



What is Dark Energy...

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WHAT IS DARK ENERGY?
(WHAT IS, AND IS NOT, DARK MASSFREE ENERGY)

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The so-called mystery of Dark Energy

Currently fashionable presentations of Dark Energy routinely begin with questions such as “how can we solve the mystery of Dark Energy?” One is seldom told why or how is Dark Energy a mystery, and is never really told what Dark Energy is.

There are very good reasons for this. The long and short of it is that Dark Energy - as conceived by our modern physicists - is a fanciful notion that would bring a Mona Lisa smile even to Einstein’s lips. There is no proof that it exists, but it *must exist*, solely because it is universally agreed that: 1) the universe had a beginning; 2) the universe is expanding; 3) the known mass-energy of the universe cannot account for the supposed rate of expansion. Add to this that, somehow, by more recent so-called computations, this rate of expansion is accelerating, and one obtains all the ingredients for a modern scientific religion - a metaphysics of physics. Note that all of these requirements were Einstein’s legacy (for all that he would have smiled!); but please remark further that, despite thousands of papers published on the subject, there is literally no experimental evidence for any of them. Hence, it is all a matter of *credo quia absurdum est*.

Indeed, the idea that the universe had a beginning is nothing more than an interpretation, and at that, one that is not legitimized by the First Law of Conservation of Energy. That the universe is expanding is not the result of any direct observation, but of yet another interpretation - of Redshifts and Blueshifts. And that the total measurement of mass-energy would have to account for the constraints of an interpretive model, is simply a self-validating requirement for which there can be no independent experimental proof. As for the acceleration of that expansion - well, it’s all in the eyes of the beholders. All of this *should* have put Einstein’s legacy into question. But it didn’t. Instead, it produced yet another false problem: if there is not enough Matter in the universe, not enough Dark Matter, then there must be some Dark Energy.

The twists and turns of the argument are remarkable. And they indicate just how obstinate, desperate orthodoxies are - in their refusal to alter the parameters of a field of inquiry or investigation - and the extent to which they’re willing to go on co-opting, patching, mending with sheer spit, models that have obviously outlived their usefulness.

Ask yourself - what would it mean to Albert Einstein to hear Dark Energy spoken of as distinct from Dark Matter or Dark Mass?? And why make the distinction when, by Dark Energy, physicists mean the most massive particle that supposedly exists? Albert undoubtedly would have exclaimed: “it’s nothing more than a marketing gimmick!” And he wouldn’t have been far from the truth, even if for the wrong reasons. For, indeed, according to Einstein, all energy is mass, carries mass, affects mass - and energy and mass interconvert. Mass, says Albert, is an intrinsic property of all energy. These authors happen to think he was wrong, but that is what Albert said. The mass-property of all energy was even *supposed* to apply to kinetic energy! - which is how DeBroglie got his Matter Waves going with a relativistic solution. There could never be Dark Energy without mass. And there could never be massless energy. Not, at least, according to Albert. Anyway, this is a minor detail, since the Dark Energy that our particle physicists talk about is only ‘massless’ for laughs - it was ‘massless’ in a distant past, but is supermassive today.

In truth, the import of uncertainty has been so abused in physics, by physicists, that they literally do not know what Dark Energy is. That is to say, they are not *just* uncertain about it, they are *totally uncertain*, ie completely confused. It's hardly surprising, then, that when they speak, they are inclined to say precisely *nothing*. Here, for example, is Rocky Kolb, of Fermilab, U. of Chicago:

“Recent measurements with telescopes and space probes have shown that a mysterious force—a dark energy—fills the vacuum of empty space, accelerating the universe’s expansion. We don’t know what dark energy is, or why it exists.”

What a mysteriously tortuous presentation! The theory calls for the existence of a force (a force of expansion, as required by relativistic astrophysics); ergo an energy must exist, even if it has never been found! This is hardly surprising, of course, since particle physicists are still so ignorant of the actual physics of energy, not to mention, of massfree energy. But, apparently, to find their so-called proof of this force, we need not go very far. It suffices for them to simply point to particle theory, or quantum electrodynamics and chromodynamics, and to propose some sufficiently imposing magnitude for the energy of the so-called ‘vacuum-state’, and voilà the proof:

“On the other hand, particle theory tells us that, at the microscopic level, even a perfect vacuum bubbles with quantum particles that are a natural source of dark energy. But a naïve calculation of the dark energy generated from the vacuum yields a value 10¹²⁰ times larger than the amount we observe. Some unknown physical process is required to eliminate most, but not all, of the vacuum energy, leaving enough left to drive the accelerating expansion of the universe. A new theory of particle physics is required to explain this physical process.” (more R. Kolb)

This is not science. This is delusional self-fulfilling prophecy - a religious enterprise. One first assumes a beginning for the universe and postulates, by dint of sheer interpretation, that the universe expands. Then one assumes that sufficient quantities of Dark Matter are needed to satisfy the expansion; if there is not enough of this supposed Dark Matter, then one fills the gap with some appropriate quantity of Dark Energy and invokes the elucubrations of particle theory as supposed proof of the scientific correctness of this procedure. And then, to explain that which does not exist and to continue to chase after the elusive proof of its existence, trillions of taxpayer dollars must be consumed across the globe. If it were not the real and current state of Physics, and one prevalent worldwide, one might think it was just some lulu’s idea. But maybe it is.

