

SHAPE JOURNAL

TRUTH AND ILLUSION

ESTABLISHING TRUTH SERIES I - III / APOPHENIA AND ILLUSION / THE CHARLES BONET SYNDROME
TRUTH AND ILLUSION / A SNAPSHOT OF AN EXPANDING UNIVERSE / MYTHS OF TRUTH



Truth and Illusion

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Introduction

Truth and Illusion

by

Mick Schofield

Welcome to the 70th Special Issue of SHAPE Journal. This edition gets right to the heart of what this publication is all about - determining what is real.

Art, Science and Philosophy all share the same ontological quest of approaching truth, albeit with very different methods, ideologies and results, but there are countless pitfalls along all three roads, and many of them share the same origin. All three rely on appearances and forms as their basic material. Even the most apparently unmediated of these, are still Abstractions from the material world, and can already be deceptive. And that is long before we start categorising, rationalising, manipulating and combining forms, in all the elaborate ways we have learned to do, but which ultimately push these forms further from their original contexts in reality.

We primarily rely on our *senses* to confirm whether forms are true or not, but many philosophers over the centuries have shown that this can be a mistake. Optical illusions are often used to demonstrate how we cannot trust our senses - that there is some barrier between us and the truth of the material world we observe. However this is a limited view - it fails to take into account the fact that most of the time our senses serve us very well, we find our immediate realities completely intelligible. They also fail to take into account a key paradoxical fact, that illusions can actually give greater access to reality, than our senses alone can offer.

Think of the mirror, for example. Until we encounter a reflection we have no idea what we look like.

A reflection is certainly an illusion however, and one we routinely trust to tell us the truth, despite the fact that it flips the entire world front-to-back. For Jacques Lacan the mirror illusion was fundamental to how we see ourselves and our relationship with the reality around us. The mirror stage is a crucial phase in the development of human infants, where the ego begins to develop as we see ourselves as an ideal image, and fundamentally separate from others for the first time. Before this, according to Lacan, we live in the Real Stage, where we are only concerned by our immediate bodily needs and a lived unity with our mothers.

Another crucial illusion we rely on to access information about ourselves and the world, are moving pictures. These are based on photography, which also makes clever use of mirrors and tricks of the light, to present authentication of how things look. The photographic illusion, while synonymous with evidence, is compounded when we use machines to play back one photograph after another. All moving images present a basic illusion of movement - a motion that is constructed from a series of stillnesses. This isn't how motion works in reality at all - and yet, we have simulated it well enough to trick the eye with ease.



The illusions of moving images provide us with reliable evidence of things all of the time - augmenting our senses and providing access to aspects of reality we could never approach without such technological prostheses. Marxist theorist Walter Benjamin talks about this in his famous essay on *The Work of Art in Age of Mechanical Reproduction*, calling this new technologically-aided sense, the optical unconscious.

But there are certainly limitations to our amazing inventions. We become so reliant on them for information, we cease to notice their shortcomings and distortions of the truth. Jim Schofield's research with Bedford Interactive into the capturing of dance on video for motion study, showed how much dynamic information is lost when we rely on a series of stills to record it. His use of Zeno's paradoxes and dialectical reasoning in attempting to resolve the problem shows this is more than just an issue of inadequate technical solutions. The very contradiction of trying to understand motion through stillness was bound to surface sooner or later, even if this particular illusion is adequate for most purposes.

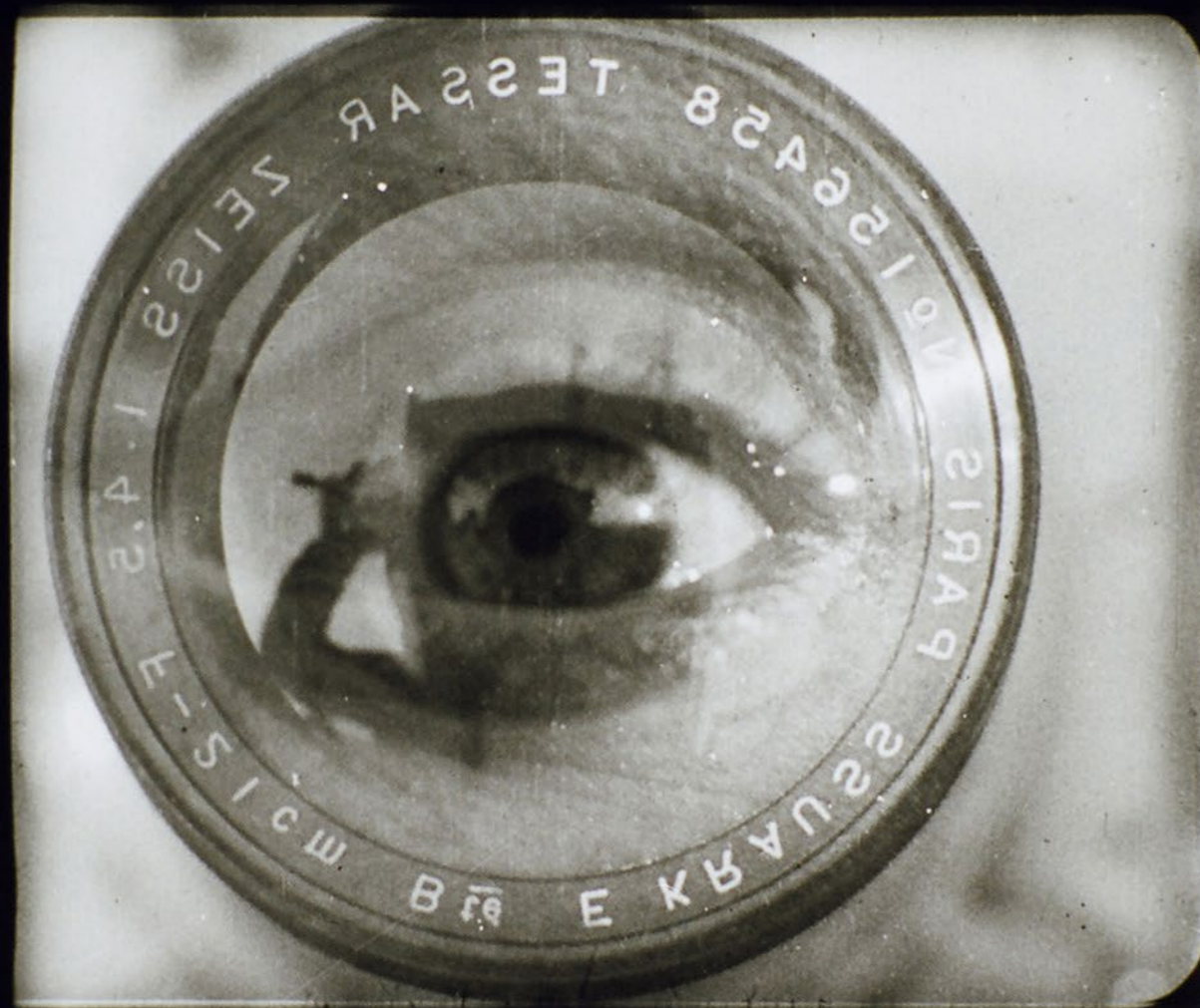
This conundrum also reminds me of Henri Bergson's view of our cinematic view of reality - another philosopher influenced by Zeno. Bergson used the "cinematographical apparatus" as an analogy for how the intellect attempts

to deal with truth - always fragmenting, abstracting, analysing phenomena into discontinuous constituent parts, and then attempting to understand the dynamic whole from these debris.

"Such is the contrivance of the cinematograph. And such is also that of our knowledge. Instead of attaching ourselves to the inner becoming of things, we place ourselves outside them in order to recompose their becoming artificially." Bergson, 1907

The video camera is a science experiment. It takes small pieces, samples, data, and tries to understand the dynamic whole. But something is always lost. Such illusions can be very useful, the difficulty then lies in working out what isn't translated, and the extent to which we might be kidding ourselves.

As Jim Schofield investigates in his paper on Charles Bonnet Syndrome in this issue, a form of illusion lies at the heart of vision itself. As with Bergson, this isn't just about technology, or even scientific methods, but about the ways we think about reality, and maybe even something fundamental about how our brains work.



Dziga Vertov, *Man With A Movie Camera*, 1929

In this pioneering experimental Soviet film, Vertov uses creative illusion to shatter the illusion of cinematic pictures.

The Charles Bonnet Syndrome

Discoveries of the Vision/Brain System
caused by significant Loss of Vision

by

Jim Schofield

I am a scientist and an octogenarian. I currently suffer from an affliction known as Charles Bonnet Syndrome, caused by macular degeneration.

"Charles Bonnet syndrome (CBS) is a disease in which visual hallucinations occur as a result of vision loss. CBS is not thought to be related to psychosis or dementia and people with CBS are aware that their hallucinations are not real." Rarediseases.info

As an extensively-experienced researcher in both science and philosophy (and their inter-relationships, and cross-causalities) - as well as being a prolific investigative writer of serious academic papers in both of these areas - I felt I was in a unique position to shed some light on this disease, and the insights it offers into how we understand the world visually.

I have a particularly well-endowed background to both accurately describe the changing symptoms involved, and (it seems to me), I possess a unique and necessary ability to draw conclusions, wholly absent from either the usual sufferers or medical practitioners - to play a role in extracting more informatively, exactly what is going on in this less than perfect, and undoubtedly failing system of diagnosis and treatment.

Indeed, it reminds me of the conclusions drawn, many years ago, by V. S. Ramachandran - whose work I have followed closely - from the clinical evidence of both Blind Seeing and Visual Neglect, concerning the Brain

Functions involved, and dependable conclusions on how hallucination is actually a fundamental part of vision.

My credentials are actually somewhat understated in the above brief description of my professional career. The last 20 years of my life have been dedicated to understanding the philosophical limitations of all Pluralist Science - a pervasive logic which sees laws as separable, but is blind to the dynamics of Qualitative Change, due to its primary methods of analysis - holding things still and making extractions. Plurality regularly generates untranscendable contradictions and impasses in our understanding, but science is fundamentally pragmatic and finds workarounds, but without ever resolving the underlying problem of its failure to deal with real-world change.

This is certainly relevant to understanding my condition, as the Charles Bonnet Syndrome is about the dynamic interface between signals from cells in the retina of the Eye, to regions of the Brain with the capabilities to construct adaptable, and developable visual models ("as cereably-viewable images"), which is what we actually "see" and consider, and which is both constantly-updateable and stable as a kind of "movie" in our minds, and could be called upon when required in both the immediate present, and the distant future as visual memory.

And this is well beyond what any Pluralist Science can possibly cope with! But, what could be the requirements

of an alternative Holist Science, one that could comprehend this mental movie? For, it certainly WILL NOT BE as a sequence of stills (as in Film) OR even as a sequence of mini-movies (as in Analogue Video)! NOTE: I studied the dynamic qualities of both of these electronic media as part of my extensive research into Dance Education and Motion Studies, with Bedford Interactive in the 1990s.

What will it have to be then, to be useable, as we know it is in the brain, and specifically, how will it perform as evidenced by the actions of The Charles Bonnet Syndrome?

