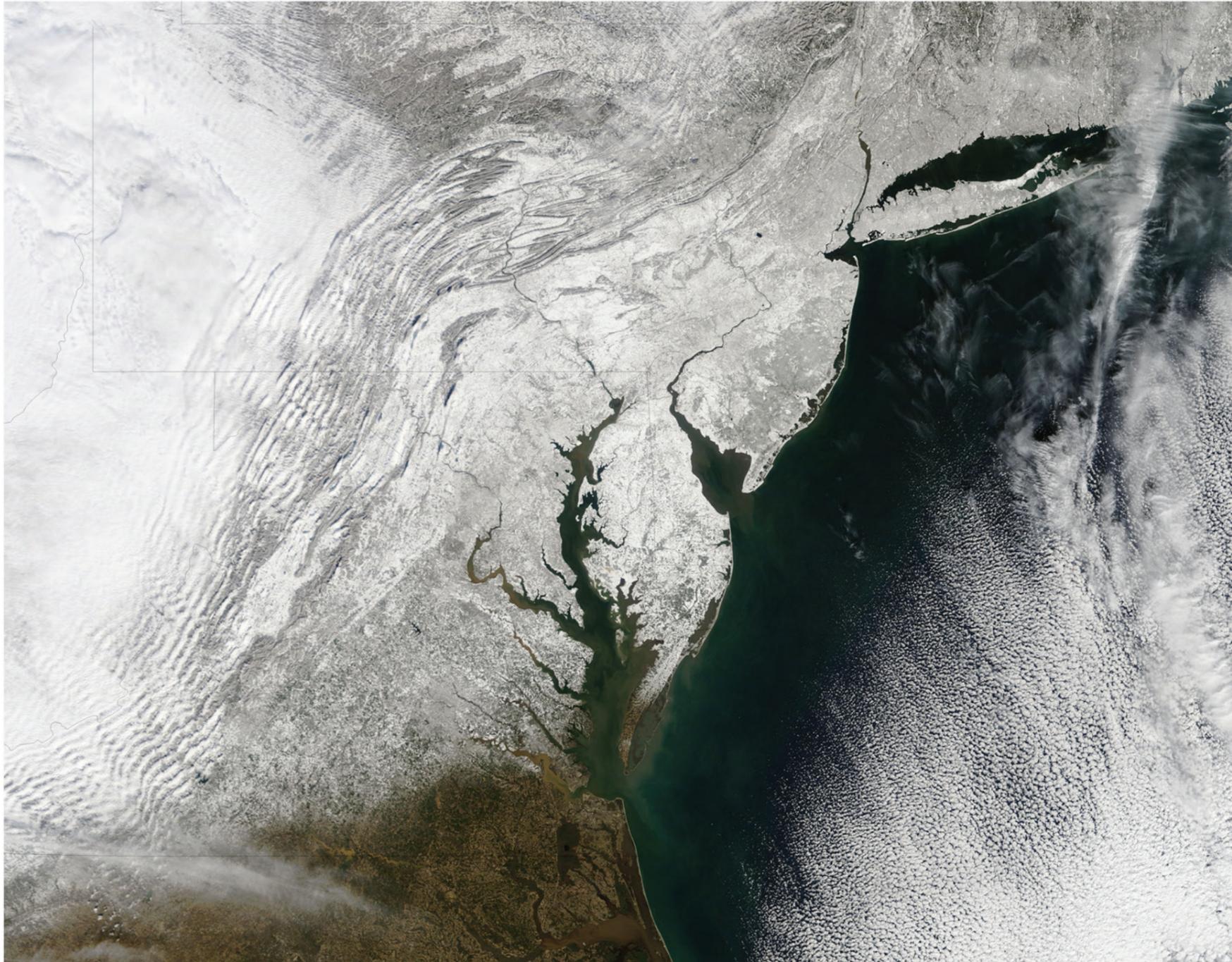




SHAPE JOURNAL

THE UNKNOWN OCEAN - PART 1 - UNDERLYING PRINCIPALS

EXPLORING THE UNKNOWN OCEAN THAT IS REALITY / ABSTRACTING THE UNKNOWN
THE EVOLUTION OF STABILITIES / WHAT IS ENERGY / UNDERSTANDING PLURALITY & HOLISM



Special Issue 31

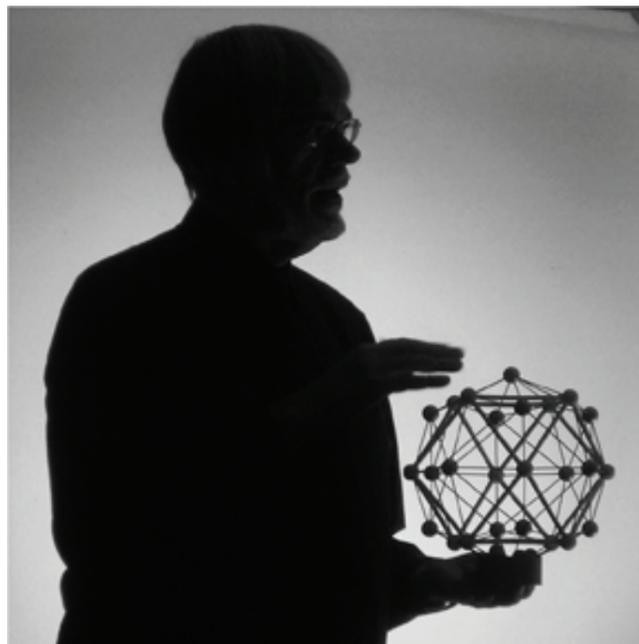
The Unknown Ocean

Part 1- Underlying Principals

1. Introduction:
The Unknown Ocean that is Reality
2. Abstracting the Unknown:
A Constructivist Alternative
3. The Evolution of Stabilities
4. What is Energy?
5. The Bases for Understanding:
Plurality and Holism
6. Conclusion

Introduction

The Unknown Ocean that is Reality



In pulling together this set of Special Issues of the SHAPE Journal, the writer has a particular objective in mind. He is not looking back at the past achievements of Science and Philosophy, but looking forward to the still-pending investigations into Reality, from a very different standpoint, which he is certain, will transform both of these disciplines. The reason for this is that a major threshold lies before Mankind, which so far they have refused to address, and hence never transcended, and, instead, continue with the old views and methods, which, in themselves, are incapable of transcending that evident impasse.

Now, of course, many of the aspects of this new view have been glimpsed upon many occasions by remarkable investigators, but their brilliant contributions have NOT transformed the standpoint or the methodology of the majority of serious investigators. They remain steadfastly committed to the old standpoints and methods. And, though, in most involved individuals, both mysticism and religion have long been banished from their standpoint, those alone did not, and indeed could not, deliver the necessary breakthrough that will facilitate the next steps forward. In all the main intellectual disciplines the old hang-ups are still well entrenched, underpinning both Modern Science and Philosophy.

In spite of many important advances having been established hundreds of years ago, they have yet to be developed into a new philosophical stance, and a consequent, significantly-different, scientific experimental and theoretical approach. Indeed, the rise of so-called Postmodernism proves this demonstrably.

Still, in the 21st century, these crucial areas are weighed down with the abstractions, constructions, assumptions and even principles of a now significantly failing past intellectual stance. For these are no longer worthy of delivering a productive and developing standpoint, essential at this time to produce any real progress at all. Science has run out of steam. Since 1927 Physics has only moved backwards towards an even more defunct *idealist* standpoint.