In the impoverished sense, therefore, in which Dark Energy is spoken about in the modern *academia*, there is no Dark Energy at all. It’s a fiction. So it’s hardly surprising no one knows what it is. However, even though, after traversing the tortuous labyrinth of an “argument” such as Kolb’s, one cannot but conclude that its subject is a fiction, a nothing - in need of never ending new fictions to prop it up - one is nevertheless told that it’s a ‘discovery’! Though it’s unknown what Dark Energy is, the very need to have it, somehow, constitutes a discovery!:

“The dramatic discovery of dark energy showed that empty space is filled with a mysterious energy that increases as the universe expands.”

And now there is space for every conceivable sort of mysticism and every demented idea of exotic bombs. Mass-energy could be converting into dark electromagnetic energy, and that is why the universe is both running down and expanding. A way might even be found to conciliate this with the Principle of Conservation of Energy (!?). After all, the proportion of total mass-energy must vary...

Is there a Dark Energy? or: Where is the Higgs?

All too often scientists charge in groups, somewhat like vying pack-dogs, in the general direction of some real and essential phenomenon, either unknown or misconstrued by existing science - and yet, they remain singularly unable to precisely pin it down. Typically, this inability to see clearly into a problem is due to the blinding hold that a previous paradigm is capable of exerting upon a majority of peers. To avoid inertia and ultimately complete paralysis, a few may try to break out of the mold, but just a little. For the general rule is that any attempt to move upstream in the midst of a descending stampede, regardless of how hallucinatory its trajectory is, guarantees professional suicide.

At the level of particle physics, Dark Energy is one such stampeding hunch. In QCD, the property of inertial mass is said to be due to a special field - the Higgs field - that is constitutive of so-called 'empty space'. And the Higgs field - whose existence is to this day unproven - has become the linchpin of the accepted physical theory of the world. Supposedly, it is because of this field that electrons and atoms do not fall apart at the speed of light. Yet, the Higgs boson, the particle that is assumed to demonstrate the solidity of these sand-castles, has persistently failed to show up. That means: no experimental evidence for the Higgs field.

And the very notion of the Higgs field is 'bozo-nic': for why should one need to propose a massive particle to enable other particles (the ordinary particles of Matter, by the way) to acquire mass? Why would mass be the result of external collisions with, or compressions by, supermassive particles? It's counter-intuitive and nonsensical, given that mass is an intrinsic property of Matter. It would make more sense to look to such bosons for the source of the force of gravity, than for a half-assed explanation of the origins of inertial mass.

What follows is perhaps our favorite CERN-certified imbecilic explanation of how massive particles cause inertial mass to appear in ordinary Matter:

"An oft-cited analogy describes it well: Imagine you're at a Hollywood party. The crowd is rather thick, and evenly distributed around the room, chatting. When the big star arrives, the people nearest the door gather around her. As she moves through the party, she attracts the people closest to her, and those she moves away from return to their other conversations. By gathering a fawning cluster of people around her, she's gained momentum, an indication of mass. She's harder to slow down than she would be without the crowd. Once she's stopped, it's harder to get her going again. This clustering effect is the Higgs mechanism, postulated by British physicist Peter Higgs in the 1960s."

Give the man a million \$ cigar! It is, of course, well known how stars die on the spot, imploding with the inertia of swamping fans, crushed by their satellites... And so it goes, in the brave new world of QCD - a world so daring that the mass of the electron may vary by orders of magnitude while transiting through a crystal.

So, what is it that physicists are intuiting here, besides a bulging granting purse and an audience addicted to science-fictioneering? The simple answer is that *what they are intuiting is the world of Massfree Energy, of the real Dark Energy, and its processes of secondary superimposition that generates mass-energy (Matter) and associated gravitons.* But they do not know how this world creates mass - or mass-energy, to be precise.

Particle physicists have become so enamored with abstruse high-energy physics that they've managed to forget just about everything they did not know about low-energy physics, but had, ostensibly, once wanted to learn. Forgetting, however, is not even the worst of it. Aside from the gouging of capital and the sanguine anticipation of military usages, the worst consequence of this fixation on high-energy physics has been sheer delusion. Yes, psychotic delusion on a mass-scale, as an academically sanctioned and collectively fabricated error. Our physicists only *appear* to do Einstein's bidding. In fact, they don't. For they have now been trained to accept - under the name of Quark Chromodynamics - the paradox that an electron does not have the mass-energy which it is supposed to have in accordance with $E=mc^2$. With their super-accelerators and colliders, they've discovered that when large energies are pumped into the field of an electron or a proton, the mass-energy of the targets gives way to what are termed 'motes', which supposedly come in threesomes, each mote, in turn, releasing electrons and/or protons. It's a merry-go-round that puts squarely into question the very principle of conservation of mass. In other words, inside an electron, there are quarks, and inside these quarks, more electrons, and so on and so forth. It is, quite simply, a bad infinite regression. But what it's supposed to do is constitute the alleged experimental proof of the tripartite quark-ish structure of Matter.

