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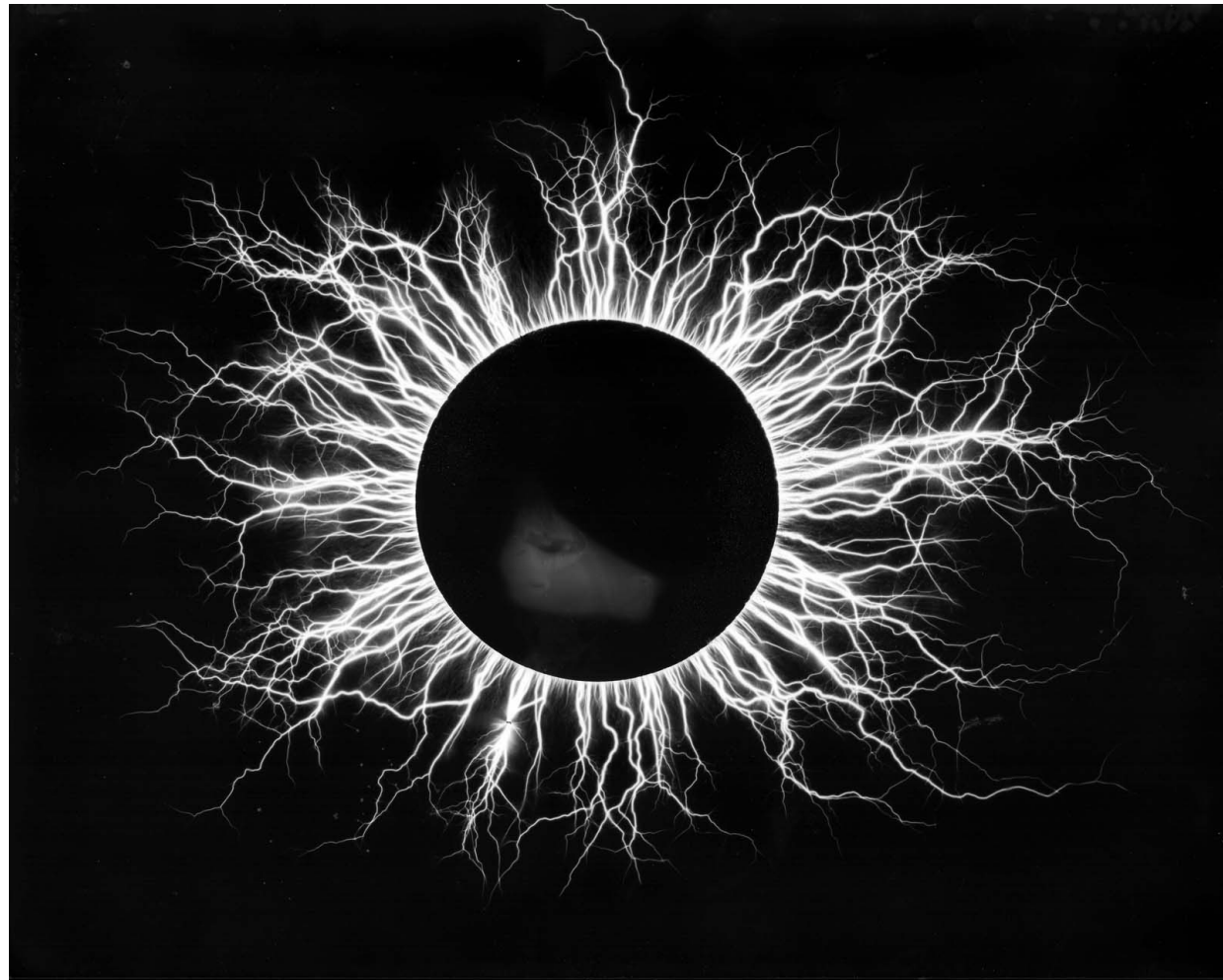
SHAPE JOURNAL

CHARGE + MAGNETISM II

CHARGE AND SPIN / ELECTRICAL AND MAGNETIC FIELDS / MAXWELL, PHILOSOPHY AND ORBITING ELECTRONS
UPDATING MAXWELL'S MODEL / BROKEN STABILITY / UNITARY CHARGES / STABILITY AND CREATION
THE BIRTH OF HOLIST SCIENCE / ENTANGLEMENT AND SPIN

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Charge + Magnetism II

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- 4. Charge and Spin
- 8. Electrical and Magnetic Fields
- 10. Maxwell, Philosophy and Orbiting Electrons
- 13. Updating Maxwell's Model of a Substrate
- 17. Broken Stability?
- 20. Unitary Charges
- 23. Stability and Creation
- 25. Entanglement and Spin

Charge and Spin

Such questions as those concerning the nature of both Charge and Spin, will clearly be transformed by both the re-introduction of an affected and affecting Universal Substrate, and, even more profoundly by the adoption of a Holist Approach, rather than the usual Pluralist/Idealist/Pragmatist one, now dominant in Modern Physics.

And, as it happens, many of the key developments, in this theorist's current contributions, particularly on those concerned with Quantized Orbits of electrons within atoms, along with other consequences of the effects upon phenomena of the universal presence of an effectible and affecting general Substrate.

So, it is clear that this current, and so-far-winding-track, be necessarily widened into a major Road!

Clearly, the prior assumption of everything being isolated by occurring in a totally empty and therefore inert of Space - and absolutely nothing else, will, certainly, have significantly distorted our explanatory theories.

The effects on things, moving through such a substrate, will no longer be validly ignorable, and all communications will no longer be "across the void", but, instead, delivered and maybe even affected by propagations in such a medium.

Let us, therefore, consider the vortices, caused in such a Substrate: we will have to reconsider and change many, many things previously simplified and idealised by assumed the total absence of any sort of medium.

To get such things, as vortices, must involve movements of whole units of such a substrate, and sometimes, in a kind of "spiral whirl".

And, if, as is currently assumed by this theorist, there are neutritrons (as the key units of the substrate), then the naturally-weak-links, connecting these units into their normally-undisturbed form - termed a Paving, will, in many circumstances, be broken, with the consequent individual units, instead, dominated by the swirl of a caused vortex.

And, of course, such an entity must have been created, by receiving previously translational energy, from a moving electron, into a very different orbiting situation.

Yet, once created and maintained, such vortices, will give up some of that energy, and, in appropriate circumstances, this could be given back to the orbiting electron.

Indeed, the phenomenon is another example of the Resonance/Recursion complex phenomenon, which was deliberately caused to occur, so brilliantly, by the French physicist, Yves Couder, in his famous series of "Walker Experiments", where instead of the more usual uni-directional propagation of vibrational effects, he managed to marshal both Resonance and Recursion between sources of vibration, in a liquid substrate, to actually create a persisting entity - his so-called Walker.

Though occurring entirely at the macro level, these Walkers, composed only of substrate, acted like unitary physical entities, and, could be persuaded by similar means to perform Quantized Orbits.

