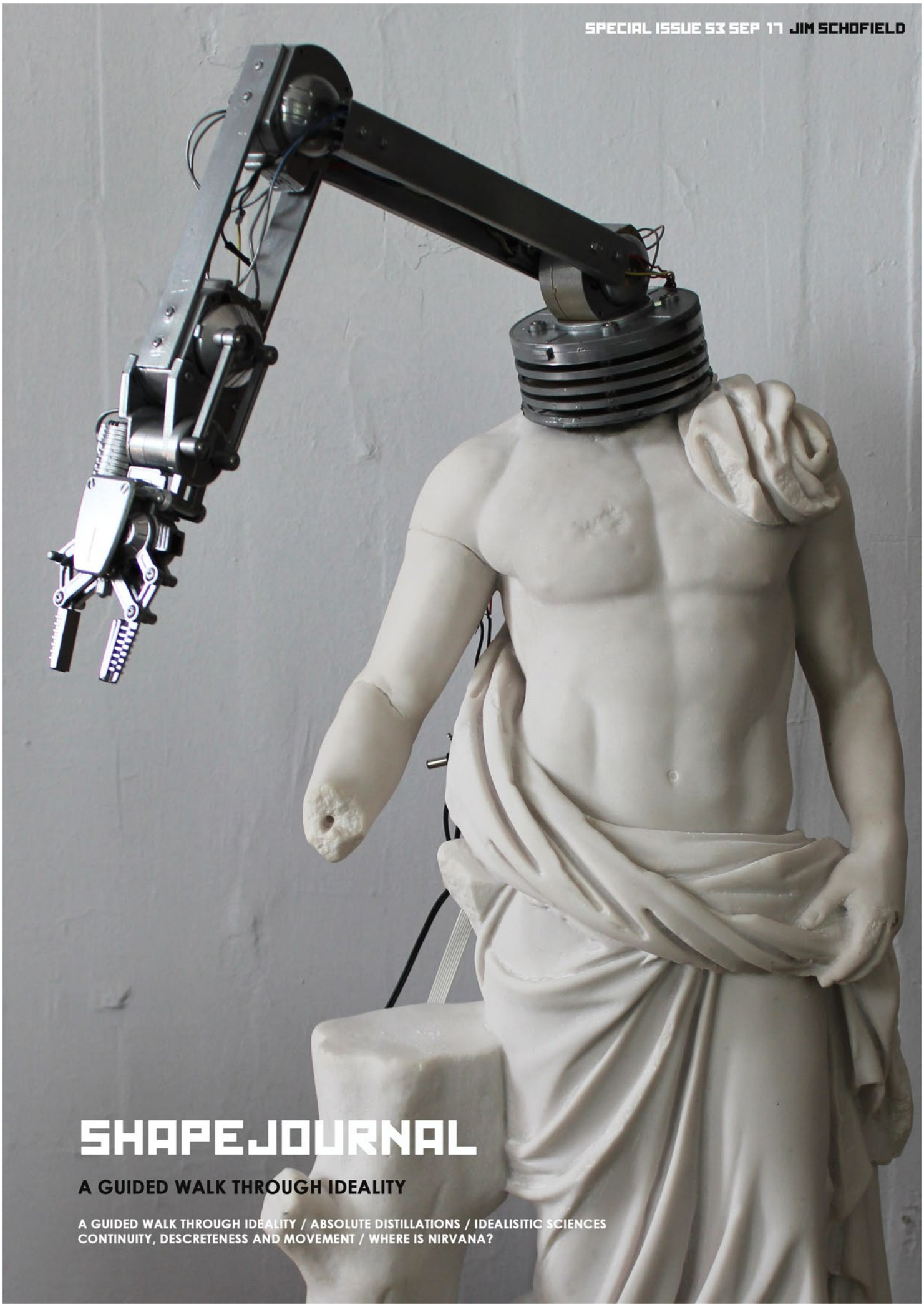
SPECIAL ISSUE 53 SEP 17 JIM SCHOFIELD



SHAPEJOURNAL

A GUIDED WALK THROUGH IDEALITY

Words **Jim Schofield**
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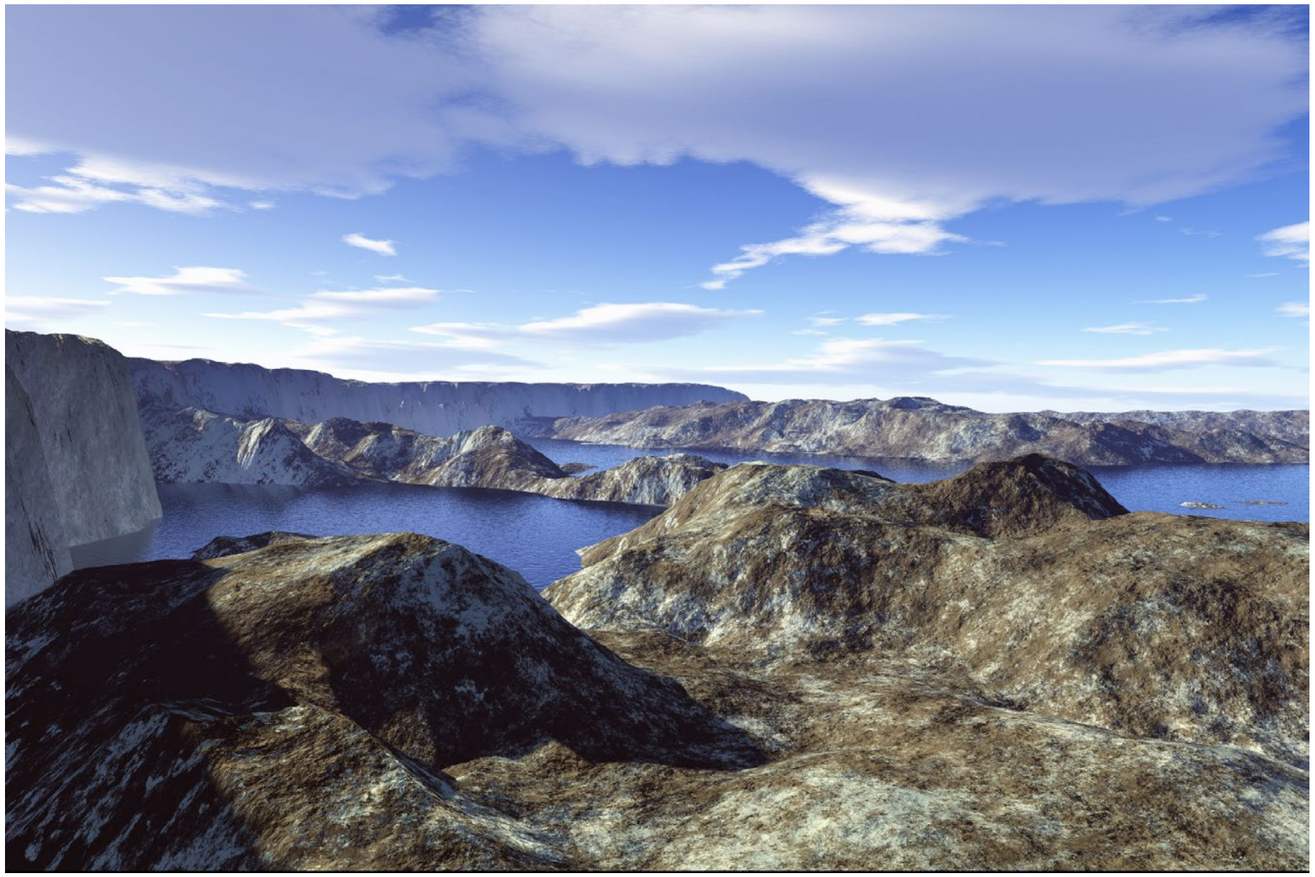


"Landscapes without Memory" by Joan Fontcuberta

A Guided Walk Through Ideality

Special Issue 53 / September 2017

Preface

Where are we going and why?

Welcome to the 53rd Special Issue of the SHAPE Journal.

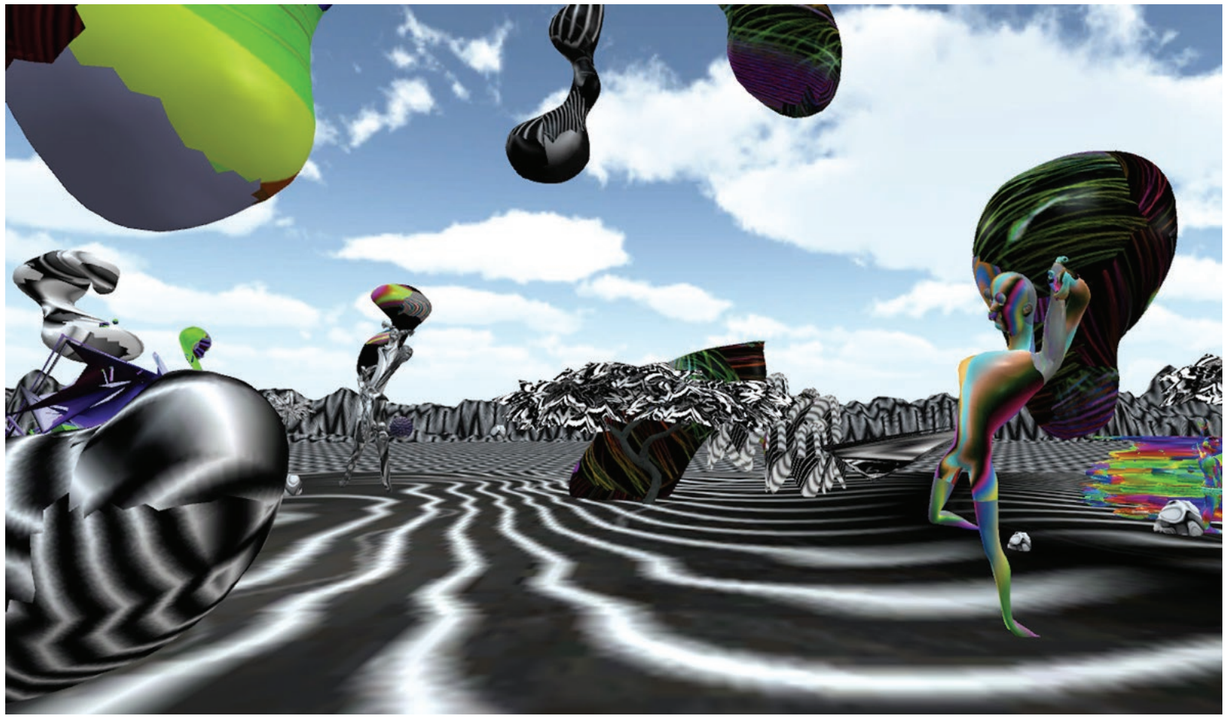
This edition arose from a response by long time colleague and good friend of mine, Peter Mothersole, to a paper about mathematics I sent to him a short time ago.