And the more incidents I experience due to the condition, the more complicated and various are the functions that are demonstrated. So, rather than using the selected examples from a clearly diverse range of accounts, some of them are either remembered or can be somewhat embroidered - to avoid the misleading consequences of such misleading evidence - I will instead commence my own contributions with a range of my own experiences, as a professional scientist and multi-discipline researcher, only recounting what I have personally experienced, and also judging what I consider valid enough to be included, if and only if, an explanation is forthcoming!

Let me start by describing the various types of hallucination I have experienced myself.

1, The Mini Movie

This invariably occurred upon waking and opening my eyes. But, it wasn't a misinterpretation of "things-seen", for it was there wherever I looked, and was always containing the very same subject matter. But, uniquely, it was always in full-detailed colour and excellent resolution - a perfect illusion, always of the same restricted scene, but with minor differences. It was always of a Victorian slate roof, containing one or two brick-built chimney stacks, surmounted by ceramic tops, all with the same kind of zig-zag heads. And, invariably, there would be a branch of a tree, with large glossy leaves being blown about in the wind. But that was it! In a way it was beautiful, but like a repeating movie scrap! Surprisingly it was always framed, as if seen through a window. and wherever looked it was there! But it always soon faded and was gone.

2, The Misinterpreted Tile

This, latterly as my sight has become very poor, is clearly a rather poor version of something actually seen, but in these cases it fills-in where my macular is detecting nothing. Very recent versions occur when a glance to a new place immediately sees a hole (that is - nothing there at all), and then rather quickly fills it with the circumstances close to the tile from actually seen views near to that hole! But my looking elsewhere and using the part of my right eye macular, still partially working, you can confirm that the patch is wrong.

With further deterioration, it has now become a major problem, as it can deliver buildings or trees to the view, when it should be the sky!

3. The False General Tiling

In relatively poor lighting conditions, a misinterpreted patch from an extended same view, will then fill-in-and-maintain, wherever I look in that extended view with a regular tiling of the same "tile", this giving it a pattern which isn't actually there.

4, The Simplified Tiling

If I look intently at a patterned surface or curtain, it simplifies successively (if I continue to stare) into a series of different, but repeated sets, wherever I look. And, surprisingly, the images, then consist mostly of black lines upon a white background, but they are so beautiful. It's a real shame I can't "capture them"!

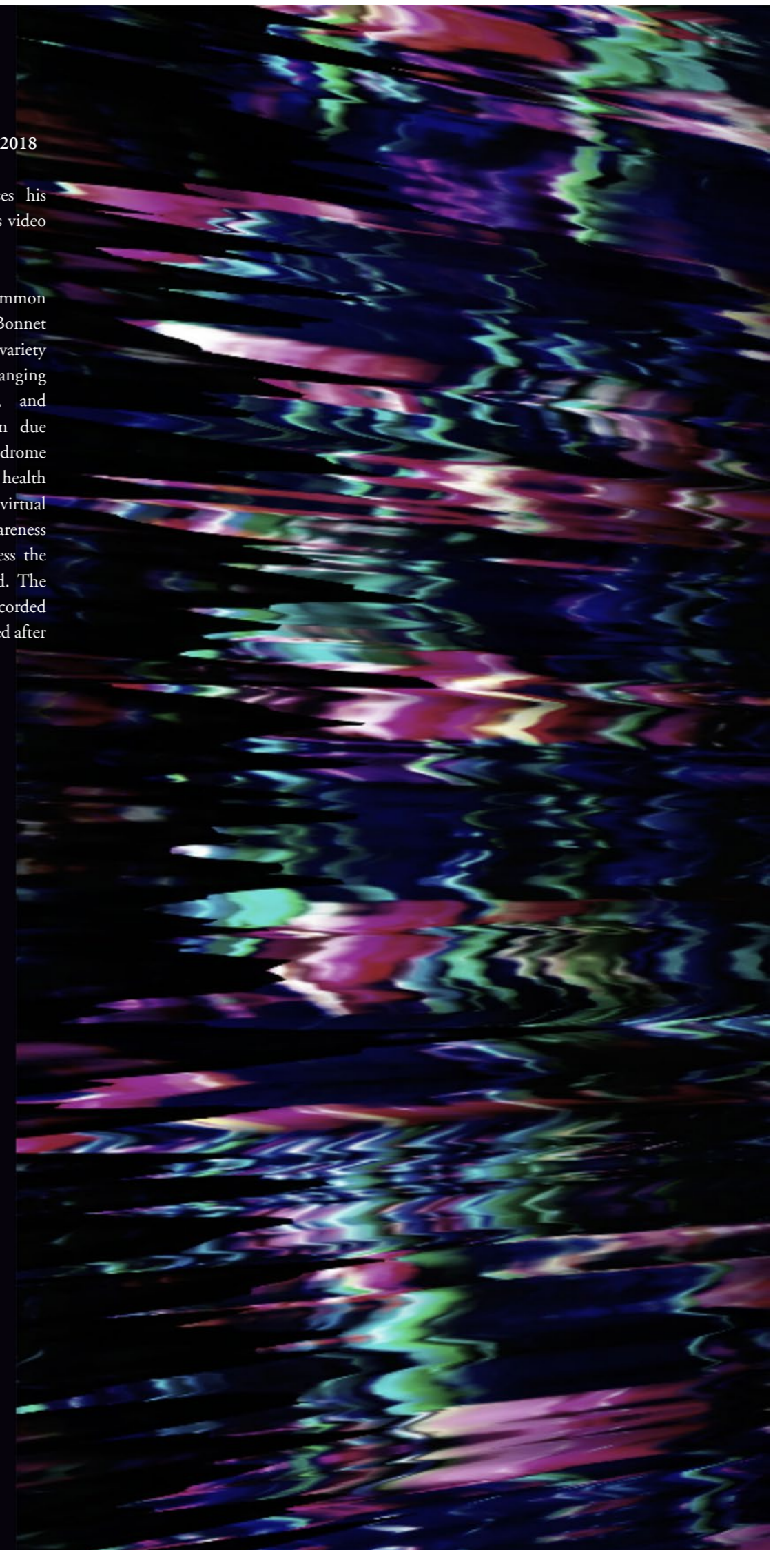
Now, as with Ramachandran's conclusions upon brain-activity areas, with normal seeing, the revelations of the Charles Bonnet Syndrome sufferers, as seeing functions were damaged, also throws light upon how the brain plays various creative roles in normal sight too.

To consider these phenomena upon sound bases, though, we have to be clear upon the differing functions of both the relatively tiny macular areas of the Retina within the eye, and the much larger non-macular area, which occupies the whole of the rest of the Retina. It has become clear that we actually see literally ALL detail via the Macular part of the Retina - these are the only areas naturally delivering everything we see in any detail: whereas the rest of the retina is only well equipped for detecting the movements seen by our eyes.

Henry Driver, *Seeing Things*, 2018

Driver is an artist who uses his experiences of sight loss in his video art.

"Following sight loss its common to suffer from Charles Bonnet Syndrome and experience a variety of visual hallucinations, ranging from abstract to realistic, and pleasant to terrifying. Often due to lack of awareness the syndrome can be mistaken for mental health issues. I have been using virtual & mixed reality to raise awareness and allow audiences to witness the visual hallucinations firsthand. The visualisations are based on recorded hallucinations, and were created after an intense period of research."





Indeed, detail updates for any achieved brain-image of something seen, can only take place via the macular! The macular must be moved about to build up the picture of a scene in the brain.

[Whereas, as the focus of seeing is moved elsewhere, a simplified-and-*unchanging* version is always left behind in all past positions, in the now non-macular areas of the Brain-image. Clearly that part of the brain-image must all be derived from prior macular attention to such areas. The non-macular brain-image is therefore initially composed of “macular-sized patches” delivering the whole of the non-macular brain-image]

So, immediately, anything no longer being picked up by the macular will NOT now show moment-by-moment changes there. Indeed, it will show what was there the last time we looked at that area, via the macular, BUT, as the non-macular does deliver *movement*, it will have, in some way, to update that non-macular view!

But in addition, evidence from Charles Bonnet sufferers, reveals an extra fill-in function, by copying in a now-absent-view from immediately adjacent areas.

While the rest of the non-macular view is always rotated according to a previously-learned “algorithm”, while still updating movements anywhere upon that area, as our view is moved on.

Now, some of the built-in mechanisms for updating the brain-image of a looked-at-view, have only been revealed by sufferers of the this Syndrome, particularly when the incoming image delivered by the eye is deemed inadequate, for the initial solution is to fill-each-gap with the same content, indeed as that of a close nearby spot (either a reliable one, or a compromise inaccurate one).

In the latter case, it is revealed to be from the immediately priorly-visited “patch” - so that in an erroneous viewed area, the moving glance of the viewer will merely leave a trail of identical patches determined by the eye’s line of scanning. So, if I as a sufferer, are not sufficiently careful, the brain can fill whole areas of sky with a fiction of recently observed trees!

EDITOR’S NOTE:

Charles Bonnet Syndrome is a very specific form of pareidolia - or visual apophenia. This means that it is evidence of a general tendency of the brain to invent things in order to make sense of random or meaningless information. For Charles Bonnet sufferers, this is experienced as profound hallucination. In people without sight loss these mechanisms are still present, but largely hidden, as the stream of visual information given to us by our eyes is complete enough to correct any mistakes or strange inventions made by the brain. Seeing faces in the dark is an example of pareidolia working under normal sensory conditions. People undergoing prolonged sensory deprivation can also experience hallucinations, similar to Charles Bonnet sufferers, as we see with a phenomenon called Prisoner’s Cinema, in which inmates kept in solitary confinement begin to see strange light shows on the walls of their cell.

Apophenia and Pareidolia

Chasing apparitions, forms and patterns in the noise

by

Mick Schofield

The term Apophenia was coined by psychiatrist Klaus Conrad while studying schizophrenia in the 1950s. He defined it as a human tendency to find meaningful patterns where none exist, and that this is exacerbated in those who struggle to process sensory information normally. Apophenia can be seen as an over-interpretation of actual perceptions, rather than full hallucinations with no basis in reality. The fact that these patterns emerge from real material phenomena, makes them much harder to refute. We see Apophenia occurring in superstitious beliefs, all kinds of confirmation biases and in conspiracy theories too.

Pareidolia is the most common form of Apophenic illusion - and it is one we have all experienced at some point. It usually concerns the visual - seeing things which aren't there, often faces - but auditory equivalents exist too, the common thread being the perception of recognisable forms in random stimuli. Pareidolia is a scientific explanation for ghosts sightings and other paranormal experiences: the face of Jesus appearing in a piece of burnt toast or UFOs spotted in the dark or in blurry photographs.