Yet, the way forward has been, at least, indicated, for the last 2,500 years with both the Holism of the Buddha in India, and the scepticism of Zeno of Elea. In spite of a long period of stagnation, philosophically, finally, only 200 years ago, Frederick Hegel, in his main philosophical undertaking, revealed the inadequacies of our concepts, and why they were inevitably so. But, of course, Hegel was an idealist (an obvious disadvantage in his own primary objective of unifying Philosophy with Science) so that, not even his leading disciples, namely Karl Marx and Frederick Engels, saw that Hegel's gains in the area of Human thinking just had to be re-established within the alternative, materialist philosophical outlook, and, of course, intimately wedded to Science. But, that just hasn't happened!

Despite brilliant contributions by scientists like Darwin and Wallace, and the major gains in Philosophy made by Marx, the necessary re-construction of a consequent philosophy among scientists did not occur. And, that has been a major problem.

Now, the situation is beginning to change, as this writer, and many others worldwide, begin to question the impasses and anomalies proliferating in all areas of Modern Science, and are endeavouring to construct a new, and sounder basis, and this series of Specials deliver some suggested steps in an advancing a wholly new understanding upon a, so far, unimplemented standpoint in Science and in Philosophy together.

It is, of course, a presumptive claim, so he has broken the argument down into three Special Issues of this journal, commencing here in the first of these, with a series of essays which establish his premises, before entering those uncharted depths.

Jim Schofield Feb 2015





Abstracting the Unknown A Constructivist Alternative

Now, the considerations of this theorist (Jim Schofield) do, to some extent, mirror those of the Copenhagenists in both historical and present day Sub Atomic Physics, but with vital, and, indeed, fundamental, differences.

In the universally accepted model of Elementary Particles, in its many unresolved anomalies, it appeared that they could NOT be explained by merely manipulating only Protons, Neutrons and electrons, along with disembodied Photons of electromagnetic energy, as was the initial simplified position of the early theorists. So, faced with this, they turned to the “always dependable and productive” weapons, usually termed The Accelerators (or more properly – the Colliders), to attempt to smash these “fundamental particles” into smaller “components”, and this, very quickly, caused the appearance of new, and as yet unknown, entities in relative abundance.

This sophisticated method of “Smashing to Smithereens”, was, to say the least, unusual, but, always, reliably produced various sets of “even more fundamental” fragments, so it naturally became the standard experimental technique, and produced an extensive set in diverse situations.

But, as you might have guessed, they were almost entirely consisting of tiny entities, with minute life spans, before they turned into, or became part of something else. [So, very clearly indeed, the term “fragments” is a far superior designation, than calling them *Fundamental* Particles] And, to make any sort of sense of these, they had to be given un-describable, yet quantifiable, properties such as “charm” and “Quantum Spin” (as well as many many others).

This quickly turned into a separate Science of Fundamental Particle Debris! For, all of these were characterised by their transient and even partial natures – for they seemed to come in pairs, which seemed to be opposite, contributing pieces of what they had been produced from.

Now, it has to be said, that analysis by smashing-to-pieces, should never be recommended! Can you imagine trying to determine the nature of a flying machine from another World, or even an Earth-bound human being, by smashing them to bits, and looking at the transient results, before they vanish almost immediately? And, consequently, cannot display their relationships in a higher order entity, as they will most certainly no longer be present! And, you would most certainly NOT choose to do that using incredibly high energies (as they certainly do). For, the results you inevitably get are very unlikely to be stable components at all, and much more likely to be either short-lived fragments or even wholly new temporary creations, or even BOTH!

They seem to be the methods of the sub human, allied to the highest and most powerful technology, and indeed some form of “creative destruction”, which, of course, bears absolutely zero relationship to the scientific study of the undoubted Development of Reality throughout its History, which are never the consequences of innumerable minor changes, but clearly, as

with all known developments, involving significant Qualitative Changes via Emergent Interludes, which though they do involve major dissolutions, are also only completed by final creative phases of progressive construction delivering the entirely new. And studies of these Interludes bear absolutely no relation to the consequential reasoning of the detritus investigators. For, their single major tool has no in-feeding, historical sequences, nor any consequential turmoil, which finally produce wholly New Stabilities.

They really only deal in the Classification of Debris!

It is inevitable that what is noticed is almost entirely formal, and hence relatable via concepts like Symmetry. Indeed, as the debris piled up this became a Principle of the fundamental nature of these many pieces of Matter

Let us contrast these to the suggestions of this theorist. For clearly, he too was investigating the structure of identifiable and known particles, but from an entirely different standpoint. Instead of a destructive methodology, he assumed a constructive alternative, by purposely addressing the unknown and currently undetectable contents of Empty Space, in order to physically explain the Propagation of Electromagnetic Energy composed of two oscillating vectors - one electrical, and the other magnetic, somehow traversing a seemingly totally empty void. He quite simply, didn't believe it. And, his task became one of discovering what evidently must be filling that void. His only assumption, were what was known, and the clear undetectability of what was delivering those things. It seemed to boil down to an attempt to construct a stable, but invisible and undetectable Particle, that had the necessary properties, due to its composition, from already known and stable sub particles. He clearly needed a resultant joint particle that would have a net zero charge, zero magnetic effects content of matter itself.

So, he conceived of a mutually orbiting pair of two known and stable particles – one of matter, with a negative unit charge and the other of exactly the same size, but consisting of antimatter, with a positive charge. If such could be achieved, it would also have NO magnetic effects either, as these too would be cancelled out. Such a union had long been dismissed by the evidence from accelerators that these would mutually annihilate one another on coming together, and produce totally disembodied Pure Energy. The particle-smashers were adamant. “We've seen it!” was their attitude.

But, such an imperative, did not say why they couldn't be kept apart by taking their relative velocities in to the creation of a mutually orbiting state. Nor, did they explain where in so-called Pair Production, an electron and a positron could be so easily produced out of what they assumed to be Pure Energy.

Now, if, as assumed by this researcher, such a mutually-orbiting union could be formed, the resulting particle would have exactly the properties required to be undetectable in Empty Space.

And, most determining of all evidence, in this discussion, was the fact that this precise joint particle had been observed in the Tevatron at Fermilab, and even named by the discoverers as the *positronium*. Yet though it certainly immediately dissociated as soon as it was discovered, that was in a very high speed Accelerator, and even the suggested particle by this theorist would have dissociated in such an environment. But, what about in Empty Space? It was considered likely to be stable there, and in that state was renamed a neutritron. The die was cast!

This researcher was committed to investigating (admittedly entirely theoretically at first) the exact opposite World to that of the atom smashers. He would investigate the stable, yet invisible, World of Empty Space, and assuming his intrinsically neutral and undetectable particles, would attempt to explain the intriguing, but certainly real, properties of the “seeming void”!

He started by considering how such particles, which he had renamed as the stable neutritrons, could indeed propagate electromagnetic energy across such a space. Now, he had chosen (devised?) particles involving internal orbits, because apart from conferring undetectability, they could also hold energy via the promotion of these orbits, and they would accomplish this in quanta. But, how would they actually propagate such quanta at the Speed of Light? Now, as these entities definitely included matter within their structures, they could most certainly NOT do it by moving themselves, for they could not move at the Speed of Light. But, they could do it, by staying relatively still, and passing on their quanta, bucket-brigade fashion, from unit to unit in a stationary universal paving or substrate. The vast speed of light would then merely be the speed of transfer of one quantum between adjacent units of the paving.