His questions, as always, were particularly apt, and needed a better response than the dispersed papers of the past. So, several new papers were written, and bundled together with a small collection of older, yet appropriate ones from the past, to deal with the issue of Ideality in this discipline, and the sciences which rely on it.

So, this Issue is dedicated to Dr. Peter Mothersole, and shared here with any other interested parties.

Enjoy!

Jim Schofield
September 2017



Left: Garden by Tanja Vujinovic

Below: Chaotic version of a beating heart

A Guided Walk Through Ideality

as seen from reality
maths from the ground of science

Let us attempt the impossible!

While maintaining our stance wholly within Mathematics, and it's unique formal techniques, let us attempt, nevertheless, to retain our Reality-based objectivity, and see the whole set of routines from that real ground.

We will be attempting to "square the circle", but the alternative can only be to join the blinkered group residing wholly within the perfect World of Ideality – where only Form dwells!

What do we do in a holist World, when our only applicable methodology is entirely pluralistic?

That is to say, that when everything connects to, and is affected by, everything else, how do we get by with an approach that analyses everything into a hierarchy of separable Wholes and their equally separable Parts?

It may seem impossible, for the two approaches directly contradict one another. And, indeed, for most of the history of Mankind, this restriction on our view of the World meant that all progress had to be limited to controllable-areas, wherein the "truth" of Plurality would have to have been both built into them, and strictly maintained as such for the duration of any applications of the extracted relations.

For historically, Mankind did not cope at all well with real and unfettered Reality, and the initial gains were only achieved by treating it (as it sometimes appeared to be) as if it was composed of unchanging, identifiable and nameable Parts – that which we term a Pluralistic World. But, such a long history of interacting only with such controllable "bits" of seemingly unchanging, yet useable, fragments that occurred naturally had to be endured, as the only means, until Man finally knew enough to be able to both construct and maintain amenable Domains wherever he required to interact with Reality to some required end.

For, only in such artificial areas, were his assumptions at all close to being viable. This "farming" of areas of Reality was what became Science, but more properly it should have been appended the label of Pluralist Science – the Study of Reality in specially erected and maintained Domains, where his assumptions were "close" to being true!

But, though many gains were achieved by such an approach, it was still NOT unfettered Reality that was being investigated, but a separated patchwork of prepared grounds! It was not what we assumed it to be! And, such an approach could not deal very well with any situations involving integral qualitative changes, and it was only after the contributions of giants such as Newton and Leibnitz that even straightforward quantitative changes were effectively dealt with by means of the Calculus!

Only then, did Pluralistic Science accelerate, and the Industrial Revolution occurred as a direct result.

Qualitative Changes, however, were still beyond Mankind's Pluralist Methodologies, and in spite of the profound contributions of thinkers such as Hegel, Marx and Darwin, a new methodology was not developed and communicated to Mankind in general, for, in contrast to Pluralist Science, which could be put to work very

profitably by those in charge, Qualitative Changes were likely to get completely and even destructively left-out of consideration, as their clearest evidence was only revealed in the study of Social Revolutions, which, of course, always profoundly threatening to any status quo, so certainly didn't get priority treatment!.

Such an approach, even at its most disinterested, was therefore seen as anathema, and was NOT pursued by scientists to any significant extent.

Honourable exceptions such as Darwin and Wallace did eventually come forward, but they had an almighty battle to even be listened to, and still did not bring about a general revolution in method to Science across the whole range of disciplines therein. Nevertheless, pragmatic gains were still possible, which accepted that the World was indeed basically holistic in nature, though all productive practitioners still stuck like glue to entirely pluralist methods.

This paper considers in some detail one of these unusual paths of discovery, which modified strict pluralistic determinism via a series of iterative corrections that adjusted the blinkered pluralist route with repeated qualitative "updates".

There were actually two main changes in method, which modified the classical pluralist approach, and these were **Simulation** and the recurrent application of Iterative Formulae.

Simulation is a fairly simple modification of the usual Domain-based methodology, though here applied paradoxically into an uncontrollable situation.

The various equations, assumed to be simultaneously involved, were separately obtained from measurements over limited and maintained ranges in the usual way, to give every one of the individual pluralist laws involved. BUT, from the outset, the scientists involved considered that they were all both slways present, and acting simultaneously, in the unfettered situation! YET, they considered that each Law was totally unchanged by its transfer to the unfettered situation, and that all blurring was entirely due to the combined acting of many contending, yet wholly separable, other contributions.

Even so, they realised that a simple sum of these was not wholly dependable, and would sometimes be entirely inappropriate due to different weightings of the various simultaneous contributions.

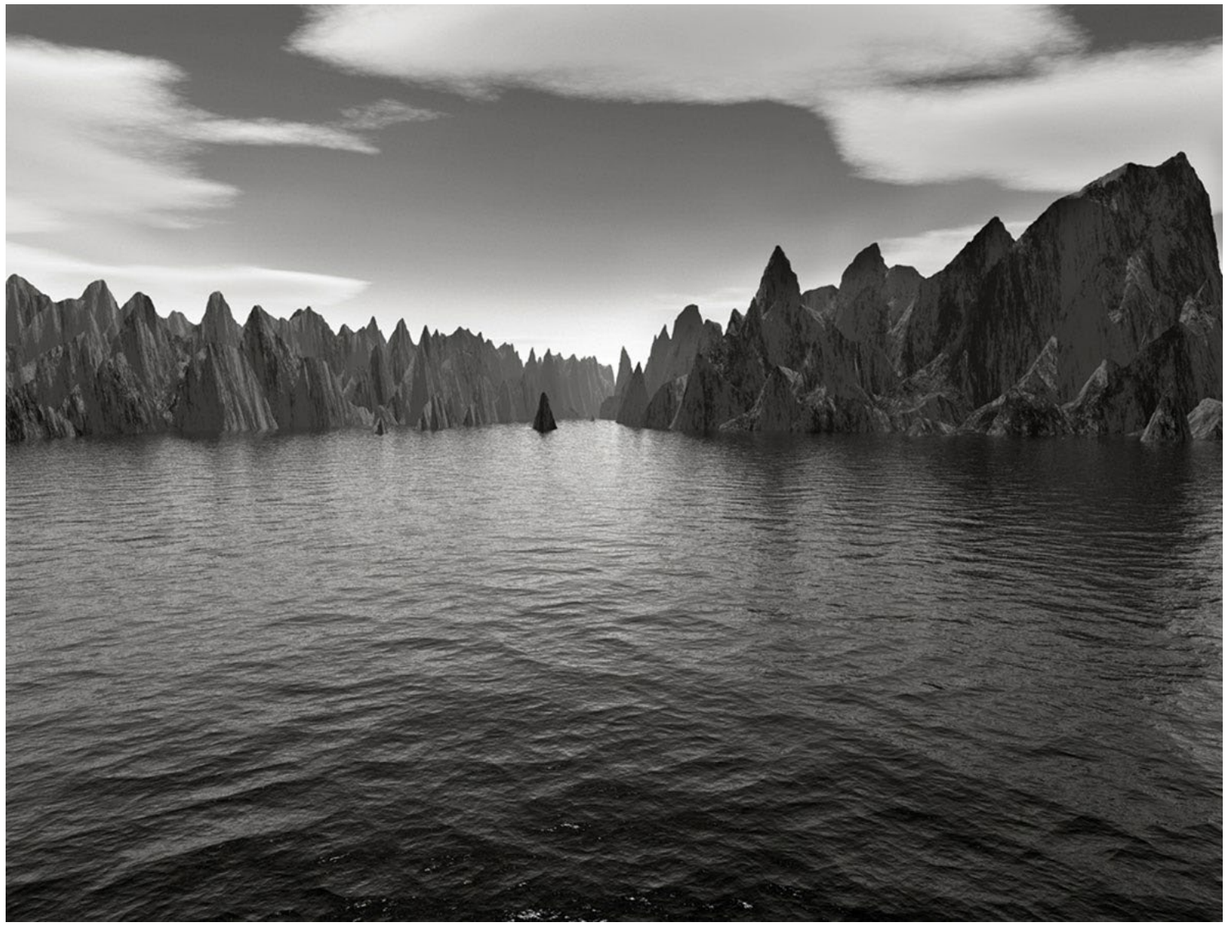
In such circumstances, usually signalled by a Key Parameter transgressing some previously-Discovered Threshold value, so THEN certain equations had to be replaced by others to maintain a better conformity to a complex and ever changing Reality. Though all were seen to be present the dominances involved could change. So, the Laws applied, one-at-a-time, were these dominant ones, which had to be switched whenever the dominance changed.

The result – Simulation, was thus never-ever complete: it was always having to be added to, as wholly new evidence demanded it, and therefore forever being adjusted as conditions changed and their consequent thresholds sought.

In the end, these computer programs implementing this wide and ever changing gamut of contributions have become the biggest on Earth. And in spite of the many problems with such programs, they could indeed deliver, most of the time, in situations that displayed recurrent patterns of performance – such as in most normal Weather Forecasting.

These programs were constantly being adjusted and improved, and any new circumstance had to be immediately programme-in to accommodate such occurrences in the future. Naturally, such programs could ONLY be retrospective! They could NOT predict entirely new situations, but only those that had both been experienced previously, and added-in as new options.

The important error in this methodology, was that which assumed that all the contributing "laws" were not only simultaneously present, but also effectively unchanged as contributions: they were all assumed to be separable from their context, at least, qualitatively. They were seen as merely summing together to give overall results, and also to be of varying weights, so that the only real changes, from their original extractions, were quantitative – variations in size of contribution – that is in relative dominances. They attempted to mirror these by their monitoring of the various thresholds, and then the consequent changes due to such transgressions meant that these had to be added in.



As you will imagine, one particularly complex weather pattern would frequently guarantee a failure with such means of prediction.

But, such methods were, at best, only pragmatic frigs. They accepted some aspects of a holistic World, BUT not the most important – that Reality transforms Laws. Instead they took the opposite view that eternal Laws transformed Reality via mere complexity alone.