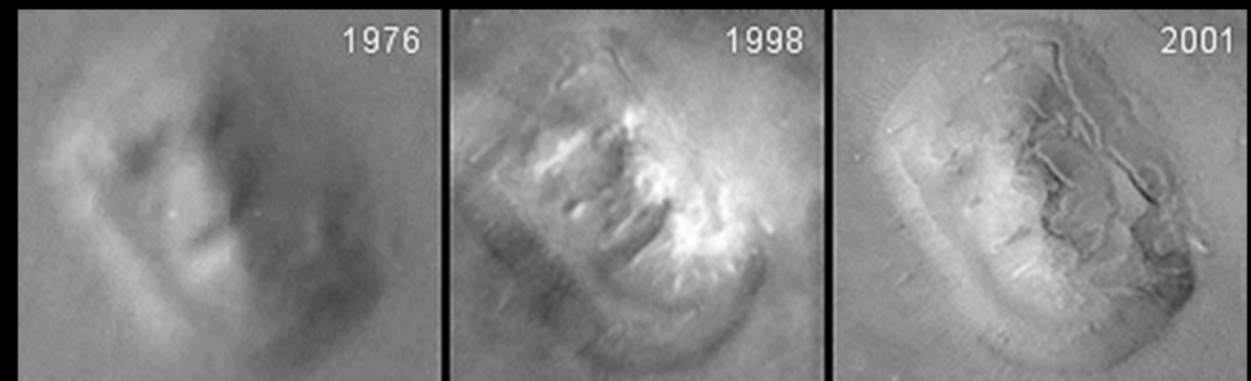
My research into the fundamental spectrality of photography, and photography's various relationships with ghosts, lead me to Pareidolia as part of an attempted materialist explanation for these seemingly immaterial phenomena. Looking deeper into this subject it began to occur to me that its relevance went far beyond explaining ghost sightings in ambiguous and grainy photographs.

As well as problematising the evidential nature of the photograph itself, Pareidolia has the potential to mislead us in scientific data too, even when we are being at our most rational and evidence-seeking. The key feature of this is our over-zealous ability to parse patterns and find forms in the background noise of reality, and the source of the possible deception, is that we limit our search to forms alone.

If we look hard enough for a certain pattern in total random noise, we will find it. Next time you are in front of a detuned television, stare at the static and think of any given object - I think you'll quickly see what I mean!

The example of Pareidolia on the right, is a famous photograph of the Martian surface taken by the Viking 1 spacecraft, whilst scouting for potential landing sites. This ghostly image became known as the Face on Mars, and was widely circulated in the 1970s as evidence of an ancient Martian civilization.

While this may seem silly now, and few scientists actually believed this was evidence of anything, its initial refutation was ideological rather than evidence-based. Many people continued to be fascinated by the image, to the extent that photographing Cydonia again, became a mission priority when NASA returned to the planet, with the Mars Global Surveyor in the late 1990s. Subsequent photos clearly revealed that the first photograph had been an illusion. In later images of the same location, we see the vague martian face - constructed of large sand





dunes rather than stone - gradually disappearing over the next two decades.

The cure for illusion here was iteration - revisiting, repeating the process and reappraising the form again, for consistency - at great expense for the American space programme. But this doesn't always solve the problem of pareidolia and ambiguity. Sometimes an experiment isn't repeatable - sometimes people can give great significance to recognisable and repeating forms, even if there is little evidence to support a material basis for the patterns that we readily see and use.

Noise can be viewed as the natural enemy of meaningful information. As with many historical spirit photographs and famous images of UFOs and the Loch Ness Monster, the background noise, the underlying graininess of the image, is fundamental to the Apophenic illusion. It may seem then, that the best thing to do is to eliminate noise and its potential for deception completely. We certainly attempt the equivalent of this in science experiments all the time. But in removing all noise we can easily miss crucial things hidden therein - and to do this, we must also first know exactly the forms we are hoping to extract.

The problem isn't just how we deal with forms and patterns, but how we conceive of 'meaningless' noise. The idea that noise is just random and chaotic, and can be ignored so long as patterns and forms can be successfully extracted, isn't a scientific notion so much as a metaphysical assumption. All noise is the result of processes and activity that have some causality, and hence meaning, it is just happening at a level of complexity we cannot currently penetrate or understand, so we label it stochastic. Important truths are undoubtedly hidden in background noise all the time, but we feel we must remove it to avoid the chance of misleading Apophenia.

In photography, ambiguity and noise can certainly help create such illusions, but this noise is also evidence of the fact that we are not seeing a real presence at all. It is

a reminder that photography is a temporal illusion, at its base - a presence that marks an absence - a kind of material ghost, that might have once been real, but is now just a trace and a mirage. We see ghosts in photography that aren't there, but arguably all photography consists of ghosts that aren't here.

Without the noise of less perfect imaging technologies, it becomes easier to forget that photography is an illusion that breaks time - so in a way those grainy and ambiguous images of old, murky spirit photographs and faded ghostly portraits, are closer to the truth of the medium and what it does to reality.

The answer then, can't be to remove all noise from our recordings and experiments.

This may sometimes risk us chasing ghosts, and finding illusory patterns and forms that aren't real, but so long as we remember that illusion is all we're dealing with anyway, in our technological mediations of reality, we might be better prepared to understand the strange things we find in the noise, and hopefully, somehow, contextualise them, and understand their role in the material reality beyond our extracted images.

Form alone can always be deceptive, particularly if we render it primary. Deleting noise is to remove that form from content and material context - our unbridled ability to do this is perhaps the greatest illusion of all.

Establishing Truth I

The Unavoidably Never-ending and Zig-Zag Trajectory Involved in
Revealing Reality in Human Thought

by

Jim Schofield

The most debilitating deceptions in Human Thinking reside surprisingly within its “successes”!

For, the initial validating test for all such conceptions has always resided in *The Pragmatic Tenet*:

“If it works, it is Right!”

Since the Intellectual Revolution of the 5th century BC, we have also been wrongly focussed into assuming *The Pluralist Tenet* - the belief that reality is separable into parts with fixity - or the unchanging qualitative nature of all Reality’s extracted Natural Laws.

Now, both of these simplifications have indeed proved extremely useful in certain highly restricted and steadfastly-maintained contexts: but they have also been wrong, when applied more generally to Reality.

I can, indeed, irrefutably establish the truth of that last statement: but instead will leave the task entirely to the reader: though I must mention that Plurality was indeed initially established as being, in fact, formally true, but only in the area in which it was indeed exclusively established - within the study of Pure Forms alone - namely within Mathematics - but absolutely nowhere else.

Now, for such a System to be greatly celebrated within its legitimate area of application, was indeed also a significant general-breakthrough for Mankind, as it was

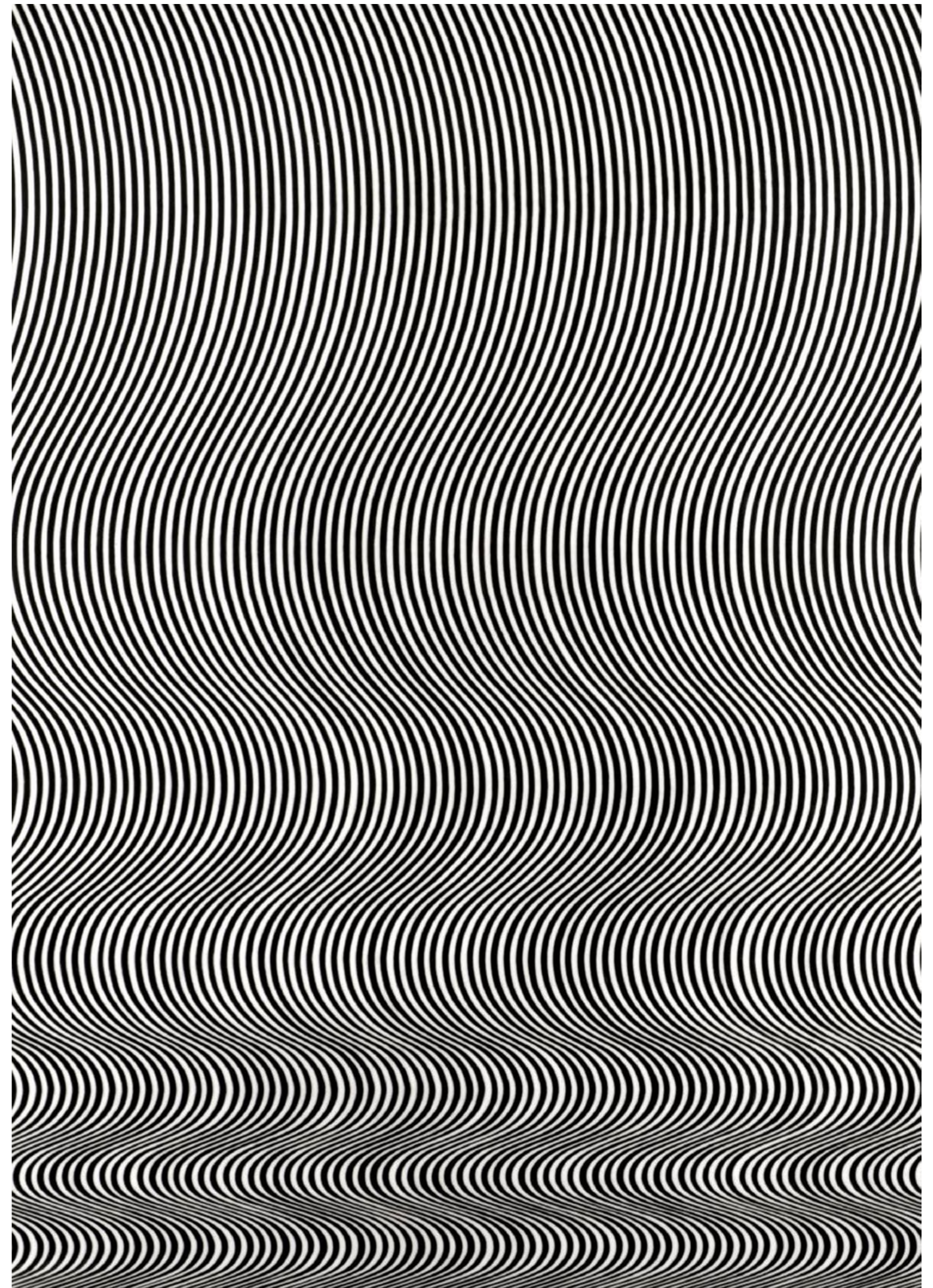
indeed the first ever formally establishable means of both relating and even enlarging the elements of such a Discipline, and to guarantee the possibility of its valuable and reliable extension.

It thereby established that Reasoning was possible: and hence established an ideal and real standard, to be required for other following Disciplines potential Rationality across the whole range of Intellectual activities.

So, instead of merely establishing a pragmatic certainty-in-use, it allowed, for the very first time, for problems to be addressed completely cerebrally, via Reasoning first! Instead of only amassing Knowledge of reliable techniques possible in the Real World, it enabled problems to be thought-about in abstraction, as well as merely pragmatically acted upon.

Areas of study now had *Theory* (to be thought about) in addition to *Practice* (to be remembered and used!)

But, there were initial pitfalls, which both could and did cause problems! In my own area of study, for example, which is Physics - it is certainly NOT a domain where Plurality holds, so along with many other study areas, which nevertheless all assume Plurality: that stance’s pluralistic assumptions are both inapplicable-and-misleading, so let us see what that has meant for my professional work. and clearly for all other Sciences too!



