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HOLISTIC MATERIALISM I

THE MYTH OF THEORY / THE NATURE OF REALITY / THE CURRENT INCOMPREHENSIBILITY OF REALITY
THE DISCRETE AND THE CONTINUOUS / THE VARIABILITY OF NATURAL LAW / ALIENATION AND TEACHING

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Holistic Materialism I

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What is Holistic Materialism?

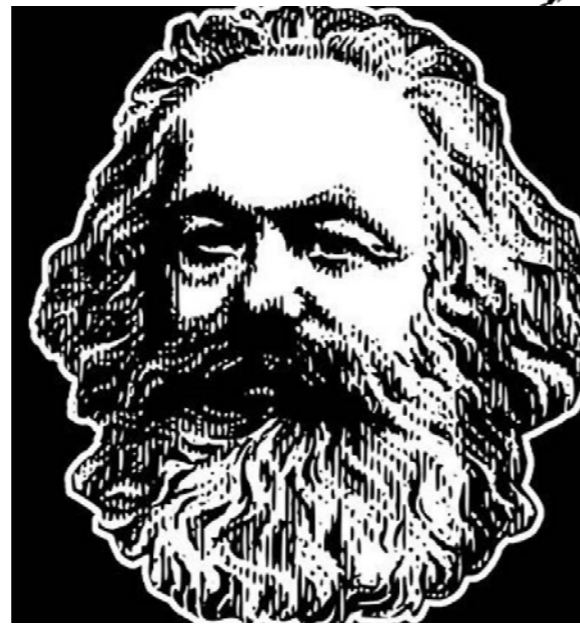
Preface

by

Mick Schofield

Welcome to Issue 66 of SHAPE Journal, the first in a special two part series entitled *Holistic Materialism*. These issues constitute a set of loosely related papers by Marxist theorist Jim Schofield concerning his philosophy of science, and his application of Holism and Dialectical Materialism to the sciences, especially particle physics. This has been a historical and epistemological project as much as it has been a philosophical and scientific one. In order to understand the mistakes and impasses we are presented with in science today, it is imperative to go back and have some understanding of how knowledge and philosophy have evolved over human history.

But what exactly is Holistic Materialism? *Holism* is a word that means different things to different people, a seemingly vague term that is often abused and misused - 'holistic medicine' for example covers all sorts of pseudoscientific nonsense no empirical researcher would care to be associated with. However Holism as a philosophical concept refers to something quite specific, and for Jim Schofield it is encapsulated in its opposition to the Pluralist position (not to be confused with pluralism), which sees all entities and laws as separable - capable of being isolated and studied in isolation - but more importantly, that this separability will somehow unlock the truth of how things in reality work. Essentially it is the philosophy of reductionism and this underpins almost all contemporary scientific research. Jim Schofield's work is a unique critique of the hidden assumptions which underpin all science.



This is not the first time the term Holistic Materialism has been used, however. We see it linked to biology and 19th century naturalists in the writing of Ernst Mayer.

“The discovery of the similarity between dialectical materialism and the thinking of the naturalists is not new. Several authors have called attention to it, particularly Allen... He starts quite rightly: “The process of natural selection is as dialectical a process one could find in nature.” Allen thought that the dialectic viewpoint of the naturalists had been lost between 1890 and 1950... Allen asserts that the “holistic materialism” of the naturalists had failed to incorporate two important dialectical views. First “the notion that the internal change within a system is the result specifically of the interaction of opposing forces or tendencies within the system itself.”

The Roots of Dialectical Materialism (Mayer, 1997)

In the work of Schofield we see this kind of holist view of natural systems but very much informed by the dialectics of Karl Marx. It is not enough to see the interconnected-ness of things but realise how natural dominances emerge, to the point of seeming universal, and also how these dominances can come crashing down as their internal contradictions finally play out. It is in these crucial events that we see the Emergence of the wholly new. In these papers we see how Pluralist science prohibits access to this fundamental feature of reality, and that while those 19th naturalists may have hinted at the way forward, holist science is something new.



Sculpture: "Vertiginous Detour"
by Eva Hesse(1966)



The Current Incomprehensibility of Reality

by

Jim Schofield

We cannot currently comprehend reality.

We should not be surprised by this revelation!

Mankind only began to effectively *Think* in the last 1% of the History of their existence on Earth, and the main contribution to their development - Darwinian Evolution - has selected solely for survival and efficient reproduction only. There was no way for natural selection to drive the evolution of thought, as the prior 99% of human development emphatically reveals. We are genetically the same species as those ancestors but have changed beyond all recognition.

Indeed, development was dead-slow until the Neolithic Revolution, which finally allowed Mankind to live together in larger social groups, and begin to develop communication involving language and ideas, which proves the explanation that we have evolved socially rather than biologically. As archaeologist V. Gordon Childe always insisted - "Man Makes Himself!"

And, the means to do that, didn't come easily or even commulatively - on the contrary, almost every gain also had, in the long run, debilitating flaws embedded within them, and many wrong and misleading paths were exhaustively traversed, before they were in any way corrected, and then only ever partially.

Dont get me wrong, it was a truly magnificent trajectory. But, we are NOT Gods: neither were we consciously designed in an omnipotent God's Own Image!

We are a particular and exceptional animal, who has spasmodically, temprarily and occasionally yet also magnificently transcended its own limited capabilities, to begin to revealingly explore and even glimpse the wonders of their World, and also themselves!

Their major innovation was, at a much later time, and on reflection, termed Abstraction: which is not, as often supposed, the extraction of *Essence*, but on the contrary a valuable and developable form of necessary Simplification.

The crucial turn occurred in the Greek Intellectual Revolution, around 2,500 years ago, when in studying Shapes and Forms, they hit upon something I like to call: *Simplifying Relatable Abstractions*. These couldn't exist alone, but only in relating other elements. This was a major breakthrough in allowing the construction of the very first Intellectual Discipline, namely Mathematics, but also contained the limitation that the elements and relations involved just had to be FIXED - they could neither vary nor develop as abstracted forms.

Now, in Geometry and general Mathematics, this was an acceptable omission, but it certainly wasn't true of literally everything else in Reality!

Mathematics legitimately conformed to the 'Principle of Plurality' but, most things in concrete Reality actually did, indeed, both vary, develop and inter-relate, so they conformed to the alternative 'Principle of Holism'.