Yet though the reliability of such programs in Weather Forecasting has improved considerably, they are now the NORM in all sorts of other areas, though WITHOUT the constant attention and modification necessary to stay anywhere near the actually occurring situations. Indeed, such methods are now employed in literally all situations in which tailor-made Domains are impossible to implement.

But, in this paper I want to pursue the other perhaps much more interesting methodology – that depending on Iterative Formulae derived from normal pluralistic equations, but taking us into quite new regions of behaviour.

Many years ago when attempting to find the roots of pluralistic equations, mathematicians had developed an initially graphical technique, which turned ordinary equations into what were called Iterative Forms: they were NOT relations as were the original equations, but applicable processes, where the coordinates of a legal point inserted into one side of each formula, together generated a new position at the other. These "processes" could produce one "legal" point from another.

Now, we have to be clear how different were these methods from the standard techniques. With the old methods, a single Point PLUS the equation could then

give the whole continuous range of legal instances - an infinite result. With Iterative Processes, on the other hand, a single Point PLUS the Iterative formulae, took us to another single, different, and often distant, Point, and repeated application would then give us Point-after-Point – all dotted about the possibility space and NEVER adjacent to one another.

In the classic use of such techniques (in the method of solving an equations to discover its roots), the sequence of Points gradually homed in upon the required root with increasing accuracy. When the last two iterations produced results sufficiently close together, the required accuracy was deemed to have been achieved and the process could then be terminated.

This sort of "pragmatic use" worked very well and mathematicians knew the various pitfalls that could occur, and, therefore, found out how to check if their iterative forms would do the trick without significant error: they knew how the check for the formulas' necessary convergence.

Now, such techniques were always considered merely as a trick, but it was certainly more than that, for later on (no longer in methods to find the roots of equations) as an alternative means of plotting a graph of a given pluralistic equation, the iterative forms (derived in a similar way) were here used in another method of achieving the usual graphical form.

Starting with a given legal point and the iterative formulae, the latter were used to find a second Point and then the process was repeated as often as required. And all the Points generated were plotted to give the required graph.

The process was also infinite but very different from the normal method of achieving a graph, because successive points were NOT adjacent to one another. Indeed, they were often far apart and the repeated iterations tended to go around repeatedly, filling in more and more points until an acceptable line was finally achieved.

EXCEPT that sometimes this didn't happen!

[See the image at the head of this paper entitled *Chaotic version of a beating heart*]

There were occasions in which the various cycles around the form did not exactly coincide. All sorts of anomalies appeared, and the resultant phenomenon was named as Mathematical Chaos. And, it became more significant when these "chaotic" results could be shown to actually match Reality better than the usual pluralistic direct plotting of the equation.

And Chaos was shown to be related to Turbulence, and in research in which this author was personally involved, it surprisingly delivered both Fibrillations and Heart Attacks via formulaic iterative models of the human heart. The methodology could no longer be regarded merely as a pragmatic trick.

Let us look more closely at these two alternative methods. It must first be established (before this is attempted) that this author worked for several years with and for Jagan Gomatam, a brilliant mathematician, who recruited the writer to create computer programs for him, which investigated the "iterative route" to revealing the possibility spaces of several pluralistic equations. Perhaps the most revealing were those based upon Van der Pol's equation to model the beating cycles of the Human Heart.

With very careful choice of constants, in the general iterative forms supplied, this author was able to deliver real behaviours from these using iterative versions, and they revealed that this methodology could actually be closer to Reality than the parent pluralistic/deterministic equation from which they were derived.

How could this possibly be the case? That was the crucial question!

Now, it wasn't the question that mathematicians usually asked of themselves. They were both the servants, and the guardians, of Form, and always left Reality to the scientists. And this meant that they limited themselves to Form alone, and the purest versions that they could isolate and investigate. And, in doing so they turned their backs on Reality, for their beloved, alternative World of Pure Form and nothing else, which I have termed Ideality. And, of course, that is what, and indeed all, that Mathematics is actually about.

It is not, I must agree, any sort of trivial undertaking, but it also isn't, and never can be a Science. For while Science deals with concrete Reality, Mathematics limits itself determinedly to pure abstraction and its purely formal content, and hence actually dwells only in Ideality – a "perfect", though purely formal, reflection of Reality!

What was necessary, here, was a deep investigation of the relationships between the pluralistic and the iterative methodologies, and of each of these to Reality itself. The two methodologies are both clearly formal techniques, and as such could never reveal the Concrete, but they could more-closely-approach its full shape or form.

What had to be revealed were the true relations to Reality, if any, and why those alternatives delivered such different pictures.

Let us be clear, this was not a study of Form (for that would be Mathematics only), but of the relationships of those formal representations to the real interest – Reality itself!

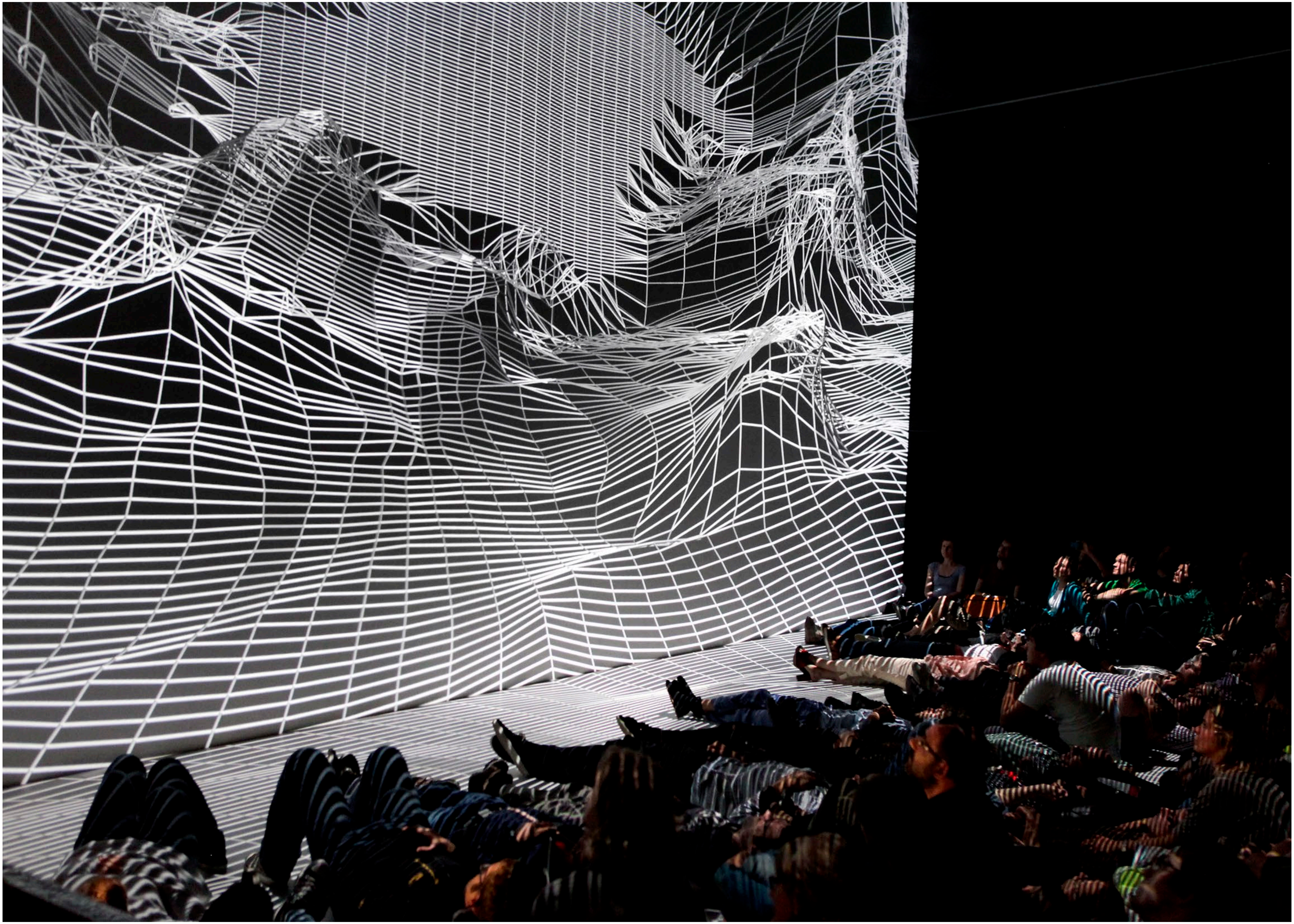
Now, this isn't yet fully cracked but a significant start has been made. Can we reveal the differences between a strictly pluralist/determinist equation approach, and the results produced by the use of Iterative forms? Included below is a simplified diagram of the two approaches. As we are talking generally we cannot bring in any particular concrete aspect of Reality, so we are limited only to relating the two entirely formal approaches, while being constantly aware of what they are the "shapes" of.

Yet, it is still revealing!

Across the diagram below is the line representing a pluralisr equation of the addressed relation. It is continuous, and once confirmed by tailoring to measured data, it gives a line that purports to deliver all possible states.

But, it cannot do that! Whether it is an overall form produced from real data in a non farmed situation, OR, the result of data taken from a farmed Domain, aimed to literally exclude everything except a single targeted relation - NEITHER includes absolutely everything involved!

WHY?



It is because:-

In the overall Equation: an overall form is, at best, only an average at all the actually measured points, and as there aren't an infinite number of such measurements, there will certainly be points NOT INCLUDED, in which something outside of what the overal equation delivers, occurring in the real world situation, and probably cancelled out by similarly off piste variations elsewhere.
while:-

In the Farmed Equation: many situations due to any of the excluded factors will also NOT be there.