Historically, and for a great deal of time following the Ancient Greek Revolution, measurements within that subject delivering numerical results, were neither common nor very accurate, so scientists treated concrete experiments, either wholly pragmatically, as Technology, or alternatively Pluralistically - that is subject only to fixed-&-unchanging Laws, in conditions guaranteed to work in this way.

But, as the precision of such investigations developed, an increasing separation of these two approaches occurred, for they drifted further and further apart in what they delivered! Indeed, Experimental Scientists, soon abandoned Reality-as-is for their experiments, and successively changed the required conditions, until the measurements obtained did indeed conform to Plurality!

In so-doing, the assumed Law that was being sought, was made wholly inaccessible, and had instead been limited to exist in a non-natural pluralist context, and always greatly reduced in the active components involved! We had actually created an Alternative Reality, in which those components worked like the pieces of a simplified machine.

Though this unacknowledged by anyone, investigations of Reality-as-is, totally ceased, and were replaced by whole sets of pluralistically-constrained experiments, each one with a different composition, and a different objective.

And the producers of required objects, had to involve several different experiments, in different contexts, each of which was only as part of an organised sequence of such, that could deliver the originally-intended object - but it was never exactly the same as it would have been, if it had naturally occurred within Nature-as-is: for the processes involved were certainly different.

Now, following the Greek Intellectual Revolution, and the incredible power of Mathematics in delivering a useable discipline to handle number effectively and efficiently, there were important features of that Discipline, which also seemed ideal for application to numbers representing experimental measurements. AND, even more revolutionary, was the possibility of expressing a Relational Law in Symbolic Forms - using "letters" as placeholders to represent all legitimate numbers: for then the application of a Law could be evaluated by putting measured numbers from experiments into the

Equations in symbolic Form, representing the actual, but Pluralistically-constrained Physical Relation.

So, unsuspectingly, a Dichotomous Pair of relations were emerging!

FIRST: the Physical Relation observed across many cases!

SECOND: the Mathematical relation relating the measurements!

But, the actual Physical relations, themselves, would NOT be Pluralistic, while the purely Mathematical relations could be assumed to be Pluralistic.

They are only ever possible by artificially - and thereby radically changing-the-context of an experiment to alternatively deliver NOT Reality-as-is, but, instead, a wholly Pluralist version of our own making.

And, of course, the Equations were only valid if applied in the exact same conditions as those artificially made to be in existence during the extraction process! The Equation could never be generally True, though in applying the rules of mathematical proofs and extensions, that would HAVE to be the case!

The usually always following mathematical manipulations, substitutions and developments may be true concerning relations of Pure Forms alone: BUT with equations, each one extracted from different pluralistically achieved contexts, would definitely NOT be true for Real Unconstrained Physical Relations, all of which "assumed" a common Reality-as-is in Theory.

But, that Real Theory, as it would be in Reality-as-is, was NOT available: only the pluralistic Equation correctly applicable in the appropriately-organised Pluralistic Context.

And notice also that all the pluralistic Situations used as a sequence to deliver the required overall effect, would be DIFFERENT. So, the commonality required for the individual Equations - one for each different context - could NOT be manipulated according to Mathematical Rules. For though Mathematics as a study of Pure Forms has that commonality: it would NOT be the case for the set of Equations, all from different contexts!

And, Plurality had yet another property, which "excused" such assumptions!

It was that all Natural Laws were *eternal*, and were hence independent-of-one-another in all contexts. This principal rendered the pluralist derived laws the same as the Natural Laws!

But once more, this was yet another incorrect assumption, when applied to Reality-as-is, and the whole area of substitutions and additions of different equations is wholly illegitimate in Physics, while acceptable in Mathematics.

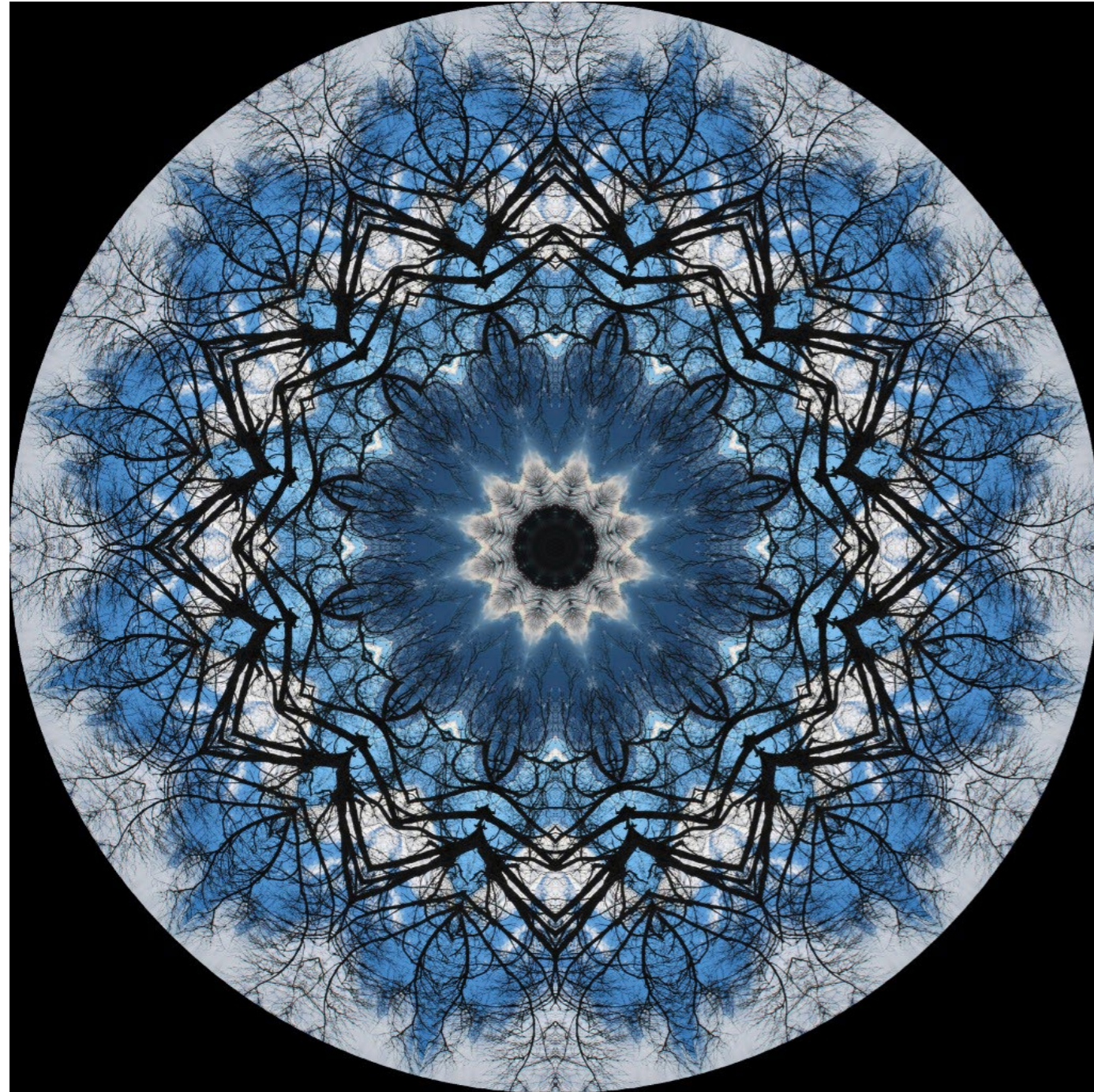
This elaborate illusion is like a reflection in a mirror of Reality - for that reflected image is NOT a one-to-one mapping with the Reality so reflected!

And Reality is quite definitely Holist, and never naturally Pluralist! But you would never know this from its reflection in Mathematics.

Do you doubt that Reality Evolves?

Establishing Truth II

Holistic Reasoning



Now, the total and damning rejection of the Pluralist Illusion of Reality, even as it is increasingly hard to refute, will amount to absolutely nothing, unless it is now comprehensively addressed by an effective Holistic alternative, which has the wherewithall to effectively deal with every single major mistake in interpreting Reality-as-it-actually-is.

And, the historical alternative, which actually emerged at the very same time as the Ancient Greeks developed Pluralist analysis - was the original Buddhist Holistic Stance that emerged in India.

And, though basically closer to the Truth than Plurality, for delivering Reality both as-is, and as it developed: it was also a premature formulation, unable to effectively address all the issues that had to be dealt with.

But, though neither of these stances were sufficient on their own, they did both introduce an era of Human Thinking, to be a potentially powerful alternative to solving problems purely pragmatically. For, with the development of concepts and their inter-relations as an extracted, purely-cerebral reflection of that obviously rational Reality, coupled with the unique cognitive abilities of Homo Sapiens, it was clear that a major breakthrough had been initiated!

But Holism, unlike Plurality, seemed more of a subjective insight into Truth, a Living World and Nature-based approach, that was quite incapable of replacing primitive

Pragmatism in delivering *useable* technical means, across the whole range of problems that constantly and increasingly demanded attention for human beings.

These two opposite, basic and incorrect conceptions of Reality, used different ideas, which underlay each of these stances, that were Fixity-for-Plurality, and Variability-for-Holism.

But, exactly what it was, that were considered either forever-unchanging or constantly-varying, were NOT the amounts of certain entities involved (the Quantitative), but actually the *natures* of their Qualities (the Qualitative). And though things and relations changed, it was never a simple Quantity-into-Quality constant-summation-type process at all!

In fact, changes in the quantities involved could carry on for very long periods, without any "Qualitative transformation" into something else. Indeed, when changes in the fundamental nature of something occurred, it was usually a cataclysmic transforming Event - a so-called Emergence (or when applied to the social world, a Revolution!)

And, to even begin to address such interludes, even the smallest entities had to be conceived of very differently as intrinsic, innovative unions of multiple parts - a kind of integration into a normally "stable" sub-system, which would usually be self-maintaining, but only within certain limits - outside of which, it would totally

dissociate, and then come together again, with some changes in composition, into a very different sub-system!

But, in fact, all such “seeming stabilities” would actually have to be “Active or Balanced Stabilities”, and NOT the minimum-energy Stabilities as conceived of within Plurality! Indeed, the whole area of Physics based upon the Second Law of Thermodynamics, and old ideas of Stability, would have to go!

Now, some of the key weaknesses of Plurality, had actually been realised very soon after the Greek Revolution by Zeno of Elea (in his various Paradoxes), who demonstrated very clearly that when Plurality was transferred wholesale to Reasoning in General, it unavoidably led to impasses caused by the irresolvable consequences of contradictory concepts.

But, this was certainly never agreed-to by his contemporaries, and it was not for another 2,300 years that GWF Hegel finally took up Zeno’s criticisms of Pluralist Logic, and even extended them to a whole group of so-called Dichotomous Pairs of Contradictory Concepts, and resolved the impasses, so-caused, by bringing in a major update to General Reasoning, which he termed Dialectics.