So, having got the bare bones of a theory, it then had to be used to solve anomalous situations delivered by the Copenhagen Interpretation of Quantum Theory, and by far the most obvious were the discoveries in the famed Double Slit Experiments, starting with the case of using moving electrons. The current consensus standpoint of Wave/Particle Duality, which was used to explain these experiments, was truly amazing! For it demolished the concepts of Waves and Particles as quite different things, and, instead, had entities, which could switch between these as if they were alternative states of the same thing. But, in “explaining” the observed anomalies, this stance abandoned materialism for a version of idealism and effectively abandoned physical explanation in favour of formal equations, as the driving essences of Truth.

Yet, the new concepts involving a universal substrate of neutritrons torpedoed all that! All the anomalies were fully explained without any recourse to Copenhagen.

The ideas certainly seemed to have legs!

Now, this theorist has had a long history of studying Emergences – those interludes occurring with all kinds of internally-generated developments, wherein a past, seemingly-eternal stability finally comes to grief.

What was evident in cases, across the whole spectrum of possibilities, was that any such Qualitative Transformation would never be incrementally achieved. To make any sort of real explanatory progress, the current self-maintaining stability would have to be completely dissociated, and, indeed, via a

mounting series of crises, the stability would finally collapse. Yet, the amazing thing that was revealed in these studies, was that only then in what seemed to be a resulting and irredeemable resulting Chaos, a new phase emerged, in which all the Qualitative changes happened, and then surprisingly self-terminated in a wholly new, and higher, Stability.

Such researches revealed that the poetic “Phoenix arising from the Flames” was, in fact, true, not as the result of some magic, but a concrete Emergent Event, the kind which occur throughout all developments and at all levels.

Now, somehow, our strictly pluralist physicists did not, and indeed will not, study such Events.

They accept dissolution, but only as a means of exposing hidden components - conceiving of only incremental, pluralist changes. So, they were incapable of ever explaining the Emergence of the wholly NEW. Their whole approach and methods were strictly analytic and never transformative. Absolutely Everything was just multiple different summations of the very same eternal Natural Laws!

But, the outstanding difficulty – Action at a Distance, was not so easy. Try as he might, this theorist could not explain either Electrostatic or magnetic fields, in terms of a purely neutritron paving: it just wasn't possible!

So, in the same constructivist vein, he attempted to devise, theoretically, other possible particles, that would also inhabit so-called Empty Space that could actually deliver these phenomena, while, in themselves, being undetectable in the aforementioned ways. The particles would have to possess non-internally cancelled magnetic properties, while somehow remaining undetectable! For if this possession of magnetic properties were the case, they would be easily detected.

So, once more, he had to construct a contradictory environment – effectively undetectable, yet possessing these crucial properties of magnetism.

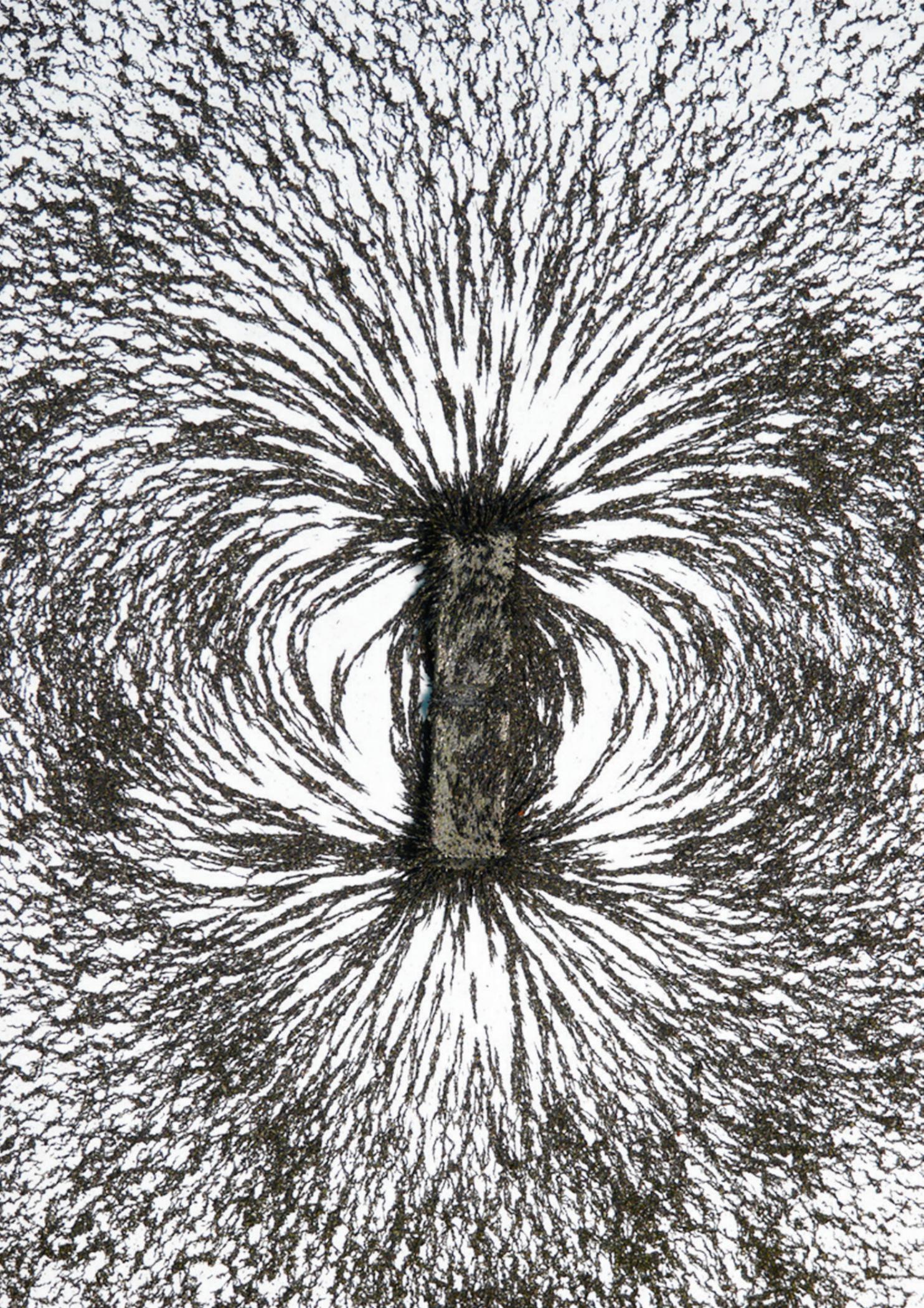
The solution was to have equal numbers of two diametrically opposite composite particles, which this time had to be able to move about, but would en-masse be neutral in all the ways necessary in joint particles similar to the neutritron, by being composed of different sub particles.

A new pair of composite particles with equal and opposite magnetic effects would be required, which normally would be totally free-moving and deliver NO resultant overall magnetic effects, but in special circumstances could both aggregate and orientate to produce fields!

Once again the model of mutually-orbiting sub particles of opposite types of both matter and charge would be involved, but this time of differently sized particles.

This would make the individual particles charge neutral (like the atom), but not magnetically neutral, nor matter neutral either. But, in a population composed of randomly moving and equal numbers of diametrically opposite particles, the overall effect would be neutral, except where fields were subtended around “seeming sources”.





Now, the objective of devising these particles, theoretically, was to see if such could indeed subtend fields seemingly out of nothing!

And, with a great deal of investigation, the answer seemed to be, "Yes!"

