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## REVIEW ARTICLE

### AN UNCONVENTIONAL COSMOLOGY

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#### ABSTRACT

I hereby introduce a few key aspects of the Cosmology of Vacuum. Despite the fact that they have not been proven, nor recognized, by the scientific community, I hope that they will be someday. In a Science like the Cosmology of Vacuum, where empirical proof is so complicated, I believe that intelligence, intuition and imagination should take precedence.

#### INTRODUCTION

What I am introducing here is an unconventional Cosmology. This Cosmology includes a number of points of paramount importance that differ from what the scientific community currently accepts. This does not mean that I am giving up on their veracity: I have a great amount of faith in them and I hope that some of the aspects I point out here will be proven soon; others might take longer to be recognized. I might not even live to see their recognition, but, as they say, "the cause never dies," and I consider myself lucky enough to have contributed to it. I do think that some of these aspects, especially the braking effect and its consequences, can be considered to have been scientifically proven already after the discovery of the Higgs boson. Despite being convinced of the soundness of my Cosmology, I am still aware that fallibility is a fundamental premise of the human being.

##### These are, specifically, the key aspects I want to discuss

1. The Big Bang did not necessarily start from a single point.
2. The expanding vibratory space (which is equivalent to the Higgs space) drags all particles and the Universe.
3. The braking effect causes gravity, mass and inertia.
4. That which has been presented as enigmatic dark energy and dark matter.
5. The pure or primordial field, a place for Metaphysics.

##### 1. The big bang did not necessarily start from a single point

The main theory that opposed the Big Bang theory at some point was Fred Hoyle's Steady State theory, but interestingly enough it was this same author who gave the Big Bang theory the final push, by giving it its name and, above all, proving that an extremely high temperature was necessary for the great amount of hydrogen and helium that exists in the Universe, as the Big Bang theory establishes. On the other hand, Arno Penzias and Robert Wilson (from Bell Labs), in their discovery of cosmic microwave background radiation, found evidence of the remains of that initial extremely high temperature in space. However, is it necessary for everything that exists to have started from an extremely small point? I do not believe so. I think it is counterintuitive and other explanations must exist. The Big Bang could well have been the result of two universes colliding, one of matter and one of antimatter, and the ensuing destabilization. This collision would have caused an explosion, with the necessary heat for the formation of hydrogen and helium, and would explain the great amount of particle-antiparticle pairs that travel through the vacuum. Our Universe would be the result of the particles that were left over from that explosion, not having cancelled each other out in the particle-antiparticle pairing following the collision.

##### 2. The expanding vibratory space drags all particles and the universe

Any beginner is surely intrigued, when studying the atom, by the amount of movement that takes place within the atom

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itself. Where does the atom obtain its kinetic energy from? From itself? I do not think that to be the case. I believe Aristotle's principle continues to apply: everything that moves has a moving cause. It is from this perspective that my thought and intuition conceived what I call the expanding vibratory space, which to me is equivalent to that which has now been discovered as the Higgs space.

Is the initial push from the Big Bang what moves the Universe? I do not think so. Particles find many obstacles along the way—the braking effect itself, for instance—and they continue to maintain their energy nevertheless. Let us remember the formula

$$e = mc^2$$

This formula indicates that matter does not lose energy despite the particles' braking effect, which takes place before the formation of mass. If it weren't that way, the energy of matter would be close to zero.

All this shows that, as I said, and despite the obstacles, the Universe continues on its expansion path—one, still, of acceleration of galaxies. This acceleration is further proof that the initial impulse of the Big Bang is not sufficient to explain the Universe and the movement we observe in it, and that in fact what we should expect is deceleration. Einstein's coefficient has been used to try to explain the Universe and the movement we observe in it, but as I see it Einstein's coefficient does not explain anything: it just shows that such acceleration occurs and it can be expressed mathematically.

It is generally admitted that the Higgs boson provides mass to particles, but my understanding is that, apart from the braking effect that causes gravity (and therefore mass and inertia), the Higgs boson also provides impulse for the particles' translational motion. Thus, all in all we have an expanding Universe, even one where galaxies accelerate. Next I will explain how I interpret what is going on. My understanding is that the Higgs field drags all particles and the Universe with a continuous and constant force, hence acceleration, given the mathematical principle that a body which is subjected to a constant force in the same direction achieves a uniformly accelerated motion.

The aforementioned expanding vibratory space may be made out of the several types of Higgs bosons, or even of other types of bosons: this lies outside the boundaries of my knowledge, but my intuition is that this is so. Particle accelerators will have the last word.

