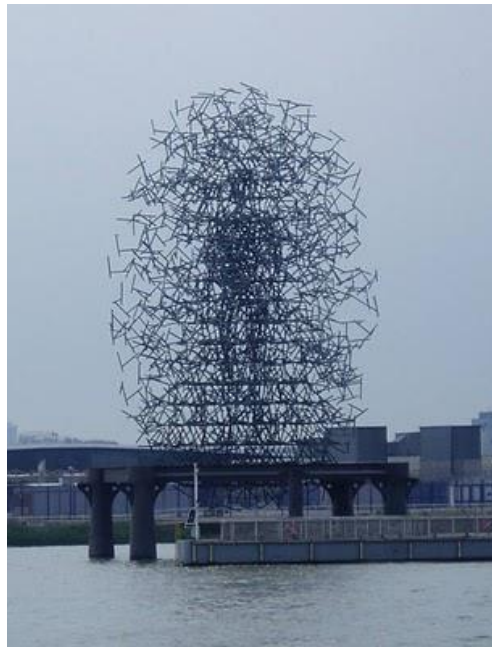
Now, there are the Bose-Einstein condensates: a state of matter where groups of particles exist under the guidance of one single pilot wave, as a whole. Also known as super atoms, or superwave functions, these were Bohm's main concern as he wondered about the relationship between human consciousness, the body, and the Universal Mind: a realm he likened to Plato's realm of Ideas and Forms.

We now have that each particle's existence in spacetime is defined by the information contained within its pilot wave, and that state is instantaneously registered throughout space. Each particle going from state to state, with each new state superseding the previous one. Learning and evolution made possible thanks to this super fast, continuous succession of states.

So, is the brain accompanied by a unifying superwave function (unified consciousness field), the field where Dawkins' memes are to be contained? There is evidence that points to an affirmative answer. As we already know, the human brain is divided into two hemispheres connected by the corpus callosum, the structure through which both hemispheres communicate. Well, there is a procedure for the treatment of some cases of epilepsy where the two halves are surgically separated, and people who have gone through this procedure still think as one single individual. Meaning that consciousness may be such a higher function that it exists as a non-localized field, where this field's features are determined by the brain, like a hologram. Information being processed in a way similar to how a 3D image is reproduced out of a holographic plate. The brain being the holographic plate, and your thoughts, or imagination, being the reproduced images on the hologram, or field (K. Pribram). State being instantaneously related to the whole brain as emotions. [This, I believe, is how meditation can help with the control of some bodily functions, and even healing.]

And there you have it: particles and cells have a self-scanned nucleus and we, as indicated by gamma waves in EEGs, have a self-scanned brain.

Have you heard the Dalai Lama talk about compassion? I like to visualize consciousness as a field around our head, a field with a given circumference. A sociopath's field having a circumference, or radius, of only a few inches. While people who, like the Dalai Lama, are full of compassion, have a field of a much greater radius... as they reach Nirvana... *like a circle whose center is everywhere and circumference nowhere...* (Zeno, Pascal, Bruno).



Antony Gormley Quantum Cloud

10. Thought and Determinism

GTR is an idealization of reality, a method, a mathematician's trick to eliminate all local degrees of freedom (uncertainty). Smooth-out spacetime, and you get theories like Relativity to work.

But there is a background (Wheeler's Quantum Foam) without which there would be no material world.

Schrödinger's equation develops in a sea of real uncertainties (background radiation). As reality unfolds, none of its possible outcomes exists prior to the wave packet collapse. As the Schrödinger wave evolves, the system will have some tendencies, or propensities that depend on the system's properties in spacetime. There will always be some preferred outcomes whose probabilities are going to be higher than those which are not as well related to the system.

Particles exist in a field, but you could never tell exactly where, you could never have 100% certainty. Quantum particles are both particle and wave at the same time. As Louis de Broglie figured out, each object, regardless of size, is accompanied by its own particular matter wave. After a particle condenses, it still remains wave and particle, even after observed and measured. Because all objects are wave and particle at the same time, they are always in a state of motion. Even though indeterminism fades away as objects become larger, there is always an amount of uncertainty left which allows for some degree of freedom.