But, in suitably-constrained conditions, Reality, though considerably modified in order to achieve it, also can "conform" to Plurality. So, the Greeks incorrectly extended Plurality to all their currently emerging Disciplines: so both Formal Reasoning, and even the first findings of Science were thereafter treated as wholly pluralist disciplines - and that is most certainly is NOT the case! In the short-term, it apparently could be made to conform to Plurality, but that was only, in fact, a carefully-maintained distortion of Holism, which made it deliver an arranged-for result that did appear to be "permanently fixed", when is certainly wasn't!

Indeed, for the last 2000 years of “Science”, it has maintained, to this day, that fiction, and actually achieved many things with its carefully maintained static Realities, but never with totally unfettered Reality-as-is!

Indeed until the developments of Hegel, in the early 19th century, even Formal Logic was hogtied by Plurality, but Hegel’s dialectics was only addressing Human Thinking. He was an Idealist. He never thought of addressing it to an independent concrete Reality.

Nevertheless, that had to come too, and it was the Young Hegelian historian, Karl Marx, who realised its importance in his historical studies, and found that a non-Pluralist approach made possible for the first time a real narrative of historically developing events, and in particular social development through Revolutions. And, his analysis of the then recently concluded French Revolution, based upon Michelet’s detailed account, began to equip him for the first time to apply it to the current Economic System of Capitalism.

But, Marx’s task, via his 3 volume work Das Kapital, turned out to be a truly colossal undertaking, and took the rest of his life. He never got around to applying his emerging Dialectical Materialist discipline to Science.

Now, this is necessarily a very-curtailed account, but it is, I hope, sufficient to justify my purpose in this paper, namely, that we are still considerably under-equipped to reveal the Truth of Reality.

And, even what we usually count upon as banker achievements are never that, but in fact, misdirections that must be made overt, if further progress is to be made.

And also, that even the our gains will never be absolute, but Simplified Abstractions, fraught with their usual flaws, in spite of what they deliver!

Having exhaustively studied the misleading premise of Plurality I feel I can now turn to an example of this incomprehensibility - the incomprehensibility of Electromagnetic Radiation in particular, and Electricity and Magnetism in general: along with doubts about Disembodied Energy, the Nature of Charge, and even that of Matter, and several other Deep Basics.

We are once again talking about Abstraction - Mankind’s main means of attempting to achieve an Understanding of Reality, via Simplified Means and Forms, which nevertheless still deliver sufficient Objective Content, for progress to continue to be made, though admittedly-and-purposely only by forms that unvoidably also mislead as well as inform.

It is my contention that no direct access to Absolute Truth currently exists anywhere, and most certainly NOT within the current conceptions in Mankind - as that development still has a very long way to go! Yet, nevertheless, real progress can and indeed has been and will be made.

The trouble is that because of a total lack of understanding, of the capabilities, and the limitations, of our current means, we have, over literally millennia, built up a body of both ideas and means, which will have to be totally demolished-and-re-built very differently, to overcome our present self-made problems. Elsewhere, I have extensively tackled the Crisis in Physics, and developed an alternative to both the Copenhagen Interpretation of Quantum Theory, and even the consequent developments in Quantum Mechanics. But here, I am being forced to address much older, more basic, and well-entrenched diversions, conceptions and even means, which will be much harder to defeat...

So, let us begin!

For as long as I can remember, I have always had a problem with the Propagation of Electromagnetic Radiation, which only got worse with the effects of the Michelson-Morley Experiment, that apparently totally-and-terminally dispensed with the Aether - the previously suggested Universal Substrate occupying an otherwise totally Empty Space.

For, what exactly is it that is actually propagated, and how is it achieved? By what means is it so delivered across absolutely colossal distances of total Nothing?

The usual physical description of an Electromagnetic Wave surely seems to be wholly insupportable in such a context. For, it consists of two sinusoidally oscillating transverse waves at right angles to one another - one Electrical and the other Magnetic.

But, in the usual supposed propagation, they have absolutely NO affected Substrate, to handle such a structure in the usual way, so they can only be totally disembodied oscillations, that maintain their characteristic Frequency and related Energy content - more or less indefinitely undiminished! And, ultimately delivering their “contained” energy and frequency to some distant receiver, totally undiminished! And, using this model of a wholly disembodied Wave, explains absolutely nothing about such a propagation.

It cannot be right!

Now, its original source is usually described as coming from a promoted electron orbit within an atom, which is then thereafter delivered by the partial Demotion of that orbit, to a lower energy level within the Atom - and thereby releasing the energy difference as an Electromagnetic Wave of a specific determined Frequency.

Now, already, we have other problems.

Its original existence within the atom requires that it be a complicated receptacle, consisting of a positively-charged nucleus, attractively maintaining a captured negatively-charged Electron within an orbit, by means of the balance between the electrical attraction inwards and the original speed of the electron now opposing that outwards. Obviously, the radius of the orbit must determine everything. A smaller radius will mean a smaller energy: and as it will also determine any associated frequency too, the difference between prior and demoted orbits will determine both the energy and the Frequency of the emitted Wave.

But, what will be the exact mapping between the Atom, before-and-after, and the “consequently emitted Wave”? It begs the question of some kind of recipient for the emission! Afterall it doesn’t just sit there but careers off, at the Speed of Light into supposedly Empty Space..... Why?

And, without any kind of Substrate, it seems to be merely a disembodied goblet of Energy encapsulated as a pure energy form, yet maintaining the delivered frequency as the mode of its existence! Will it only comprise a single disembodied cycle, or a finite short string of such cycles? And, will it then be spread out in space, or restricted to a localised oscillation, also moving along as an individual entity?

Or, will it be some kind of discrete Photon, with no material basis, yet maintaining the said contents literally perpetually once released as such? And, in Empty Space, what could these physically consist of?

It sounds as if each merely consists of a goblet of pure energy somehow oscillating at a given frequency and containing a precise amount of that disembodied Energy, while moving (at the Speed of Light?) forever! Is that even possible? It doesn’t sound OK to me! How could it even be contemplated?

And, the stock answer is very revealing!

If we stop thinking physically, and instead encapsulate everything within mathematical formulae, we can construct a formal system that fits with what we can detect! And, the problems of the concrete World will no longer be present.

It also can be used to predict outcomes, and even enable required events to be made to happen. Forget Physical Explanation: we can use Mathematics!

Of course, there is a crucial philosophic consequence of such a decision.

First, we abandon Understanding for solely Pragmatic Use.