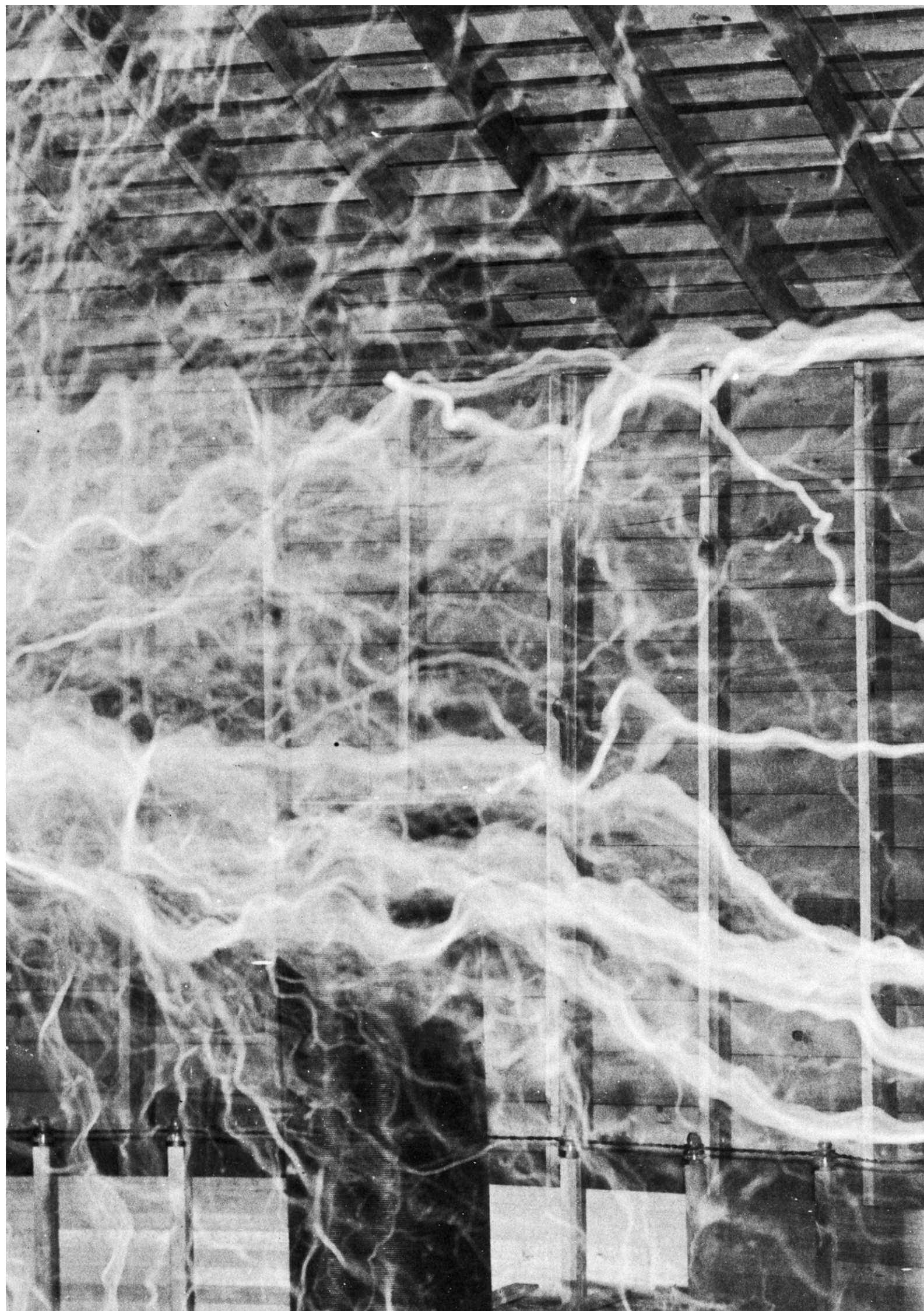
But, even these forces are small compared with electrostatic ones, so, considering things more generally, the "magneton" content of the substrate, if they stop moving-incessantly, like a random gas, will, instead move, first, towards such a charged particle, and, second, to cluster around it, delivering a physical field, composed, entirely, of these "magnetons" - arranged in concentric shells around the supposed source of that "seemingly" electrostatic field.

Now, the above initial description, is only true of isolated or linearly moving electrons, but we are considering an electron orbit in an atom, and that is a very different situation.

It doesn't seem possible for those particles to be pulled, totally unchanged, into the suggested vortices, but we shall see! So, the question, instead, becomes being about an orbiting, charged particle - an electron, within an atom. There is no doubt that this produces a magnetic effect, perpendicular to the plane of the orbit.

Can we explain that?





NOTE: The trouble is that we used this fact to actually devise both the neutritrons, which, based upon this, were magnetically neutral, AND also the magnetrons, which because of the asymmetry in the sizes of their composing sub-units, though neutral electrostatically, did have a similar magnetic effect as the Hydrogen atom, “due to” the internal orbit of its smaller charged sub-unit.

You can see the problem!

It has never even been explained for one case, and then for the other, or even vice versa: it was just described, so any further theorising could only be circular!

We have another example of the chicken-and-the-egg paradox.

You cannot prove the situation in one context, using only what you have assumed in another. You will be dealing only in descriptive Form, and certainly NOT explanatory Content!

Now, this might mean that both are explained by something else (as Hegel would have doubtless insisted), then, currently, the most likely candidate seems to be concerned with Particle Spin.

For, we know that particles, of physical extension, (that is all known particles with mass), will, in addition to other means of possessing energy, could also have a spin, about some axis! But, then, the distribution of a Unitary Charge within that particle, presents the usual conundrum! Because the charge is a discrete property, and not a continuously variable one, it cannot (surely?) be distributed throughout the particle: you cannot divide a Unit Charge!

Indeed, scientists, for ages, have always simplified and idealised it to be, effectively, concentrated at the centre of the particle. But, that is a statistical approach: it doesn't mean that such an assumption is physically true!

Now, if the particle, in question, is actually composed of internal and discrete, sub-particles, with each of which contributing a “part”, that is hard to tally with unitary charge, and might, instead be the product of some complex internal orbital, and/or even spins (delivering magnetic effects?) - in other words, Charge could be a man-made abstraction to facilitate further ideas - indeed, yet another example of simplification & Idealisation, of

something, as yet, not understood! So, if this turns out to be correct, you can see that the Logic also carries over to the next level up, with spinning electrons, in such orbits, creating magnetic effects in a vital association with an affect-able and affecting Universal Substrate .

The suggested explanation of Electrical Fields (explained elsewhere) also involved magnetic properties primarily, so this was a pointer to a more general set of theories in this area.

Of course, such a supposition, immediately presents a problem - “What will determine the axis of spin?” With a translationally-moving particle, the answer is, “Nothing!” If there is a spin, it could have any orientation. But, with an orbiting particle, this might internally cause an orientation of the spin. And, perhaps, though this is much more unlikely, such particles in a vortex, could have their axes of spin determined by the orientation of the vortex.

Electrical & Magnetic Fields within the universal substrate

Having found out that the neutritron, as the unit of the suggested Universal Substrate, was totally inadequate when it came to explaining Fields, it was necessary to complicate the situation by adding what were termed “magneton pairs” to the composition of the Substrate.

These too had to be undetectable, but also had to bring in un-cancelled electromagnetic features to be able to deliver these as-yet-unexplained features of the Substrate.

This contradictory requirement was to deliver both these seemingly incompatible things at the same time. The solution was to have equal numbers of literally, mirror-image pairs of particles, with a similar structure to the neutritron, but as two directly oppositely propertied components. They also needed to contain differently-sized components to deliver magnetic dipoles.

Only the charges would be neutralised within individual particles, but neither the opposite matter-type contents, nor the magnetic dipoles due to the asymmetry of the components were cancelled within the individual particles.

But, with large and equal numbers of both types of magneton, moving randomly, everything would, indeed, be cancelled in normal circumstances.

The substrate would remain undetectable!

Now, this would be the case, as long as nothing, which could affect these magneton units, intervened, to actually remove their random movements.

But, the presence of a charged particle would, locally at least, change everything. Local magnetons would gather around the charged particles with their magnetic dipoles moved around to be re-orientated radially, centred on the charged particle. These would form a series of concentric shells - delivering a field. Surprisingly, the required functionality of an electrostatic field - due to a charged particle, would be supplied by this, clearly, magnetic field (of sorts) - that is achieved solely by particles with magnetic dipole properties.

NOTE: Other investigations, considering the interactions of two charged particles, showed clearly that the known features of such a situation were adequately explained by this idea of an “electrostatic” field.

But, in addition, such components of the Substrate must also be able to deliver normal magnetic fields too! The question, of course, is, “How?”