If you do not allow for indeterminism in Nature, then you must also reject Darwin and the evolution of species. What need would a theory of evolution satisfy, what purpose would it have in a world where everything is supposed to be known from the beginning? If there were strict determinism, there would be no deterioration in objects, things would remain intact forever. There would be no ever growing entropy, just as there would be no need for change, process, or becoming. There would be no need for motion, no need for time, and no need for death!

There is teleology determined by Thermodynamics, but nothing is predetermined. Subatomic particles follow an undetermined path, it is the nature of reality. The motions of all objects in spacetime the size of an atom and bigger follow semi-deterministic laws. Aside from the reality of quantum uncertainty and the fact that, as proven by Nobel Prize winner Ilya Prigogine, subatomic processes are not time-reversible in self-organized matter, thought itself may also be largely ruled by indeterministic quantum mechanisms.

Everything in our normally perceived reality follows the rules of motion as described by Classical Physics and Relativity, but our thoughts may follow the laws of quantum indeterminism. We are choosing the future out of the multiple paths it could have taken. The path my thoughts take cannot be predetermined. Thoughts, as well as sub-atomic particles, have the potential to follow several paths. That is the beauty of quantum mechanics. A determination of the path a thought may follow depends on what we focus our attention on. That is, thoughts, like sub-atomic particles, *happen* as we observe and perceive them, and this is what free will is all about.

Quantum mechanical process is indeterminate going forward, or backward. Reality, like thought,

is about becoming, it is process, and this process is totally dependent on the uncertainty that exists in the movement of quanta.

Uncertainty is what broke the symmetry, it is what turned flat space into curved space, it is what causes activity. It is due to the natural indeterminism of quanta that the universe exists. Take the uncertainty away and it will stop moving. Uncertainty is intrinsic to the evolutive process. Uncertainty, which is at the human scale (spacetime) translates to a question like... *What am I?*

[Personally, I like to visualize this symmetry breaking as a Yin Yang circle (Singularity) whose halves become unstable and out of sync, then explodes (Big Bang), as the two collide with each other.]

11. Syntropy and Evolution

Evolution is this very slow, ratchet-like motion, where Nature selects and locks-in any advantageously occurring changes. These are property based selections where the favored properties are usually the ones which will lead to increased thermal efficiency, as information works to fight entropy... or waste.

Self-reference is the fundamental property of Nature that made possible biological evolution. This is the same property that has made it possible for matter to naturally evolve into human brains as the ultimate self-observing example of self-organized matter.

The universe exists because of active information contained in all kinds of interacting waves, and if it were not for wave superposition, there would be no universe. Inherent to wave mechanics are the mechanisms of wave superposition and parallel, non-linear information processing. These mechanisms, which are also affected and regulated by the laws of Thermodynamics, are in great part responsible for information growth and the evolution of biological matter.

Perception, sentience, and communication are fundamental functions of all matter, dead or alive. Sentience is not unique to living matter, but living matter is the result of sentience. Sentience is synonymous to communication, and communication is any information exchange between any two or more parties. The observer could be a molecule, a rock, an ant, or a human being. Take neutrons for example, how can a neutron maintain its geometrical configuration during millions of years without breaking apart? You can also call it self-reference.

Objects in spacetime are continuously interacting with space and the environment through EMR and matter waves, always following classical and quantum field laws. Information about the environment and other objects is transferred to objects through EMR and matter waves. And inertial state is transferred through the aether, or as many prefer to say, through momentum space. Wholeness in space and time, unity of process, only being possible because the aether is one, and this unity being what allowed Nature to evolve.

Some researchers specifically linked the so-called *measurement problem* to humans with eyes; as if someone had to be looking before we could have a measurement followed by a collapsed wave function. But, as experienced by many scientists, it is now known that even when there were no human observers involved, there would still be some form of communication between the instruments being used and the observed event. Before there were eyes, there were other forms of communication going on through matter waves and many forms of EMR between atoms, molecules, bacteria... etc. Quantum measuring is a built-in function of all matter.