Small wonder, then, that to buttress the infinite but 'renormalized' mass-energy of a simple electron, and thereby save the Standard Model of particle physics, one must be searching for super-energetic 'motes'. The energy of the hypothetical Higgs boson was once predicted to vary between 17 to 1000 GeV (the upper limit was placed there just for good measure...). Yet, with supercolliders of proton-antiproton pairs that have now reputedly reached >175 GeV, there's still no sight of it.

Why is the Higgs boson so badly needed by accepted particle physics? The essence of the answer lies in the gratuitous assumption that the universe had a beginning. And this is immediately joined to another assumption - that of the Standard Model - which prescribes four 'forces' to nature: electromagnetic, gravitational, weak and strong nuclear forces. And now, what have you got? Marketable metaphysics. And while the official physicists profess to have understood electromagnetism - in fact, they haven't. Our own work stands as a stark reminder of this fact. Of course, everyone knows what weight is - but not what gravity is, let alone the nature of mass. And while modern particle physicists pretend to know the weak force responsible for radioactivity and hydrogen fusion, that is, how the W and Z particles interact with leptons, quarks and neutrinos, they've never been able to make that fusion self-sustaining. As for what holds atomic nuclei together - the strong force - we are provided the quark bestiary.

Assuming, then, that the universe had a beginning, its early stage would have been ruled by high-energy interactions between heavy quarks (charm, strange, top and bottom quarks) and leptons. Electromagnetic interactions mediated by photons, and the so-called weak interactions mediated by the super-massive W and Z particles would also have existed in this early universe - but would have been susceptible to integration into a single, symmetric, 'electroweak' interaction. This is, supposedly, the first step towards a unified field theory...

Paradoxical as it may be, particle physics assumes that, at the time when symmetry existed (in the fiery stage of the world), all the particles involved - quarks, leptons, photons and W and Z particles - were massless. Yes, not massfree but massless. And that the coming about of Mass from this primordial

fire, was 'the result of the breaking of the symmetry' - or of the separation of electromagnetic and weak interactions - which permitted the cooling of the universe to occur. As the universe reached lower energies, the W and Z particles would begin to interact with the Higgs field, through the hypothetical Higgs particle, and would thereby acquire mass or 'become massive' in the common parlance of particle physicists. It was supposedly then, too, at this nebulous point in the past, that quarks and leptons also acquired mass - though their masses, or mass values, required a prodigious amount of hammering before they could be inserted into the Standard Model, now loaded with all the adjustable, normalizing parameters required in order to fit the assumed Higgs field.

Apart from the other disadvantages this bankrupt model holds for Life, it once again inevitably leads to those fits of bad poetry about living in a cold and empty universe. Deserted by the original fire - the scientific equivalent of being abandoned by God - left with the diminutive heat bath of the mCMBR, with nothing to fill the emptiness of space but Higgs particles, top-antitop pairs, or still more pragmatic particles that might decay into such pairs - the universe is a pretty dismal place.

But what if the universe had no beginning? What if the universe had infinite existence, no beginning and no end? What if physicists constrained themselves to explaining the masses that exist and whatever Matter there is, by the low-energy physics of the real world they live in? What if they actually adhered to their own $E=mc^2$ rule, that the energy of a massive particle is finite - that it is not infinite, and never was? What if physicists were required to explain mass as an intrinsic property of Matter? And what if the high-energy interactions they so doggedly have been studying could be explained by the same processes that, at low-energy levels, sustain Matter such as we know it, ie ordinary leptons and baryons? And what if neutrons themselves did not even exist as such within the nucleus?

Then, all one could say about the Standard Model, with its Higgs prediction and its top, antitop and stop algorithm(s), is that it had a hunch that something other than mass-energy, something massless, 'fills space', so to speak, and underpins the very existence of mass.

A hunch, yes - but as far from the exact physics of the nature of mass as it can be. Nothing more than a metaphor of an ordinary fire, a creationist fable of mass-energies that are somehow infinite, of symmetries that break down, and of massive particles that were, in some manner, originally massless but which, upon cooling down, massified, all because of the mythical Higgs. It is, at best, a contortionistic attempt to reach for the real Dark Energy - that is, for massfree energy that is neither electromagnetic nor gravitonic.

Of course, none of this precludes still more hysterical treatments of Dark Energy, some of which are just for pure amusement. Consider, for instance, the spin of one Gary Bekkum in a feature entitled "Dark Matters surround Dark Energy": ZPE physicists are at work developing Exotic Bombs - the new weapons of mass destruction - that aspire to emulate the projected end of the universe (the Big Rip...), now that we know, somehow, that the Universe's expansion is accelerating...Yes, the lingo is cute, and so is the scenario of magical numbers:

"The universe now appears to be made of two unknowns - roughly 23% is 'dark matter', an invisible source of gravity, and roughly 73% is 'dark energy', an invisible anti-gravity force. Ordinary matter constitutes perhaps 4 percent of the universe."

Demoted from the 10% of just a few decades back, ordinary matter has become statistically irrelevant. The curious part of the spin is that Dark Energy is now seen as being responsible for an anti-gravity force that explains the dogma of expansion. How one goes from Dark Energy “Higgses” that were supposed to explain inertial mass, to Dark Energy that seats an anti-gravity force is a miracle of the sublime brought about by the handwavings of those who sensationalize black-budget projects, handwavings only too often in the pay of Firmage and NASA:

“Firmage hired a NASA Ames nano-technology scientist, Creon Levit, to run the ‘International Space Sciences Organization’, a move which apparently alarmed the management at NASA. The San Francisco based Hearst Examiner reported that NASA’s Office of Inspector General assigned Special Agent Keith Tate to investigate whether any proprietary NASA technology might have been leaking into the private sector.”