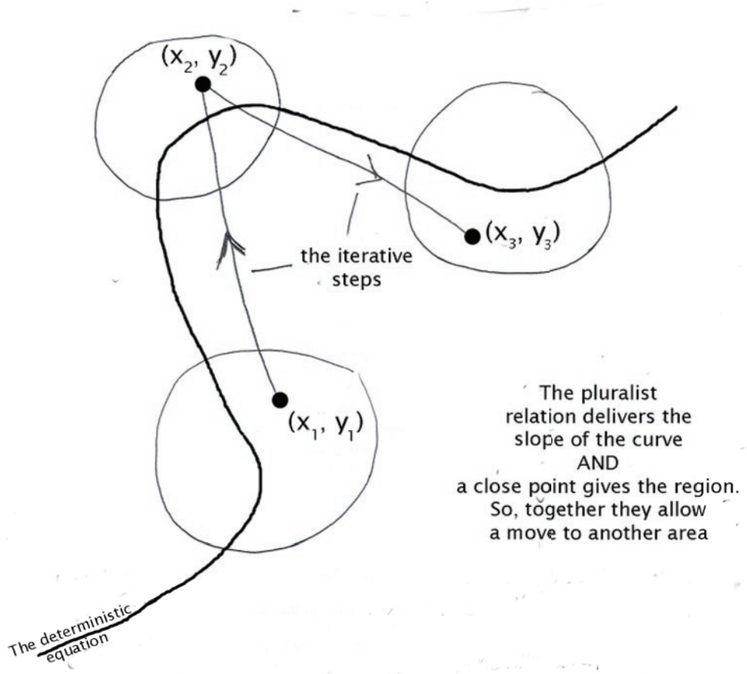
BOTH exclude momentary exceptional variations that will certainly be there in the unfettered natuiral situation. So, clearly, the repeated manipulations of the constants involved in finalising the required Iterative Forms, can, in its switching about between iterations, take the situation into points were exceptional swings can cause a drift and be added to, on every circuit of iterations. NOTE: The particular reason given here may not be correct, but remember the devising of the iterative forms from the pluralistic equation has NOT yet been included.

Being abstracted and purely formal, it can never include its own unavoidable demise – as when the context is moved to outside of the allowable Domain of Applicability. But, we can limit the discussion to wholly within that Domain.

So, considering the accompanying diagram, we see that superimposed over the aforementioned determinist line, is the situation delivered by repeated applications of the alternative Iterative formulae, which, given an initial particular Point, will always generate a new Point. And with a repeat of the process, will then deliver a third Point.

These are labelled $(x^1, y1)$, (x^2, y^2) and (x^3, y^3).

The Stepping Stones of Iteration



In comparing these two approaches, we find that they are certainly NOT coincident. So, what is actually going on? And how might the much less intuitive iterative method reveal more truth than the strictly pluralistic derived form?

They are connected (on the diagram) by the "iterative short-cuts" that take us directly from each Point to the next.

We must remember the different tactics employed! With the usual approach only one Point, plus the Equation, is expected to deliver the whole range of possibilities of the relation: it reduces everything to the simplest, purest and most general single form.

With the Iterative Forms, however, we are taken step-by-step to Points in different "localities" (or regions), which are then fed back into the iterative forms to continue the sequence of points: it is a kind of oscillation between Locality and Form!

Now, by the time the process has been repeated many times, the picture has been produced with contributions by BOTH the iterative forms AND the sequence of localities traversed - represented by the different Points visited. THIS must be the difference.

Now, clearly, this analysis does not deliver a full explanation, but it does include "locality" in the deriving of the possibility space of the given relation. And we do know that all original (pluralistically) derived relations, as we extract them are limited to a finite Domain of Applicability. We know that our usual pluralistic plots do NOT cope with the crossing of the boundaries of such Domains – in fact they then incorrectly appear as asymptotes or singularities (giving infinite or zero values) and these are wholly wrong: they are merely placeholders for the undeliverable truth – that we have totally passed beyond the range of the given relation, so that it no longer works. We know that we must avoid such areas like the plague!

NOTE: Remember, in unfettered Reality, the context is never totally fixed, and holistically this will mean that the involved relations will certainly vary. They will either move or distort, so the rigid, pluralistic line will NOT represent the actual possible "legal" positions, moment by moment.

So a technique, which by some means traverses such off-line locations, may well be importing something crucial into the "so-treated" pnenomenon.

So, clearly the pluralistic equations do respond to illegal values with these placeholder phenomena, and hence that property will also be transferred to the iterative versions too.

The question is, "How do they manifest themselves towards the limits of the Domains with this alternative methodology?"

They, as you might expect, display increasing instability – a diversion away from the reliability and indeed certainty of those areas well away from the edges. We are seeing another, and different, response to the limits of applicability.

Sadly, this area was left too long in the sole charge of mathematicians, for, as usual, they considered only the formal aspects – they simply turned the area into yet another Branch of Mathematics, whereas the crucial content was the light that this alternative threw upon truly holist Reality and its distortion by Pluralist approaches. Without the necessary questions about concrete Reality itself, we are left merely with another set of formal techniques, sufficient unto themselves within Mathematics.

The real content of these discoveries were hidden behind the equally incorrect conceptions of Reality delivered not only by Plurality, but also by its seeming alternative Holism! The original conception of the latter was far too "even-handed", in that it had everything affecting everything else more or less equally. And this was never the true situation.

Indeed, the reason for the long reign of Plurality was that it was "approximately true" at first glance, and over short periods of time. But, in really existing Holism, all contributing factors to a given situation were NOT of the same weight. Indeed, this was never a static balance of factors, and was indeed the actual cause of its certain demise over time. So, not only did some factors have more weight than others, but also, more generally, in a diverse mix of contributions, there would undoubtedly be factors pulling in different directions, while requiring the same resources. A form of competition and consequent Selections could, and did, lead to dramatic dominances

in given situations - for a time at least: Plurality was almost true!

Now, though more widely and generally correct than Plurality, Holism, in its originally conceived of form, was far too weak to deliver what Plurality could do quite easily. And this was largely because Holism, in spite of constant activity and change seemed nevertheless, and in that version, to be bereft of any sort of Development or Progress. And significant Qualitative Change without Development could only result in constantly repeated Cycles, which made NO Progress at all. With such a basis The Buddha came to see the essence of the situation in perpetual cycles ONLY, while at the same time seeing the vital, if almost impossible, need to break out from that never-ending process (in his case via the achieving of Nirvana).

Somehow, the dichotomy between Plurality and Holism had to be transcended via something both better and indeed higher, which would have to include the possibility of both Development and Progress.

A Form of Holism, which did not only allow the incessant undirected changes of the old conception, but must also include both totally transforming Catastrophe and Creation Interludes, which could Change the Game completely. In addition it would quite naturally also display both temporary dominances and also interludes of directed change. Periods of Stability would be interrupted by episodes of dramatic overturns and wholly new Levels of Reality.

Clearly, such a Form of Holism would be quite unlike the classical version, and yet would display aspects that were seen as permanent in Plurality, but were always temporary in this new version of Holism.

Now the alighting upon such a conception was not at all an easy task. Indeed, stated as above, it seemed a wish fulfilment rather than a revelation, but then what else could it seem from the impasse on that side of the dichotomy?

So even when such an idea was imagined by geniuses such as Hegel, it was not delivered, but only another version defined on one side or the other of the as yet unresolved dichotomy. Hegel remained an idealist in spite of his profound contributions! You cannot always pull yourself up by your own bootlaces, even when you see the glory above! It turned out that many conceptions had to be reviewed and drastically changed to allow any approach to such situations.

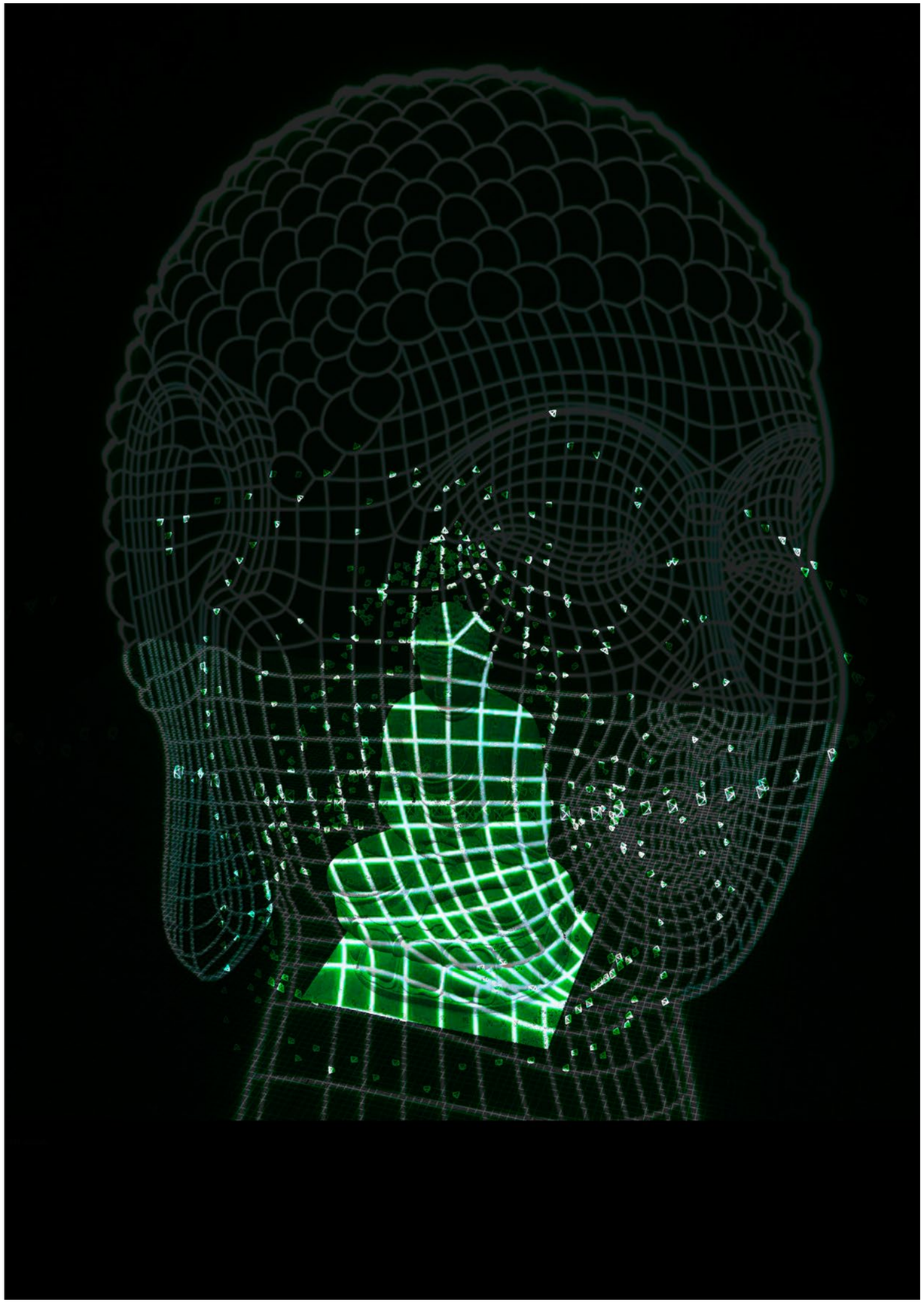
For example, the usual assumptions about "Randomness" had to be dumped completely. Their uses in very stable yet multifarious situations were sound and led to Probabilities and Statistics, but such uses did not tally with the simultaneous and very different uses of Random Chance to "explain" creative turns in Development. The area was ismply a cover for the inexplicable, and soon became all things to all men. It was, and is, a MESS! And as such a conceptual "fig-leaf", as its extensions got worse with every new factor covered by the same "ready solution"!