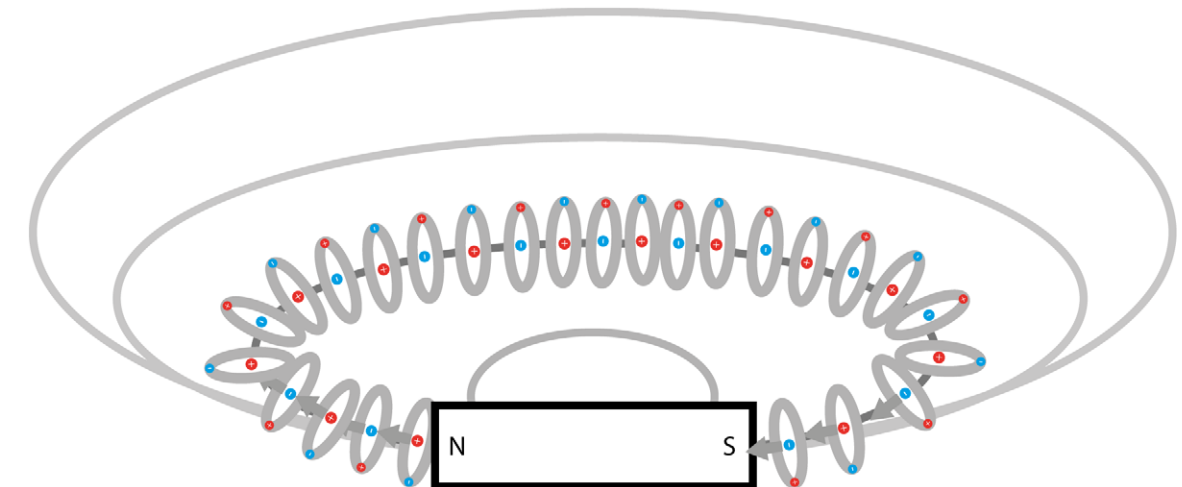
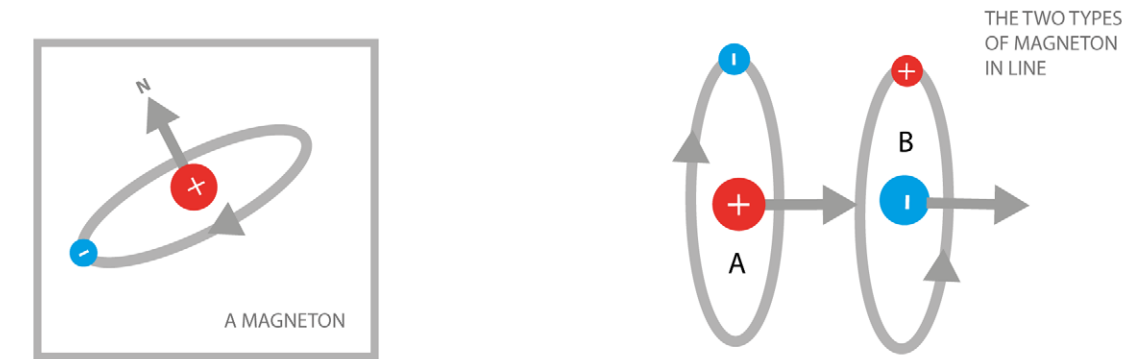
As all students of Science, including those still at school know, a permanent bar magnet, made of magnetised iron will display a unique magnetic field very clearly, if iron filings are scattered around the magnet. Lines of force seem to emerge from one end of the magnet, and loop around to end at its other end. We also know that the properties of such “lines of force” in Space, are similarly present within the iron of the magnet itself.

So, our first task is to align something like a magneton, within the magnet, with others to form lines of force there too, linking up with those outside formed by the magnetons themselves. This process proves to be easy. Outside the magnet, both types of magneton could be used to form a “string” merely by flipping the second types over so all the dipoles link together, but, all one type would also link in the same way.

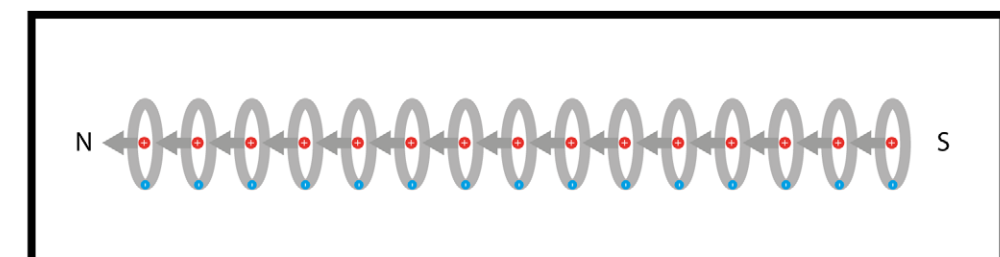
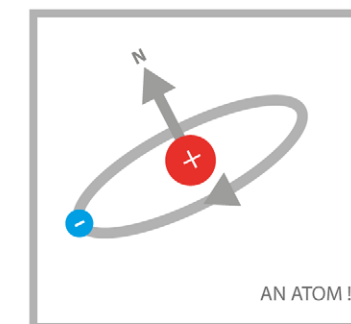
Within the magnet, however, we have a permanent situation, and this is because the atoms of iron with a single outer electron orbit, also are magnetic dipoles, so they too could with sufficient external coercion have been re-align to fix-in a magnetic effect. Effectively, the lines of force originate within the magnet, but outside the magnetons line up continuing the line of force round to re-entering at the other end of the magnet and forming a loop.

When seen in this way, the search for a magnetic monopole appears totally futile!

It seems possible that magnetons can produce both types of field merely due to circumstances.



Magnetons line up to create lines of force



Atoms lining up in the same way, inside the magnet

Of Maxwell, Philosophy & Orbiting Electrons

Comparing the effect of a translationally-moving, charged particle, with that in an orbit inside an atom, we find that the interactions with the Universal Substrate, as proposed by this theorist, contrast markedly with the unconstrained case.

Let us, therefore, see how such a Substrate, composed of neutritrons and two mirror-image kinds of magneton, must be behaving, in these different sets of circumstances.

Neutritrons are wholly neutral particles, with only, very weak and very local, oscillating electrostatic effects - active only within a very narrow shell, close to each individual unit, and, outside of which, the particles are, in every respect, completely neutral.

So, any fast-moving electron is likely to merely plough-through such a substrate, momentarily applying a tangential force to any encountered neutritron, which will give it a nudge, it in that same direction.

This will be a purely physical force, and clearly directional. Any possibly caused electromagnetic interactions will be in all directions and will very quickly leave the locality at the “Speed of Light”. [See the Theory of the Double Slit for details]

But, these purely physical directional effects will not be involving the electromagnetic properties of the neutritron, which will always be transient, in any promotion and demotion of its internal, shared orbit, but, instead, the physical kick will be affecting the particle as a whole.

And, doing the same thing to neutritron after neutritron, will, via imposed spins, also cause a series of vortices, rotating locally, in a sequence of discrete positions, due to those tangential kicks, and consequently spinning whole neutritrons.

But, this is a moving electron, and a stationary neutritron Paving, so, the forces will vanish soon after they were applied to a given locality, so though a vortex will have been formed, it will immediately be left behind, in a slowly dissociating “wake”!

Ultimately, the vortex will fully dissociate, and the oscillating electromagnetic effects, with each and every close approach of the individual neutritrons, will re-establish the loose Paving once more.

But, things will be extremely different, if the electron is following an orbital path, for, though its initial effects upon a locality within the Substrate will be the same, the continuing role of the electron is very different, for, it will return, time after time, over exactly the same ground.

In fact, the local disturbances - the vortices, will be returned to, and affected again, on each and every cycle of the orbit.

And, even more significantly, these regular interactions will be taking place at the many different positions, all around the orbit, where vortices had been established: the more usual left-behind and “dissociating wake” does NOT happen here!

And, by the time the electron returns, none of these vortices will have subsided, so another tangential push will be applied to a member of every vortex, as the electron passes its position: the whole collection of vortices, all around the orbit, could receive sustaining impulses, on every succeeding circuit of the electron.

But, there will also be inter-neutritron effects too! Immediately-adjacent neutritrons, on either side of that kicked-again, will be encouraged to spin in the opposite direction, so around an individual vortex, the spins of the involved units will alternate - clockwise, anticlockwise and so on.

But, consequently, the effects of the kicks will only build up, if and only if, the originally affected neutritron, or one possessing exactly the same moment of rotation as that one, instead, receives the following kick.

The frequencies of electron orbit, neutritron spin, and vortices rotation MUST be harmonically related for this to occur!

Now, when this is the case, energy from the electron will be leaked into the associated vortices, and the orbit will

decline, except when the vortices can actually begin to deliver energy back to the orbit by a reverse of the initial process.

And, clearly, if all these resonances are maintained (or, much more likely, homed in upon) a balance between losing and receiving energy will be arrived at.

The orbit and the associated vortices will become a self-maintaining stable system.

Now, it will occur to the reader that alternate neutritrons in a vortex will be going the wrong way (as explained above), but, it is also significant that the vortices produced are discrete: they will have major gaps between them. So, another factor must be part of a self-maintaining, stable system - the returning electron must always give its kicks to the neutritrons going in the same direction. NOTE: If the reader thinks this is far-fetched, let him study the Walker experiments of Yves Couder, who managed to create stable entities entirely out of a substrate and absolutely nothing else, due only to resonances and recursions in appropriately chosen and applied vibrations and rotations.

The above ideas, therefore, do have sound and demonstrable experimental parallels!

Now, we are rapidly being drawn into a very different way of doing Science!

For literally millennia, a basically incompatible mix of three difference philosophical stances has been simultaneously subscribed to, which has dramatically determined how we investigate Reality, experimentally, and also in how we attempt to explain it, theoretically.

These components, in their historical order of arising, are first Pragmatism, then Materialism and finally, in the 20th century even Idealism, with the ill-famed Copenhagen Interpretation of Quantum Theory.

Now, as Hegel, the brilliant German philosopher, 200 hundred years ago, was able to show, such rocky

premises will regularly, in all Human Thinking, lead to major impasses, always signalled by what he called Dichotomous Pairs of contradictory concepts, which were, most commonly, never transcended, but, instead, got around, by simply switching between them pragmatically to achieve any sort of reasoning.