For, though usually randomly mixed and moving constantly, but though in normal conditions they would be undetectable, in the presence of something like a charged particle, they would contrastingly organise themselves surrounding the charged particle, in concentric, motionless shells to deliver the required field. Simple geometry would make it an Inverse Square Law, and as it would have internal orbits, these could be promoted to provide the energy required for the field to actually move things in accordance with this law.

For, as with the explanations in the Double Slit explanations, the substrate could contain energy, throughout, as slight promotions of the orbits, and it would be this that did the work. It would then be immediately replenished from further afield in the universal substrate.

And this theory explained the fact that the supposed source of the Field – an electric charge, was never diminished by the work done in such a field. This can only be explained by this provision of energy by the field itself (and hence the universal paving).

Now, this work is as yet incomplete, but so far it has been incomparably better than the Copenhagen version at successful explanations in the following areas:-

1. The propagation of electromagnetic energy through Space.
2. Solving all the anomalies of the Double Slit Experiments
3. Solving how electrostatic fields can be subtending in Space.
4. Explaining where the energy comes from to cause forces to be applied by such fields and perform work.
5. And, all these consistent with an entirely materialist, constructivist standpoint and method as an alternative to Collider-based smithereens and idealist rules of the usual Copenhagen stance.

The Evolution of Stabilities

And the Inevitable Demise of Every Single One

What actually is Stability?

Clearly, it means something different to different people – from a welcome and comforting certainty to a stultifying lack of Development. It clearly depends significantly upon a person's social position and power (or lack of it). But, such social overtones MUST be distinguished from the actual occurrence of natural Stabilities at all levels in Developing Reality, for they have nothing to do with privilege or the lack of it at all! So, though literally all politicians consider it to be their most profound aim, let us get away from rhetoric, and attempt, instead, to understand this clearly natural phenomenon, that can persist for truly vast periods of time, or be as frail and insubstantial as a feather in a breeze!

The usually accepted analogue of Stability is that of the lowest point in a "hilly terrain" of phenomena, which in any varying circumstances seems to inevitably bring things down to settling in that least energy position. For, once there, no further transporting changes are considered to be likely, or even possible.

But, though this is reasonable as an initial approximation, it is substantially misleading as absolutely all stabilities are bound to ultimately terminate. They are never the eternal and final positions that they are often believed to be.

Throughout their existence, they are always being threatened, and crises regularly occur, though, mostly, these are resolved by relatively minor adjustments and stability is re-established. Except though, at some critical point of agitating tumult, when "a nearby ridge" can be surmounted, which takes the situation away from all its "returning forces", and the situation careers down the nearby slope seemingly to oblivion. Though it is usually brought to a halt in some other surrounded low-point, and a new Stability is established once again.

Some idea of the tempo of such changes is given by the real situations used as a model. For any sheltered valley will only ultimately prove no longer able to maintain an unchanging situation, until and unless, some rare Earthquake or an extended epoch of erosion changes the secure state of the stable depression. Stability is often long lasting, while the cataclysmic Emergences (as we call them) are both short and extremely rare.

So, if the above is more accurate, what are the consequences for our understanding of such situations?

Indeed, so simplistic are our usual conceptions, that we have an amazing "Meta" Law – The Second Law of Thermodynamics, which insists that the "ever-downwards" background-and-dominating process is towards inevitable Chaos.

Such ideas are remarkable when you think about it; yet they underpin the whole conception of Reality and its ultimate destination!

Indeed, such unstoppable imperatives are always used as the excuse for all the calamities that occur!

Crises happen quite naturally and always swoop towards oblivion: they are natural, and, "You cannot do anything about them", we are told, "But we, your leaders are constantly doing our best to re-establish the Stability that we all crave!"

But, Stability and Crisis are not what they are claimed to be. Indeed, if that were the case, our Universe could never have existed, let alone developed into what is now evident all around us. For, such a trajectory totally omits development, and its most exhilarating aspect - Progressive Evolution. You cannot have only a downhill trajectory for Reality.

So, this discussion cannot omit both creation and construction. Where can that come into the narrative?

And, for a vast amount of time, that was not easy to discover. The tempo of all evident changes of all kinds seems desperately slow, and to human beings they are also impossible to observe, for they live such very short lives in comparison to the trajectory of the Universe. And, in addition, the creative and constructive processes and even Phases, occupy such very short Interludes, that even the geological record in the rocks captures NONE of Them. Only their results are fossilised, with NO capture of the active processes involved at all!

And, to confuse Mankind even further, there are continual trivial and non-revolutionary changes occurring all the time, and we are therefore easily convinced that it is merely a culmination of such small changes that, in the end, produce everything. But, it just isn't true.

So, clearly the fundamental mismatch in tempo between an observing and considering Mankind, and the changing World, inevitably leads to unavoidable misconceptions. Our initial ideas of development were defined by us in terms of quantitative, cumulative changes resulting in Complexity ONLY, rather than dramatic qualitative changes, occurring within a short dramatic Event. And these were manipulated, conceptually, to explain both the persistence of Stability and, along with the Sword of Damocles of the Send Law, also as its demise.

Now surprisingly, though evident seemingly everywhere, Stability is NOT a creative state. On the contrary, it is the exact opposite. It is a quiescent and conservative state – a kind of balance of many different forces that settle down into the most easily achieved and maintained overall state. And, as such, it cannot explain the Development of Reality at all, and crucially it is the exact opposite of Emergent Interludes, when a resident stability meets its demise.

In spite of the preponderance of stable situations, the real changes take place elsewhere. And, we must start with these!



Before we consider the usual seesaw between Stabilities and Emergences, we must first consider a state with absolutely ZERO overall organising systems. A kind of primitive state, in which many different processes are simultaneously occurring, so that the overall situation is one of NO coordinating drives – indeed, a kind of idealised random state, without any restraints and all kinds of processes will occur - all producing different things, but in which no dominances arise, so such a state will evidently remain the same. In a sense, it is a kind stability, but, in such a case, a balance of multiple unrelated processes, which “in sum” can get absolutely nowhere. But, the first transforming events will be towards terminating such a balance.

And, to provide this, it could then be the case, that certain mutually conducive processes, which benefit one another, for example, by the products of one being the required resources for the other, or even by reciprocal generation of appropriate catalysts. For such processes, occurring in close proximity, can multiply in numbers at the expense of other competing processes, not so well endowed with such potential partnerships.

Indeed, in such totally, randomly-balanced mixes, such occurrences can rapidly move the overall situation away from the prior maintaining balance, and produce dominances, especially if linked sequences of conducive processes gradually come to grow.

Elsewhere, under the title of *Truly Natural Selection*, this theorist has explained how competition, between totally non-living processes, can strongly redirect such seemingly random static situations, and in so changing a context, begin to determine significant qualitative changes, and these can precipitate totally unpredictable developments. In non-living, emergent Interludes, these are the phenomena in which entirely new features emerge, and the development then moves upon a more directed path.

Indeed, different subsystems of this nature can happen simultaneously in different areas, and then these at a higher level will compete, with ebbs and flows, until one particular system begins to dominate. Then the original overall, and unchanging randomness will be effectively overcome.

Generally, out of what seems to be a terminal random Chaos, the situations can begin to generate such systems, which can compete, and result, for a while, in oscillations between different temporary dominant subsystems. But, such interludes, which inevitably occur following a dissociating swoop into seeming Chaos, and once underway, this enables other quite different processes come into play.

For example, there will inevitably be “parasitic” processes that survive by dissociating other constructive processes and consuming them – their resources are the actual substances of other processes! And, of course, such dissociating actions will presumably act against the success and growth of more productive processes, and such will prosper most, where successful processes and more complex systems dominate. But also, in such environments these will come to specialise on certain processes as their resources, and could work in concert with other systems competing with the main targets of the dissociators.