Using a Leaf Wing butterfly to explain God's intervention in the creation of its camouflage was a mistake I used to make. Now, I understand that creating a camouflaged appearance to survive is just another function integrated into their pilot wave function, an algorithm, a program in charge of acquiring information about the environment in order to copy the shape of surrounding leaves and ensure the species' survival. This information is gathered by the insect's matter waves, as well as being supplied by all the matter waves (morphogenetic fields) and other EMR coming

from the surrounding environment. As fields are superimposed in hyperspace, meaningful information is integrated into the insect's pilot wave.

The term, *morphogenetic fields*, comes from a hypothesis in which all matter, including living matter, is described as being shaped by a very peculiar type of fields called, *morphic fields*. This hypothesis stands on quite solid ground, scientifically speaking, as it is compatible with the de Broglie-Bohm pilot wave concept. According to this new hypothesis, matter is organized by fields in a similar way a VCR would record a TV program into a magnetic tape. As the tape rolls inside the machine, information contained in EM waves is used to re-arrange and organize the tape's magnetic particles, which can later be used to reproduce well-ordered images on a TV screen. Morphogenetic fields supposedly re-arrange and order what are otherwise space particles in a chaotic disordered state into organized matter, e.g., chromosome formation during cell division.

Some say entropy is always growing, at the same time they say energy goes from hot to cold as equilibrium sets in. But how can entropy be growing at the same time equilibrium is setting in? How does syntropy come about? Why does information, especially the more it grows, evidently seeks to preserve itself? Look at human DNA, it still contains genetic code segments that were already present in bacteria 3 billion years ago. Information creating information: is this an intrinsic property, or is there a teleological force guiding it? Complexity and information growth obviously go together. Information begets complexity. Is it an algorithm inherent to biological, self-animated matter? Is this property a product of evolution? The reality seems to be that self-organization started with the first atom, that it was present from the beginning.

Is this proof, however, that Nature is guided by some syntropic quality, a force, an energy analogous to information, ruled by logic, which will try at any opportunity to beat entropy by constantly working to create order out of chaos? Who is the designer, is it the universe itself, or is there an external designer or creator? The question is, is there an external guiding source of knowledge, or does the knowledge needed for these gradual changes to occur exist within matter itself? I believe matter follows logic. Process follows logic, but the intelligence, the geometry needed to build the chemical components, the molecules, etc., that comes from the universe itself, not from some external mind or creator.

12. Being, Will, and Purpose

Information (geometry) starts with the quantum. Existence starts with the quantum. Before the quantum, there is aether. There can be an aether without quanta, but not quanta without an aether. Matter is dependent on the aether (aka., the Higgs field), it depends on the background as an energy supply, hence wave-particle complementarity.

At the beginning of time there was a change in state, a phase transition, and symmetry was broken. We went from equilibrium and order, to instability and chaos. From a singularity, to a universe. From certainty, to uncertainty. Reality went from a simple state, to an ever increasing complexity. From an empty and perfectly flat vacuum state, to an objects full, curved spacetime. From not just being, but also to existing.

According to contemporary science, the universe is ruled by four fundamental forces and logic, the rest happens by chance. Electrons always move the same way, just as magnetic fields always follow the same rules. Those things are always controlled by something else, they cannot choose which way to move. The aether acts like a traffic light which directs energy flow as required by all types of field interactions. There are no decisions being taken, the field will always interact in the same exact manner. Neither the universe, nor Consciousness, or whatever you prefer to call it, cares about us. The day we are gone, the universe will continue to exist as if nothing had happened. Sorry, no Promised Land, nor an afterlife, those are physical impossibilities.

There is no death, only renewal. God is, but cannot exist unless it exists as matter, as a universe. I see the universe as God in its material form, and matter as an instrument to get the information it needs to constantly re-create itself. Considering that matter is made of fields, that if there were no fields there would be no universe, then we could safely assume that all objects that exist as matter are little more than ephemeral images which exist only temporarily. Objects come to be within that which *is*. They *are* thanks to the aether they come from. If you are because of the aether, then your being comes from the aether. You, the biological unit, because of the rules that govern matter, are only for a relatively short period of time.