It was, and usually still is, an almighty mess, as it meant that all such reasoning had to be predicated upon The Principle of Plurality, which knitted such diverse assumptions together by means of both simplifications and idealisations - achieved by a belief in eternal and simply-additive Natural Laws, which enabled them to be able to find an artificial bridge between these actually incompatible premises.

The only possible solution, to such a Dead End, had to be to change over to The Principle of Holism, which meant the end of those methods, and the acceptance that, “Everything affects everything else!”.

Many real phenomena could not so simplified and idealised, without losing the crucial factors involved, and delivering, instead, an easily-grasped-and-used pragmatic fiction.

Many impasses could only be apparently “transcended” by “keeping all the affecting factors”, and attempting to juggle with them all. In fact, such immaculate juggling became the “true mark of the expert”!

Indeed, in what we are addressing here, there is not only the orbiting electron within the atom, but also a complex Universal Substrate that is composed of at least three component units, and involved in two distinct behaviours. One is the static Paving of one kind of particles, while another is a randomly moving mix of two other particles - when an undisturbed situation is considered.

But, both behaviours are transformed when considering these electron orbits, by the appearance of vortices and energy transfers between these and the orbiting electron.

Updating Maxwell's Model of a universal substrate

All the easy solutions made possible by the total absence of a substrate - indeed, the ground that is Empty Space, fall away, and unable to cope with things like quantized orbits and balanced stabilities, other purely formal means were brought in, and physical explanations abandoned!

The rose-tinted spectacles of pure formal characterisations simply cannot deliver, and causal explanations take us into a much closer approximation to the Real World.

Consider, for a moment, an everyday phenomenon!
A rapid stream flows into a still pond.
It causes vortices to form along its edges, at separated, discrete locations, which spiral way and dissociate.

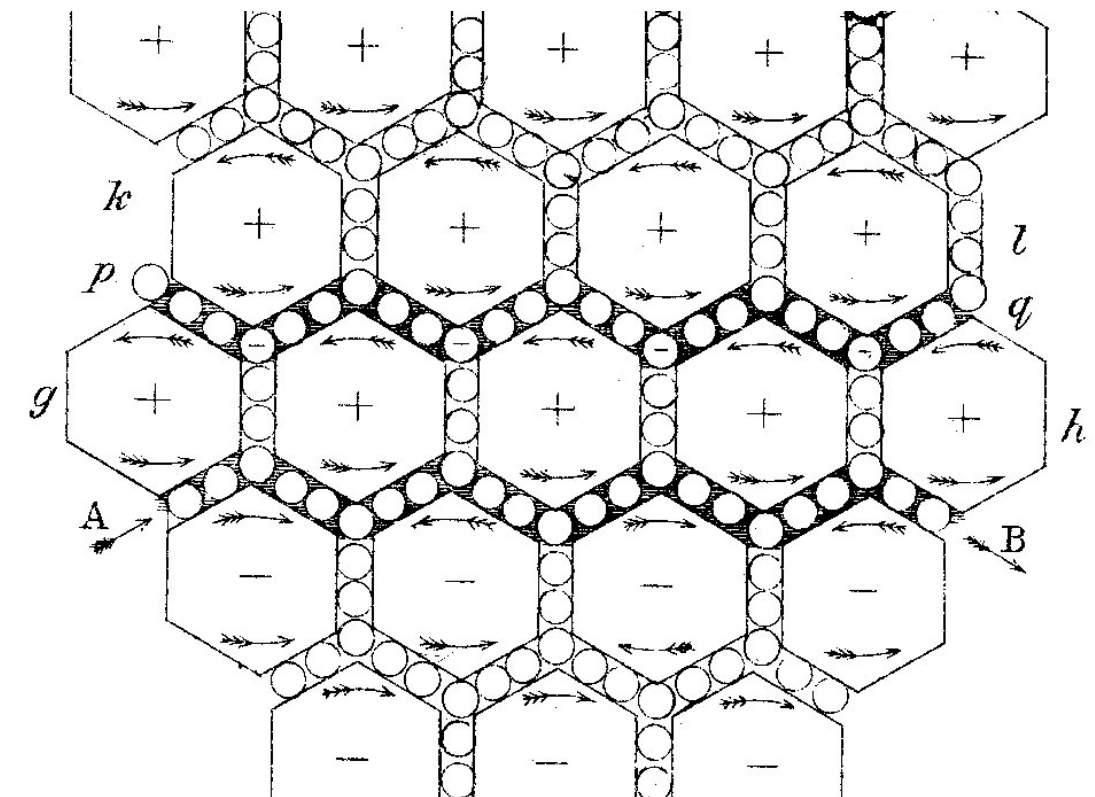
So far so good, but when our “stream” is a single electron, forced into an orbit around a proton, with everything occurring within a complex substrate, energy is passed to the vortices from the electron, which in this context returns regularly over the same ground, and under ONLY very special conditions finds a natural balance between not only giving up energy to the vortices, but receiving it from those vortices.

A quantized, stable orbit is established.

Pluralist Science cannot explain this phenomenon, and Sub Atomic Physics sees the only way out to be the abandonment of explanation, and the switch to purely formal means of dealing with it.

But even that isn't enough. A whole inexplicable world of Wave/Particle Duality, Quantum Entanglement, and Universe wide Fields in absolutely Empty Space, are needed to allow their formal means to “suffice”!

The attempt in this, and other related papers, is the alternative! But, it isn't just a different theory: it is a different approach based upon a different philosophy!



Now, the inclusion of vortices, in a Universal Substrate, harks back to James Clerk Maxwell's model of the then conception of such a thing - The Ether.

Now, neither Maxwell, nor anyone else, at that time, had any idea of the actual components that made up this Substrate, but, he did know, well enough, many phenomena that he considered were certainly going to involve such a Substrate, so he “retrospectively-devised” an overall Model, consistent with all those known phenomena.

Clearly, he also used analogies with well-known, and extensively-studied material substrates, such as water, and, hence, involved vortices and “electrical particles”, as being essential features determined by what they visibly produced within those phenomena. And, ultimately, he produced a model, which he illustrated with the diagram above, showing relationships between these two

sorts of “components” that he considered could both “deliver what was known”, and guide theorists in, as yet, unexplained areas too.

Now, vortices are remarkable things, for they are “driven” whirls-or-spirals of substrate, as discrete entities! [See Yves Couder's Walker Experiments, for a brilliant demonstration of related, discrete constructs, entirely formed from various effects acting alone upon a substrate] So, when such vortices are caused by a continuous flow (as in water, say), these discrete islands-of-rotation are the exact opposite of the, more usual, continuous-cause-and-continuous-effect occurrences, and are produced as a separated-string of individual entities - usually left behind by such a flow.

Maxwell could not conceive of a Universal Substrate - that exists absolutely everywhere, and is also the stage, upon which all phenomena are performed, without

such entities being intimately involved. So, he included vortices, intrinsically, in his model.

Now, while Maxwell's, and everybody else's idea of a Substrate was totally discarded, because it was never detected, it cannot be forgotten that it was on the basis of his model that Maxwell was able to formulate his world-famous Electromagnetic Equations, which are still used to this very day!

For, what this, most certainly, means is that his model had a substantial-and-significant measure of Objective Content - aspects or parts of the truth, and, it was this that enabled him to produce his Equations.

So now, with a resurrection of the idea of a Universal Substrate, AND, the inclusion of vortices, as key entities in important phenomena, the task of relating the new conceptions to Maxwell's Objective Content, surely cannot be avoided?

The major gain, in the new conception of a Substrate, was the success in removing all the anomalies of the ill-famed Double Slit Experiments, as well as delivering a fully explicable Theory of Electromagnetic Propagation through supposedly "Empty Space". While, in addition, a full explanation of both Pair Productions and Pair Annihilations were also achieved. Clearly, this model, too, must have significant Objective Content, in order to be able to make such achievements possible.

So, the task is clear!

Just how do the key units of the new version of the Substrate - the neutritrons, relate to Maxwell's vortices and "electrical particles"?

Clearly, the best place to start is where vortices seem to be essential, and have been used to produce a new alternative, non-Copenhagen explanation of quantized electron orbits within atoms.

In the new theory, the passage of an electron through the Substrate, will cause vortices composed of collections of discrete neutritrons.

Now, without some sort of structural model of the substrate, it will be difficult, if not impossible, to produce any coherent explanations of what is actually going on.

Maxwell, himself, was confronted with the same problem, but even worse, for he had no idea of the composition of his vortices and "electrical particles". He, therefore, had to attempt explanations, at the level above those components, and that produced unavoidable assumptions, about those, as yet unknown, participants. He had no analysis below the level of his vortices to justify those assumptions, and it wasn't even clear what they were! Nevertheless, his design was sensible.