Second, we assume that concrete Reality is determined by such formal relations, entirely-and-exclusively, within the Forms delivered by Mathematics.

And that most certainly cannot be right!

Mathematics is an exclusively Pluralist discipline - which means both that it deals only in qualitatively fixed things, and hence though incompletely mirroring aspects of Reality, only actually exists as such within Ideality - the World of Pure Forms alone. Mathematics is also an Idealist Discipline, while Reality most certainly isn’t.

A THOUGHT EXPERIMENT:

Some years ago, struggling with all the anomalies of the ill-famed Double Slit Experiments, I decided to attempt a theoretical-physical explanation, aided only by the assumed existence of a currently undetectable, but materially-constructed Universal Substrate.

The detected Waves would then occur within that Substrate, and were caused there, in the case of the electron fired at the slits, by disturbances set up within that Substrate, due to the energetic passage of that Particle. And, every single anomaly was explained-away by this model, and Wave/Particle Duality proved to be a purely invented and wholly formal construct.

Yet, all I had done was make an effecting and affected existing Substrate currently undetectable!

This encouraged an all-out-assault upon Copenhagen, which was consequently also ultimately successful too.

And, necessarily, this was underscoured by a comprehensive philosophical demolition of The Principle of Plurality, underlying Mathematics, as totally illegitimate when used in Physics.

Indeed, you can see why physical Explanation was abandoned - The New Approach fitted very well with Mathematics, as both were wholly pluralistic. And, in addition, as Mathematics was also totally idealist, it resides only within the literally infinite extension of Ideality.

Sub Atomic Physics had theoretically been transferred to being a subdivision of Mathematics. But all the questions about Propagation of Electromagnetic Radiation, as well as the similar problems of extended Electrical and Magnetic fields, within Empty Space, were also solved.

The solution was via the assumption of an undetectable Universal Substrate, composed entirely out of undetectable mutually-orbiting Pairs of effectively-cancelling Leptons. For, the propagations was NO LONGER as Waves either (as in a classical substrate) or in Empty Space, but instead propagated Bucket-Brigade fashion, between the internal orbits of such adjacent Substrate Units - on a very similar basis to Atom-to-Atom transfers.

And, in addition, Electrical and Magnetic fields also merely became properties of the Magnetron Universal Substrate Units, which could deliver both Electrical Fields and Magnetic Lines of Force via different structural modes of those Units, in response to appropriate initiators, for these Units also involved the mutual-orbiting of opposing Lepton Pairs, so the fields could also supply the energy for Field Effects too.

NOTE: The anomalies which troubled me, clearly also troubled those supporting the consensus position within Sub Atomic Physics: for they too had to abandon "Totally Empty Space" for what they deemed to be "everywhere present" Quantum Fluctuations, which, because they "added up, overall, to a zero energy content", were said to be composed of "Virtual particles or Photons", and, which could only be the case if involving negative as well as positive Energies.

Of course, if Mathematics is your "Common Coin", all this nonsense is considered legitimate!

And perhaps the Action at a Distance Anomaly delivers a final blow to the usual consensus assumptions about the Nature of Empty Space.

Now, clearly, Einstein's Space-Time continuum, which though emphatically non-material, is said to be both affected by the presence of Matter occurring within it, while, in turn, also determining the consequent motions of material objects passing through it. But, of course, Einstein's Stance is inevitably undermined by its major allegiance to Mathematics, as the common Rationale - for all The Theory's means are embodied in mathematical forms, and even the supposed abstract reference system has been modified to become part of the once always only physical components within the phenomena to be addressed.

Clearly though, the new Continuum has more in common with an undetectable-yet-material Universal Substrate, than with a totally unaffected, Man-defined Reference System.

Of course, the problem is a repetition of such assumptions throughout the History of Mankind's attempts to grapple with Reality, a reference System was yet another Simplifying Relating Abstraction, but this time even more removed from the concrete, as none of it

physically existed, but enabled a system of measurements to be established and then related its uses to one another. But, though a brilliant invention, in its time, and extremely useful for millennia, Einstein plumbed its relativistic difficulties, which he seemed to have solved by his extensions to the capabilities of the Reference System, by giving it certain disembodied properties of Matter, while working out the consequences of his invention, rather than treating it as a formal analogistic reflection of something actually concrete in the Real World!

Einstein's creation was in the tradition of the Positivists like Henri Poincare and Ernst Mach, with their amalgam of Mathematics and Physics, which they termed Empirio Criticism (criticised by Lenin in his book on the subject). But that was a century ago, and no really conclusive treatment of such anomalies was undertaken by Marxists on this area. until the current work by the author of this paper in the last decade.

The major contribution by this theorist has been the theoretical work achieved in defining exactly what kind of Universal Substrate could possibly remove all these anomalies.

Now, though the current Theory may not be "The Last Word", it has to be seen as playing a similar role to that of James Clerk Maxwell's definition of the Aether, which he always considered it as an analogistic Model for some Real and unknown Substrate, and accurate enough for him to develop his Electromagnetic Theories and Equations using it as his basis.

Of course, in my case, I was attempting to demolish the Copenhagen interpretation of Quantum Theory, and have recently completed that endeavour. But, along with those objectives, a much more general set of even older anomalies were addressed too, and the New Universal Substrate involves Undetectable, though material joint units of the substrate including three different types the Magnetron, Neutritrons and Gravitons of very different sizes and properties, but all as paired mutually-orbiting Leptons, and both undetectable either individually or over local populations, and crucially all capable of delivering energy via the promotion of their internal orbits. And, in addition forming very different constructed Phases from Random Gas forms, and even Streams and Vortices, and remarkably also delivering Electrical and Gravitational Fields, and even Magnetic Lines of Force

as sole properties of the Substrate. Indeed, for the first time, it was possible to conceive of various populations of different Substrate Units at effectively different Levels of organisation, but occupying the same physical Space.

Perhaps in demolishing Copenhagen we will begin to see the light (and its medium) and subsequently make Reality that little more comprehensible.

The Myth of Theory

in Sub Atomic Physics, as presented by Robbert Dijkgraaf

In a lecture delivered by Robbert Dijkgraaf recently in Brussels, I found out something important. It was not a sophisticated account, but it did reveal to this investigator what actually lies behind all the so-called theories in modern Sub Atomic Physics by the *Language* used.