In such circumstance these could form even more fruitful co-operations, in which both parties would benefit.

Such developed systems will move the situation a long way from the initial assumed random chaos, as the most successful system will not only be comprised of mutually conducive productive processes, but also included beneficial “policeman processes” that will dissociate their rivals too. These included processes could also remove faulty or dead parts of the parent system too, and very effective cooperative systems could result.

Gradually, such competitive systems get more widespread, as well as becoming more efficient competitors, and the processes involved will also include active and destructive opposition, delivered by the systems Policemen processes. The six-of-one and half-a-dozen of the other balances begin to be swept away by major dominances, and indeed more turbulent and active opposition. And such situations will not reign long!

The inevitable result occurs: one of more successful systems will dominate, and settle into a new balance. But, this situation will be determined by the policemen processes – for though other, entirely non-system processes will still happen, there will be no way that they could develop into new major systems. The inclusion of these new selectively destructive processes makes the creation of the wholly NEW, thereafter, totally impossible.

A General and long-lasting Stability will have been achieved!

Now, though this narrative has real explanatory merit, it is still clearly inadequate in also explaining both the persistence AND the ultimate demise of such stabilities, without any external extra events as cause. And, it turns out that both the in-system; policeman processes and their still existing non-system counterparts are indeed the reasons for both!

What results isn't a once and forever victory of a given Super-System, or even some sort of alliance of several such systems. The actual result is more complex than that, for it would have to survive as such, while containing within it the seeds of its own demise, yet, for a considerable period keeping such factors in check.

Such Stability is NOT like the simplistic suggestion aired at the start of this paper. For, what has been wrong with our account so far, is that it is STILL based upon a pluralistic view of Reality – where all contributions are seen as both separate and unchanging – having their overall effects by some sort of summation. That is not the case.

At base, below the dominating Super Systems, there are still innumerable “primitive” processes taking place, and they are neither separate nor unchanging in their inter-relationships. They can still affect and indeed change one another. So why do they not challenge the dominance of the current Stability and cause its demise?

Considering a resolution of the supposed original Chaos, as one of balance between such “primitives” is actually an incorrect simplification and idealisation of what was going on: it is merely our abstraction of that phase! And, such will certainly not be the determining regime within this new kind of Stability.

For, there it will be the alliances and resulting complicated and mutually affecting processes of the Dominant Super System that actively maintain the Peace. In such a situation, the key-determining thing has been that the system of processes arrives at wholly NEW resolutions. Simple quantitative balances are NOT what achieved this new kind of Stability! It was mutual modifications – actually changing each other, to produce a unique and original self-maintaining state.

And this cannot be seen as analogous to the reaching of the bottom of a valley in the situation's possibility landscape. It is an adjustment of the landscape to deliver such a maintainable state. And, though primary processes of all sorts are usually kept in check, they still continue, and sometimes demand further changes in the dominant Stability to maintain its control.

This is difficult to explain when we have been used to assume the Principle of Plurality, and the clearest proof that it is a mistaken belief, is in what has been recently brilliantly demonstrated by the French physicist, Yves Couder's experiments based entirely upon a single substance – silicone oil, which with various imposed, yet natural oscillations and a rotation, inexplicably managed to produce a series of subsequent developments via both resonances and recursions to coalesce into actually persisting entities, which he called “Walkers” The crucial features of these entities were the evident interactions of the various oscillations to produce a self maintaining stable system, which with the subsequent addition of an imposed rotation applied to the substrate supporting his “Walkers” caused them to perform clearly quantized orbits.

No one could have predicted these results. But, Couder suspected that something of the sort would be possible, based upon his holistic perspective, and carefully adjusted the available parameters until these amazing results were achieved. It wasn't merely separate causal influences between different elements, as would be expected from a pluralist approach, on the contrary, they must have involved very special mutual modifications, which took the seemingly separate contributions into a wholly new and integrated system.

Now, whenever the various oscillatory inputs were maintained, the “Walkers” persisted, and revealed their own new, and entirely unpredictable properties. But, by carefully adjusting these inputs, the Walkers could be made to dissociate, leaving behind the single liquid that was all there was, materially, in these stable entities. The liquid was still undergoing the many vibrations, but no longer organised to producing a higher-level entity.

The inference is, that it is something like such things that are behind all System Stabilities, and can occur at literally innumerable Levels in Reality.

Hence, you cannot, merely by applying sets of assumed-to-be eternal, Natural Laws, go all the way from fundamental particles to Life, let alone Consciousness and Human Society!

Now, though a great deal more has to yet be investigated on this side of Stability, there also has to be a believable explanation of why Stability persists for such long periods, and finally, and crucially, why it will always, in the end, totally collapses.

The truly vital events in Development are without any doubt relatively short Interludes, which we have come to term Emergences or Emergent Events, when a prior Stability finally fails to resist the internal forces for its dissolution, and it collapses into what seems initially to be inevitable Chaos. And, in one sense at least, this is certainly true. As explained earlier, there is a situation in which multiple processes are no longer restrained by a higher, in-charge Stability, and the unavoidable consequences involve the coming together of conducive processes (as in the presumed primitive random state) into mutually-beneficial subsystems.

Yet, even here, there are NO all-one-way developments. It turns out to be yet another seesawing between alternative systems, and, of course, the resurgence of independent, parasitic Second Law processes too, to bring about wholesale dissociation. But, primarily, it has to be the absence of developed intrinsic constraints in the form of “policeman processes”, which means that though still oscillating, the overall process is to a series of ever higher level of systems, until, finally, along with the intrinsic dissociative processes within their systems, aimed at competitor systems, some particular system (or an alliance of them) takes control, and a wholly NEW Stability is established.

The different durations between the periods of Stability, and those of Emergent Interludes, is clearly significant!

So much so, that for beings with relatively short lifetimes, it seems as if Stability is permanent. It is only in a Social Revolution that these interludes of instability become clear to us, for there such creative events occur within the lifetime of individuals, and are therefore available for us to study.

What is Energy?

Perhaps the most distinctive feature of Energy is its apparent ability to transfer from one recipient or receptacle to another – and even from one mode of existence to another, without any obvious difficulty.

You can see why heat was initially seen as a fluid – called Caloric, which could be “poured” between receptacles without any losses.

The principle – “Energy can neither be created nor destroyed”, was quickly established by scientists, as they noticed its ease of transfer from one mode of existence to another, or even to several at once. Even in these abstracted conceptions, such as Heat, Light, or even Electrical Energy, such a Principle seemed to be inviolate.

Now, as is Mankind’s usual, and also unavoidable, method, they inevitably turned this universal extraction into an entity, or more properly – an Abstraction – both a simplification and an idealisation of this “property” of all material entities. Indeed, considering entities devoid of all energy is the other basic man-devised abstraction – namely Matter.

But, such separating out into something called Energy is a highly useful convenience rather than an actuality. It is much more correct that energies are the modes of existence of Matter – and, therefore, completely intrinsic to it. Indeed, it is often said the all existence is “Matter in motion”, as an inseparable and unavoidable co-existence.

NOTE: Even at this early stage, such a statement throws up major criticisms at the widespread belief among modern-day sub-atomic scientists not only in the existence of totally disembodied Pure Energy, but in its role as the originator of absolutely everything else in the development of the Universe. So, with this important Principle, it means that though Energy can be transferred, it can never be eliminated, nor can it even “stand-alone”.