For Hegel quickly realised that Plurality totally excluded all qualitative change - and this couldn’t be true.

Now, Hegel was an idealist philosopher, he considered that the errors were entirely due to flaws within Human Thinking, so nothing beyond his dialectical corrections were considered necessary. But, his follower, Karl Marx, who was also a Historian, realised that these aberrations were NOT just figments of Human Thinking, but actually existed-within, and hence reflected, concrete Reality itself, and he transferred Dialectics wholesale into Materialism, in what was later termed Dialectical Materialism.

And, he began to apply it, more and more extensively, to History, and, in particular, to Social Revolutions. And, in so-doing, realised that the Economics of Societies, were absolutely crucial in both their Developments, and even in the complex Trajectories of Change, that were involved in Revolution - and which appeared to be the only way that one Social System could transform into another - though in no way ever directly predictable from its predecessor.

Now, via his Theories of Surplus Value, Grundrisse and Das Kapital, Marx began to develop the new Stance, but, initially at least, limited solely to Capitalist Economics. And though, much of what he revealed could indicate far more general applications, it was also abundantly clear that until the new stance was applied, in the same comprehensive way to the Sciences, the most general means would not yet be available for universal use!

And, that undertaking did not happen until this last decade, when this very Journal began to address the problems rampant in the Copenhagen Interpretation of Quantum Theory. Without what was learned from my prior research into motion studies, via Zeno, the difficult problems in Sub Atomic Physics would not have been solved.

Yet, in spite of these achievements, the crucial problem of including Dynamic Changes into all studies remains - going well beyond the usual Pluralist assumptions and methods, to a wholly new and difficult area of dealing comprehensively with the Group Dynamics, of Multiple Component Qualitative Changes.

But, the tasks unavoidably involved, in attempting to do this, moved all such situations into a very different set of contexts from Plurality! For, the traditional methods involved, in such an approach, had all the assumed relations as immutable: indeed those involved always sought only eternal Natural Laws, which never changed qualitatively. So, situations were interpreted as mere complications of those orever-fixed-laws - like the Rules of a Game.

And the Fixity of the Laws also allowed substitutions from one law into another, so the whole galaxy of mere complication, as was always allowable in Mathematics, was illegitimately imported into Physics too.

But, with both the actual variability of Laws, and even the minimal effects of simultaneous Laws, qualitatively, upon ome another, THEN all the tidy Maths-based techniques would no longer be valid, except in majorly and rigidly controlled situations which could not adequately reflect the truth.

Now, without a massive amount of further information, which was always totally unnecessary in Pluralistic Science, or merely brought in as non-intrinsic Pragmatic Rules, literally Nothing now seemed possible!

But, that turned out NOT to be the case: though the dynamic additions were as yet, it is true, entirely unknown for well over two millemia in all Pluralistic Sciences.

Such results were known, but never explained: Human Knowledge was divided up into separated disciplines - divided at all the inexplicable incidents, and Science, was limited to straight-jacketed subdivision, wherein total control could be effectively maintained.

And this didn’t harm Technology at all: most desired outcomes would be achieved. entirely pluralistically in rigidly-controlled situations - but certainly not all!

And Explanatory Science - with Physical Explanation was abandoned, to be replaced by Technology, backed by a purely “Mathematical Theory” only!

So, the important tole of Science in contributing significantly to Understanding in General, was largely irretrievably lost, as also was the dialectical side of General Reasoning.

Only Biology, particularly, with respect to Evolution, continued to make important contributions to the understanding of Natural Development. But, even there, the total domination of Plurality in areas such as genetics, has even badly damaged that contribution too.

But, the most desired outcomes would only ever be achieved, with the intended and necessary review of Modern Physics, where the adoption of the Copenhagen Stance was still perpetuating the already woeful Pluralistic approach.

But, there is a problem!

Dialectics certainly applies across the board, from Historical Materialism applied to the trajectories of History, all the way down to Effective Manufacturing, and all the way up to Human Thinking! It is indeed THE most General Approach! But, every distinct area and scacle will generate its own particular versions of the same General Principles.

So much so, that such a general approach will only make itself profoundly understood, in the process of attempting to apply it across all such areas.

It is certainly, even now, not yet an already fully-defined approach.

Marx himself was significantly adding to its definitions throughout the whole time he was attempting to use it within Capitalist Economics! And in my own experience of trying to use it within Physics, Motion Studies and Systems Design, the Key Dynamics (applicable everywhere) were only initially accessible at those tempos and scales, analysed by special techniques, that could be applied to recordings of the movements involved.

But, by far the most important aspects when compared with Plurality, was in the interdependence of simultaeous processes. For whereas in Plurality, such things were qualitatively independent of one another, and at most, only added together: in the Dialectical Holist approach, in contrast, such interactions actually qualitatively changed what occurred.

And even more significant were situations with multiple simultaneous processes repeatedly re-occurring: for there was an extra superimposed trajectory of changes throughout such regular repeats.

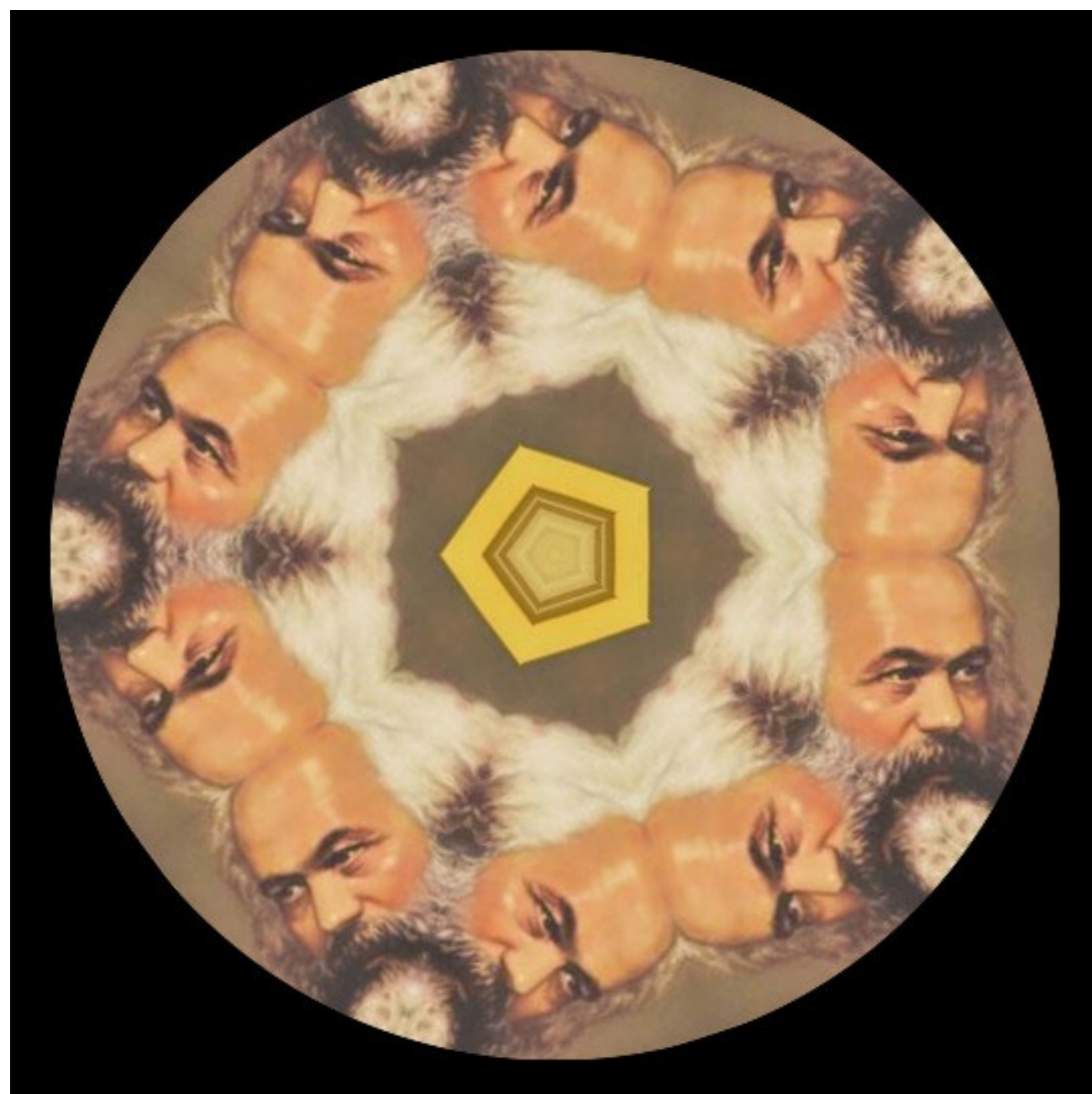
And this made Cycles different to individual, one-off events!

Things could “drift” in various hidden ways, over repeated occurrences to actually change the overall nature of what was going on.

And, such cycles could generate sub-cycles at conducive points, which could grow in importance and ultimately effect the original cycle significantly.

NOTE: An excellent example from the Grundrisse was recently revealed by David Harvey, within the Overall Cycle of the Processes involved within Capitalist Economics, with subsidiary Cycles in Capital increases, Production, Realisation and Distribution, wherein the subsidiary “Tails” could significantly “wag” the Capital “dog!”

Indeed another excellent example was recently exposed in a review of my past researches into what I termed Truly Natural Selection, which concerned the evolution of multiple chemical Processes, in the immediately Pre-Life situation, when concerned with entirely internal changes, within a simultaeously interacting set of such constantly



repeating sets of processes over extended time periods. For, there were certainly changes both in the continued-presence, or even loss, of certain processes, AND in the consequent emergence of “opposite” processes, as well as in changes as to which could become the dominant one within the set.

For, this then recently threw light upon the occurrence of what I called “Balanced Stabilities”, which wholly replaced the “Minimum-Energy Stabilities” of Pluralist Science - being instead sets of processes dominated by “pairs of opposites”, which as an overall group, made it generally actively self-maintaining, but which would in exceptional circumstances turn into a cataclysmic Dissociation, followed by the subsequent establishment of another different “Balanced Stability” at a different Level.

But such essentially Dialectical features of Reality were always misinterpreted because of the universal subscribed-to basic assumption of Plurality, which could not but terminate interesting revelations into pluralist-explained Stabilities, using notions of minimising the energy involved as the significant determinators of all stabilities.

But, we must also never forget that Life itself emerged from a wholly non-Living situation, so the transition to the first living things must also have arisen from processes emerging from that non-Living World!

The easy separation into Living and non Living Worlds, has always been illegitimate, and founded first upon the obvious differences, along with a basic assumption that Plurality was THE underlying Nature of Reality, so the Qualitative Changes unavoidable in the Emergence of Life from non-life. would be totally impossible to occur without divine intervention of some kind!

But, even that is no kind of explanation either, because the agent or agents involved are NEVER available for Scientific or even Logical Study.

It inserts an unbridgeable by-any-known-means Gap, at all seemingly Rational Impasses.

And with That established for our own existence, why not legitimise it for all other similarly inexplicable impasses too?