Primarily he talked about “Explanations” when all he was actually delivering were consistent “Descriptions”. And whereas explanations are always about causes and effects, descriptions are usually about the Perfect Forms apparently involved: and these two are most certainly NOT the same things at all.

Firstly. Forms are always-and-necessarily *fixed* qualitatively, and always follow the Principle of Plurality, in showing only HOW such things behave.

Whereas, Explanations are attempts to see WHY such things behave in certain ways due to their Properties, which definitely change with circumstances, and so, conform instead to the very different Principle of Holism.

Now, Forms can never explain WHY qualitative changes actually occur: they can only describe the Forms involved on either side of that change. And, guess what! Reality does not conform to Plurality at all.

To, in any way, make situations even conform approximately to Plurality, experimenters and producers have to go to exceptional lengths to filter, corral and maintain a natural situation into an qualitatively unchanging artificial state. For without that transformation it will NOT conform to Plurality, to enable mathematical forms to be fitted legitimately to what occurs! AND, even more importantly, to then enable Pure Forms taken ONLY from pluralistic Mathematics to be legitimately fitted up to those pluralistic results.

What is encapsulated, in the achieved Equations then, is NEVER Reality-as-is, but, instead, idealised forms that exist only in Ideality - the World of pure pluralistic Forms alone.

Now, as long as the exact same conditions, as were achieved in the extracting experiment, are replicated for production, then the equations will indeed work.

Exploring Ideality

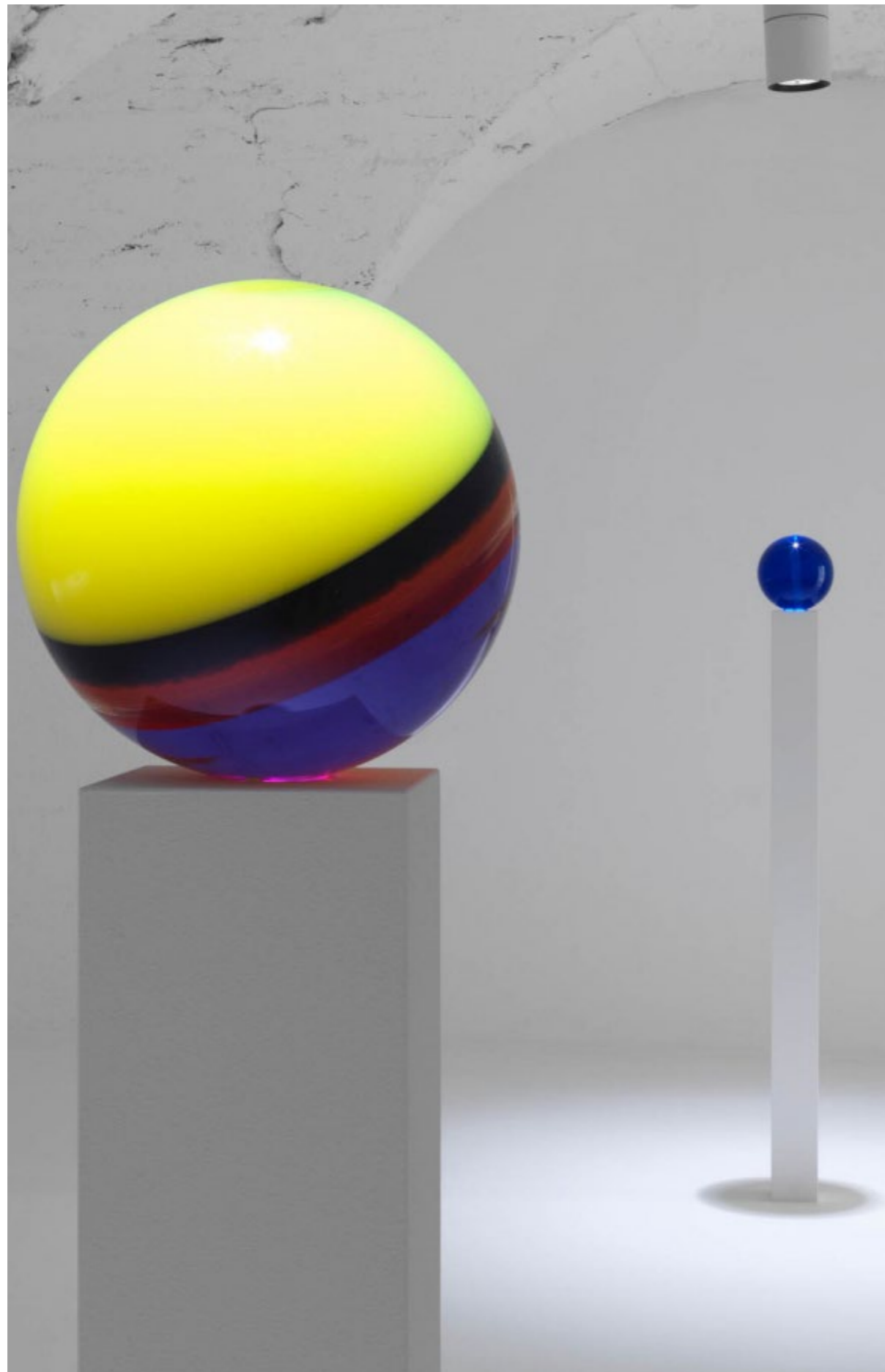
Now the results of the above wrong turnings could only go one way. The denial of Holism and universal embracing of Plurality. Physics had to somehow cope with an ever increasing failure of the old ways to deal with Reality-as-is, and it pushed both researches and Theory ever deeper into Ideality, in the search for New Forms that could be made to deliver predictions purely with what could be found there, and manipulated-to-fit! Some of the individual solutions, though theoretically incorrect, were able to deliver something useful - such as Einstein's Relativity.

But that didn't stop it turning Sub Atomic Physics away from a study of Reality, into one of studying the most abstract outer limits of Ideality and the avalanche of idealist nonsense within that source supposedly to “explain” Quantum Theory.

Of course, it did not succeed, and the last few moments of Dijkgraaf's lecture dealing with String Theory demonstrates exactly how far they would go to make Sub Atomic Physics a part of Pluralist and idealist Mathematics.

But, Plurality also adds another debilitating rider! When many natural relations are all acting simultaneously, they are NOT independent - they affect and change one another! So, the really acting effects are NEVER involved, only idealised and approximate versions.





So, Technology is accomodated, but never Science!