The universe is where knowledge comes from, and that is what existing is all about... seeing, learning, and becoming. If information were really contained by some universal mind, then what need would Nature have for a DNA molecule? And, if there were an all knowing mind, a creator, why would it need this long to finish its creation? (13.7 billion years and counting)

I think, therefore I am -- said René Descartes. I say -- I think, therefore I exist. I agree with Carl Jung's materialistic interpretation: the collective unconscious as a morphic field where fields are considered to be a form of matter. Teilhard de Chardin was on the right track.

Just as all objects, the Earth has its own superwave function, which includes each species' particular pilot wave. And just as self-reflection is a built-in feature, gathering and preserving information are also built-in features in matter. That is what all these species have been doing since the beginning of life. We, just as all matter does, also want to acquire and preserve

information as we process it (or as we think). As far as we know, we are the repository and gate keepers of all the acquired understanding in this part of the universe.

"An act is a temporal process, and self-inclusion is a spatial relation. The act of self-inclusion is thus "where time becomes space"; for the set of all sets, there can be no more fundamental process..."

Every object in spacetime includes the entirety of spacetime as a state-transition syntax according to which its next state is created. This guarantees the mutual consistency of states and the overall unity of the dynamic entity the real universe...

...thus, we can speak of time and space as equivalent to cognition and information with respect to the invariant semantic relation processes, as in "time processes space" and "cognition processes information"...

It follows that the universe freely determines its own constraints, the establishment of nomology and the creation of its physical (observable) content being effectively simultaneous and recursive. The incoersive distribution of this relationship is the basis of free will, by virtue of which the universe is freely created by sentient agents existing within it." --- Christopher Michael Langan (www.ctmu.org)

Ponderable matter has its own refresh rate, like a TV screen, just that it happens at a much faster rate, and in 3D. As described by contemporary Quantum Mechanics, each particle is accompanied by a continuously collapsing spherical wave, each full collapse representing a moment in time, as the particle jumps from inertial frame to inertial frame, while it progresses in spacetime. This is where motion comes from. This is what makes evolution possible; or, how else could state be preserved if or when information were not? It is a learning mechanism. Objects, including the universe as a whole, go from state to state, as each new state supersedes the previous one. All this information replication and preservation being caused by this continuous succession of states. Matter going from state to state in a direction determined by how balanced, or coherent, the now state is... or feels. Is this where emotions come from? Is this qualia?

Meaning

Meaning is intrinsic to sentience. As cybernetic systems go from state to state, these will keep or reject data depending on its usefulness. In other words, depending on its meaning or significance. Meaning being discerned through a mechanism of wave superposition, or parallel information processing, which acts from top to bottom and bottom to top, all at once. Self-replication, learning, memory, self-organization, etc., all depend on process, and for these mechanisms to work, these systems must be able to go from one state to the next. As the wave function collapses, each collapse, each wave-front, representing a new state, each new state representing actuality, or the now moment. The particle being in a point-like state only during this moment, however brief that moment may be. Each moment the particle having its own wavelength, wave-phase, frequency (or energy), etc.

Because of the gravitational properties of the empty space in which these little quanta oscillated, they grew into ever more complex wave structures, eventually forming three dimensional structures, in spacetime. So, what we now have are these tiny little particles following information that exists embedded into their own particular matter waves. But these particles kept growing in complexity, eventually becoming human beings. Remember, information begets information, it is its nature. In my view, our consciousness is represented by this pilot wave, which is still present and of the utmost importance in the development of each one of us.

Sentience, in this view, is analogous to active information. Just as cellular automata can produce infinite complexity from only a few laws, active information follows Nature's four fundamental forces, which are directed at the aether level, constantly recreating itself according to information already contained within each particular system's pilot wave and the environment in which it evolves. Sentience, the way I see it, comes from an inherent self-reference mechanism in active information.