Such rotating, discrete entities would also affect one another, and, crucially, two adjacent, mutually-affecting sets of neutritrons would inevitably rotate in opposite directions, whereas a continuous, or regularly applied, cause would cause them all to have the very same rotations.

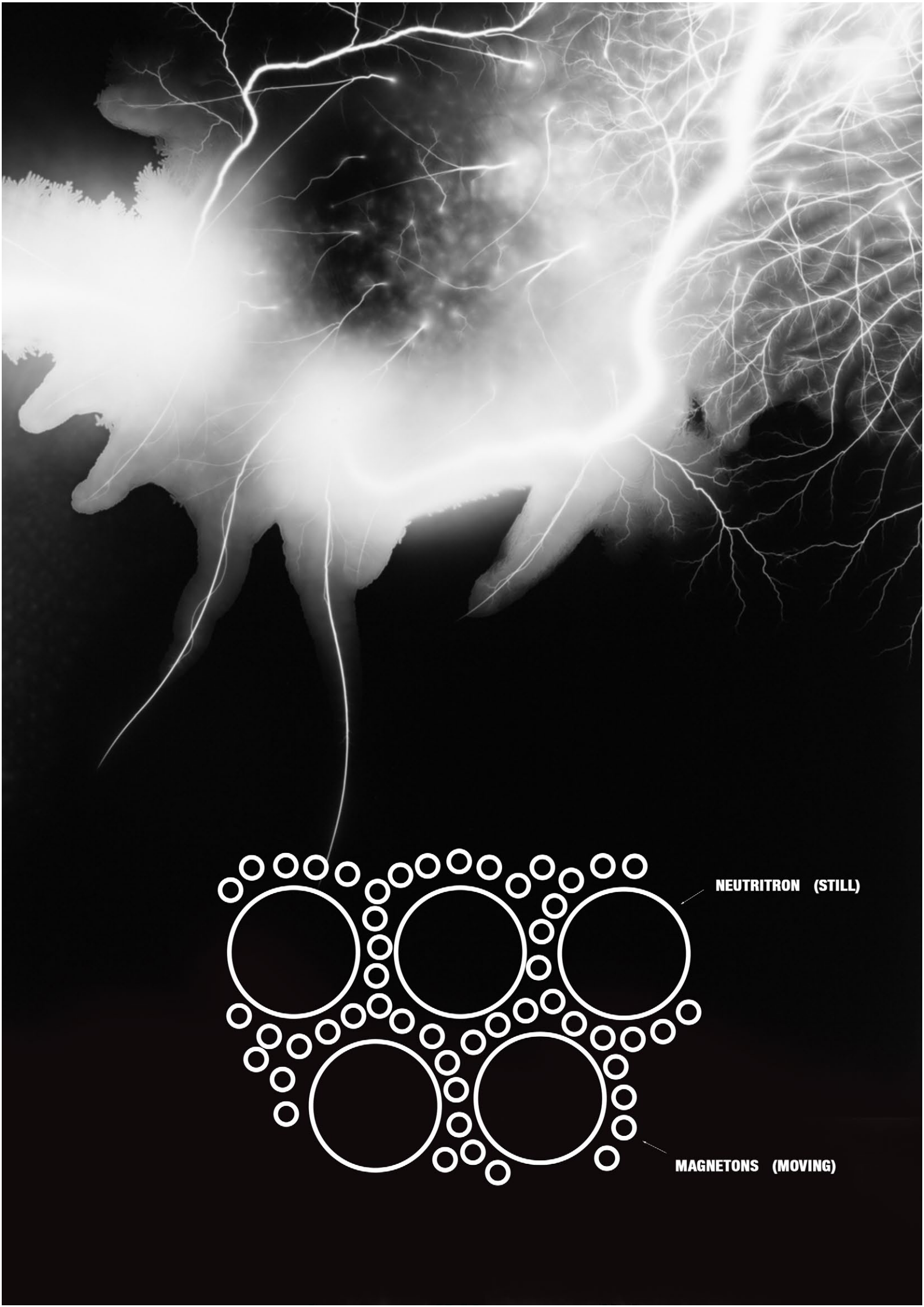
Maxwell's solution was ingenious, for it not only took such things into account, but also included his "electrical particles" into his solution - as many actively flowing series, between the static vortices.

Careful inspections of his diagram seem to indicate that it was these flows of particles that determined both the pattern and the rotations of the vortices. Remarkably, continuous flows of the "electrical particles" could be consistent with alternating, oppositely-rotating vortices, and amounted to a somewhat meandering "flow through" of those particles.

We should commend Maxwell for his attempt at coherence, even if his solution was too model-determined, rather than Reality-determined: but, what else could he do at the time?

Clearly, when considering the new conception of a Substrate, it would be a relatively static arrangement, within a continually moving system something-like Maxwell's "electrical particles", but what could they possibly be?

As it happens, the emerging, New Theory has been forced to include magnetically-active "magnetons", in addition to the fore-mentioned neutritrons, to enable the establishment of physical Fields (within, and actually composed of, the substrate), while their normal mode would have been incessant random movement.



Now, “letting the tail wag the dog” is never a good idea: so, the task isn’t to make the new concepts and components fit Maxwell’s model, but, on the contrary, make Maxwell’s valid Objective Content throw significant light upon the formal aspects, which are now being underpinned by new contributions concerning the now-known entities involved in the new model.

And, what better way could there be of bringing its objectives to fruition, than in a full explanation of the Physics of orbiting electrons performing quantized orbits in atoms?

As already emphasized, such a task is by no means a re-instatement of Maxwell’s model, but, crucially, an identification of what was the Objective Content within it, validated by new explanations that Maxwell was in no position to deliver himself.

Indeed all, repeat ALL, developments in Theory are unavoidably of this nature.

Man isn’t, nor can he be, able to alight directly upon Absolute Truth. But, he can, and has been throughout his finally-evolved existence as homo sapiens, a truly brilliant user of “observed analogy”, to get some sort of handle upon things, he could not yet explain, but by such means could, nevertheless, often correctly predict, what would happen next, as well as, introduce concepts, with each re-development, yet more aspects or views of the Truth - more Objective Content!

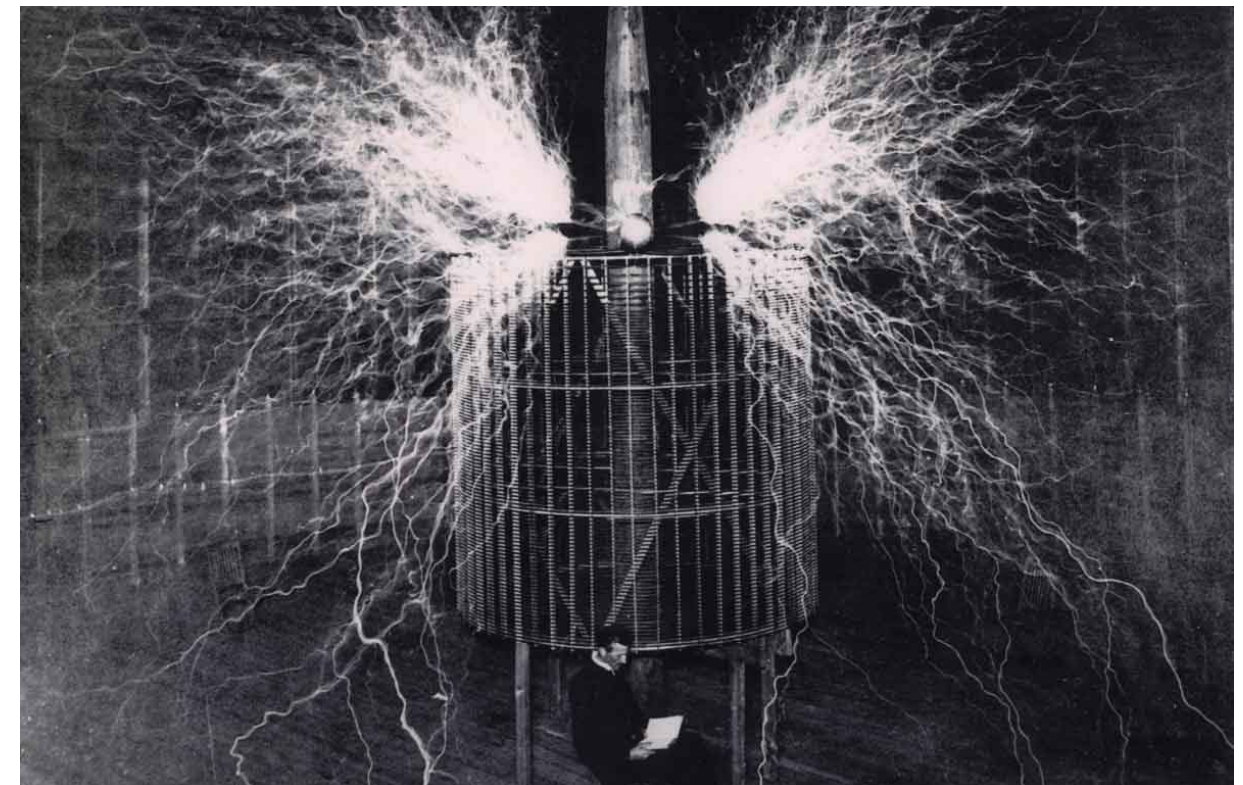
So, here we have a new theory, involving vortices and electrical particles - in this case special systems of neutritrons - normally in a loosely connected, static structure, but here driven into forming vortices. And, in addition, magnetons -very different components of the Substrate, made out of at least two mirror-image types with opposite properties, and in the context of both equal numbers of each type, and random constant movements, are also undetectable (as were the neutritrons, but then achieved internally to that particle).