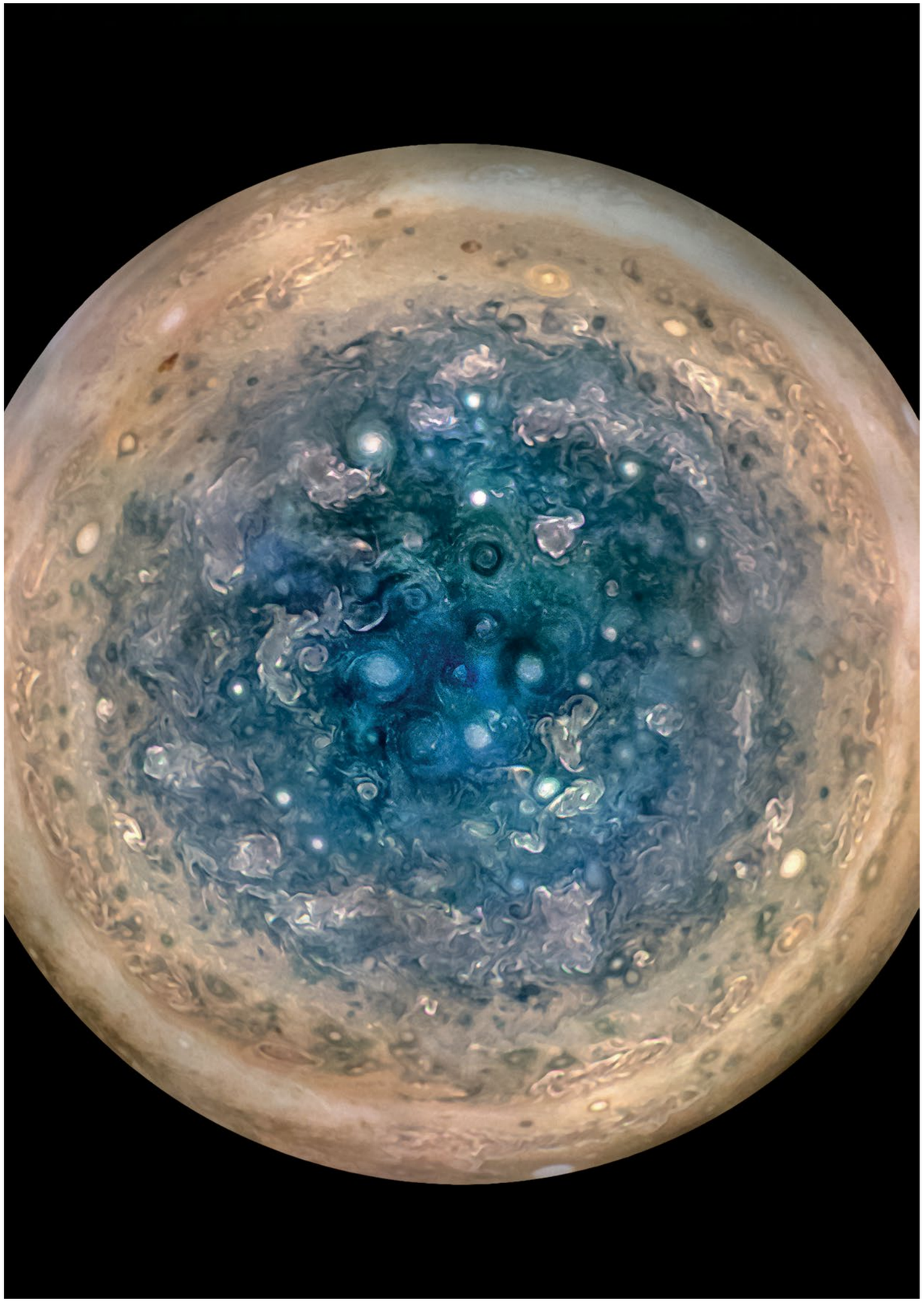
The use of such ideas in Sub-Atomic Physics, which stemmed from the Copenhagen Interpretation of Quantum Theory, led into a morass of inventions from Equations, instead of revelations from Reality. And, instead of any resolution to the evident dichotomies, they were simply entrenched into a new non-explanatory eclecticism – Post Modernism, in which anything goes, and totally unprincipled pragmatism was hailed as the "New Truth"!

Of course, the necessary transition would never be automatic. The ever-maturing crisis could not be shelved forever! At some point (as with the Ultra Violet Catastrophe towards the end of the nineteenth century) the crisis would finally dismantle the lot, and all would seem to be careering into "formless chaos"!

Good! That would do the trick! For the real discovery in the study of such crises has always been the inevitable occurrence of an Emergence – a cataclysm of Change initiated by the most profound dissociations seeming to be heading only towards oblivion. Yet, that doesn't happen. As this author has shown in his *Theory of Emergences* (2010), the descent into dissolutory chaos is of a special type – it primarily dismantles the defence mechanisms of the prior Stability, which not only maintained that prior state, but also prevented any new alternative and competing systems to anywhere even begin to grow.

So, the removal of these major inhibitory processes allowed a true quality of Randomness to reveal itself – a situation in which the wholly new could indeed happen, and such processes could mutually assist one another into the beginnings of new cooperating systems.





To have any chance of affecting this new potential era of Science, scientists have to study Emergence, and only then can they possibly transcend the dichotomy and see THE way forwards.

But let us return to my work for Jagan Gomatam.It revolved around what I would now call the positioning of his Iterative Formulae via the adjustment of the involved constants. It seems likely that well-within the Domain of applicability, the chaotic behaviours would NOT occur. Presumably, any usually associated graph (from the normal pluralistic equation), and the iteratively attained version would appear identical there. Indeed, I not only demonstrated this but also had great difficulty finding where they differed, and "chaos" reigned! But the careful choice (by trial and error initially) of constants might well have been "effectively" moving the action closer to the edge. Not towards and through the boundary, of course, but certainly a bodily repositioning into a "near-border region" displaying such near instabilities.

I have for some time been fascinated with the phenomenon of the Great Red Spot on Jupiter for its evident long term Stability, while being surrounded and mutually interacting with a maelstrom of turbulence around its edges. And, of course, Mathematical Chaos was originally discovered via studies of Turbulence here on Earth. So, this natural phenomenon is an excellent analogue for Stability, its border regime and the turbulence beyond.

Now, we must not leap off imagining we have the complete answer. Any comparison of the Real Phenomenon of the Spot on Jupiter with our formally constructed versions in Mathematics will show that we, as always, have uncovered only an aspect of the unfettered natural phenomenon. And in Mathematics, it also delivers it to us from the "Black Hole" of purely formal investigations, that is, after all, the unavoidable remit of mathematicians.

This can be helped by formal researches, but never actually cracked by them. Why? It is because Reality does not conform to eternal formal Laws, it actually creates the 'laws' that we sometimes are able to extract in special circumstances.

The purely formal view of Reality is like studying it via the shapes of the shadows that it can cast – a very meagre source of information for Reality itself. And though such aspects will display laws, they will be more about the shadow-casting process then about the essential, concrete causes intrinsic to the casting entity. That is why, after all, Form is universal!

AND, in addition, it is still always confined to the Stable Interludes. Even with Chaos, we are not transferred over into the real external maelstrom of Qualitative Change that is an Emergence, but we are getting closer.

So, let us reiterate the differences once more between pluralist/determinist equations, iterative techniques and Concrete Reality.

Equations are reflections of most stable circumstances.

Chaos takes us towards the boundaries of Stability and delivers precursor behaviours (close-to-the-edge, and the usual behaving Iterative Techniques are here too).

While real qualitative change happens beyond those stabilities, and formally are seen as Emergences.

Without a thoroughgoing study of these Transforming Events, the trajectories through the boundaries cannot ever be understood!

Jim Schofield
(April 2011 & August 2017)

Postscript:
Clearly, this paper is by no means the last word: it is scarcely the first word, for it does not yet reflect a Holistic Experimental Mathodology (yet to be devised) that must be evidently superior to the current Pluralist Experimental methods. This theorist's suggestion of a development of Stanley Miller's brilliant Experiment, may point the way, but has yet to be implemented. While Yves Couder's wonderful "constructivist" Walker Experiments also reveal a very different and fruitful approach. Finally, and with a very different remit, The Copenhagen Interpretation of Quantum Theory, and ALL its consequences must be soundly defeated on its home ground.

We are on the threshold!

Absolute Distillations

Is there a path to perfect truth?

Quick Preface: This is an old paper, but has been re-instituted into use as, in spite of its evident inadequacies at the present state of this researcher's contributions, it still, better than anything from now, reveals the trajectory of the realisations necessary for progress to have been possible [Schofield 2017].

In my current preoccupation with the idealism of Mathematics, and its changing role in Science, I, along with most other people, tend to ignore that other side of idealism which is, and always has been, an absolutely necessary counterweight to the dangers of deterministic mechanism. For, that is always the unavoidable first step in observing, and then extracting, causal factors from our complex World.

In this "form" of idealism, it refuses all-embracing system-like answers (as occurs in most Science) for the individual revelation of momentary glimpses of profound Truths. And, as such, this aspect of idealism has to be determinedly holistic, knowing that a pluralist analysis (into Wholes & Parts) with separate contributing factors, is both unsound, and will in the end greatly mislead our understanding.

So, its very different contribution is NOT to reduce what is required in attempting to understand the World, but, in a sense, to necessarily increase it.