Also, the myths of Absolute Zero turn out to be just other examples of Mankind’s abstractions, which inevitably lead ultimately to non-real singularities when taken to the limit.

Indeed, we have to think very clearly about the rules that we have, concerning disembodied Energy, and its ease of complete conversion from one mode to an entirely different one. For, such “transfers” are an illusion. Energy truly is the mode of existence of Matter. It is most certainly changes in the material entities involved, which makes the Energy look as if it is an independent transferable entity, in itself. Indeed, one such a change in our conceptions is admitted, phenomena such as Resonance take on a very different nature. Why does the energy “change horses” in midstream?

But ultimately, Heat, for example, was explained in terms of increasing the amplitudes of existing oscillations or the promoting of orbits to higher levels, when it went up, and decreasing these, when it went down.

NOTE: Once more, the inseparability of these two aspects of Reality, pose unanswerable questions at zero energy content. Do things no longer oscillate and orbits dissociate totally? And, what would then be the spatial arrangement of the resultant, motionless Matter?

In other words, our abstractions such as Energy were neither an existing separate thing, nor a transferable fluid. Energy was involved in a mode of existence of real, material entities, which could transfer between entirely different forms of Movement to handle the Energy = “as if it was a separable “fluid””.

We found it both useful and conceptually possible to consider it as if it was a fluid being decanted from one receptacle and mode into another. But, it was no such thing! Such abstractions show both the efficacy of their conception, along with the inadequacies that emerge when such ideas are taken to, and beyond, the limits of their applicability.

Perhaps the simplest, yet still sufficiently appropriate description, was that it is a measure of the involved motion of the matter in one of its stable modes. As we know it can be involved in the speed of translational movement – Kinetic Energy, or even the potential of movement caused by promotion to a position involving the potential of movement if the current holding restrictions are removed – Potential Energy. It could also be involved in the capture of one body by another, by means of the balance between K.E. and P.E. in an orbit of one body about the other.

In all of these, the amount of Energy will be the amount of movement, real or potential, involved. Oscillations will have their amplitudes increased by extra energy transferred in, and will be promoted to a higher energy level, in such transformations.

So, in this relatively simple narrative, the Energy is a measure of intrinsic movement! But, of course, as abstracters of everything that we recognise as unchanging entities, we will separate Matter and Energy as different abstractions.

We then talk of Energy being transferred from one thing to another, and slip easily, and mistakenly, into the illegitimate extreme of Matter without Energy, and Energy without Matter. But, the question arises – “Can we do that?” Can we really have inert Matter totally without any movement, or movement without any material thing being involved?

From the position outlined here, the answer has to be no.

So, what are we to make of our mathematically-delivered Singularities, such as, the Origin of the Universe caused by an energy-only Big Bang? Or, we could also consider the blithely described Absolute Zero in temperature, which is Matter totally devoid of any real, or even potential, movement? Do they really exist?

Remember, the Big Bang isn’t supposed to be an explosion, but an initial concentration of Pure Disembodied Energy confined to a “dimensionless dot”. Immediately, we seem to have at least a couple of meaningless concepts here. First, Pure Energy entirely without Matter! What is that?

And secondly, a “place” that is simultaneously strictly localised into nowhere, yet also manages to include everywhere possible! Thereafter, all sorts of inconceivable processes move these impossibilities until they produce the entirety of our truly massive Universe.

How can all of this possibly be true? Of course it can’t! And, can the holy Second Law of Thermodynamics really deliver an ultimately dead-end and inactive Universe? Again, the only sensible answer has to be, “NO!”

All these conceptions occurred when a particular product of the evolution of Reality, namely Mankind, mistook its helpful ideas for Real Things, and used them to attempt to explain Reality in terms of its own, admittedly brilliant inventions – Abstractions!

Now, these abstractions cause us to miss crucial processes, which do not fit simply into our consequent versions of Reality. For example, - Resonance!

If Energy is available in one mode of matter, how can it move swiftly from where it is to some other, somehow, more “conductive” situation, which because of having certain natural possible oscillations suited to its form or forms, can easily accrue the Energy resident elsewhere into that “ready-to-go” structure?

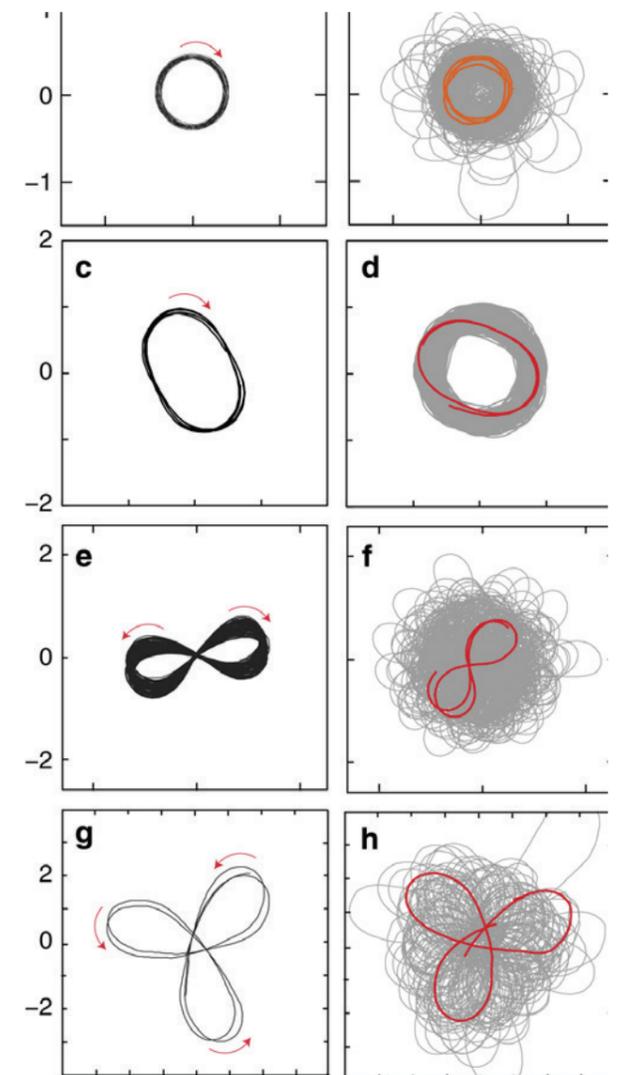
Indeed, a musical instrument is an excellent example. Plucking a thin string tightly held between two fixed bridges, cause it to vibrate, but you cannot hear much. But, with a cleverly-designed instrument, with an appropriate set of resonant surfaces or volumes, that same inaudible pluck of a string, attached appropriately to that instrument, will cause the right parts to resonate, and the resultant sound can be heard, loud and clear across a large room, and even in the open air.

We “explain” this as a mere transference, but that cannot be sufficient. What makes the energy seeming flow into the resonant system?

Now the French, present-day physicist Yves Couder has been investigating resonances for some time, and has recently demonstrated a whole series of important phenomena that quite remarkably have surprising resonances, if a series of oscillations with resonant relationships, which seemingly out of a totally inactive liquid substrate, could produce stable “entities” out of something with no solid surfaces or tuned volumes, but nevertheless produce a system of resonances and recursions to deliver a stable entity which he called a “Walker”.

Then, in a later experiment raking his original set up a bit further, he managed to get his Walkers moving in quantized orbits on the surface of his substrate.