Clearly, the two models are very different, but you can also see why, and indeed how, Maxwell’s version arose. He correctly identified features (to explain known phenomena), which he could only objectify by his vortices and his “electrical particles”. In other words, it wasn’t the last word in explanation. But to, for that reason, to “throw the baby out with the bathwater”, as

the Physics community did, when abandoning the whole idea of a Substrate, was indicative of an absolutist error - “something is clearly wrong, so dump it”

The task, once a better set, of both philosophical and physical premises, had been established, with a Substrate of devised components, the necessity would have to, to attempt to retain the Objective Content from Maxwell’s model, and interpret them differently in terms of the new model.

And, of course, that does not mean keeping Maxwell’s model, as illustrated here, but devising a new one, also displaying the same Objective Content, but with an explanation of how they were produced, as well as adding more in amore comprehensive theory.



Broken Stability?

The denizens of the Copenhagen stance, in Physics, make a great deal out of Symmetry (almost as if it is some sort of organising principle), which is very odd thing for any materialist scientist to be doing. But, it is consistent with the generally, “maths-first” stance, of that now dominant group.

But, such a stance is, most certainly, not the position of this theorist, who, definitely, considers a reality-first position to be absolutely essential.

So, he considers that his whole task is one of finding “physical” entities, properties and relations, rather than either revealing or formulating merely formal ones. So, Symmetry is out, and Stability is in!

What the Copenhagenists put down to Symmetry, and even Broken Symmetry, are both likely to be merely formal reflections of concretely established Stability, or its dissolution for good causal reasons. For, these are certainly a much sounder place to look for a cause-driven

means for beginning to understand Reality. All formal representations can only be descriptive: how can mere shape or pattern alone determine anything?

As you may have already realised, any theorist’s philosophical background is crucial in understanding where he is coming from. Though a qualified physicist, the writer, of this piece, has also been a serious Marxist philosopher for half a lifetime, and in the last decade has produced and published his Theory of Emergences - a purely philosophical work. And, what turned out to be a cornerstone that enabled that major achievement, was a long and detailed study of *Stability*, and its consequent and unavoidable dissolution, and, thereafter, the following, creative re-establishment of a wholly new Stability, via that crucial Event, termed an Emergence, for such are unavoidable and repeated interludes in any serious study of real, intrinsic Development.

That work, needless to say, began to also be effectively applied in his primary discipline of Physics, and,

particularly, in addressing the major Crisis, caused by both the Discovery of the Quantum, and the accelerating breakdown of all the prior assumed premises of that subject.

The “mathematical-physicists” solution was, of course, the Copenhagen Interpretation of Quantum Theory, so, this theorist addressed what was considered to be the cornerstone of that stance - the ill-famed Double Slit Experiments.

And, he ultimately came up with an alternative Theory that removed all the many anomalies evident in the Copenhagen account.

So, this work has excellent theoretical precursors! It is, by no means, a mere, hopeful speculation.

The steadily establishing basis, from these earlier efforts, had to be extended more deeply into Modern Physics, and that had to be into the concepts of Charge and Magnetism.

So, let us begin!

What is the main ingredient in a Stability that seems to be permanent, or even eternal?

It is, surely, the availability of an apparently inexhaustible source of energy, as a basis for maintaining a complex set of factors and processes in the same overall state, against all happenings to the contrary - for, indeed, always keeping things stable!

Let me put it this way, a completely random mix of many equally-weighted basic processes is likely to stay the same for ever. To get any sort of development you have to have a balance of conflicts, that will establish a dominance, while not eliminating possible alternatives.

In all plants, for example, it is the constant source of sunlight, which allows its systems to perpetuate yet also collapse and then renew.

While, in Yves Couder’s famous Walker Experiments, the produced “Walkers” are primarily maintained by the applied constant vertical oscillation of the whole experiment.

Such dependability allows a “selection process” to develop-the-system, without which, a resulting dominant Stability would never be achieved, to, thereafter, persist over large periods of time.

Now, if this is true, considerations about things like Unitary Charge (addressed in other papers of this series) may be a problem that is mostly about “almost eternal Stabilities”, which deliver a pair of Charges - positive and negative, which constitute an incompatible pair, out of some of some almightily stable whole.

Some clues may be required?

While Schofield’s neutritron is a stable, mutually-orbiting pair of a positive positron, and a negative electron - the classic Pair Production, the collision of these two particles is “said” to produce pure energy - the classic Pair Annihilation.

But, this theorist is inclined to dismiss all this to-and-from-energy stuff, and, instead, involve the all-ways-neutral and, hence, directly undetectable joint-particle - the neutritron to explain both these phenomena very straightforwardly.

What is being sought is a Stability that is the actual Source of Charge, which when sufficient energy is available, a seemingly stable, neutral entity - the neutritron, is dissociated into two charged particles - the negative electron and the positive positron.

Perhaps we should think of these as the incomplete, yet surprisingly stable, parts of their stable Source.

And, though they are both stable and can continue to exist as independent particles, they are always seeking neutral-completion once again.

Now, if these, as components find other similarly “charged-but-stable homes”, in different combinations, the natural re-combination will be excluded for them, and the determining processes, which are possible, can, instead, be put down the “Charge” - as a primary property - a man-made abstraction!

It will not be the first time that Mankind has abstracted-out some “fundamental primitive” as an abstraction from Reality, and, thereafter, explained many phenomena in a simplified and idealised way to get a handle on something currently beyond our ken!

Notice, if this is what happens with charge, it reverses what is primary, for then it is the neutral stable entity, that could be split to produce seemingly independent Charges that is primary.

Making the neutritron (or something like it) basic makes many things, very different, indeed, to become possible, and its role in a Universal Substrate, much more believable too.

The Development of Reality that delivered that neutral primary particle very early on, may have caused many of them to have been split by vast amounts of energy, to bring in, for the first time, “things with charge”, which would then enable a vast radiation of possible associations with “charge” as a new basis.

Unitary Charges

When something delivers a discrete amount of charge, either positive or negative, we say it has a Unit of Charge, which has just two possible and diametrically opposite aspects.

This is to some extent verified by the examples of both complete neutralisation, and by measurable attractions or repulsions with other charged entities.

And, what seems to define a bottom-line, are the so-called fundamental particles.

Yet, this is clearly difficult to explain in terms of the currently-known content involved.

It is most likely to be because of a “whole body” process or effect of some kind. Yet, though always considered as a primary property of matter, that doesn’t gel with matter, itself, being a primary substance.

It is certainly impossible to isolate a unit charge as such, and the classic way of obtaining separate negative and positive charges is as parts of a divided neutral form of matter - like an atom. Indeed, Bohr’s initial planetary model, of the atom of Hydrogen, was as a mutually orbiting pair of one positively-charged proton and one negatively-charged electron, produced when, by some means, the electron was stripped from its partner proton (or ionisation is performed)!

This set of particles has formed a bottommost level, composed of so-called fundamental particles, but, with this idea, the particles are clearly different, seemingly having intrinsic unitary charges and even different kinds of matter. Clearly, this whole level is a set of abstractions formulated by Man to enable some sort of sense to be made of this level.

It is, of course, both valid and unavoidable, as insufficient is yet known to go further, and the reasonably consistent set of concepts contains enough Objective Content (parts or aspects of the truth) for some explanatory progress to be made.

But, it is clearly NOT the Absolute Truth!

Just as we will never find a magnetic monopole, we will also never find a totally isolated (disembodied) unitary charge. To seek such supposedly concrete entities, occurs because we substitute our pragmatic abstractions for actual real things - as yet undiscovered, or, at least, wrongly conceptualised.