The claimed "Explanations" have NOT been delivered, only pragmatically useable formal descriptions, in very special circumstances. So, integrated and comprehensive explanations are impossible by such means.

So, what is erroneously called "Science", and therefore supposedly capable overall of explaining all natural phenomena, even in combination, can only be a total Myth.

At best it is a patchwork of many different situations, each one tailored to a different pluralist Law.

Now, when considering the Origin of Life on Earth, it was clear that there were NO experimenters involved, AND certainly many simultaneously-acting Laws would be involved! So, if Holism is correct and Plurality wrong, the various multiple processes occurring, would NOT deliver some sort of simple summation of unchanging Laws, but on the contrary a complex of mutually affecting "laws", both modifying one another's contributions, AND delivering some sort of overall combined effect, which itself would be varying.....but HOW?

The usual crude conclusion is that there will be some sort of summed result: yet some contributions will be such as to attempt to cancel the effects of thers, While ther will also be contributions that enhance one another's effects.

Indeed, a surprising overall effect might be the partial cancellation, both statically and dynamically, of contrary effects, which overall with everything involved may well deliver a Balanced Stability, wherein all contributions to instability will be naturally countered by opposite contributions, and this would also be the case over many different contributions.

Such a Balanced Stability will be self-maintaining most-of-the-time, so the Stability will be long-lasting. But in certain circumstances, that balance could be multiply challenged, and indeed overcome, by enough of those simultaeous effects, and the Balanced Stability would totally dissociate.

Also, in spite of the many contributions involved, certain natural abundences could cause a single contending pair to dominate the overall effect to deliver a single Law,

but in a certain circumstance, a change may only affect, which one of the contending pair dominates, without challenging the Balanced Stability, so the overall law would FLIP to its opposite!

So, the holist view can explain many known-to-occur natural phenomena, which pluralist Science simply cannot.

Now, clearly at this stage in the development of Science most holistic situations cannot be investigated, primarily because they are too swift to be addressed, or even too slow - taking long periods of time to study effectively.

Indeed literally nothing had been achieved in holistic Science until the studies by Karl Marx into Social Revolutions, which remarkably were slow enough to both study and also intervene in, and fast enough to notice, given the appropriate philosophical stance.

The general dynamical Laws of Holistic Science were first formulated concerning the trajectories within such tumultuous Events, but, of course, even those will bear the stamp of their context, as they will have to when applied at all other Levels where they will be needed.

And carefull study of the French Revolution by Marx, and that of the Russian Revolution by Trotsky finally provided the evidence for the Theory of Emergences in 2010, by this theorist, who after a lifetime of detailed study has finally concluded his Critique of the Copenhagen Interpretation of Quantum Theory as the only Holistic criticism, and an attempt at an alternative.

The Discrete and the Continuous

The Essence of Dialectical Development

Long ago in Ancient Greece, circa 500 BC, a remarkable Revolution occurred, one which both greatly-empowered Mankind, as never before in particular areas, yet also and simultaneously, widely-disabled their intellectual capabilities in most other areas, and this inevitably led to a roller-coaster of both Progress and Retrenchment for literally millennia.

It concerned a wholly New Social Phenomenon, which marked the final turning point of Man as a just an advanced Animal, for hereafter human beings would be Thinking-Social-Organisms, unknown anywhere else on this planet and perhaps also anywhere else in the Universe.

But still, we are wholly ill-equipped to guarantee our survival, as they then were! For, these new means were still wholly insufficient to perpetuate an on-going success, and the situation could just as easily result in their cataclysmic total failure, perhaps even bringing all life to a premature and final end, even on this remarkably endowed Planet.

For, Mankind had only very recently (upon a Cosmic Timescale), discovered how to live together in numbers - via the Neolithic Revolution, which not only radically changed their means of survival, but also opened up a wholly new dimension, to their potential, further development, because, now, as socially interacting, communicating and co-operating collections of Human beings, they were finally in a position to begin to Think, in a potentially-developable way!.

Of course, though such an ability had been marginally present for many millennia, it had still not been capable of accelerated development, but also, was dramatically restricted by their then universally dispersed Hunter/Gatherer existence, with, often unavoidable, incessant losses of individuals due to predation by wild beasts,

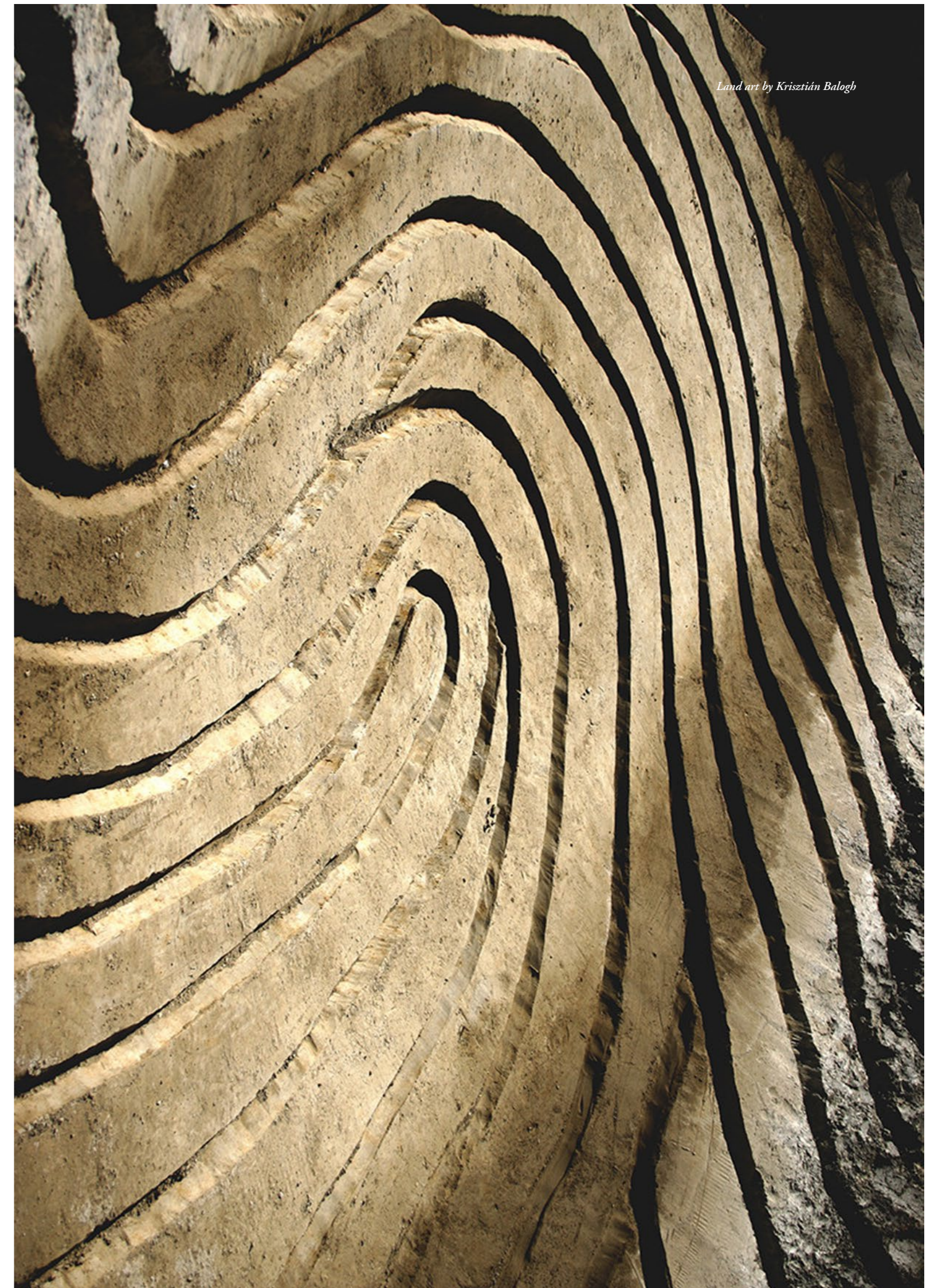
and diverse other natural calamities, alongside the all-consuming job of finding food.