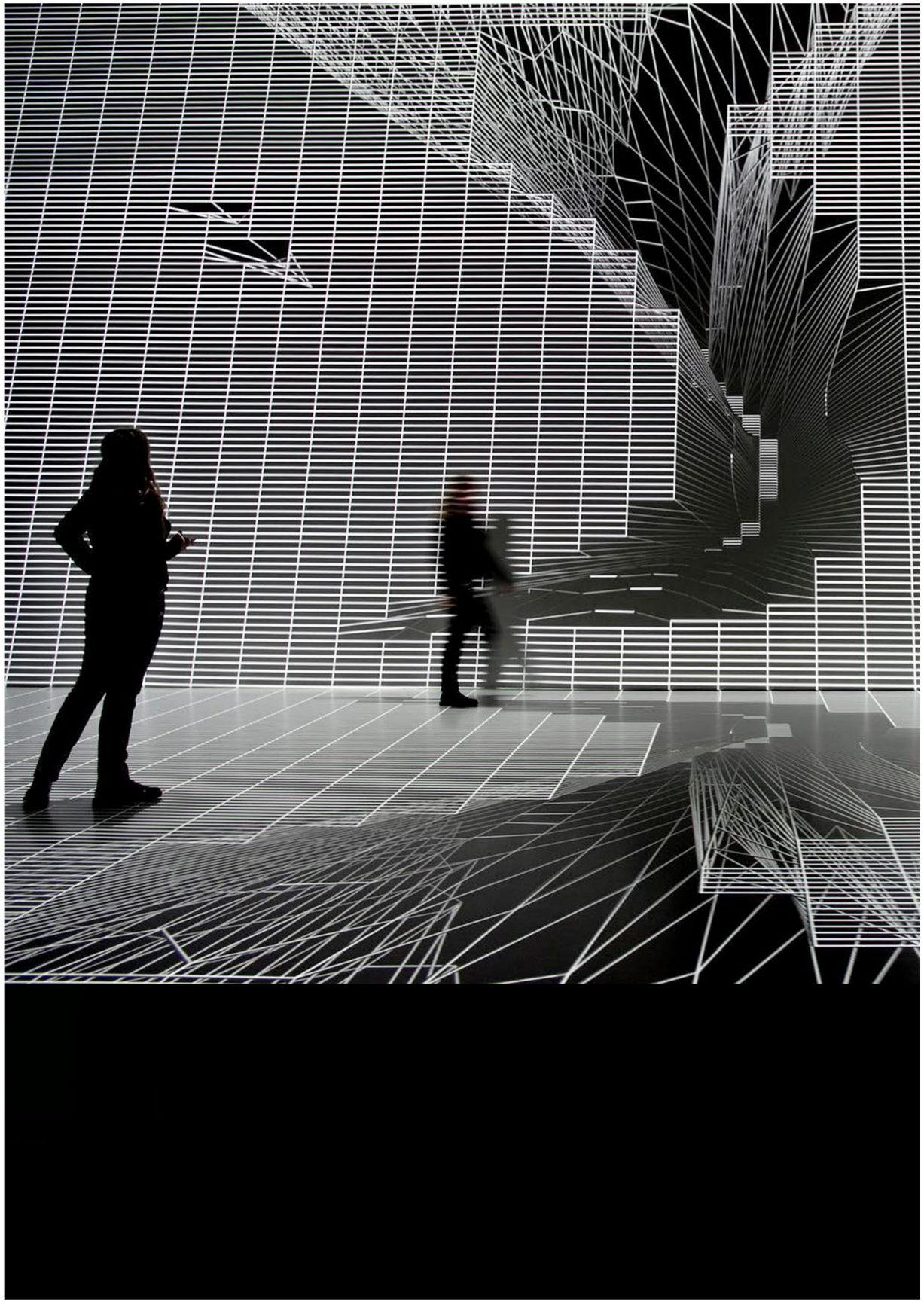
Buddhist sayings (preferably by the man himself), seem innumerable and, consistent with a holistic approach, are NOT required to conform to a single and wholly-coherent schema. Instead, they allow (or more accurately they require) the presence of contradictory elements, all of which will be equally true!

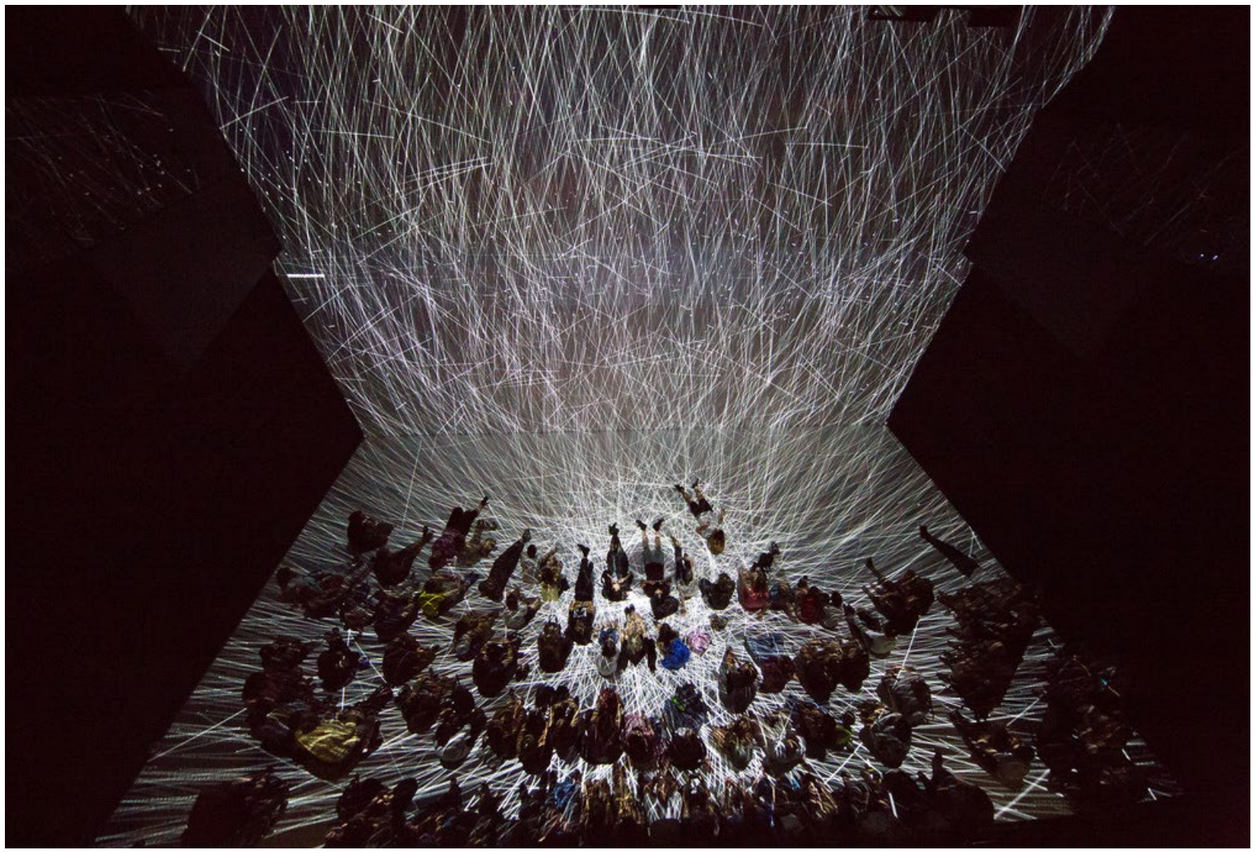
From such a standpoint Truth, if it is to be "built", cannot be made of wholly consistent and compatible separate "bricks". Its elements will not only be very different, but seemingly mutually-contending and even mutually-exclusive.

The principle involved seems to be that when contributions are all wholly consistent and mutually supportive, they have most probably been altered to make them so. They deliver not the "essentizl" Truth, but an easy rationalisation of the Truth; indeed, a conceived of and built Royal Road to understanding! But, the real nature of these elements, if carefully and honestly carried through in depth, will always reveal contradictions.

I always remember Robert Pirsig's remarkable book, Zen and the Art of Motorcycle Maintenance, in which he insists that essential occurrences along a path to Truth must involve what he calls "stuckness", when a resolution initially seems to be wholly impossible.

To be really addressing Reality, you will always reach a point where separate lines of reasoning will collide, where both alternatives will appear unassailable, but at the same time clearly in total contradiction to one another. Indeed, ONLY such interludes can reveal the error of your dearest assumptions. (See Zeno's Paradoxes) Indeed, if your "Construction of the Truth" has NOT been fraught with innumerable train of such impasses, then it is most probably some sort of Rationalisation and its total consistency must be due to a chosen de-selection of anything not fitting perfectly with the rest. Its actual consistency is entirely due to a determined rejection of everything which doesn't conform!





NOTE: It is worth at this point reminding everyone of the differences between Reality and Mathematics. For though the consistency of Mathematics is "everywhere in evidence", so that it even demands "Absolute Truth" in all its derivations and Proofs, Reality itself delivers only Partial Truth via scientific Studies, and expects every revealed single Theory to always be incomplete. Indeed, real scientists are aware that they are dealing only in pieces of objective content, which though NOT the full Truth, do reflect enough of it to carry us forward.

Mathematics is the Science of Pure Form alone, and as such it is only a tiny, yet consistent aspect of the real World. It is a Science of the shadows cast, rather than of one relating real concrete Substances.

But all of this clearly brings us again to the Materialism/Idealism impasse! And hence poses the question, "Are not both these standpoints guilty of the very points made above?" Well, often that is true, but what makes it difficult to apply to Buddhism, for example, is that the latter embraces contradiction as the indication that the seeker is on the cusp of taking the next turn into a correct path. The only trouble is that it seems to condemn the seeker to only finding "fragmentary" and non-coherent paths. Life with such a principle will always be seeking, and never actually arriving.

The opposite materialist/scientific philosophy, on the other hand, sees consistency as THE legitimiser, and assumes that ONLY such can allow any real and regular progress towards Truth. The problem turns out to be in distinguishing between that "path" and the "gum tree" you have mistakenly ascended assuming it to be the "path".

Surprisingly, many remain atop their own wonderful "tree", until they die, insisting to the very last that the view from there is unsurpassed anywhere else in the Universe!

Now, as you might well have guessed, all these initial conclusions are still wholly insufficient! For example, the scientist who is heart-broken when his own Theory is disproved, is "no scientist", and whilever such an attitude predominates, Science will not break through its current limitations. Ideally, (and actually already existing in rare cases) a scientist should be elated that his Theory has been superceded, for it must, to have been able to do that, mean that new evidence or sounder conceptions are available, and hence not only a better Theory has become possible, but also an extension of what can be understood.