The problem is that their understanding of the Aether is deficient - they insist on either confusing it with massive particles, from hadrons to Higgs, or with electromagnetic energy, be it but a virtual one. They have a hunch:

“Even if the rumors of a sub-quantum bomb are pure fantasy, there is no question that mainstream physicists seriously contemplate a phase transition in the quantum vacuum as a real possibility.”

If only they could understand the difference between phase states of energy and the phase-Space and phase-Time manifold properties of energy! But then the cosmic microwave background radiation would also have to be understood as merely a byproduct of Dark Massfree Energy in electric form! They talk about bending spacetime, about Dark Energy and Supersymmetry, but have no inkling of the real, physical properties of energy superimposition, the properties of the real Dark Energy!

And then there is the hyper-relativist technobabble of those on the forefront of the bombist fashion. It is as if, collectively, physicists had gone berzerk:

“George Chapline, of the Lawrence Livermore National Laboratory, and Dr. Jack Sarfatti in San Francisco, have independently proposed that the quantum vacuum may be unstable to the formation of coherent virtual processes. Sarfatti suggests that gravity is an emergent property determined by the physics of the vacuum. His idea is to find a means of directly interacting with the coherent physics of the vacuum that he believes controls the shape of spacetime.”

The fancy dons of sci-fi fantasy. Those who give birth to ideas the way sheep drop turds - but already neatly packaged for immediate media-tized consumption. Ideas whose goodness is measured by the amount of spit they take - just so much more detrita of a science and a technology subjected to image-making by the flows of money and power.

The basic aetherometric functions for Dark Massfree Energy

The simple relation that particle physicists are missing is the aetherometric equation that describes the real balance between mass-energy and graviton energy, on the one hand, and the Dark Massfree Energy that creates that mass-energy and that graviton energy and sustains them, on the other. This simple relation is precisely what explains the existence of a mostly homogenous mCBR and its micro-physical process of production. It permits, at last, a non-interpretive understanding of how ordinary leptons in this 'cold universe' are both systematically created from Dark Energy, and electrically accelerated by that Dark Energy with modal kinetic energies responsible for the production of the mCBR discovered by Penzias and Wilson. Creation of cosmological mass is a universal parameter where that mass is in balance with the massfree energy from which it arises, and with the massfree energy it acquires as its own energy of motion.

We have called this process - the process of secondary superimposition. It is secondary, we have proposed, because it relates, not to the primary superimposition of waves (such as one studies when one considers waves as constituents of energy) but to the superimposition of energies - or, more properly, of energy functions. Such processes of energy superimposition occur in what we term 'phase Space and phase Time' and are, in effect, phase energy processes.

Of all the critical new equations our work has produced to express the most varied dynamic interactions - electric, gravitic, kinemassic, thermal or electromagnetic - perhaps the following one may be said to stand out the most, precisely because it addresses the most basic phase energy process there is: the asymmetric creation of Matter - including its inert mass property - by the superimposition of low-energy units of Dark Massfree Energy. When we write it for the electron mass-energy, where Einstein's famous equation is applied to the electron, using the notation:

$$E_{\delta_e} = m_e c^2$$

and apply this, in turn, to our equation for secondary superimposition - here is how this equation becomes expressed:

$$E_{\alpha_e}^2 = E_{\delta_e} E_{G_e}$$

On the left side, there is a well-defined superimposition of Dark Massfree Energy, of low-energy mass-free particles - whose precise energy value we have both identified and reported (see ABRI monographs AS2-11, AS2-17C). On the right, there is a superimposition of that electron mass-energy with a unit graviton energy (an electron-graviton), the term designated by E_{G_e} . Mass can be - and, in fact, is - constantly created from the superimposition of massfree energy. And along with mass, a basic graviton is also created. Conservation of that mass-energy requires conservation of that graviton - and this is, effectively, the physical basis for the identity of inertial and gravitational masses (it is a little more complex, in fact, because the graviton is really an impulse with a definite rate, and it is the unit impulse that is actually conserved by a constant flux of massfree energy). For mass-energy and graviton energy to be conserved, the Dark Massfree Energy must remain in a continual state of superim-

position. Unwind the mass-energy, or unwind the graviton, and the superimposed units of Dark Energy are released. The balance, then, between Dark Energy and Matter is a constitutive one, constitutive of both Matter and its gravitational properties. We have experimentally demonstrated the energy, momentum and wave characteristics of these gravitons, as well as determined the corresponding characteristics for those units of Dark Massfree Energy (report in preparation).

Yes, as we said above, everyone today knows what weight is: the result of the interaction between the mass of a body and the force of gravity - or to speak more properly, the result of the force of gravity acting between the masses of two bodies. But still, nothing is known about how this force of gravity arises nor what, in fact, constitutes mass. Trillions of global dollars have been poured into the supersymmetry efforts of particle physicists - supposedly, to answer the very basic question: what is mass? And what those trillions of dollars have purchased is the Higgs lemon as buttress of the Standard Model, which has been time and again patched with ever more dubious entities. The four-decade-long search for the Higgs has failed to hiccup even one. And yet, in our model as summarized above, the simple answer is given - the answer that is adequate for an eternal universe of low-energy interactions: mass is a property of trapped massfree energy in constructs of mass-energy that are phase-superimposed with graviton energy.