But, having radically altered the whole premises for both Reasoning and The Sciences, that everywhere in evidence are flawed due to Plurality, will have to be tackled, and NOT merely by some adjustment to the premises in the easier areas to address as Hegel did, but instead by an all out assault upon all the many cases of it throughout our treatment of Reality.

But, of course, the solutions cannot merely be in Rules of Thinking, as established by Pluralist Logic, but only in every single case of such an impasse, chasing it down to incorrect assumptions about the underlying Reality.

Instead of them all being considered to be in the single Discipline of Human Thinking, they will have to be found Philosophically and Scientifically, within the Disciplines that we so cavalierly consigned to have been truncated thereby, and instead returned their own place within a Universal Reality, instead of isolated in artificial Pluralist Domains.

As both Marx and Harvey (and this theorist) have demonstrated, it will be in the correct re-evaluation of the falsely and artificially separated Disciplines, that the answers will be found.

Establishing Truth III

The Dialectical Rationality of the Real Evolving World

The very beginnings of a Dialectical Materialist approach were, of course, initiated by Karl Marx, but that was long before his lifelong concentration upon studying Capitalist Economics. He was initially fascinated by the French Revolution, which had only recently happened, in historical terms. As a Young Hegelian, Marx was interested in studying Change. With Human History, and especially within Social Revolution, the pace of substantial Qualitative Change was accessible to study for the first time.

As Lenin was later to observe:

“For whole decades nothing happened, and then within a Revolution, decades could occur in a few days”

While the dynamics of Real Qualitative Changes were happening at a tempo which Mankind could both understand and intervene in, this was only possible if those involved totally dispensed with, the then universally employed Pluralist Approach, and, had instead attained at least some measure of the necessary Holistic wisdom available via Dialectics.

So, that is what Marx commenced to do, initially within his own professional Discipline, and began to get the feel of such changes within Revolutions. But, he was also aware that the standard Rationality that had arisen out of the Ancient Greek Intellectual Revolution, and which still dominated Western Philosophy and all Science,

was woefully inadequate to the task, as it had artificially made things intelligible by prohibiting the very Change he wanted to study. Instead, logic incorrectly saw all Natural Laws as eternal and fixed.

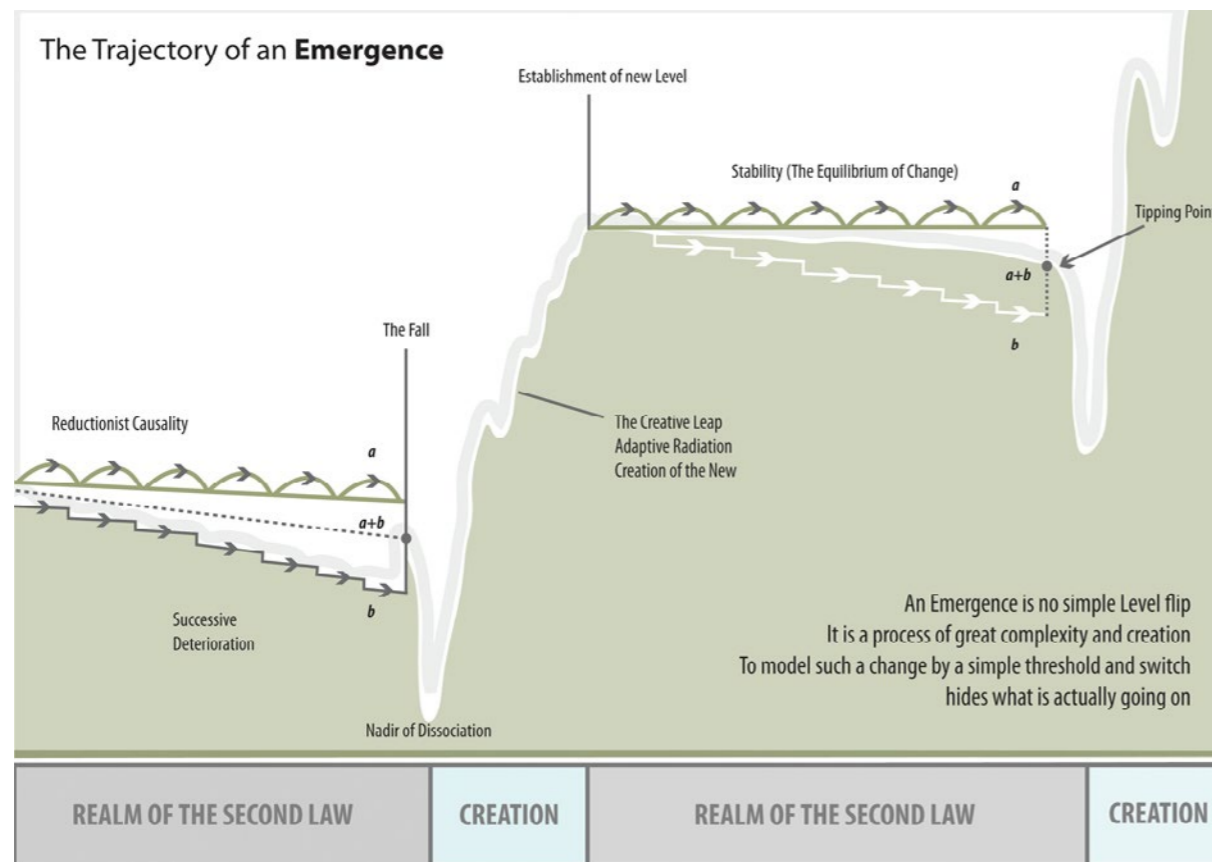
So, he began to conceive of a very different trajectory of Change, obeying overarching Meta Laws, which governed those changes and delivered Real Trajectories, unavailable within Pluralist rationality.

He was forced to take on a Root-and-Branch, comprehensive critique and overhaul of what was termed Political Economy, which took him the rest of his life.

But, interestingly Marx's gains from studying Revolutions were conceptual rather than explanatory: so they could be carried across to other Revolutions, as known-to-occur Meta Forms. And it was not until the last decade that this theorist embodied those gains into a Diagram of the Trajectory of Revolutionary changes (as shown on the next page)

Now, Marx did, of course, endow the rest of his Life to developing Dialectics within Capital, but as soon as he applied the Holist Tenet, “Everything affects everything else”, the scale of the task inflated to prodigious proportions, making a comprehensive treatment seemingly never-ending. But, Marx was no quitter, and a skilful and dedicated researcher, so, along the way in tackling particular regions within that study, he both covered enough ground to throw





light upon the generality of the phenomena involved, while simultaneously not producing the full range of particulars available in different areas throughout Reality. It was clear that similar comprehensive treatments to those Marx had generated for Economics, would have to be undertaken for all Disciplines - the most important being the Sciences.

And, this has finally been tackled, by this theorist, over the last decade, and published here, along with a 1000 related papers on new Marxist Theory.

But the above diagram also poses the NEXT QUESTION which is:

“Why does that complex trajectory have that particular Form?”

As with all real Explanations - they do NOT reveal sufficient in themselves eternal Natural Laws. Indeed, once the immediate causes have been exposed, they too have in turn to be explained.

And, clearly, when we comprehend the true complexity of a changing and developing Reality, which ultimately has produced something as inexplicable and vast as Life, Human Beings and Consciousness: it is clear that despite our successes, much has still to be addressed.

And the answers will not come from Pluralist Science, which is certainly reaching its limits of usefulness.

Indeed, the successes of the recent application of Dialectical Materialism to Science has revealed vast areas of necessary study, and, at the same time, has demanded a new kind of causality, unavoidably involved when “Everything potentially affects everything else!”. Meta Laws that result from huge collections of underlying components, have now to be addressed! For, in affecting each other, the consequent overarching results can turn out to be everything from delivering “Apparently self-perpetuating Stabilities”, all the way to precipitating cataclysmic Interludes of revolutionary changes.

And crucially, when many simultaneous processes are affecting one another, they do not behave in a purely random way like shaken dice - all equally affecting one another in the same ways: but on the contrary having sometimes very different effects on each other at very different tempos. And rare incidental interactions will have very different effects to constantly repeating interactions. In addition the nature of the effects will vary enormously from the cancelling of opposites, to the swiftly multiplying up of conducive effects.

And these were initially very perplexing to investigators, and only revealed themselves clearly within Constantly Repeating Cycles involving multiple different yet simultaneous effects. Indeed, some could for long periods be establishing a “Stability”, whereas with a certain rare conjunction, could flip over into a catastrophic asymptotic dissociation.

Effectively opposite processes, could in some circumstances, work together to produce an overall self-maintaining function, whereas, with minor changes instead precipitating the opposite of a total collapse, or even in still mostly maintained situations, but instead deliver a flip to a different overall dominance.

And, of course, for most of Mankind’s history, they were so restricted in the extent of their achievable controls, that they could know absolutely nothing about tempos well beyond their abilities to achieve them.

And, finally, the universally adopted pluralistic scientific method of largely eliminating all complex multi-law situations, and holding what was left as steady as possible, actually walled-off investigators of even ever dealing with such situations.

They didn’t even know that they existed!

NOTE: And looking critically at exactly how that stance unavoidably distorted Sub Atomic Physics, it is easy to see, how such an approach focussed all researches into an extremely narrow band of possibilities. And, secondly, how their attempted corrections only took them to the exact opposite (and equally wrong) extreme of total random chance in their probabilistic corrections!

Since the publication of my Marxist Critique of Copenhagen, as well as a whole series of philosophical papers, not only upon Physics, but Mathematics too, and even an extended series on evolution before the Origin of Life on Earth, it soon became clear that the real task had only just begun, with the switch from a Pluralist to a Holist, and indeed a Dialectical Materialist, approach across the board.

And, instead of those completions causing a diminution of Research Papers, they had the exact opposite effect, and the work simply increased many fold.

It was evident that not only intellectually, but also politically, our World was careering towards a major Cataclysm, and if the outstanding problems were not addressed, it could be terminal for Mankind, and the resolution of the ever mounting difficulties, could well precipitate yet another Dark Age.

The stakes could not be higher.

A Snapshot of an Expanding Universe

Or How a Sequence of Stills Can and Effectively

Hide True Dynamic Change

Another field of study in which I have attempted to sort truth from illusion is Cosmology. While this may seem to be a science less restricted by Plurality (no experiments in the traditional sense), the modes of analysis and use of Mathematics, still creates similar problems. This is not restricted to our interpretation of the data, but a problem written into the stars itself - we can only access snapshots of time, up there. There is a natural discontinuity in our view.

Before embarking upon this particular problem, it is important to stress that the whole approach involved has to be, initially at least, entirely Descriptive as well as Pluralistic! So, before we attempt to Interpret and actually Explain such a detailed description, entirely without any explanatory basis, we at first have to be intent upon a wholly neutral, and as far as possible accurate, straight-forward description, which in a Holist World will unavoidably arrive at intrinsic contradictions and anomalies, which will, at some point, inevitably demand a revision of our minimally assumed premises. But, any other Basis, prior to the ultimate acquisition of an informing body of suitably coherent information - such as assumptions of non-material powers - the "Hand of a Supernatural God", will, from the outset, torpedo any chance of building an understanding, entirely out of concrete evidence, and nothing else!