Clearly, he was not simply moving Energy about, but, instead of some Pure disembodied Energy being moved about between bodies, he had marshalled matter with its energy by adjusting his set up into delivering stable systems. This achievement doesn’t make sense with entirely separable abstract Energy, and abstract (and totally inert) matter.





The Bases for Understanding Plurality and Holism

The Dichotomous Pair of Plurality and Holism are, as with all such eminently useable opposites, is an admission that the real underlying situation, which elicited them both in our conceptions, has not yet been adequately defined. But, the situation has been complicated by the predominance of Plurality over Holism particularly in Science, and the fact of the remarkable achievements of this discipline has to have been, to a major extent, the sidelining of the alternative to a very minor role indeed.

Now, this dominance has had two major effects. It has meant that the Dichotomy is much more rarely realised, and hence the absolutely essential efforts to transcend the conceptual impasse was, and still is, ever more rarely realised, let alone attempted.

So, in order to get to such a point, the holistic standpoint must first be rescued, and the now dominant pluralistic stance must be thoroughly criticised, for its errors, which it undoubtedly imposes on our understanding of Reality. We have spent centuries discovering the pluralist landscape, which is now substantially narrowing what we can still deal with, particularly in the major Science of Physics.

Though the main objective must be to arrive at an integrating, superior standpoint, that alone will transcend this impasse, we must start with a major critique of Plurality, and a building up of this largely dormant Holism, in order to even demonstrate the actual impasse, and the impossibility of staying with a purely pragmatic and dualist position, which uses each “where it works” and be satisfied with that! So, to approach the usual even-handed switching from one to the other as circumstances dictate, we have first to defeat the current very one-sided attitude to these opposite standpoints.

Modern scientists, and indeed also most other people, if pressed would insist upon Plurality, and give Holism minimal credit. Indeed, it has been left to spiritual humanists, such as the Buddhists, to emphasize the virtues of a holistic standpoint.

So, let us compare these two opposite stances, and see why this is the case.

Plurality is the banker standpoint in both Formal Logic and Science, mainly because the idea of Analysis is based soundly upon it. If complex situations are composed of multiple and very different factors, then the question is inevitably posed – “How do we get at these contributing factors as the initial step in understanding, formalising and using such situations, to some valuable, intended purpose?”

Now, the idea of Analysis assumes that these factors can be separated out from an evident complexity by appropriate methods. And, this could only be possible, if these factors were actually independent of one another – that is unchanged by their context. Plurality insists that this is in fact the case!

And, when, by some means, a particular factor has been extracted, it is the very same as it was within any of its normal complex mixes, and we can, therefore, re-formulate it as a “General “Law”! The pluralist scientist sees it as his task to expose, extract and deliver as many of these Laws of Nature as possible.

Now, immediately, anyone carefully observing any complex situation, could not fail to notice that it is never steady-as-a-rock: on the contrary, it displays literally constant, if small in amplitude, variations. So, somehow, the contributing factors do indeed deliver a result, which is, overall, fairly consistent. But, how could such a mix of Natural Laws do that?

The pluralist answer is that though the individual Laws do not change one iota, the resources involved can vary due to currents and uneven mixes caused by local disturbances, such as sources of heat and the like. Thus, though the Laws are fixed and unchanging, the contributing quantities of these factors will in fact vary, and the overall mix will display a certain variability.

NOTE: I cannot leave considering this point without a mention of Professor Brian Cox, the “guru” of TV Science, and his series The Wonders of The Solar System. For he seemed to spend the whole of this extensive series of many hour-long programmes, giving his version of how fixed, Natural Laws (in the pluralist sense) can deliver such amazing variety,

His thesis is that such eternal rules merely “summed together”, will give very different outcomes for the smallest of differences in their relative magnitudes. Though the laws don’t change in the slightest – they are eternal, their combined effects certainly aren’t! They can easily produce direct opposite results without any new inclusion or modification of the laws involved. Now, except in retrospect, he cannot predict what those differing results would be, and the only conclusion is clear. Either the meta laws governing such additions are not eternal laws, or the original claimed laws, themselves, are not eternal. And, once either of these is admitted, it is impossible to have eternal laws in any multi-level hierarchy.

His “Wonders” are the unknown reasons why Reality produces what it does – the magic(?) of evolving Reality! Indeed, listening to his account of Variety, there seems to be innumerable ways of falling off the teetering balance of factors, when the slightest diversion will send things careering off to one oblivion or another. Despite his effusive use of superlatives, I’m afraid his Wonders are the inevitable results of a fixed set of eternal laws. I’m afraid not!

For, Holism totally disagrees with this version. The crucial principle is that, “Everything affects everything else!” – there are NO constant Natural Laws – they, along with everything else actually evolve. Any apparent relation is always due to all other simultaneously-acting relations in a particular situation, and the clearly evident, perpetual variability of such a “mix”, is not merely varying amplitudes of fixed natural laws, but real, mutual

modifications to deliver a resultant integrated overall affect. And this not only varies about an evident mean, but an integration, that could, and does, at particular junctures dissociate the situation dramatically.

Any conception of real affects has to include the major qualitative changes that also emerge from the seemingly same elements. Plurality is incapable of ever dealing with such qualitative transformations. And, indeed, many thinkers and artists of many kinds find their richness, analogues and resonances only in a holistic view of reality.

But, of course, Holism isn't much good for straightforward, scientific investigation and consequent innovative use of what is discovered. There has been, so far, NO holistic methodology developed in Science, though honourable exceptions like Charles Darwin and Stanley Miller have made significant contributions to science from a holistic perspective.

On the other hand, it is indisputable that a very effective methodology in Science has been developed based upon Plurality either. Science always attempts to find its "Laws" by extensive and rigorously maintained control of a given situation – sufficient, in fact to establish the necessary Stability, so that Plurality approximates to the truth in that produced Stability.

It was soon noticed that the investigator could simplify his task by first isolating his chosen area of study, and then removing as many present and confusing factors as possible, while holding many of the others constant. This "farming" of the experimental Domain could be relied upon, if strictly maintained, to reveal clearly a given targeted factor – an assumed Natural Law.

Thus, via measurements of a very limited set of parameters, scientists managed to get their sought-for "Law". It, of course, was never an exposé of a fixed "Natural Law", as much as a special arrangement delivering a law, which would hold ONLY within that tailor-made set up.

The crucial question as to whether it was the same in all complex circumstances NEVER arose! And, this was because scientists learned that to use their extracted "Law", they had to replicate the exact conditions of its extraction in order for that "Law" to hold. Then, and only then, was the "Law" reliable!

NOTE: It is interesting that the constant struggle to maintain optimum circumstances elicited a major meta-law, namely the Second Law of Thermodynamics, which embodied the quite natural forces involved in returning an engineered Domain, back to its natural state and balance. The importance of this Second Law is a consequence of the use of Plurality in Science.

Plurality allowed the "farming" of Reality in what we came to call Science. So, surely the debate is one of "No Contest": what use is Holism, if it could not allow either Analysis or effective Use for production?

Well, let's face it: that is a fair argument, and has led to the technological age we now live in. But, it never really led to real understanding, which, when it did occur, was achieved by scientists with a very different attitude and purpose. And, even more crucially, such "Laws" could only effectively deal with a natural, or much more likely, and imposed Stability!

The "farmed" areas were man-made stabilities, and the associated "Laws" could only be used within their corresponding stable Domains. Plurality only allows scientific of stable situations: and we must also be clear that Stability does NOT mean "stationary".

Active stabilities occur all the time quite naturally, and are the normal, if only temporary, result of complex sets of mutually interacting factors simultaneously present in a balanced situation. Clearly, we cannot avoid dealing with Stabilities, but to assume permanence for them, and never address their inevitable demise, can only produce an idealised conception of Reality.