Development historically had initially been Dead Slow! Only minor improvements in how they Knapped flint to produce their only tools, had occurred, but had been almost imperceptible for literally Millions of Years (even pre-dating Homo sapiens). Effectively, their mode of life, made all other Humans competitors for the often extremely rare necessary resources, which inevitably led to the necessity of a constant expansion and indeed re-location of their geographic range, due to having to constantly find new areas, to enable them to find the means to survive. So, surprisingly quickly, these ill-equipped, though remarkable, Apes managed to reach ALL accessible parts of the planet.

This Planet-wide spread also took some of them to areas where regular floods replenished the fertility of the ground, and where, wild food crops self-seeded to deliver a regularly replenished food supply. And, such conditions also attracted herds of grass-eating animals, which Mankind first hunted, and then corralled and domesticated for milk and meat. It was then but a small step to gathering seed, and planting them in the regularly replenished conditions. Soon, they wandered no more: the Neolithic Revolution had occurred.

After many millennia of miniscule development, Mankind, in these socially co-operating and discussing groups, began to accelerate on all fronts, so, in a relatively short time, they had begun to think, and within the vanguard in the Greek City States, there was a concerted effort to radically improve and systematise that invaluable means of progress.

If Thinking could be turned into a problem-aiding, or even an effective problem-solving tool, so things could move even faster.



And, the breakthrough finally occurred in studying Forms, Shapes and Patterns, wherein the invention of a wholly new kind of Abstraction delivered precisely that.

These Simplified Relating Abstractions were very different from all prior abstractions, in that they only existed as relatables: they couldn't exist independently of that function. But, they, for the first time ever, legitimately enabled ever more complex-and-related systems of Forms and Shapes to be validly constructed.

But, only if the elements involved were permanently fixed, which was certainly OK for disembodied Forms, as these aren't actually 'real'.

The result, via such uses, in what were termed Theorems and Proofs, was a valid system called Euclidian Geometry, which was later extended, on the very same basis, to deliver the whole of Mathematics!

So, this became the very first such Developable Intellectual System, or Discipline: and, presumably, essentially similar systems could also be constructed elsewhere - but only as long as the elements involved were also permanently fixed.

This enabling condition was later termed the Principle of Plurality - BUT sadly it didn't naturally apply to almost anything else! But, remarkably, it was still so applied. The Greeks were so enamoured at the rational power of Geometry, that they also assumed Plurality for both Reasoning and Science too. And, that drastically truncated those new and nascent Intellectual Disciplines into Systems of Fixed Concepts and Relations only: they were, henceforth, limited to Stabilities alone.

And, this persisted uncritically for over two millennia, because of the unavoidable contradictory Nature of Reality.

To Human Beings, with their relatively short lifespans, Reality appeared to be "naturally stable", Qualitative Changes were considered aberrations, or even God-given miracles, while Nature itself did seem to "majorly" abide by Fixed Laws.

And, Human Reasoning also settled into a tight, handleable System as long as no contradictions were ever allowed!

But, of course, these were clearly man-made simplifications - it was the classic way of making things easier to cope with, especially if man-made Laws were also religiously or politically instituted on the same basis, in Society at large.

But, in spite of these self-imposed and regulatory pressures, these simplifications were simply NOT TRUE as such. And, therefore they inevitably led to crises at all sorts of levels, and most significantly occurred politically, religiously and even scientifically too.

Indeed, very soon after the Greek Revolution, Zeno of Elea had already revealed, in his Paradoxes, a whole series of contradictions involved in the formal reasoning applied to Movement, when addressed in various ways with the fixed concepts of *Continuity and Discreteness*

Indeed, within those exemplars, the problems were clearly exposed - but *never* solved!

Throughout my own academic career, they have recurred with alarming regularity - in The Calculus in Mathematics, with the hogtied, and presumed to be essential nature, of ALL scientific experiments, with Analysis and Choreography in Creative Dance, and with the many anomalies in Modern Sub Atomic Physics - the same problem arose, the same logical contradictions.

Indeed, those very same contradictions outlined by Zeno 2500 years ago, turned out to be absolutely crucial to the ultimate break-out from the increasingly dead end of Plurality.

It was Hegel's route into a significantly damaging critique of Formal Logic had become, and his objective of rescuing Reasoning by, for the first time, attempting to allow *Qualitative* Changes to be necessarily included.

But, just like the Simplifying Relating Abstractions of the Greeks, the means of resolving the Continuity/Discreteness Anomalies again must involve a profoundly different approach, which will demand an almighty philosophical switch back to an alternative that has long been totally banished from Science - from Plurality to Holism. From permanently Fixed to Varying. From Figure and Ground to include its direct opposite!