The equation we have given above is but a glimpse into the processes we have proposed. The issues are obviously more complex than this, for this equation describes only what happens as a function of that Dark Energy which has no electric, no inertial and no electromagnetic properties - what we call the *latent energy* inherent to the production and structure of cosmic space, or of so-called abstract space itself. However, the very discovery of the mCBR indicates that we should be equally able to consider cosmological processes that implicate electrically-charged Dark Massfree Energy. The final cosmological function for the production of the mCBR that we have proposed was:

$$\begin{aligned} (4 \alpha^{-2} E_{\alpha e}) + E_{\alpha e}^2 &= E_{\alpha \text{CBOR}} + E_{\alpha e}^2 = E_{\text{kmode}} + (E_{\delta e} E_{Ge}) = \\ &= (\alpha^{-2} h\nu_{\text{mode}}) + (E_{\delta e} E_{Ge}) \end{aligned}$$

where $h\nu_{\text{mode}}$ designates precisely the energy of the observed mCBR photons, with mode nominally equal to $4 E_{\alpha e}$. The intermediate terms, $E_{\alpha \text{CBOR}}$ and E_{kmode} , designate, respectively, the ambipolar radiation (ie electric Dark Energy) associated with the secondary superimposition process and the (modal) kinetic energy acquired from the ambipolar field by cosmologically created electrons. In other words, when cosmological leptons are created in 'empty space', they are created not just with an associated graviton, but also with a *minimum* of electrokinetic energy. And it is the latter which constitutes that contribution of the Dark Massfree Energy which is in an electrical state - what we have called 'the ambipolar contribution'.

In the same way that the Higgs field is a poor intimation of the secondary superimposition of non-electric Dark Massfree Energy ($E_{\alpha e}$), the notion of a Zero-Point Energy (ZPE) is a poor intimation of the cosmic Dark Massfree Energy which is in an electric state, $E_{\alpha \text{CBOR}}$ - and thus is only a vague intimation of the precise cosmic ambipolar spectrum which we have identified and made public

through our writings. The Higgs field and the notion of a ZPE are, in other words, nothing more than ill-defined but currently accepted hunches of cosmic Dark Massfree Energy in latent and electric states, respectively.

These hunches are wrong because Dark Massfree Energy is not composed of high- energy quarks or bosons. It is, instead, composed of units of latent energy and ambipolar radiation, which lie at the very opposite end of the spectrum of energy magnitude. In the single expression provided above, all the interactions pertaining to leptons are directly integrated into the context of the genesis of a single ordinary electron: Dark Massfree Energy in its latent and electric states is directly integrated with mass-energy, kinetic energy, photon energy and the graviton. Moreover, even though we shall only mention this here in passing, we have described, in parallel, the cosmological asymmetric creation of protons (or antiprotons) and have predicted the existence of baryon-emitted radiometric CBRs. We have publicly, and quite a while ago now, challenged NASA to search for them. They would constitute yet another experimental proof for Aetherometry and the accuracy of this model.

The day the Higgs died: bye-bye, Big-Bang symmetry pie.

On December 5, 2001, the *New Scientist* thrust a dagger into the heart of the Higgs affair:

“The legendary particle that physicists thought explained why matter has mass probably does not exist. So say researchers who have spent a year analyzing data from the LEP accelerator at the CERN nuclear physics lab near Geneva. The elusive Higgs boson is so central to the standard model - the theory on which physicists base their whole understanding of matter - that it has been dubbed the “God particle”. If there is no Higgs, they will be left totally unable to explain mass (...) For many it’s a big disappointment, because last year researchers from another group at LEP claimed they had found the Higgs (*New Scientist*, 9 September 2000, p 4). Their announcement came shortly before LEP was due to close, and it won them one month’s extra time on LEP. But they later admitted to having botched their calculations in the heat of the moment. Their mistake was to assume too low a level of background noise as the experiment’s energy was ratcheted up, so that they took scattered particles that were actually background as signs of the Higgs.”

One may well wonder just how many of the beasts in the quark bestiary - beginning with the top quark - are due precisely to such willful groupings of background scattered particles whose production is simply not understood, when not entirely artifactual. After all, there’s a lot riding on proving the Standard Model - not just the reputations of scientists and the investments of an epoch, but plenty of high-stakes, speculative and militaristic interests too. For our part, we think that the explanation for mass, for its creation and function, was never really riding on that train, even if it is completely true that without the Higgs particle, particle physicists don’t have a viable theory of Matter and must admit they do not understand what mass is, nor how it was formed in their phantasmagoric Big-Bang cosmology.