For, the pluralist approach means that the everyday failures of stabilities can never be predicted, understood or in any real way properly addressed. And, not only that, for any sort of creative development will also be outside the aegis of such a methodology. Pluralist Science cannot deal with naturally transforming, creative change *at all*. And the trajectories of development were totally absent from the body of Knowledge extracted from their "farmed" and maintained-to-be-stable Domains.

Clearly, in spite of the truly prodigious gains of Pluralist Science, it was, and still is, totally insufficient to deal with Reality-in-Development at any level. And, of course, the attempt to understand Reality could not be left there.

All such "Laws" will reach a limit in their applicability, and cease to be validly used. We cannot maintain artificial stabilities in all circumstances, for what we seek may not be available within our constructed and maintained Domains, and attempts to see what happens will inevitably transgress the essential boundaries of the Domain, and our "Laws" will simply fail!

Of course, we are competent enough to construct alternative stabilities in other Domains, and there pursue our new sought-for relations, but the transition from one Domain to another, as a real transition (as in Reality) will always be beyond our conceptions and methodology.

As long as we continue to cling to Plurality, we will never cope with Reality-as-is in its intrinsic and necessary development: we had to kill that aspect of what we study, lay it stable and unchanging upon the slab, and analyse it in absolute, "dead" Stability!

Our methods were of a man-made World, and could never address Reality in its unavoidable and necessary Change.

NOTE: The role of Equilibrium in pluralist experiments must be seen as proof of the necessary conditions for extracting "Laws". The imperative "Stir well before measuring" is in order to establish a stability and its "laws".

Let us look at little more closely at the pluralist methodology in Science.

As an uninformed pupil of Science, when still at school, I was constantly exasperated by my calorimetric experiments (involving liquids and heat), which invariably gave contradictory results. You can guess the reasons. But, we were admonished to merely "Stir thoroughly, and wait for equilibrium before taking measurements!"



So, what was the situation before and after this necessary “farming”? Left alone, the beaker containing the reacting substances could have reactions taking place in different places, around things like specks of dust, or unusual local conditions, but they would not only be dispersed, but also likely to be moving about. So, if we dove straight in, we would be measuring different situations moment-by-moment. Though after achieving Equilibrium, the mix will have been homogenised, so that the reactions were taking place all over the place, and our readings, though still somewhat variable, would be “averaging” what was going on, and a bit of extra “calculable averaging” would complete the process. Just to ensure some reasonable results, the usual objective was to measure, what could only be an average anyway – like temperature. So, we would end up with figures representing a stability, in the most abstract way. The complex, multi-process reactions, taking place in different parts, and the effect of one upon another were totally unavailable by such methods, and I think that those experiments clearly indicated to me what pluralist Science was all about.

In other situations, something similar would always be necessary to achieve the required stability and its parameters. Yet, think what we were “whooshing away” by our vigorous mixing, and also what inaccurate ideas we would take away from what had really occurred there.

Yet, much later at University, I was working with a chemist and a mathematician on Mathematical Chaos, but my colleagues main preoccupation was what was actually happening in a liquid chemical reaction in a beaker without any mixing at all. By using oscillating reactions with different colours and keeping the most rigid regime of total stillness, the seen reaction front clearly took the form of a Toroidal Scroll, and Jagan Gomatam, the mathematician involved, actually derived the formula for this amazing form. Now, you may wonder why this was important, but it did show that to exclude such processes and force an un-analysable, thorough random mix, may have given a useful equation concerning “temperatures”, but it threw away the dynamic changes as they actually happened. And remember, even this effort was still pluralist, as the set up had to be as near perfect as possible AND as simple as possible to even extract what they did. Imagine a much more likely real situation, with many substances involved, and multiple, and mutually affecting cross-reactions. What on earth would you get from, “Mix thoroughly, and wait for Equilibrium!”

That is what pluralist-methodology ignores. It is pragmatic, but really poor when it comes to explanations. Theory (and ultimately understanding) is sidelined in favour of effective and productive use.

So, it is clear that we avoid the crucial interludes of significant qualitative change like the plague, and have constructed both a methodology, and a philosophical stance based upon the fiction of Plurality. To carry Science forward, this will certainly have to change. Researches, by philosophers like Hegel, considering Human Thinking, and historians, like Michelet, considering historical Social Revolutions, both made it clear that Reality *self-develops*, and its general trajectory, left entirely to itself, did indeed involve a kind of overall Stability that is usually long-lasting (but is clearly also true of complicated systems), and was always terminated, and totally re-constructed in turbulent interludes of significant qualitative change termed Revolutions, or more generally Emergent Interludes.

Science could not develop further without addressing these crucial, and indeed, creative Emergences The methodology of Science, heretofore, has proved to be inadequate for dealing with these interludes, and they not only happened on the wider Super System scale, but also on down through much simpler interactions to almost all processes. Every single Law produced by pluralist Science would always fail in inappropriate circumstances, and instead of only concerning themselves with Stability, scientists will also have to find out how to deal effectively with Qualitative Change and the Interludes in which they occur.

Let us, therefore, address the usually complex situations that Science must deal with, and be absolutely clear what is happening there.

The pluralist view is that the given complexity has two sources. First, the simultaneous activity of many fixed Natural Laws. And secondly, the unavoidable unevenness of the mix can be due to local effects, concentrations and even currents. The task is to eliminate as far as possible these latter effects by working to eliminate those possibilities, and then to so “farm” the given experimental situation to filter out as much as possible, and then control what remains to reveal a targeted Natural Law, and to repeat this several times, until all the major laws involved have been extracted and formulated as equations. It is based upon the Principle of Plurality, and can only be applied in those fixed and maintained Domains.

The holist view is that the “given” complexity is due also to the local effects admitted by Plurality, but the way that contributing factors are dealt with is entirely different. For these are not fixed laws, but modifiable “factors”, which, though they have internal causes, and therefore a core contribution, are also always affected by their contexts too: they are not unchangeable laws, but depend overall upon the other simultaneous factors for the actual natures at any moment. And hence, they will certainly differ all the time. So, what the pluralist methodology actually extracts are not eternal laws, but particular instances produced by the actual tightly controlled contexts within a farmed Domain. So, though they are made to appear constant due to their rigorously maintained context, they are mistakenly put down to eternal laws. They are in fact idealised versions of *modifiable* laws.

Now, this definitely means that in other different situations they will be different, and no situation is eternal. No matter how strongly maintained, all situations will in the end dissociate – either by lack of adequate maintenance, or intrinsically by the development what is in it.

Holism, therefore, can never deal in fixed Natural Laws, but has to instead concentrate upon adjustable and variable factors, and their contexts. The holist is intent upon tracking qualitative changes, and being in a position to make sense of the crucial Emergences that constitute the crucial interludes in Natural Development.

Conclusion

Clearly, many of the ideas mentioned in this Introductory Issue of SHAPE upon the necessary revolution in both stance and method that is required, will need ever more detailed amplifications to do adequate justice to the proposed changes. And, these are all currently available on SHAPE Journal, not only in the two following dedicated Issues, but also in many past Issues over the last six years. Indeed, this current general approach is based upon a whole, wide range of studies, appearing not only as articles in SHAPE Blog posts, but also in other Special Issues of the Journal, on a series of studies in all relevant areas. It may well be useful to interested readers if they (via the Archive facility in the Journal) access the following Issues:

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Jim Schofield February 2015

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