Sentience is probably a set of built-in algorithms... archetypes... memes... like beautiful passages in a musical composition integrated into biological matter's morphic waves whose functions are to make information grow, self-organize, replicate, and preserve itself, all at the same time. It is active information. Do these algorithms come from Natural selection? I see this information gathering function in self-animated matter as a representation of a process ruled by a syntropic principle. The Mandelbrot set comes to mind.

One could see Nature, in this sense, driven by a hunger, an urge to continue to exist until it satisfies a need to balance and harmonize. An urge to order reality; to gather and preserve the information that guarantees its long term survival. It is what makes us continue, it is what makes all matter continue. Could this be the reason why biological matter seems to be following a preferred time line?

As long as the basic laws remain the same, the universe will always anthropomorphize itself in the sense that, whatever comes out as a top product will likely have many of the qualities characteristic to human beings. We were not created in God's image, the universe created itself in Man's image. After dinosaurs disappeared, humanoids were the most likely outcome on this planet. Make any changes to any of the fundamental forces, and we may not even get a universe. But as long as the laws remain the same, we will probably end up with something similar to what we now have. It could happen anywhere in the universe, but sooner or later, as long as there is matter, it will happen. It is the way of Nature.

We are just biological units which active information employs to see the world, to exist. Look at birds, all they want in life is to get somewhere where they can mate, have offspring, provide for them, and then die. Same with salmon; in their world, getting to the top of that mountain is all that counts. To them, that is what life is all about, that is the information world they live in. A pigeon's life story may be a beautiful thing, but that is not enough, not enough information compared to what we humans can gather. As far as we know, we get God (the universe) the best possible input. Because of the way we see the world and our ability to process the information we gather through our senses, we are God's most efficient source of usable, valuable, and

especially meaningful information in this neighborhood. In this sense, we truly are God's servants.

Spirit & Soul

In his book, *Answer to Job*, Carl Jung wrote:

"The importance of consciousness is so great that one cannot help suspecting the element of meaning to be concealed somewhere within all the monstrous, apparently senseless biological turmoil, and that the road to its manifestation was ultimately found on the level of warm-blooded vertebrates possessed of a differentiated brain - found as if by chance, unintended and unforeseen, and yet somehow sensed, felt and groped for out of some dark urge."

Spirit is one. You may say, but how am I connected to God? How can God be every man, or every man be God? Well, that is why I am obsessed with the concept of an aether, or empty space, if you prefer to call it that. Remember, thanks to wholeness, state, not knowledge, instantaneously spreads throughout the whole universe. Empty space is all pervading, it is the space between the points. And the points, the particles, are just clusters, nodes of information floating in that empty space, as a hologram ruled by the laws of Quantum Mechanics, Thermodynamics, and Relativity. Because this empty space permeates everything, it is omnipresent. So, it does not matter where you are, you could be a man in Buenos Aires, Montreal, or Tokyo... you would still be connected to God through the empty space in which the universe sits. As David Bohm said, empty space is not what separates us, it is what unites us!

We are basically a collection of cells, an organism, moving around in 3D space. That is why we need eyes. When you need something, you locate it using your eyes, then you lift an arm and reach for it. When you walk, you first look for a safe path, then start walking through it. But, who's the one looking? What is the Self? When you introspect, who's the one doing the introspection? When we say I, who do we really mean? We know we are the ones thinking, Descartes got that right. And we also know that we are a bunch of cells floating in an empty space that permeates everything.

There is a universal being that we are connected to, then there is our soul to which we are also connected, and which serves as our own particular filter. The soul is a compilation of all of the experiences we have had as we interacted with the world. It is the lens through which we as individuals see the world. In my view, it is a field, or what some call, a unified consciousness field. In this view, fields are material, but the universal being we are connected to, is not. The collective unconscious, as Jung used to call it, is also a material field, a compilation of all the experiences our species has had, each species having its own field. Teilhard de Chardin called it the Noosphere, and it is supposed to surround planet Earth.