Daggers, however, when thrust into the hearts of mythical personages, can just as well be pulled out - like rabbits out of a hat. Nothing could die that easily, let alone when allowed resurrection by Supersymmetry theories - which have always been designed for fools. Filled with logicalistic and formalistic apriorisms, Supersymmetry apologists have always preached that every particle has a heavier counterpart. It would need not one Higgs but two at least, and preferably four... Even though

Supersymmetry required the lightest of these Higgs bosons to be less than 130GeV, by June 2004, everything had returned back to where it had been for four decades: by tweaking the energy of the top quark, R. Madaras - also from Fermilab - succeeded in putting forth the case for the upward revision of the expected mass of the Higgs. With their endemic lack of creativity, insight and even imagination, these physicists, though good at getting money, are poor at getting the science. Says Madaras: "The most likely Higgs mass has now been increased from 96 to 117 GeV/c², which means it's probably beyond the sensitivity of current experiments, but very likely to be found in future experiments at the Large Hadron Collider being built at CERN." Yet, up until 2001, CERN had not found any below 130GeV... But never mind, since nothing ever dies of contradictions - nor even of the lack of Higgs bosons. As a matter of fact, 'Higgses' miraculously continue to multiply at the very pace they're not found.

One might complain about the capital which has so wantonly been sunk into the thermonuclear fusion programs. But what to say of the almost comical search for the Higgs? It's nothing short of a sensationalistic mega-enterprise suited for scientists with very little in the way of brains but with a perfect bureaucratic, white-collar mentality. If they really were scientists, they would have long ago called the whole thing off and have come to the only sensible conclusion there is - that the Standard Model always was bankrupt. As for Supersymmetry, it was mere fluff.

What, then, of the strong and weak interactions on which our particle physicists have been labouring for more than a half-century? How to explain the tremendously energetic and massive motes that they have found in electron-positron and proton- antiproton collisions?

If there is no beginning to the universe and there is no Higgs, there ceases to be a reason to suppose that an original state of symmetry was broken down by the Higgs mechanism. In essence, then, that leaves us with two problems: how does mass arise in a cosmological context (eg how do leptons and baryons arise asymmetrically?) and how is mass generated by nucleosynthesis - in plasma clouds, galactic cores, stars, etc.

If physics is at the threshold of abandoning the Standard Model, it should consider abandoning what has led it there to begin with - a dual error: Relativity and the wrong understanding of 'Quantum Mechanics'.

What, then, explains and unifies the weak and strong interactions? We have no intention of disputing the experimental findings of particle physicists - even if several of the groupings of particle jets and corresponding algorithms can be seen as being rather dubious and contentious, to say the least. Many particles and energy localizations have been proposed and then withdrawn, probably at least as many as suggested alternative energy systems that didn't work.

The simple answer is that processes parallel to those we found for leptons - ie processes of phase energy or energy superimposition - are also at work in both weak and strong interactions. We shall here address only the weak interactions, and in particular the basic annihilation of an electron and a positron, the paradigmatic interaction of matter with antimatter. We have, elsewhere, demonstrated how there is no missing energy in this interaction - and thus no reason whatsoever to entertain the neutrino hypothesis. We will not go into this here, but it is precisely in the case of such an interac-

tion that the Standard Model proposes that the mote formed by an electron and a positron may first radiate a gamma photon, before annihilating and generating the Z^0 particle, which may then decay into another lepton pair, or a muon pair or...(when measurements yield nothing at all) a pair of neutrinos. The reader can already sense the silly arbitrariness of this model. And it, too, is nothing more than a hunch: but what is it based upon? In accordance with our argument, it is based upon the ignorance of the positronium atom structures, including what we have termed 'nanohelium'; upon the ignorance of the real asymmetry - ie the break between the processes of pair-creation versus those of pair- destruction; and, we should add, upon ignorance that this real break or asymmetry is compensated by emission of ambipolar radiation. Our contention is this - if the balance between Matter and its gravitational energy requires a sustained phase-energy superimposition of Dark Massfree Energy, wouldn't high-energy processes of pair- creation also be in a phase energy relationship with this same Dark Massfree Energy? We must think the asymmetry as constitutive of the high-energy structures of Matter. Accordingly, a process of complex or tertiary energy superimposition would be occurring, and, upon pair-annihilation, this Dark Massfree Energy input would also have to be released, for it had been its superimposition which all along had sustained the pair (or the quasi-atomic structure) it formed.

We shall simplify matters here - and present only the model for para-positronium (PP). Creation of a pair in the low-energy limit is never brought about simply by the minimum input of a gamma ray with energy equal to two electron masses. It is the input of Dark Massfree Energy that permits the absorption of that gamma ray, facilitates it, through a phase energy relationship, and confers kinetic energy to each lepton of the pair. Moreover, for as long as that pair exists, as a high-energy PP construct, this energy input also exists in a phase-differential relationship with it, to be released only when that PP atom disintegrates. This has nothing to do with neutrinos, nor are any such hypothetical beasts required - since the reactions, when properly understood with their kinetic components taken into account, have no missing energy. It is Dark Massfree Energy which the creation of high-energy pairs requires as their dynamic balance. If minimum threshold processes require ca 320keV of Dark Energy, any experiment capable of injecting energies greater than this into the field will likely find resonant levels when motes much more energetic than ordinary PP atoms, are brought forth, forming what we call 'high-energy condensates', in this case - condensates of parapositronium. Our model is, of course, far more complex than this - as it also explains orthopositronium, the nanohelium structures, and the function of these constructs as the real nuclear glue. But, in a nutshell, this is all that our particle physicists are doing with their super-colliders, whether employing leptons or baryons: they inject field energy into temporary leptonic and baryonic quasi-atoms, 'swelling them up', so to speak, until they burst, and then they try to reconstruct, in reverse, the structure of these swollen atoms by gathering the shards from the explosion, in order to make structural inferences, from these reconstructions, about the original leptons and baryons.