So, any scientist who uses coherence and consistency as proof of objective content must embrace new evidence and ideas which shatter the seemingly all-embracing prior Theory, because that theory must have been some sort of Rationalisation – where a morsel of objective content is promoted to become a General Truth, and hence must be dumped!

The recurrent appearance of contradiction cannot be easily transcended, unless it is a crucial part of the philosophy of the scientist, that though all theories will be inadequate, they will NOT be entire fabrications or pure inventions.

They must, initially at least, be validated by being reliable and indeed useable in Reality in certain circumstances. Indeed, though NOT the full Truth, they must include enough objective content – sufficient aspects of the Truth to deliver what is needed most of the time.

It is Partial Truth in a World where Absolute Truth is actually unobtainable. We must never forget that "Truth" is both sought and formulated by Man – and only that!

Those who seem to deal in Absolute Truth directly, independent of Mankind's conceptions and assumptions, are frauds!

The true materialist scientist defends his Partial Truth to the limit, but as soon as it is shown to be inadequate, he must dump it for something better.

Now, in Science, such a "progress" is indeed possible. But in Life and Living, the "truths" do not necessarily accumulate to build Truth, especially, of course, if contradiction is embraced. The "possible" paths are forcibly kept-open, but they often lead in diverse directions, and no accumulation of such "truths" seem possible.

Rather than an ascent (as with Science), you seem instead to have an ever richer journey, but with NO clear concrete destination.

But, I always remember History! It is never the seekers for Nirvana that win wars, and determine fates, but the pragmatic and greedy conquerors. The invading hordes cannot be stopped by profound insights of the holy men. The latter will be slain where they sit, and the sword wielding soldiers will take what they want, and impose whatever they believe with impunity.

Idealistic Sciences

...or the handmaidens of mathematics

I have a major problem with "Science", though I must admit this shouldn't be true of *The Science of Concrete Reality*, it is most certainly true of those sciences and disciplines which consider a world based upon, and even entirely generated by, Principles and Laws.

And sadly, this is still true for the majority of professional scientists, for they most certainly believe in the latter definition, as they have developed effective ways to use their Knowledge, and have also handed-it-down to non-specialists in a different and easily digestible, if not an actually useable form of this stance. They actually always depart from their primary stance when asked to explain it!

Now, to explain this important anomaly I must start with the cause of it all, Mathematics.

For, this was the first "scientific" approach to the world ever achieved, and it involved the recognition of perfect forms, and studied them, as the underlying principles of Everything.

Clearly, "round things" exist like the Sun and Moon, and most berries approximate to being "round". Also, though the ground beneath our feet is full of bumps and troughs its most useful state is perfectly flat (like the surface of a pond or puddle. And, students of Form, began to list the basic formal elements of all things "but only in their simplest perfect modes": all lines were changed versions of perfectly straight lines, and the walls of buildings, if they were to persist, would have to be straight and exactly opposite to flat. Even trees tried to grow straight up, and the biggest and straightest could live for a long while. The study of all such Forms rapidly became that of only the "most perfect" or ideal shapes or components, by treating things as being of ideal shape often made them very easy to assess for building or making things. Basic ideal shapes such as perfect Squares, Rectangles and Triangles, and even perfect Circles and Spheres proved to be a very good way of dealing with them.

And the specialist discipline of Mathematics arose, in which ideal forms were studied in a very detailed way to make them approximate in various combinations to real world problems.

Indeed, Mathematics was the very first intellectual discipline, and very quickly developed to a remarkable degree, but only ever using perfect forms.

And, in addition, it concentrated, to an exceptional degree, upon those most perfect ready-made forms - The Counting Numbers! Rulers were invented with identical countable units along their edges to help measure various shapes, and even messy fields could be divided into simpler perfect forms to enable their areas to be found, and hence adjust what size of crop could be expected from it!

Extremely early-on in this process, the Egyptians were already building enormous pyramids, based upon such calculations. And the Greeks extended it into what became Euclidian Geometry.

Let us re-iterate the method used to produce this powerful discipline! It both simplified and idealised what it dealt with, in order to allow useful derivations from such forms - the initial most useful being in performing calculations, for the counting numbers though idealised were perfect for calculations involving unchanging things!

But, in addition, the idealised forms also allowed calculations of less obvious values - of areas and volumes, for example - and in buildings (like the Pyramids for example) turning pieces of roughly quarried stone into identical rectangular blocks enabled entirely correct estimates to be arrived at for what was needed.

Notice that with extra transformations of aspects of Reality, the ideal forms of Mathematics could be made to fit exactly. Though, it certainly both simplified-and-idealised Reality, Mathematics, could be ideal, if Reality was itself made-to-fit!

And, it had repercussions in other important areas too.

The revolutionary period was in Ancient Greece culminating around 1,500 B.C when a series of philosophers, in quick succession, namely Socrates, Plato and Aristotle, generalised the gains of Mathematics to other areas by employing the same simplification and idealisation methods to wholly new areas - principally to Reasoning, with what is termed Formal Logic, but also in dealing with Reality itself via a Primitive Science.

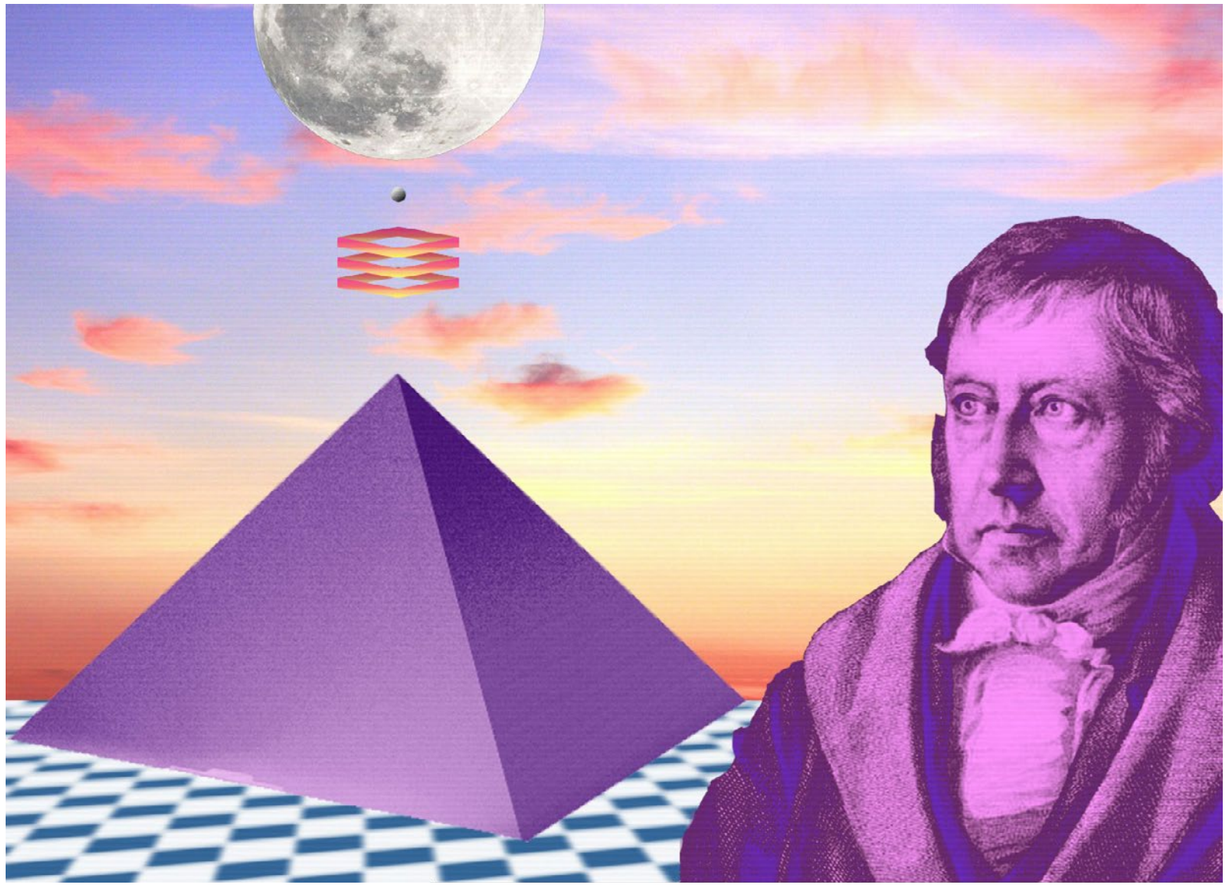
Now, these extensions were simultaneously extremely-fruitful, but also damagingly-misleading in these new areas. So, in spite of many advances in the short term, in the longer term the simplifying and idealisations turned out to severely restrict further development. For example Aristotle was still the leading propagator of Science for the next 1,800 years.

What was wrong with simplification and idealisation was its underlying assumption of the Principle of Plurality! This principle generally assumed that wholly and permanently separate things, always remained exactly the same, and when acting together merely summed their effects. Absolutely NO Qualitative Change ever occurred, and hence NO development, so all apparent changes were mere *Complication* - a summing of eternal contributions.

By the way this principle is still believed in by all who think that Reality is the product of eternal Natural Laws!

But, of course, the restrictions of Mathematics as described here, and used for many centuries could never address Qualitative Development, and in its Reasoning Version, Formal Logic, it was incapable of dealing with many things that unavoidably changed their natures.

Stability became the assumed, or arranged-for, norm of Reality, and Contradiction was always condemned as proof of bad Reasoning, The many different trajectories of Qualitative Change were dismissed as invention, and never investigated nor explained.



Continuity, Descreteness and Movement

It should be no surprise to us how important Zeno of Elea's Paradoxes are to any attempt to establish and extend Human Thinking. For, the very Dichotomous Pair of contradictory concepts that he addressed in those paradoxes were, indeed, Continuity and Descreteness. And, the key process involved in them all, was Movement.

In a nutshell, Continuity, Descreteness and Movement together encapsulate the essential problems with Mankind's attempt to understand the Reality of the World.

Zeno was surely brilliant to settle upon these three, because they immediately totally undermined what we today call Pluralist Formal Logic, as well as the simplistic conception we have for Moving Things.

We initially conceive of things as both stationary and totally stable (an abstraction), and, thereafter, imagine that such is their Nature. To then involve Movement, we see it as being due to some externally applied impulse or force, which, having been applied, then endows the object with a permanent constant velocity moving in a given direction - only changed, in any way, by further external influences, either slowing it down, speeding it up, or diverting it in some way.