Purpose

We cannot use subjectivity to understand or explain objective reality. Love, purpose... these things have meaning to us, but neither Science nor the universe cares about them. To understand and explain reality, we must look at it in an objective way, and the facts say that the aether... God... Mind... Consciousness... the Self... or whatever, is just a thing with no purpose. It can neither see, nor think... until process turns it into brains with eyes. We see and think for it, and we like it and want to continue, that is where purpose comes from. We have purpose, the aether does not. In other words, the quantum state of the universe is barely affected by the quantum state of Humanity, or planet Earth. Its state depends on many other factors. Also, as far as we know, many other extraterrestrial civilizations may be also contributing to the universe's overall state.

Material systems will use only that information which contains meaning to them, or meaningful information. Whatever happens here on Earth has meaning only to us humans, and we, as Nature's top product, are accountable for it. Scientific research is our obligation. By the same token, whatever advances in science extraterrestrial beings may be responsible for, would never be transferred to us... unless we went to one of their schools.

In this part of the universe, humans, after 13.7 billion years of evolution, are state of the art. Our brain, Nature's jewel in the crown, will be doing what it created itself to do: which is to gather the best available information in order to better understand and enjoy existence. Always thriving to maintain a state of well-being, stability, and tranquility.

Will

Why does matter try to better itself, where does this syntropy come from? Is the best possible choice always selected? I tend to think it is a phenomenon ruled by the laws of Thermodynamics, the path of less resistance, or the most energy efficient, meaningful, and useful process. But at the same time, I see the aether as Spirit, and the place where energy and Will come from. Will that manifests itself as an urge to fight entropy, a need to order, balance, stabilize, and preserve information, e.g., atoms and DNA. Maybe, this is where Humanity's hunger for knowledge comes from.

When your thoughts wander away, what brings them back, what makes you pay attention? Will does, that is where intention comes from, but this thing we call aether can neither think nor see by itself, it needs our brains. There is Will, energy, and matter, then come human consciousness and purpose.

As I said before, all you need to be physical is to be able to act. *To will is to act*. There is matter because there is Will. This is where active information, or quanta come from. Quanta is defined as a quantum of action, in other words, an amount of energy. Or, a quantized amount of fluctuating spacetime.

Will is intrinsic to matter because matter sits on the aether. Energy, or Will without purpose, is but does not exist... until it turns into spacetime; purpose comes afterward.

Aether/God/Spirit -> Energy/Will -> Matter/Information/Purpose

Being

If we are to answer -- *What is that which is?* -- we need the notion of an aether. After all, what is real, this ever changing material reality, or the eternal? What was five seconds ago, is no longer.

The aether is that which *is*. It is immutable, it is now what it always was, and simply because matter is in constant change, there is nothing in this universe you can say that about.

That which is needs to be something eternal, immutable, and absolute, with no beginning and no ending. For that to be possible there needs to be no motion, therefore no time. Matter is then ruled out. Matter is what it is only at present time, neither the past, nor the future exist as matter. Whether you call it God or not, would depend on what you think God is. To me, God is a thing, an entity incapable of thinking until matter and brains come to existence. Many call it Cosmic Consciousness, others call it Mind, or the Self, but they are all referring to the same thing: a universal being. The aether, like God, is omnipresent and eternal, with no beginning and no ending. The aether is the seat to all fields, and without fields there can be no universe, therefore it is the source to everything there is.

God (aether) is Spirit, Will without purpose... pure energy, which is neither hot, nor bright. *Aithor* means *I burn*, maybe that is why the meaning of the word *aether* is *maker*, or *burner*, as in *the fire that builds*. [Thousands of years ago, Aether and Thor were also known, respectively, as the gods of light and thunder.]

Thanks to the aether, state, not information, instantaneously spreads throughout the universe. God feels what biological matter feels, and the day it feels at peace and fulfilled, or the day there is no more uncertainty, will be the day the universe freezes and goes back to being just flat empty space, but in a different state of being.

Aether is the physicalists' god.

(Continued on Part IV)