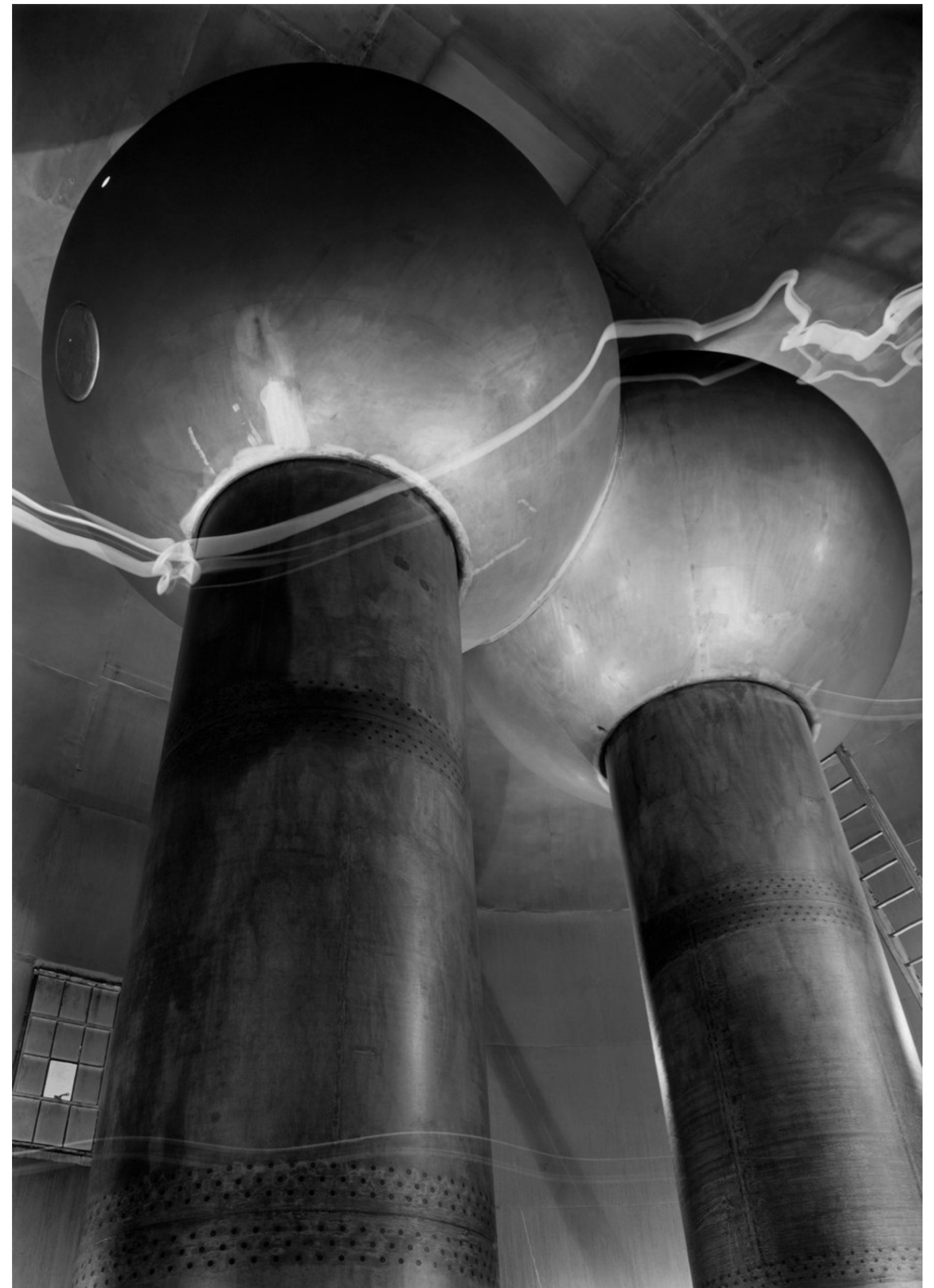
Without the wherewithal to prove it, this researcher is inclined to consider that charge is likely to be a feature of some whole-body process involving movement. It once again points to a sub-structure to seemingly unitary bodies like the electron, for example! But, how you can get something like Charge is a mystery, for it certainly isn’t passive! It is both active, and has an exact opposite, and when both are present, they are neutralised, with respect to either of the two opposites.

The classical solution was two-fold: first we physically assign it as a property of a given entity, and secondly, we make it elementary! And, in addition, we describe it via laws and equations, without ever explaining why it is what it is physically.

It engenders either a strong force of attraction or of repulsion, and its dichotomous pairing with its opposite sounds like a Hegelian Dichotomous Pair.

And, if it is, as Hegel proved, it means that the assumed premises which give rise to situations seemingly involving Charge as totally incompatible opposites, must be flawed!

It is perhaps, the most perplexing question in Physics - “What is Charge?”





Stability & Creation

the birth of holist science

Somehow, French scientist Yves Couder's brilliant "Walker" Experiments must point to a profoundly new view, and new means of study, of the nature of Reality.

It, seemingly, has the disadvantage of being artificially constructed to occur at the macro level - the everyday level of our experiences, and, hence, is not considered to, in any way, reflect phenomena at the micro (sub atomic) level, but the exact reverse turns out to be the case.

By bringing a situation into that level, everything is made directly visible, and hence theoretically discussable, and, of course, all new ideas are then also visually demonstrable.

And, by reducing the content to a single substance - a silicone oil substrate, he was able to study a substrate directly, and extract generalities that may be applicable in all substrates.

Let us briefly describe his basic experiment!

He used only silicone oil. A tray of that liquid substrate, and a single drop of that same substance, were his only material components. He was aware that for his experiment to tell him what he was seeking, he could not introduce any other substances, but could only add energy.

His drop could be released, from above, onto his tray of oil, but it would simultaneously both cause a transient wave, and also be absorbed into the same oil in the tray. By constantly vertically vibrating the tray, at the appropriate frequency, and also, dropping his drop (of the right size), from the right height above the tray, he was able to make it bounce!

And, of course, it would merely move upwards and then fall back down to again approach the tray of oil again. He was able to perfectly control his limited parameters, so that it would continue to bounce indefinitely. And this also turned the transient waves in the surface of the receiving liquid into a Standing Wave.

A slight adjustment, which caused the drop to hit the slope of the standing wave, made the whole arrangement start to walk! It moved about the surface, taking its bouncing drop, and its standing wave with it, even bouncing, horizontally, off any obstructions in its path. You can see why he called his stable entities, Walkers!

Let's be clear what he had achieved! With only a substrate and energy, he had produced a stable entity with surprising properties.

Now, knowing the history of the neo-Bohmists in France, it was likely that Couder was attempting to model their proposed "Particle with associated Pilot Wave", of that theoretical tendency in Sub Atomic Physics, but, in fact, he had taken things further, and for this ALL he needed was a Substrate!

The implications for Sub Atomic Physics were even more revolutionary than his initial objective.

First, the very thing, all physicists had banned from their premises, after the Michelson-Morley Experiments - a Substrate, was here being shown to be vital in many phenomena. He didn't even have a conventional particle involved, for that was substrate too.

Now, even in version-one of his experiment, the achievements were remarkable, but Couder went a major step further. By merely continually rotating the tray of substrate, he made his Walkers perform quantized orbits - only certain radii were possible.

Here were unquestionably quantized orbits, happening at the macro level, and quite definitely produced by macro-level processes and phenomena.

Copenhagen was now under severe threat, for Bohr and Heisenberg had got away with it, because none of their theories could be disproved, for they were purely formal and statistical, and included NO overt causes whatsoever.

The question arose, "Could all these macro level phenomena be causally explained without any recourse

Entanglement and Spin

whatsoever to the formalisms of Copenhagen?” For the answer has turned out to be , “Yes!”

Using vortices. caused to happen in the substrate, the quantized orbits could be explained, and if there is a Universal Substrate, the same sort of arguments could be used at the micro level too.

Couder’s remarkable experiments have defined a very different ground for such investigations. Instead of the now universally applied experimental method of selecting a Domain of Reality, and then extensively modifying it, by omissions and rigid controls to suppress all but a chosen factor, so that its performance could be extracted by taking readings over a given range of variables, and these fitted up to a general Pure Form, taken from Mathematics, a supposed eternal Law was delivered.

But, the problem was that the “law” was valid only in the very conditions, from which it was extracted. It wasn’t necessarily true for its action in totally unfettered Reality. This was a major problem, but classical physicists had an answer - they devised the Principle of Plurality, which, if true, meant that the two contexts involved the exact-same Law.

Such Laws were eternal and additive! “They were unchanged by context, and, in each case, merely added-together with other simultaneously present laws!”

Now, you would think that this could easily be disproved, but you would be wrong!

They could put all unfettered Reality anomalies down to the complex mixes of many present and different eternal Laws.