When their accelerators became capable of generating field energies on the order of 2.8 GeV, electron-positron annihilations were observed to generate hadrons (jets of quark aggregates - in pairs, called mesons, and in triplets, called baryons) and even bosons such as the Z^0 particle. But these resonances are not separable from a basic understanding that is, somehow, completely absent from existing particle physics. You see, whereas the latter proceeds as if these high-energy particles were hidden inside the paired leptons, as constituents of their respective quanta of mass-energy, the fact is that the initial paired leptons serve as nucleating seeds for the condensation of massive motes from the ener-

gy injected into the field (more properly, from the ambipolar radiation that produces the field).

As we recently wrote: “Since mass-energy can be formed out of the field superimposition of massfree energy (hence, the failure of neo-classical field theory to explain meson physics that led to QCD is also a failure to adequately account for ‘field properties’ as such, namely, for ambipolar radiation and secondary superimposition), and since kinetic energy is nothing but energy of motion appropriated *from* a field by a particle or body of Matter, it is little wonder that physicists are so entertained with studying the creation of hadrons and their motes from the collisions of leptons and baryons. They then confuse the materialization of the field energy, by way of a condensing interaction by particles of Matter (leptons, heavy leptons, mesons and baryons), with the energy constituents and the mass-energy structure of those particles of Matter. And so, the paradoxical belief is formed that particles of still greater mass than the electron mass, and still greater mass-energy than the electron mass-energy, exist, somehow, inside of that electron, inside of its mass-energy.”

The motes are real. What is not real is their present articulation and their interpretation with respect to the known units of Matter.

If, instead of applying the Lorentz-Fitzgerald transformations, physicists had applied the mass-to-length transformation once suggested by W. Reich and, 50 years later, decoded by us in a three-year old paper that physicists have proven themselves singularly unable to read, they would have long ago understood that energy is a continuum having five dimensions, three for energy-Space S and two for energy-Time G or Synchronicity:

$$E = S \Gamma = \ell^3 \tau^{-2}$$

It is obvious that a simple phase energy superimposition, such as the secondary superimposition described above, has, not five, but ten dimensions: energy-Space functions are superimposed, and Synchronicities are ‘synchronized’, as per -

$$E^2 = S^2 \Gamma^2 = \ell^6 \tau^{-4}$$

In our work, we have encountered still more complex processes, eg at $E^3 = S^3 \Gamma^3 = \ell^9 \tau^{-6}$. It is precisely this physics of low-energy secondary and tertiary superimpositions which physicists studying the high-energy interactions are ‘intuiting’, though in the context of high-energy physics. They are experiencing a protracted inkling of these processes of energy superimposition, but are studying them, not by studying what produces them, but by their byproducts. If only they would walk before they attempted to run, they would have learned that the key to understanding what happens in high-energy physics is to understand what is happening in low-energy physics, and in particular, in the physics of massfree energy.

Instead of rationally coming to terms with the existence of phase massfree energy processes, physicists have been wasting time in the spurious contemplation of the question “Are there extra dimensions to Space?” No, there are no extra dimensions to Space, nor can Space, when empty of Matter, be filled by something that, whatever it is that already produces Space as such, *qua* Space, Space itself is some-

how *lacking*. Space does not exist in abstract. Space is a specific property of energy. It cannot exist without energy, without Dark Massfree Energy. And it is because Space is a property of massfree energy, that it exists concretely, and we can think about it in abstract.

All the mysticism about the arbitrary addition of new dimensions (of length, mass, time) and ‘dimensionalities’ (charge, color, charm, etc, etc) is a superfluous outgrowth of this lack of understanding of phase energy properties, secondary and tertiary. There can be no extra dimensions of Space without there also being extra dimensions of synchronous or phase-locked Time, without energy superimposition. Dimensions cannot be added at will; they must obey the energy structure. And there are no ‘dimensionalities’ - beginning with charge - that cannot be accurately reduced to the dimensions of length and time.

Only when this much has been understood is one ready to make the last jump, to understand, in a parallel manner, how Dark Massfree Energy drives the strong interactions. That, however, we will leave for another occasion. We have already said enough, here, in favour of our contention that, indeed, there is a Dark Energy, but it is not electromagnetic, nor was it massless only once in a fiery past. *Dark Energy is massfree energy*, and it has both electrical and nonelectrical properties - and it is the interplay of these properties which accounts just as much for the production of the mCMBR, as it does for the creation and decomposition of electron-positron pairs that, given adequate field accelerations, can condense and emit hadrons and so-called bosons. If lepton pairs can do it, so can baryon pairs, etc. There is, therefore, no need to entertain such cumbersome notions as fractional charge or tripartite hadronic structures of nucleons or leptons. These are the shallow myths of an epoch which have deranged the possibility of a new physics of energy. Studying what a high-energy accelerating field does to lepton and baryon pairs is neither the same as studying what creates, constitutes, upholds and sustains the structure of those leptons and baryons, and the nucleons they compose, nor the same as studying their cosmological processes of creation. But, if properly understood, it can teach us a lot about nucleosynthesis.

