

Essay

Aether: The Physicalists' God

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ABSTRACT

This is not a new theory but a new insight on already existing theories, a freshly synthesized interpretation consistent with already known and well accepted scientific facts. This essay contains parts of what I have realized after a lifelong quest for proof of wholeness in space and time as a fundamental property of the universe. For a complete treatment, readers are directed to my book listed in the reference (Duchesne, 2010).

Key Words: Aether, GOD, physicalist, wholeness.

This notion of a primordial substance is a very old one, also known as Akasha or Brahman, and many times described as pure energy or spiritual fire. It has been anthropomorphized by man since the times of Plato and Aristotle, the Chaldeans, and the Akkadians. It has been called by the names of Zeus, Jupiter, Brahma, and others. But there is no need to anthropomorphize the aether by personifying it, the aether anthropomorphizes itself.

The aether was re-introduced early in the 20th century by scientists like Einstein, Mach and Minkowski as they were trying to describe a substance, or... a thing. Einstein said that matter and fields emerged from the same basic substance, that there can't be a universe without an aether and that the aether is the seat to the electromagnetic and gravitational fields. That there are gravitational, electromagnetic and nuclear forces because there is an aether. According to him, without fields there can be no matter, nor spacetime, therefore, the aether is.

This new insight or synthesis represents, in one way or another, claims already made by many great thinkers throughout the history of Mankind. This new perspective re-introduces the aether concept at the same time it tries to reconcile a centuries old notion of wholeness in space and time with the actually established scientific paradigms. This is not a new theory but a new insight on already existing theories, a freshly synthesized interpretation consistent with already known and well accepted scientific facts. This is aimed at a general audience that goes from the specialist to the layman. Here is what I have realized after a lifelong quest for proof of wholeness in space and time as a fundamental property of the universe. In addition to arguing for a common substrate to all matter, I also relate human consciousness and perception to non-living self-organized systems, thereby suggesting that Consciousness is not an independent supernatural entity that precedes matter but an intrinsic property of Nature.

Even though I continuously make definitive statements, due to the immaterial nature of the subject and the lack of ponderable data, I recognize this to be as subjective as any observation could get, therefore, always leave the door open to speculation and change.

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The GTR (General Theory of Relativity) is an aether theory. That everything is related through empty space, that everything exists in a single continuous field, a unifying matrix, is the basis, the foundation, of the GTR. It is a philosophical necessity, if not, how can anyone explain inertia, gravity or action-at-a-distance?

Matter is a continuous, time dependent, self-organizing process. Particle-wave systems, as they move through the CMBR, will continuously re-ordinate the space that constitutes them. Particle-wave systems must be in constant motion, continuously processing space in order to continue their existence. If motion were to cease, they would simply disintegrate.

You could compare the movement of matter through the Aether to the movement of waves in a pond in the sense that what is really moving is the form, the in-formation that gives its particular shape to the waves. Reality is like a wave propagating in water... the form moves carrying information as water molecules are left behind. As we displace ourselves, it is the information that constitutes our material body which is really moving, the underlying medium stays virtually unchanged. The particle is more like a pattern of motion than a solid, permanent, and space independent thing. Picture the rings that form and spread outwards after you throw a rock in the water, now hit reverse and picture the rings moving back, inwards, towards the rock. The particle represents actuality as the inwardly flowing waves bring information about the past, about what already happened to the particles around it. The rings going towards and outwards the rock being in reality, spherical. It is a self-reflexive, spherical, standing wave that is constantly feeding the particle information about its inertial frame and environment, as a trajectory develops in relation to the surrounding space.

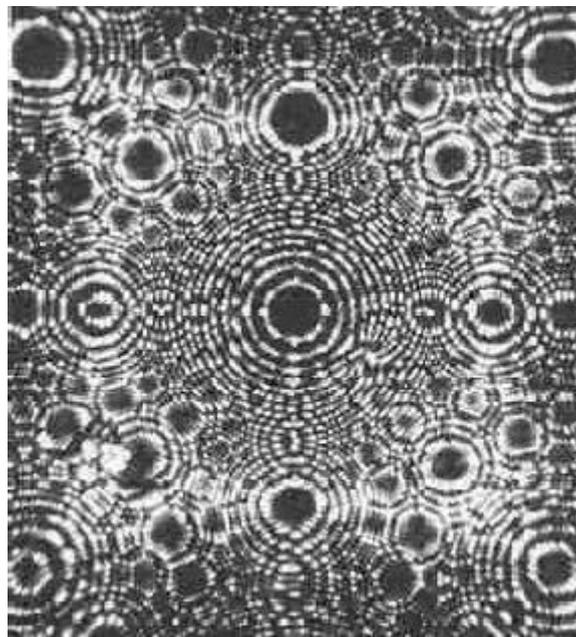


Figure 1. Inside matter

Order arose from interactions within chaos, giving rise to self-dependent, separated cybernetic systems, which in turn evolved to take full advantage of matter's properties. After billions of years interacting with each other, these systems evolved into human brains for the purpose of

experiencing/perceiving/measuring existence from a 4D perspective just so Nature could continue to improve its methods to use information to its advantage as a tool against entropy and disorder. Why? Because all thermodynamic systems tend to move towards thermal equilibrium, and in doing so they interact, forming physical geometrical relationships in the process, which are then preserved in matter and are accessible by these cybernetic systems when needed, as they evolve towards stability and thermal efficiency.

Hyperspace is filled with information bits, matter precursors, a pre-geometry comprised by material units of information which exist in chaos and are ordered by logic and activity into spacetime. But for natural reasons, i.e., energy conservation laws, everything that comes into spacetime must be registered and energetically measured before it can materialize.