This Statement of Intent has a philosophical assumption, which will initially be one of the two significant stances we have already covered - Plurality and Holism.

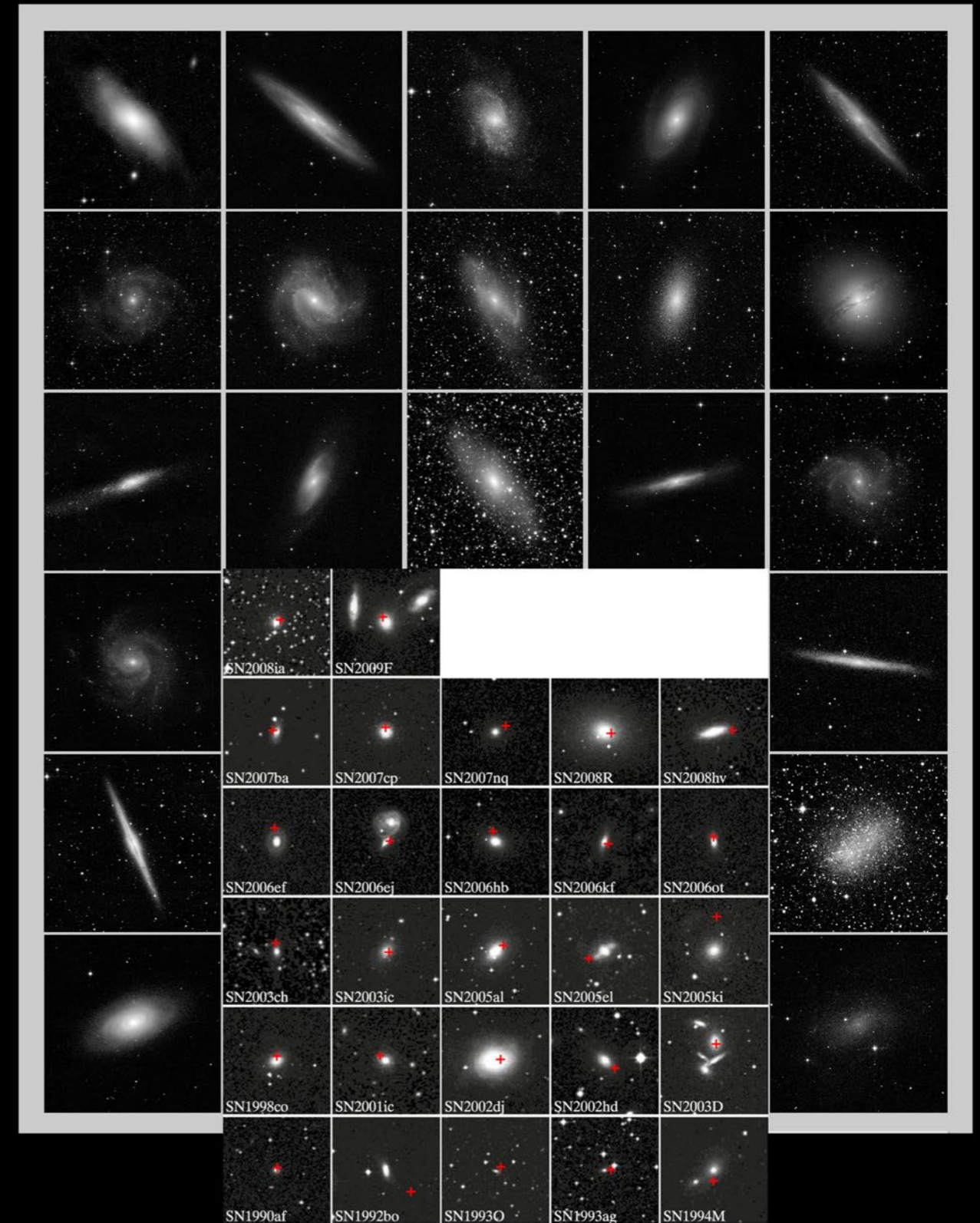
Now, Holism delivers a much more complex approach than Plurality, so, for most of subsequent History the latter stance became increasing dominant - though NEVER by producing a legitimate developable solution to the Nature of Reality: yet it did turn out to be the best place to start. For, though inadequate, it could be made to work-out in many possible carefully-controlled circumstances.

And much later too, it also delivered important Contradictions and Anomalies, that alone enabled, in development the True Basic Stance, and ultimately, along with Holism, a measure of progress in The General Understanding of Reality.

But, we must not attempt to run before we have learned to walk!

Let us begin with the simplest Pluralist stance, but NOT as The Path to Glory, on the contrary, the Path towards a ultimately potential general development. Secondly, the purely descriptive route initially taken will only rarely add possible explanations. So, from the outset questions as to WHY things behaved as they apparently did, were rarely answered. Indeed, the usual answer was, "Because they obey this Natural Law!"

You can easily see why, from the outset, Idealism represented an ever-present alternative, for Reality certainly conformed to something.





And, when such Fixed Eternal Natural Laws were embodied in Purely Formal Equations, this pitfall became ever more prevalent!

Plurality only works for Forms and Games, but absolutely never for dealing with Real World Development: for, in attempting to do so, it replaces Truly Creative Change, with merely Additive Complication, which can absolutely never generally deliver wholly-new Qualities, but only Quantitative increases, by wholly independent-of-one-another's Fixed Laws (even if such can be arranged for).

Now, such restrictions were welcomed as a "boon" to Science, and have dominated Physics and even Cosmology ever since! So, ALL the assumed Laws of Cosmology, as such, are always, and quite wrongly, wholly Pluralist, and can never deliver any explanations as to why the Universe is the way it is, and how it got there. So, when an attempt is made, as is unavoidable in Cosmology, to tackle its many clearly distinctly different interludes - over time - absolutely NO Dialectical Laws of True Qualitative Change are ever involved! Involving only Quantitative Changes, via which, and wholly without explanation, they, somehow, smuggle-in "Qualitative Changes", merely as the results of Quantitative Laws passing some crucial threshold, and consequently "resulting" in the "arrival" of wholly "new Qualities" - which is, of course, totally impossible.

In a truly Dialectical Materialist Cosmology, such sleights-of-hand are wholly illegitimate: and I am well aware that the Single Fixed Laws of Plurality, which are always only implemented in highly restricted circumstances, and which attempt to deliver wholly Pluralist situations, whereas I know that Qualitative Change, is only ever possible in the presence of multiple simultaneous Laws, which actually affect-one-another, and can give results, which are NEVER predictable from Pluralist Laws, because they are outside the Possibility Spaces of all the supposedly contributing Pluralist Laws involved.

For, they instead open up a very much wider range of potential outcomes, as the full set of various real combined outcomes involving the simultaneous contributions from ALL the currently acting Laws - and this significant extension of possibilities takes them totally well-beyond the summed, predictable Possibility Spaces of all the Fixed Pluralist Laws (supposedly independently involved), and this is NOT achieved merely by adding together the

full set of Possibility Spaces of the Pluralist Laws. The Possibility Space of the full set of simultaneously acting contributions is far greater, because it includes all the potentially different weightings of all the cross-influences between the many contributions, which, of course, are NOT present in the set of Pluralist totally separate cases!

So, all of this having been established in attempts to both understand and explain Cosmology, entirely via Plurality, it is now crystal clear why that vitally important trajectory of change is so woefully and inadequately absent!

For, it attempts to deliver what is required, totally in the absence of any dynamic, causally-understood Theory: it delivers only pluralist descriptions, along with totally unexplained Causal Transitions to each and every New Emerging Phase.

So, with only Pluralist Laws (incapable of delivering Dynamic Holistic Change), the absolutely essential Explanation, is instead replaced, effectively, by Fixed pluralistic purely-descriptor laws.

These are effectively Qualitative "Stills", delivering Nothing about the crucial formative Interludes, between the Fixed Laws.

Myths of Truth

Building towards Truth is a Process, not an Accumulation

The most harmful, yet currently widespread conception of Truth, has it both as forever-Fixed, and also Available-to-be-Revealed, by an objective, rational investigation - involving both its extraction, and thereafter, its subsequent confirmation via both appropriate Experiment and successful Use. Finally, residing as an extendable and objective Description of the involved aspects of Reality-as-is, initially via the agreed collective intermediaries of multiple Human Achievements-in-Thought - "supposedly" as an on-going, ever more detailed-accurate-and-complete, catalogue of unchanging contributions to that Truth.

But, of course, it, most certainly isn't that, at all! For Reality is never a mere collection or mix of forever-unchanging-elements, related by totally Fixed Laws - but that is what is usually assumed to be the case.

We can, in the short term, use such assumptions, as temporary approximations. But, as soon as the involved time-scales, or areas of applicability are extended, in any ways at all, such a supposition begins to increasingly fail.

And, it isn't as if the Rational Thinking involved has had a long and successfully-confirming History - for it hasn't! It has been a mere 2,500 years since the Ancient Greeks first seriously considered the power of Geometric Forms, along with their relationships, which later became known as Euclidian Geometry.