Joe Lykken, also of Fermilab, states that

“String theory unifies physics by producing all known forces and particles as different vibrations of a single substance called superstrings. (...) Do superstrings exist? The strings themselves are probably too tiny to observe directly, but string theory makes a number of testable predictions. It implies supersymmetry and predicts seven undiscovered dimensions of space, dimensions that would give rise to much of the mysterious complexity of particle physics. Testing the validity of string theory requires searching for the extra dimensions and exploring their properties. How many are there? What are their shapes and sizes? How and why are they hidden? And what are the new particles associated with the extra dimensions?”

In light of what we have written above and elsewhere - and in light of our proposed model for energy superimposition - Lykken’s popularization is simply an illustrative example of the utter nonsense that is running rampant in physics. With string theory, we go from what Gell-Mann derided as ‘the shopping-bag model’ of physics, to the spaghetti of the strings.

So-called ‘extra dimensions’ are thought of as nothing more than a matter of ad hoc additions in imaginary topological spaces - and yet, in physical nature, they can only come about as a function of an energy superimposition process, as a phase energy process. But since ‘supersymmetrists’ are unable

to think in terms of energy, dimensions can arbitrarily be added at will - with new dimensionalities aimlessly sprinkled around as the baffling new properties of quarks...

The paranoia of high-energy physics can only be measured by the heights of its science-fictioneering and the amount of Capital it thereby gobbles up. Here is more Lykken:

“The physical effects of extra dimensions depend on their sizes and shapes, and on what kinds of matter or forces can penetrate them. The sizes of the extra dimensions are unknown, but they should be related to fundamental energy scales of particle physics: the cosmological scale, the density of dark energy, the TeV electroweak scale, or the scale of ultimate unification.”

It's a merry carrousel that can spin forever, until the never-arriving 'scale of the ultimate unification' arrives. There are no extra dimensions in this sense; and there are no extra dimensionalities, no elementary qualia of charm, color, etc. The latter is a mere phenomenology of the byproducts of the interaction of field energy with so-called matter/antimatter pairs. The energy characteristics and properties of these motes are no more irreducible to the properties of inertial momentum and associated wave functions, than are the parallel characteristics of any lepton or baryon.

More specifically, our work has shown that to understand the structure - the fine structure, as we call it - of Matter in the subnanometric scale of nuclear constructs, we must first understand the low-energy interactions - the gravitational, electromagnetic and weak interactions - with the tools of phase energy, as we have summarily argued above.

If we are correct, physicists are searching for Dark Energy in all the wrong places: in the wrong part of the energy spectrum and with the wrong tools. And if they are to understand the high-energy motes they create in their accelerators and super-colliders, they will first have to understand how mass-energy is conserved, by its equilibrium with low-energy, superimposed massfree energy.

There is, therefore, no reason to think that there was once a world when symmetry ruled, and that the universe had a beginning, and will expand until it will meet its end. Science would do well to consider that the universe is infinite, without beginning or end; and that is the reason not only why no two particle-physicists agree on an energy prediction for the Higgs boson, but why no such boson has been, or will ever be, found. The Standard Model has endured for four decades, amended by ever wilder logicalistic theories of strings and superstrings, etc. But it has been unable to come up with the exact geometry and structure of the ordinary lepton. Our work has proposed one, and one which is in complete agreement with the experimental facts; moreover, it explains both the classical and probabilistic treatments of so-called orbital electrons, while escaping the stranglehold of the Uncertainty Principle. It is time to consider alternatives to the Standard Model - in particular, alternatives that do not generate infinities in constant need of normalization and 'hand-correction', nor violate the Conservation of Energy. All such attempts to date have failed because the reality of phase-energy interactions with Dark Massfree Energy has consistently been ignored. If the universe had no beginning, then what matters is to explain the low-energy interactions, for they are the interactions of an infinitely-present universe, and what makes possible a real understanding of both the strong force and the high-energy interactions.

Of course, low-energy physics is not fashionable, and it does not, at present, serve to bring in greedy promoter, corporate and military interests. And without the hoopla, the race for the bucks for the fastest accelerator, the highest energy collider or the breakthrough nuclear reactor will be lost. But something is also lost - something far more fundamental - when all of physics is conducted under the dictatorship of the mythical quest for the highest attainable energy. What is lost is a real understanding of phase energy and all physical interactions, and also - in our view - the chance to understand the basic physical interactions capable of unlocking the utilization of Dark Massfree Energy as an infinite, benign energy source.

We would not hold our breath for the Department of Energy of any nation-State to arrive at this conclusion - that a new model of particle physics is needed and that phase-energy processes must be considered. Fermilab, like Berkeley Lab, etc, is funded by the Department of Energy's Office of Science, and, consequently, all the idiocies their scientists might 'think' or utter have already been paid for. They are therefore safe in their ignorance. We could not but expect any such Department to defend the untenable status quo. But we would expect any real scientists, who may still be out there, to give serious consideration to what we have written. It is profoundly different from that which is accepted - and yet it adheres strictly to all the fundamental constants and values of accepted physics. There is no recourse taken to arbitrary dimensions or abstruse 'dimensionalities'. In fact, it makes plain what superimposition of dimensions is all about. If physicists refuse to take this into consideration, they will never understand even the simple electron, its mass and its charge, let alone the secrets of Dark Energy.

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