There has to be a quantum measuring device registering the particle's location and momentum in relation with the rest of that inertial frame before it can crystallize, as the quantum matter that constitutes it flows radially from hyperspace towards its center in spacetime. But this measuring device isn't some external being, it is the Universe itself. Thanks to wholeness, each particle senses the other and their relation to space (Mach), building an information network filled with geometrical relationships (spacetime) which are in turn used as the future is built on the already existing information.

Information emerges from and is preserved as matter (e.g., DNA). The components, the ones generating this information, are all floating in and interacting with space as particles, molecules, galaxies... brains... all of which continuously exchange information as they continuously emit and absorb electromagnetic radiation as spatially separated cybernetic systems. EMR is one of the tools which Nature has been successfully using since the beginning of time to overcome space-like separation between objects in order to evolve as a whole.

The Aether helps maintain the relations that give shape to a particle as it moves, but that information stays always bounded by the laws of spacetime. For example, virtual particles that pop-up from hyperspace into spacetime are the result of random field interactions such as resonance. Particles such as fermions stay in spacetime because they have stable standing waves. So, as someone said, don't be bothered by all those subatomic particles being detected, they don't play a significant role in reality, only the ones you find in your every day life have any real significance.

The Aether contains all the energy available to the Universe. As bodies move through empty space, stress-energy tensors around that body must be automatically adjusted according to the existing environmental conditions at each point in space and time, and this is possible because of the continuous nature of the Aether. That is the principle behind inertia and momentum. The time a moving body takes to reach thermodynamic equilibrium with its surroundings is directly proportional to the inertia and momentum forces it will experience. Each body's energy requirements is tied to the total energy available to each given point in space and time.

As objects are accelerated in a space-time metric, each new position creates new energy requirements from the continuum. The Aether provides the unity needed for the inertial state to be instantaneously registered. This information follows the laws of spacetime, laws by

which the structure is going to be held intact, in spacetime, only if and when the spatial relationships are maintained in spacetime.

If we allow for three different size scales of reality with Aether as the substrate, the whole process can be coherently put together. We could say that Aether, hyperspace, and spacetime are all different states of the same entity, the difference between them being just a matter of scale. At the Aether scale there are no reference points, no meaningful motion, no time, no wave fronts, with empty space as perfectly flat. Then, at a larger scale, it becomes hyperspace and we get things like EM waves, strings, branes, quanta, etc. Finally, at an even larger scale, we get Einstein's spacetime, the objective Universe as we naturally perceive it.

1. Aether -- (Sub-quantum level) Dimensionless, eternal. David Bohm's implicate order, Basil Hiley's pre-space. The scale at which non-local, instantaneous state change occurs. This is where Nature's four fundamental forces are administered from.

2. Hyperspace -- (Quantum level) Wheeler's quantum foam. Quantum gravity. Quantum weirdness. A medium where more than one object can occupy the same space; allowing for quantum wave superposition, parallel, and non-linear, information processing.

3. Spacetime -- (Classical level) Gravitation, matter... the objective Universe.

We could conceive reality to have started with this non-material, indivisible substance from where hyperspace emerged. A reality that shares the properties of both; the Aether's omnipresence, and hyperspace's non-linear information processing. Which then turns into spacetime as reference points and linear time emerge, sharing the properties of all three scales, or realms, at once.

According to Timothy Boyer, the CBR (space) is constituted by at least two different types of quantum matter. One is noisy and expanding, while the other is ordered and condensing. One exhibits negative gravitation, the other, positive gravitation. From one, space is created, from the other, matter. Quantum matter waves inwardly and constantly flowing into matter, as heat and light continuously flow away from matter. There is a continuous condensation and expansion of space taking place.

We need two separate matter states, two types of motion with opposite directions, one deterministic and the other indeterministic, objective and subjective, matter and quantum matter. Particle-wave systems in a continuous exchange of information between matter and space in a non-ending quest for self-consistency. Order (matter) coming out of entropy (quantum matter). It is a semiclassical process, an endless information exchange between the metric and quantum matter. Schrödinger waves evolving in curved spacetime.

The Schrödinger equation must be solved according to the spacetime geometry, but then, as the system continues to move in spacetime, stress-energy expectation values need to reset to a new spacetime geometry, making it necessary to again solve for the new quantum state. This process repeats itself in a continuous cycle without end in the form of spherical, standing waves.

It is a process where an object's matter waves are described as being continuously condensed by gravity.

Leon Rosenfeld (1933, 1963 papers) considered:

$$G_{\mu\nu} = 8\pi G \langle \hat{T}_{\mu\nu} \rangle_{\psi}$$

Where Ψ (psi) represents the quantum state of the matter fields and:

* Gravitation is the beginning of a semi-deterministic process. The gravitational force (G) is considered a classical, non-quantized field.

* Gravity and wave packet collapse are interrelated. There is wave packet collapse because there is gravity, gravitation being the product of electrogravitational forces generated within matter.

* Gravitation is caused by a space pressure differential created by the inward, radial space flow that occurs as a result of the object's wave packet continuous collapse.

* Quantization and organization of space is orchestrated by matter fields which originate from and follow exclusive dimensions already existing as matter. Energy was quantized into particles by spontaneously emitted subatomic particles (Higgs boson?) in hyperspace.

If there were no wave collapse there would be no matter, simple as that. Stopping or reversing gravitation would require the stopping or reversing of the matter wave flow, and that would cause matter to disintegrate. All matter is wave and particle at the same time (de Broglie, et al.), that is why there is gravitation. So, let's stop wasting time on anti-gravity devices and let's concentrate on creating a spacetime bubble in a different matrix and completely independent from our space. A bubble which could be extracted from and reintroduced into the time-cone at will.

Reference

Laurent R. Duchesne (2010), *Aether: The Physicalists' God*, 2nd edition, CreateSpace.
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