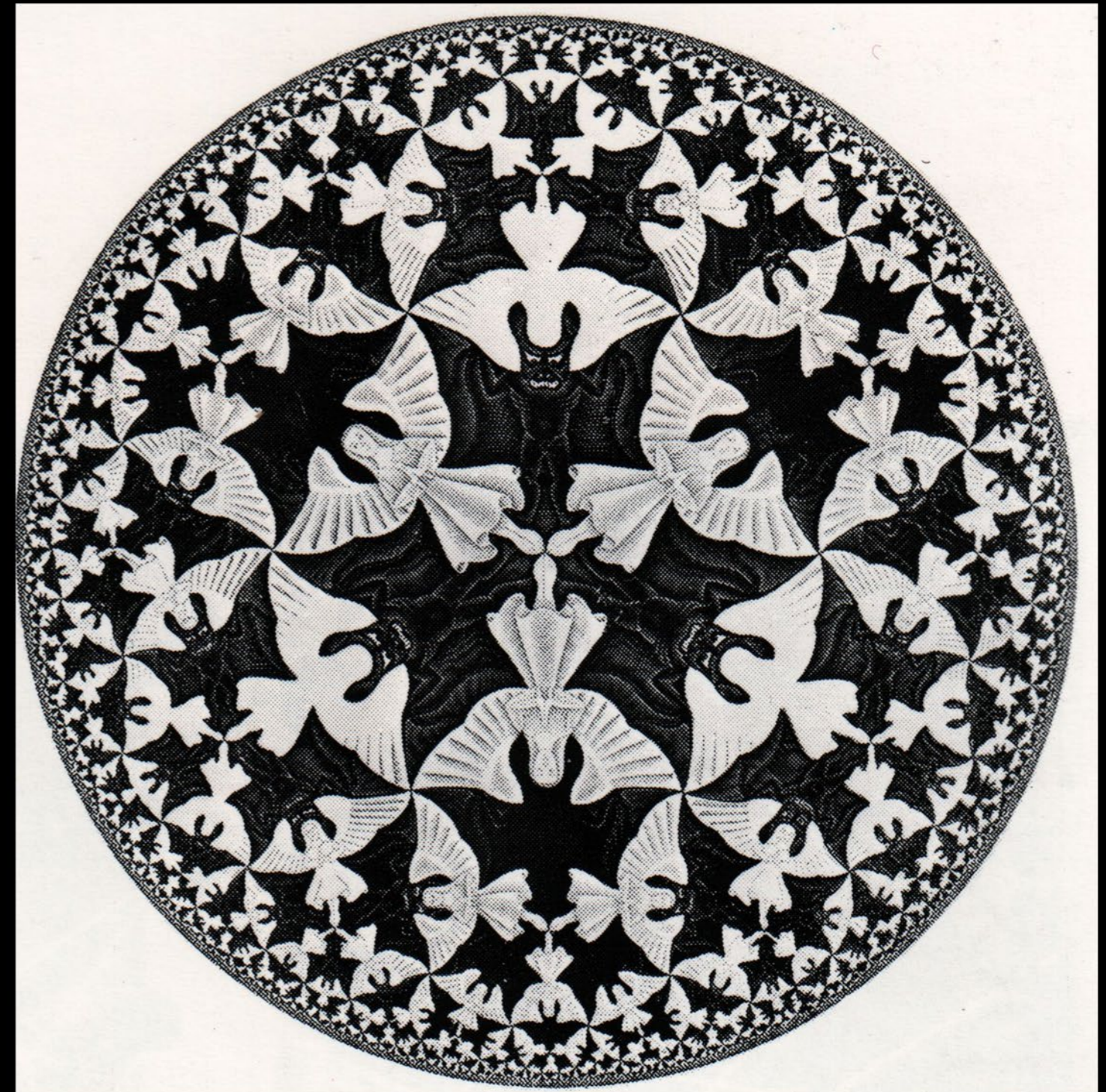
The power of Mathematics was real and immense, but its composition of Qualitatively-fixed Forms and Interrelationships were severely limited when dealing with a constantly shifting, and indeed a "Living World"!

But, the Ancient Greeks, with their sound mathematical reasoning via Theorems and Proofs, legitimately built and extended a powerful-and-useable Rational Discipline, which they also and mistakenly transferred wholesale to both General Reasoning and The Sciences. And that was ultimately a mistake.

It left entirely-unaddressed, just HOW things evolve: what actually made such changes happen, and also just how-and-for-what-reasons did those changes actually occur, with the current purely Pluralist approach, with its Forever-Fixed Laws? They could, in fact, be merely described as occurring, but actually explaining exactly "Why?" would, and never could be addressed!

And even exactly by what processes they occurred wasn't ever made clear either - generally, we only go directly to what-the-change-was and when-it-happened, and absolutely nothing else! Indeed, the absence of any delivered-and-explained causes, meant that the supposed result is ONLY defined as the product of such an Event, and never Explained at all.

Now as soon as such an Event has to be explained, the whole Pluralist approach reveals its limitations for a Fixed Law can never do that.



It merely defines the result by its description alone!

No Reasons are ever given!

So, do things merely change over from one State to another, like the throwing of a switch?

NO, they do not!

For such is always a simplification of a whole series of hidden processes.

Indeed, the Tempos involved are often too fast or too slow to be easily revealed, and on the occasions when the times are appreciable, we are warned to “mix thoroughly, and wait for equilibrium”, before taking our results! Hiding the very processes of change in our experiments.

And all this was established by Karl Marx, when in his re-evaluation of History, and using the Dialectical Approach of the German Idealist Philosopher, Hegel, found that the processes taking place within a Social Revolution, were slow enough in tempo to be fully causally analysed, and could therefore potentially be intervened in, to change the final outcome!

Laws which simply deliver “instantaneous” changes, were always actual over-simplifications of such real and caused Events.

Indeed, only a Social Revolution delivers a version of the General Trajectory for All Qualitative Changes at all Levels, BUT there happening at a discernable Tempo, because the Engines for Change were primarily People in Action - a level of Reality we are predisposed to access.

Indeed this very researcher (Schofield) produced the The Theory of Emergences to explain this, but though derived from Social Revolutions, it has proved itself to be far more revealing than any crude Simple Pluralist Law.

The diagram visualising this trajectory of change (page 28), though now 10 years old, has proved invaluable in my efforts to initiate a Holistic Approach to Science, and particularly within the recently completed Critique of the Copenhagen Interpretation of Quantum Theory.

But, its original intention was as a description of the Trajectory of a Revolution (the clearest indication of the nature of any Emergence), made possible by the Human

Tempos of Change possible only there! The Trajectory of any Emergence occurs within what seems to be a Permanent Natural Stability, but which turns out to be, in fact, only a classic, Holistic Balanced Stability, which though most of the time is a self-maintaining Entity, it is NOT at all permanent! So that, in time, a succession of Crises will occur, in special circumstances, which though individually usually easily resolved initially, ultimately always cascades into a Total Collapse of the Stability, which are seeming to be heading for Chaos - but in fact never are.

Indeed, the complete Collapse is the only way out of that Syndrome of Stability, and when it does succeed completely, it, for the first time in aeons, re-produces the conditions, again via a new “building” series of crises, for the establishment of a wholly new Balanced Stability.

And this would be true for all Qualitative Changes, and at every Level: with ALL Laws usually taking place at tempos vastly beyond Mankind’s perceptive processes - and would usually be totally missed by human investigators, simply replaced by Pluralist Fixed Single Laws - only consisting of the Final Outcomes Type: the actual many composing processes that would be involved would, as usual, all be completely hidden!

In recent Fusion Research, Eric Lerner has revealed that in the Fusion Process used in his particular Man-Made Electricity Generating Plasma Device, in which he designed a Forma, and an associated “Forma-caused” set of processes, via which, a series of different increasing concentrations of a Plasma Stream were brought about, so that the affected Plasma successively went through a whole series of natural stages, of which each was further concentrating the flow to finally produce an absolutely mammoth Fusion Event, which in his unique apparatus directly produces the required Electricity!

Of course, the techniques necessary to bring about the means to see-what-is-happening, and hence allow an effective intervention, are necessarily in addition to those processes for achieving the finally Required Event.

Now, the researches in Physics, which have been essential to reveal such a complicated final process, are NEVER necessary in any simplified Pluralist Experiments. But, Reality-as-is is very rarely Pluralist, involving a Single Fixed Law! It is much more likely to need to be concerned with Reality-as-is, where multiple processes are all acting

simultaneously - and hence unavoidably affecting-one-another, and, thereby, causing the Real Overall Process, which, so produced, is likely to be more like the ones in a Revolution, or indeed, in Lerner’s Plasma Fusion Device!

ADDENDUM:

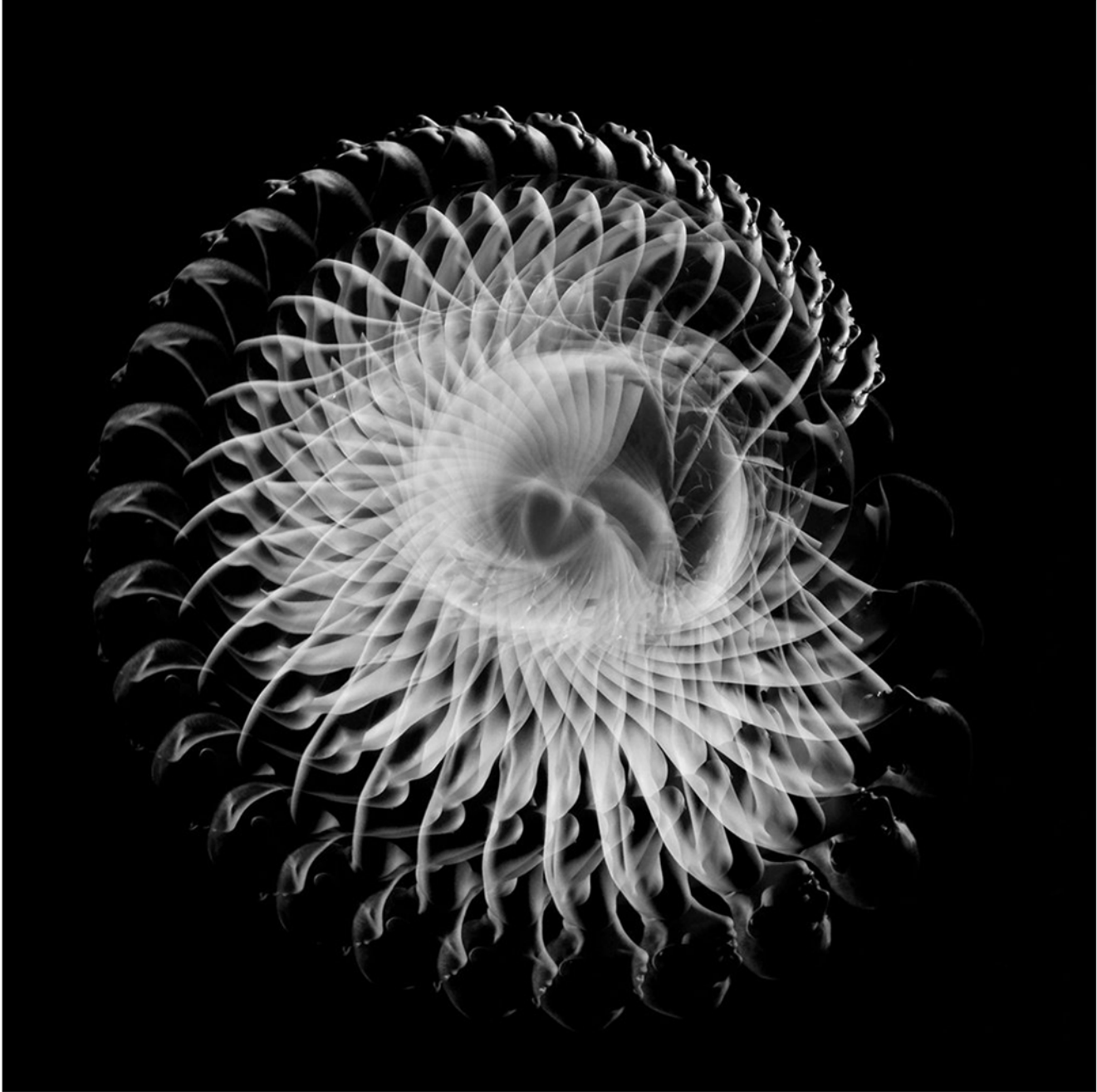
Absolutely all Qualitative Change must involve something closely akin to this Form.

Indeed All Life and its Evolution must develop, in this way, and under the natural Pressures of Life, and the Selection processes of competition.

But, Holistic Science, in attempting to explain all this in detail, rather than merely describe its results, is still in its infancy, but at least it is finally underway!

...fragments and illusory snapshots won’t do.

We must now begin to understand the world dynamically.



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