And, they would only use their Law in the very same conditions from which it had been extracted.

Its use was NOT stymied: as long as the “farmed” conditions of extraction were replicated for use, “All would be well!”
And it was!

But, theoretically, the success of Plurality was totally damaging, for the World is not pluralistic. It is undoubtedly holistic.

And, guess what? Couder’s stance and his experiments are holistic too.

By, his constructivist means, he allows, and even requires, the complexity of Reality to achieve his objectives. He has revolutionised Experimental Physics by his Walker Experiments.

Let us consider a Pair Production event, delivering one electron and one positron - presumably from the dissociation of a neutritron (positronium), though the more common assumption is that is from a focus of abundant Pure Energy.

The reason for choosing such an event is because it is a common vehicle for “demonstrating” what is said to be evidence of Quantum Entanglement.

When such an event occurs, the two particles move off in opposite directions, so in the “creation direct from energy, some of that energy has to turn into these two diametrically opposite particles (involving both matter and antimatter), while some energy must be turned into their emerging kinetic energy. Now, such an unexplained phenomenon doesn’t allow much study and analysis, of what usually follows, so I will instead assume that the event was the dissociation of a neutritron, due to too much energy being absorbed, which promoted the internal joint orbit ,of an electron and a positron, beyond its stable limit, and precipitated its unavoidable dissociation.

Remember, both component particles had Kinetic Energy in their orbital movements, and being on exactly opposite sides of the orbit, a dissociation would indeed deliver them in opposite directions with the same speeds.

Now, this fairly detailed stage-setting is considered to be essential, for this theorist wants to examine the so-called “Entanglement Phenomenon” attached to this event, and hence is delivering as much as possible before any analysis gets underway. Clearly, the usual description of such an event does not give sufficient for a detailed passage through so it is always simply an unproved description of what occurs, without explanation.

Let us, after this necessary preamble, consider the usual description of Quantum Entanglement attached to such an event.

The basis for this suggestion has to be that there remains a connection between these two particles, after separation, no matter how far apart they move, and that it means that

if one switches over a certain quantised feature, the other one responds immediately. Clearly, so many impossible factors are involved in putting what occurs down to quantum “connection”, or even a “communication”, that these must be made clear.

The more obvious of such sort of communication presents innumerable difficulties, not only because the response is immediate, but what possible means could be involved, and what could possibly direct such a communication, only and always, directly to the companion particle.

Such objections are unanswerable, so the usual response is to call what occurs Quantum Entanglement, and explain no further.

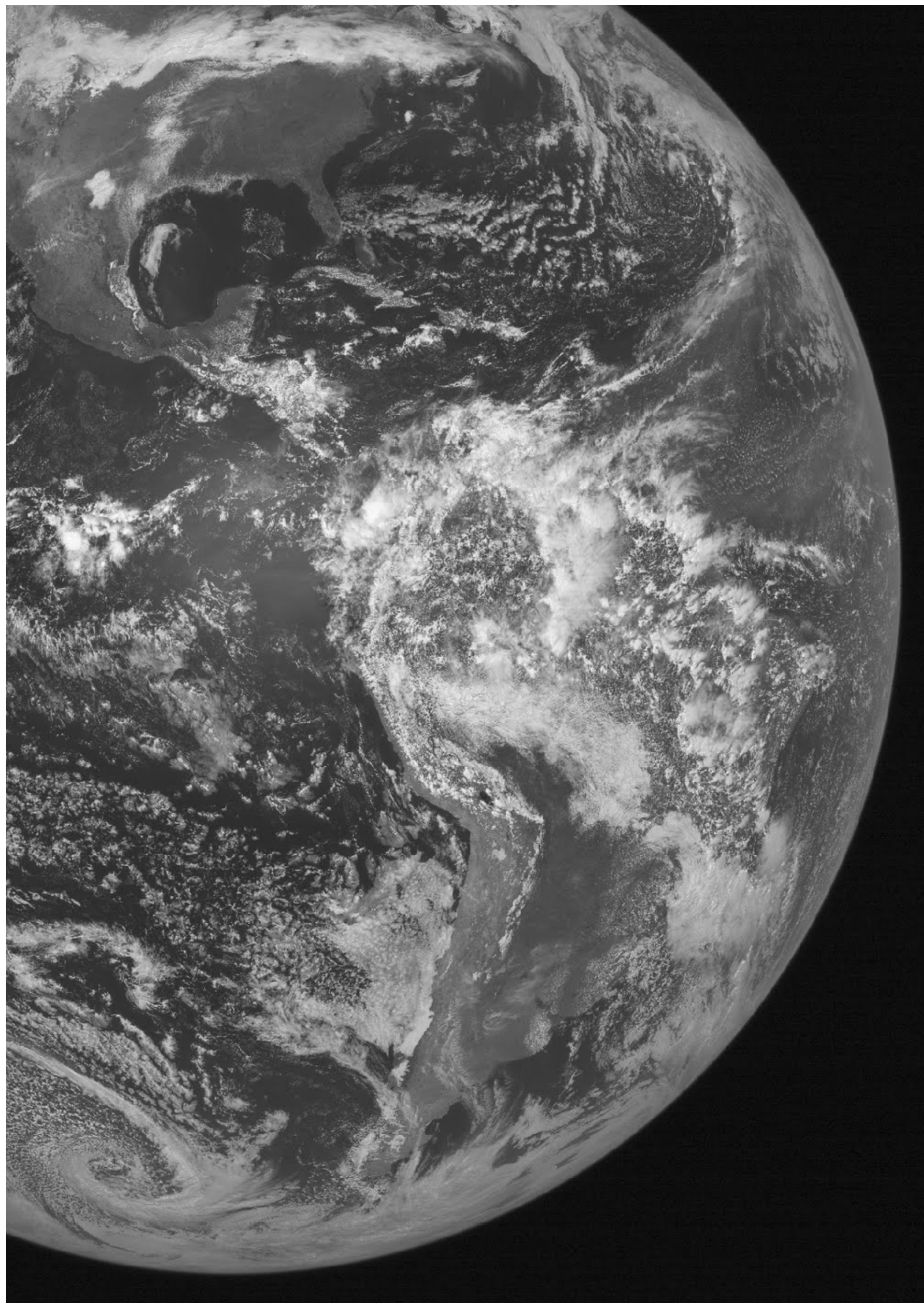
The total lack of any explanation is the usual Copenhagen route. If formal means can be produced to cover a phenomenon, “then that is enough!”

Well, not to this physicist, it isn’t!

We have very simple particles involved here. There aren’t many properties that could be quantised. Once “dissociated”, there appears to be no internal means of holding energy, as there is in joint particles like the atom and the neutritron, so the energy that they obtain from their “creation event”, has to be either translational energy (usually a 50/50 split), OR they could have enough energy to spin, and that is a quantize-able feature - with a single spin-speed and two directions of spin (usually termed something like “up and down”)!

So, you can see why it is chosen to demonstrate Quantum Entanglement. What is said to happen is that a spin flip in one is mirrored exactly by a spin-flip in the other, no matter how far apart they get after “creation”!

This has been observed, and with the current premises and particularly the philosophic stance and consequent methods in Sub Atomic Physics, absolutely NO explanation has been found for what occurs. Of course, consistent with the now consensus stance, they can deliver an equation, using waves and statistics to cover what occurs, and that is really all that matters to them.



Indeed, the whole edifice of the Copenhagen Interpretation of Quantum Theory is exactly the same. All phenomena are given a name, and the appropriate equations, but never, ever an explanation!

Now this description of a spin flip sounds a bit like the magnetic field of Planet Earth, which, for some reason, every million years or so does something similar magnetically resulting in a change over of the North and South magnetic poles. But, clearly, the Earth is a complex system, and the seemingly constant field is only the current stability of that system, which will never persist without regular total inversions, which then become the established norm.

And, clearly the physical spins of the whole earth are NOT quantized!

Nevertheless, that evidence does seem to indicate that even the “simple” case described above must be more complex than it has been delivered thus far. Considering this theorists current work upon the components of a Universal Substrate and the various possible complex particles that have emerged, it seems likely that our conception of the electron and the positron must have more to them, then spinning billiard balls! Even their differing matter types need some sort of explanation (not just the usual Name and Formula). It seems likely that whatever their internal structure is, it is that which makes them flip, and, if their initial production set the same processes going in both particles, which like the Earth’s magnetism flips at regular intervals, then they would flip “instep”. No magical connection is necessary, just identical processes, set into action at the same moment, and the event that produced them seems the most appropriate time for that to have occurred.

The evidence against the Copenhagen stance mounts, and literally all of it comes from its defenders, and their inadequate ways of dealing with the anomalies stemming directly from its idealist premises and methods.



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