### 3. The braking effect causes gravity, mass and inertia

If it weren't for the expanding vibratory space or Higgs space, particles would travel at the speed of light like photons. Their interaction with said space produces the braking effect, through unknown kinetic effects in which possibly their own forces intervene, as a result of a rotary mechanism that feeds off said space's energy and produces forces which do not follow the same direction as translation forces. In sum, due to this braking effect, the particles' wave compounds reduce their

speed and cease to travel at the speed of light, as they materialize. But it's not just that; let us take a look. The first evident result of this is gravity. Einstein did already say that gravity is the consequence of a uniformly accelerated motion; in this case we would be dealing with deceleration (in other words, a negative acceleration). Einstein also pointed to the deformation of space and its equivalence with a uniformly accelerated motion. Both are easy to observe in the braking effect: the deformation of space due to the braking force on the one hand, and its capacity to cause a uniformly accelerated motion as a consequence of the aforementioned braking force's constant attraction.

Mass is a consequence of gravity. The mass of fermions is equivalent to gravity and the group of forces affecting the particle, which constitutes a wave compound that we perceive as mass or matter. Inertia is the consequence of the Universe's gravitational weave. In order to move a body which is either in a state of rest or in motion, it is necessary to overcome the force of attraction exerted by gravity.

I dare to say that, since the Higgs boson was discovered, the braking effect and the consequences that I hereby present have been scientifically proven. It is said that particles acquire mass when going through the Higgs field: how would that happen if it weren't for the braking effect?

### 4. That which has been presented as enigmatic dark energy and dark matter

What has been presented as enigmatic dark energy becomes very clear in my Cosmology. It is not necessary to appeal to a new energy: the expanding vibratory space or Higgs field explains it perfectly. The particles that travel through this Higgs space or field do so by receiving their kinetic energy from it. As it happens, the boson confers upon them two types of force vectors, one being the braking force and the other being the translational force. And the energy of translation acts with a continuous force, in a way that it confers on the particle a uniformly accelerated motion, with the speed of light as its limit, since this it is the expansion speed of the aforementioned space. Out of the two forces, braking and translation, the latter prevails, which ultimately results in a Universe with accelerated expansion.

But what about dark matter? It becomes clear that the understanding I have been putting forth about gravity requires us to revise our calculations. The forces determining the braking effect can vary with distance, and especially when being subject to great pressures, like in the center of a galaxy. Thus, as I understand it, it is not necessary to look for a dark matter, but is necessary to revise the calculations.

### 5. The pure or primordial field, a place for metaphysics

The pure or primordial field is the magical piece that we needed in order to explain the expanding vibratory space, which does not exist just because, either. Let us see. Quantum Physics presupposes that two particles that have been together are part of the same wave function. Hence, if they were to separate, measuring the position or speed of one would also

indicate the position or speed of the other. Einstein did not agree, because this contradicted the principles of Classical Physics. The next step, therefore, was to try to prove this with an experiment. In 1951 David Bohm proposed abandoning the speed or position variables, given the difficulty in determining them, and suggested spin instead. In 1964 John Bell, having incorporated the variable proposed by Bohm, established mathematically that while Classical Physics determines the inequality of said variables, Quantum Physics implies contradicting this inequality. And that's when Alain Aspect and his 1975 experiment, considered irrefutable, come into play.

Indeed, in this experiment, which lasted until 1982, Alain Aspect was able to measure the polarization of two photons that had been intertwined, and confirmed the presumption of Quantum Physics explained above, which contradicted Bell's inequality. To put it another way, modifying the polarization of a photon also modified its twin's polarization—instantly, regardless of their distance. Alain Aspect obtained the photon pairs by exciting the electrons in a calcium atom, in a sophisticated mechanism that allowed him countless verifications.

This experiment, which has been considered by many the most important in History, implies simultaneous transmission regardless of distance, that is, it implies nothing less than the existence of a dimension where space and time play no role. Then, from my point of view, the dimensions of matter are matter itself, the expanding vibratory space, and this pure or primordial field. But let us see the amazing implications looming for this pure field, in which space and time, which can be considered material dimensions, do not properly play a role:

1. The pure field can be considered the magical talisman that determines the expanding vibratory space.

2. The pure field can be considered nothing less than the place where God or the Intelligence of the Cosmos can be located. Similarly, we can understand it as Metaphysics itself, and a place for spirits and the several deities.

3. Many of us believe that neurons cannot quite explain conscience and psychic energy. I consider the pure field the solution to this enigma, while agreeing with the Vedas and the Hermetic tradition, which state that the Universe is Mental.

4. I understand the pure field, where space and time play no role, as an eternal present. This sheds light on questions that remain a pure mystery otherwise; questions like genuine intuition, the transmission of thought, telepathy, and futurology. With this eternal present as basis, these questions become intelligible.

In closing, I want to recall the great physicist David Bohm, who divided reality into explicate order and implicate order. In my Cosmology, the explicate order is matter and the implicate order is the expanding vibratory space and the pure field.

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