A Cautionary Tale from my theoretical researches into an Undetectable Universal Substrate seems invaluable here! For, that search soon seemed to avail of all of these features, even though to include them all was never the intention.

For, in seeking for an individual undetectable unit of such a Substrate - constructed solely from known leptons, the obvious first port of call (suggested by both Pair Productions and Pair Annihilations) was to investigate the possibility of a Mutually Orbiting Pair - consisting of one negatively charged Electron of ordinary Matter, with one positively charged Positron of Antimatter - as such was suggested by these significant phenomena! This design was not just suggested by its undetectability, but, in addition, by the ability of its units to carry a discrete quantum of energy - via the promotion of its internal shared orbit (like the atom)!

Now, it certainly still had problems as a lone Unit of a Substrate, as there was no evident continuous connectivity between such Units to deliver the essential communicative properties of such a Substrate, for without such connectivity, the individual Units could only be "Individual Carriers across the Universe", and that wouldn't fit the facts of actual propagation at all.

So, entirely theoretically, two Units were considered to get extremely close together (no problem as they are totally neutral), and a surprising interactive feature was then revealed.

When very close indeed, an internal (charged) sub unit of one, might well get close enough to an (also charged) sub unit of the other: for as they passed, they would temporarily affect, one another, and hence their containing Substrate Units. Indeed, the affect would be temporary, first mounting and then diminishing as the movements in their respective sub units proceeded in their orbits! So, temporary attractions or repulsions would come and go - only to be replaced by their partners coming around - each in their respective orbits.

Clearly, if these Substrate Units were normally all packed together as close as this, these effects would be acting on all sides delivering oscillations, in all units, which could loosely keep these Units together, and also equally-spaced, in what I termed a Paving.

Now, without intending it, I realised that such a Substrate Mode would also facilitate the propagation of quanta - bucket-brigade-fashion, and, as all the gaps would be equal, the speed of propagation would be a Constant, and the units of the Substrate would themselves stay where they were. But, also, with those weak linkages, within such a Paving, literally any energetic passage of a Particle passing through it, would inevitably plough a dissociated path through it, driving the now-separated individual Joint-Units into a Stream, and even into accompanying Vortices.

So, such a Substrate would no longer deliver an always Constant Ground, but instead a variously affected and affecting set of possible background - participating variously in phenomena contained within it.

NOTE: Using just these ideas alone, every single anomaly in the full set of Double Slit Experiments were easily explained physically and removed!

Now, these findings (admittedly purely theoretically arrived-at), radically extended, significantly, the possible roles of such a Universal Substrate, generally, and with these particularly-devised units delivering this variety of structures, with very different properties.

And, remarkably, developing the means used thus far, involving only Leptons, in mutually-orbiting pairs of opposing sub units, not only were Electric Fields and Magnetic Lines of Force produced as properties of such an Extended Universal Substrate, but even Gravity could be similarly dealt with too.

And, remarkably, the new Units were of such greatly different sizes to the initial Electron-Positron Pair, that the various "Substrate Levels" could be simultaneously present occupying the same space, but with the smaller units occupying the interstices within the larger.

And, all proposed initial Units, re-named the Neutrinos, along with the added Magnetons and the Gravitons, were all capable of existing in various radically different structures, depending upon what they contained, for reciprocal changes were produced by the contained interlopers, both upon the Substrates and vice versa!

Now, these revelations, if substantiated, would transform Sub Atomic Physics, and challenge the Copenhagen

Interpretation of Quantum Theory, and its later replacements, by extending physical Explanations into the whole of this rich understory to all phenomena at that level.

But, this won't be enough - the established mistakes of Plurality in both Reasoning and Physics will have to go too. And, the limitations of Hegel's Idealistic Dialectics will also clearly never suffice in this wholly material context.

The whole edifice will have to be re-addressed, starting with that first realisation of error by Zeno of Elea.

The concepts of Continuity versus Discreteness has to be extensively and sufficiently cracked - how can things be both?

The idealist Dialectics of Hegel were incapable of solving this - it isn't just a problem with Human Thinking but a crucial part of its wholly materialist basis within concrete Reality itself. Without a real understanding of the dialectical Emergence of the Wholly New, within concrete Development, these questions could never be addressed.

Though Zeno's Paradoxes were all conceived of at the Macro Level, it is clear that they are relevant at every Level, if-and-only-if Continuity and Discreteness are no longer irreconcilable opposites, that cannot change into one another by some means. Indeed, it was that assumption that led to such ideas as Figure and Ground, Phenomena and Context, and even incidents within an unchanging reference system.

But clearly, as has been demonstrated in my Thought Experiment with the Double Slit, and the theoretical researches into an undetectable, yet both effecting and affectable Universal Substrate, have shown, these do not have to be totally independent and separate. They WILL indeed always change into one another, but mostly when considered at very different scales - different levels of material reality.

Indeed, for centuries phenomena were seen as only occurring within a Continuous Substrate (the Aether), and requiring a wholly different scientific approach, involving both Waves and Propagation, which was developed to cope with phenomena solely limited to within such "backgrounds".

And, that was considered perfectly valid from an Objective Content aspect. Yet, since Michelson-Morley, Propagation through totally Empty Space was left wholly without an adequate physical explanation.

Yet, we are still adequately equipped with that same body of Theory, whenever we detect and acknowledge the presence of new physical substrates. Surely, the time has come to "extend" those methods into the now theoretically-extended undetectable Universal Substrate, and an attempt to iron out any contradictions with the latest developments in Dialectics and modern Substrate Theory to be carried out - especially that involving the wealth of diverse substrate modes that are clearly theoretically possible.

NOTE: The alternative explanation of Quantized Electron Orbits in atoms, demonstrates what is possible - as the orbiting Electron, now occurring in an undetectable Substrate, first producing many free, gas-like Units, which are then driven into Streams, and, thereafter, with many repeated returns of the Electron, as in orbits, also into sustained Vortices. And, thus allowing regular Energy Flows, from Orbit to Vortices and vice versa, to thereby establish Stable Orbits at fixed quantized radii, along with maintained stable Vortices too.

The general transitions available with such a Substrate, is its dissolution, where it turns into a Gas-like form, with very different properties: for only in the Paving Form is Bucket-Brigade Propagation of Energy possible. While, of course, only with Orbits, could such persisting Vortices be both established and maintained.