NOTE: This endows the usual experimental investigator with a misleading imperative - to first establish such a "natural condition" as ground, so that only those factors which are left, or that he then inserts, are present, and can be studied effectively!

Clearly, all of those assumptions are only "true" within a particular context, at the everyday, macro level! It certainly doesn't take much penetration into the object to find that movement is permanently-established within that body, and without any evident persisting cause too! And also, no great time will need to have passed before the object-in-question, itself, begins to become something else.

Even an apparently still rock having been resting in exactly the same place for centuries, can be shown to be resting upon a swiftly spinning Earth, itself orbiting the Sun, and presumably many cosmic layers of movement above that.

Indeed, before today's blinkered scientists got their hands upon these things, and greatly confused them, particularly in Cosmology, we have to consider Karl Marx's definition of Reality which was Matter-in-Motion, as being a pretty sound initial characterisation, but, of course, requiring a full elaboration of what this involves.

But, returning to Zeno's chosen features, his Paradoxes were certainly no carefully picked and misleading anomaly, but, on the contrary, a crucial generally applicable quandary, which is usually "removed" by how we address Reality in order to study it! We effectively removed the problem by how we actually investigated things.

In the 21st century, I cracked a seemingly unsolvable problem in analysing complex Dance Movements from recorded footage delivered and controlled in a Multimedia context by a computer program. Initially using video footage, it had been possible to partially deliver the crucial dynamics of such a movement, by effective solving of suitable means of consummate Access and Control. But, even so, it wasn't sufficient, and when forced to use Digital Footage instead, ALL real dynamism was lost, because, such footage was composed only of a sequence of stills that each omitted over 90% of the actual dynamics - alright for entertainment, maybe, but not for serious analysis.

As a proof of this I applied the same system to sports, and the results were horrendous, literally all the content of swift movements of the ball in both Football and Cricket were totally lost!

NOTE: All the joys I used to get out of watching great

spin bowling were no longer available for me to consider: no wonder modern Cricket, is largely about smashing to the boundary, on a carefully prepared docile pitch.

Zeno was still relevant!

I worked out why interlaced video footage retained the crucial dynamism - it was because moments from every single part of the 1/25th of a second, in a single frame, were included within it sequentially, and, in spite of the two-field anomaly, the brain could still cope with that, and give most of the relevant information to enable dynamic understanding of the movement involved.
the video 'frame', was in fact a mini movie!

Without turning this into a paper about capturing dance dynamics, I can say that the problem was solved by means of two simultaneously shot-and-synchronised sequences - one in Video and the other in Digital, and taking exact positions from the Digital to superimpose as a varying, animated track upon the moving Video, with all the already achieved Access and Control: the problem was solved.

Clearly, the holistic rather than the pluralistic approach is closer to Reality, and a wholly different methodology will be needed to take Science further.

Where is Nirvana?

Can the way up be revealed?

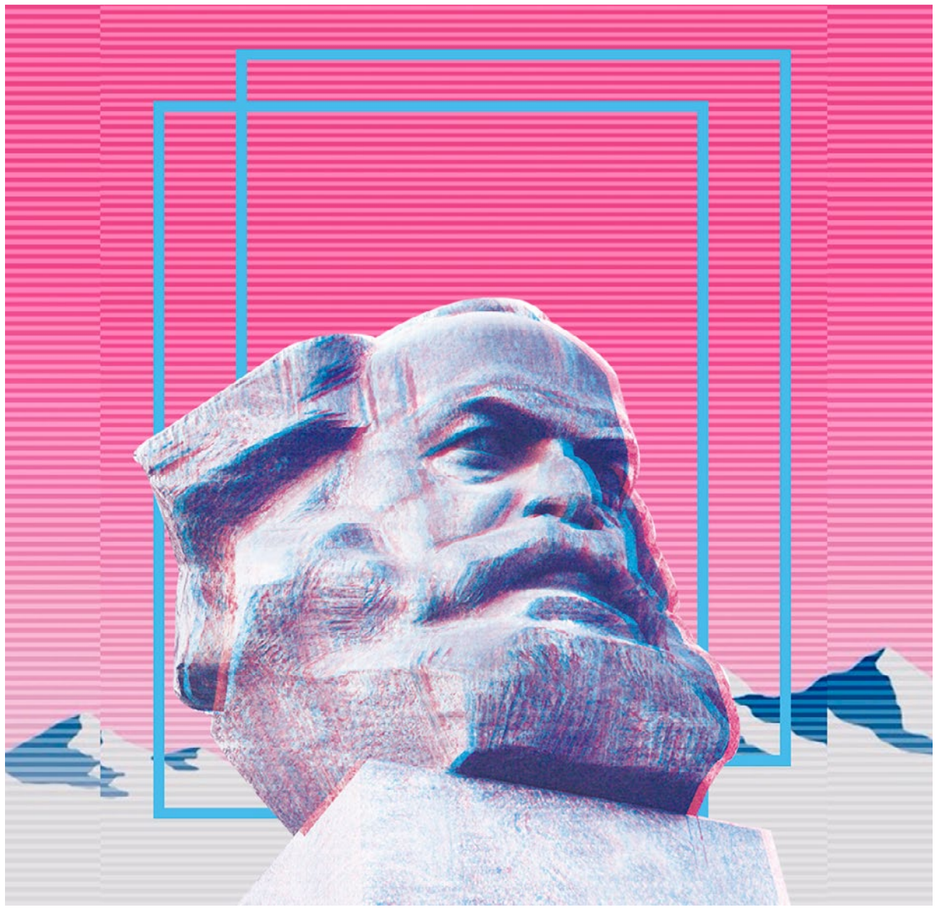
As you will have noticed, there is no easy route to what I seek: and the reasons do not reflect a personal lack, but, on the contrary, the long History, and key but unavoidable wrong turns in Mankind's efforts to transcend his own biological Evolution, and its consequent endowed abilities, and attempt to understand both his World and himself.

For example, still to this day his primary intellectual tool, as a direct consequence of his evolution, has always been Pragmatism - "If it works, it is right!", which he inherited from earlier hominids. Indeed, it effectively took around 170,000 years for him to extract any alternative means, and even those, from the outset, were always-and-only "legitimised" by a banker Pragmatism, and involved various major erroneous assumptions, that have not been adequately dealt with even to this day!

In fact, though developments have occurred, it has been a long, zigzag path, with every single gain, though containing more Objective Content than what it replaced, would inevitably, at some point, always be running out of steam, and requiring yet another major turn to allow any further progress to continue to be achieved!

Even now, in the 21st century, the "current epitome", of an all-encompassing, philosophical stance, is yet another "postmodern" amalgam of contradictory, and inadequate stances switched-between pragmatically at each-and-every encountered impasse.

Diverse intellectual systems proliferate with every new area of study - yet even the best still rely upon Idealist Mathematics and Mechanical Materialism, with a reasoning-basis supplied only by pluralist Formal Logic, along with a necessary final-and-inevitable seasoning of



Pragmatism. Now, let us be clear, none of these are pure invention - they do, indeed, reflect some aspects or parts of Reality, but embedded in several complex, immense and inadequate systems. And, they do "succeed", if not in delivering a comprehensive understanding, then, definitely, in providing pragmatic successes, within finite constructed, maintained and controlled localities.

The seeker for a better way, is faced with a forest of impenetrable, pragmatically-linked disciplines, resting upon a common foundation of Mathematics and Formal Logic.

"Yes... but" counter arguments abound in any "debate" with consensus supporters, never actually defeating your efforts, but also "maintaining" the status quo (to their own satisfaction) with never-ending protests. And, it isn't only that! You can criticise Abstraction, Simplification and Idealisation till you're blue in the face, but to construct an alternative to the plethora of current systems, with a single general stance, is not only a mighty task, but requires the killing and burying of every single one of component disciplines of the current consensus!

And, even knowing the initial steps turns out to be insufficient.

Hegel and Marx pointed the way, without "leaving-a-map" - you have to make your own, by reading the innumerable exemplars provided, digging them up "as is", and attempting to re-plant-and-tend them in the absolutely necessary ground of Science - all the time, like

the good gardener, revising-and-improving the implied methods to that new ground, already occupied by the dense thicket of pluralist weeds.

And, it very soon became absolutely clear that a purely philosophical process would never be enough! In this non-philosophical World with its History, the only possible path would have to be a warlike-attack, upon the citadels of the consensus, taken through to their total ignominious defeat! And, the first Stronghold to be attacked, had to be the imposing Citadel of Copenhagen.

Yet, a direct frontal assault would certainly be a mistake: the original route would have to appear to be an entirely theoretical assault upon the nature of Empty Space (Copenhagen's clearest weakness).

Not only a definitive exposure of failure, but also, a demonstration of the success of an alternative, must be established, at the very Heart of the Copenhagen monolith - The Double Slit Experiments - seemingly only reconsidered, with the single added premise of an undetectable Universal Substrate.

The objective would, also, be crystal clear - a purely physical explanation of all the anomalies engendered by the Copenhagen stance within that whole set of experiments. But, it would not, of itself, be sufficient, of course, yet in the process of establishing it, an alternative approach could be being assembled, which could then address all the other mistaken tenets of Copenhagen, one-by-one!

But, I'm afraid, the necessary wherewithal to achieve this would NEVER be found in Classical Physics: for that too is irrevocably tarred with the same brush of Plurality (not to mention Idealist Mathematics, Formal Logic and Pragmatism).

Many, including Einstein, de Broglie and Bohm all tried that approach, and failed to defeat the Copenhagen position, so that route, as they applied it, would be most certainly doomed to failure too.

What has to happen is to apply what appears to be Classical Materialist Physics, but without the idealist, pluralist and pragmatic insertions ruining the means employed.

It will actually appear to involve merely a single added physical premise, but the philosophic means will be the really revolutionary component!

IMPORTANT: The opposition will, of course, demand experimental proof, but that will be reserved for a final Coup de Grace - for what they call Objective Experiment is not what I call Objective Experiment.

For, almost a century of their inverting the relationship of Theory and Experiment, as well as much more of their pluralist stance, have destroyed their version of a confirmatory experiment into one of supposedly justifying prior speculation.

So, we will rest upon a steadfast, physical Theory (based upon philosophy) until we can mount an experiment which will indeed confirm that Theory as against Copenhagen!

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