Clearly, both Orbits and Dynamic Balances become crucial within a Holistic view in Science, as they both provide special kinds of maintainable Stabilities within a Holistic Reality - very different from the Definitive Stabilities within a Pluralistic Reality.

Finally, and much more generally important, within this proposed Revolution in Physics (and indeed ALL Holistic Sciences) there has to be the crucial Interludes of Qualitative Change that provide the defeating (if hidden) counterpart to the Second Law of Thermodynamics, which we term Constructive Interludes within an Emergence.

Let us be crystal clear!

In order to cope with an initially unintelligible Holist World, Mankind, ill-equipped, genetically, to deal with it, created instead his own cerebral means, by simplifying that World pluralistically.

But, that unavoidably distorted the conception of that World into a Universal extension of its common Stable Periods: thus limiting their understanding to Stabilities alone, and delivering absolutely NO means of explaining Creative Development, apart from mere Complication, when they could get away with it, AND Idealist Speculation or Religion when they couldn't.

Clearly, this paper has NOT addressed Emergences, for it can only be addressed from a Holistic Basis, and a thorough-going establishment of Holistic Science has yet to be achieved, in such a way, as to convince current pluralists of its efficacy and explanatory power.

But *The Theory of Emergences* (2010) was achieved at the commencement of this current body of Research. And *The Real Philosophy of Science* (2018) is the latest addition. But, as this body of work has shown, we are working down from a High Meta Level, first revealed in Social History, to the underlying individual Disciplines, many levels below, and as Marx realised, while actually writing *Das Kapital*, every new addressed area is also essential to a comprehensive version of the overall Approach - you only really reveal the Reality, by trying to apply such an Approach. As V, Girdon Childe used to insist "Man Makes Himself."

So, much has still to be done.



Olafur Eliasson. *The Weather Project*, 2003

The Nature of Reality

Seeking the Dynamism of a Recursively Active Universe

Creations, Propagations & Stabilities Substrates, Incursions & Hierarchies

On watching a Gresham Lecture by Professor Carolin Crawford on the Sun, I found myself to have been very much somewhat differently prepared, by my own prior researches over a much wider range of topics, and undertaken in order to get a very different narrative from that which she was delivering, and which caused me to think along the very different lines, which consequently triggered this paper.

For, what I was picking up, was instead of the variety of phenomena, embodied rather loosely in my chosen title, and sub headings for this paper, I was perhaps surprisingly hitting yet another Pluralist treatise!

As, for me, her approach alternatively posed many unaddressed questions about the nature of both Concrete Reality, in general, and, in particular, the true nature of so-called Empty Space - surely requiring not only one or more kinds of apparently permanently-resident Substrates, but also posing questions about their natures and initiations, and, thereafter, the persisting establishment of such significant entities, involving both their supposed self-maintenance, and also their relatively stable continuances, as well as the different results also caused by ejections into-and-through them of high-energy and often charged particles - while also crucially asking why-and-how the intervening stabilities between such Transforming Events get re-established and then maintained.

NOTE:

Interestingly Mankind historically had incorrectly assumed that Stabilities were the self-maintaining-and-defining norms of Reality-as-is, so that all understanding could only be found within the study of such Stabilities, whereas the evidence presented here alternatively

inferred that such Stabilities were always only-temporary, merely due to long periods of the absence or over-riding of the real movers and shapers of Reality.

And, in addition, the unavoidability of Recursion, not only causing temporary transformations, but often also being the crucial bringers of Major-and-irreversible Evolutionary Changes, and consequently bringing-into-being hierarchies to enable the protective slotting-in of contradictory situations caused by something wholly New.

To the serious physicists not involved in that kind of research, these kinds of conclusions may seem insupportable: yet in a particular theoretical investigation into the effect of an undetectable Universal Substrate, this researcher was able to explain away all the anomalies of the complete set of Double Slit Experiments, without any subscription whatsoever to the Copenhagen Interpretation of Quantum Theory! AND, in addition via a multi-level hierarchy developed for that Substrate, was even able to purely physically explain so-called quantized orbits of Electrons within atoms.

And, of course, not only in Professor Crawford's cosmological findings, but literally everywhere else in modern Sub Atomic Physics, the assumption of a universally-present understory of Quantum Fluctuations, appears to be absolutely essential, even though any coherent "physical" definition of such, is still unforthcoming.

Of course, both the bases for the old stances, and the grounds for the new are dependant ultimately upon fundamental assumptions at the bottommost levels in the Science involved.

For in Mathematics, where it was first discovered, and thereafter in both Formal Logic and Science, the adoption of the Principle of Plurality introduced totally unquestioned qualitative FIXITY into the concepts and relations involved.

In my alternative stance, that has been wholly abandoned. Holistic Materialism replaces such immutability, with a natural and vital VARIABILITY, thereafter enabling a causal explanation for Development and most importantly for Creative Evolution too.

Indeed, the very same Sub Atomic Physics upon which Professor Crawford bases her whole account, is entirely pluralist, and elsewhere, within Sub Atomic Physics, has led to the continuing Major Crisis which now only sees its future by studying it through the Wrong End of its Large Hadron Collider for “all the answers”!

The solely limited search for only eternal Natural Laws, is a Pluralist Myth, so it has been no wonder that the seeking for such Laws was moved from varying Concrete Reality into the Stable World of Pure Forms alone - namely Ideality - the sole valid realm of Mathematics.

The Lego-brick constructional methods of Plurality - wholly eliminating significant Qualitative Changes, can only allow the mere complexity of unchanging added-together Eternal Laws, and hence can never explain the emergence of the wholly New.

Now, very clearly, the Universe has actually Evolved! They even paste together a History, including a wholly-unseen Big Bang, a period of Immense Inflation, and the coming together of matter into bodies, which at a certain point became Stars, and even a trajectory thereafter with collapses and new different nuclear-fusion-caused Shinings, that came together with other stars into Galaxies, with individual stars often effectively terminating in Supernovae! But, with their still unshaken pluralist stance, they can only squeeze in a sole Quantity-into-Quality “Law” for all changes, which adds as much to Cosmology as Lego bricks do to a model Town - delivering Form without Content.

And hence unavoidably opening the door to Purely Formal Speculations from within Ideality - the Realm of Mathematics, wherein only Pure Forms dwell.

So, while they unavoidably accept that Qualitative Changes do indeed occur, their single Quantity-into-Quality attempt at explanations can only deliver an undescribed (nevermind explained) apology for delivering its very real trajectory and richness.

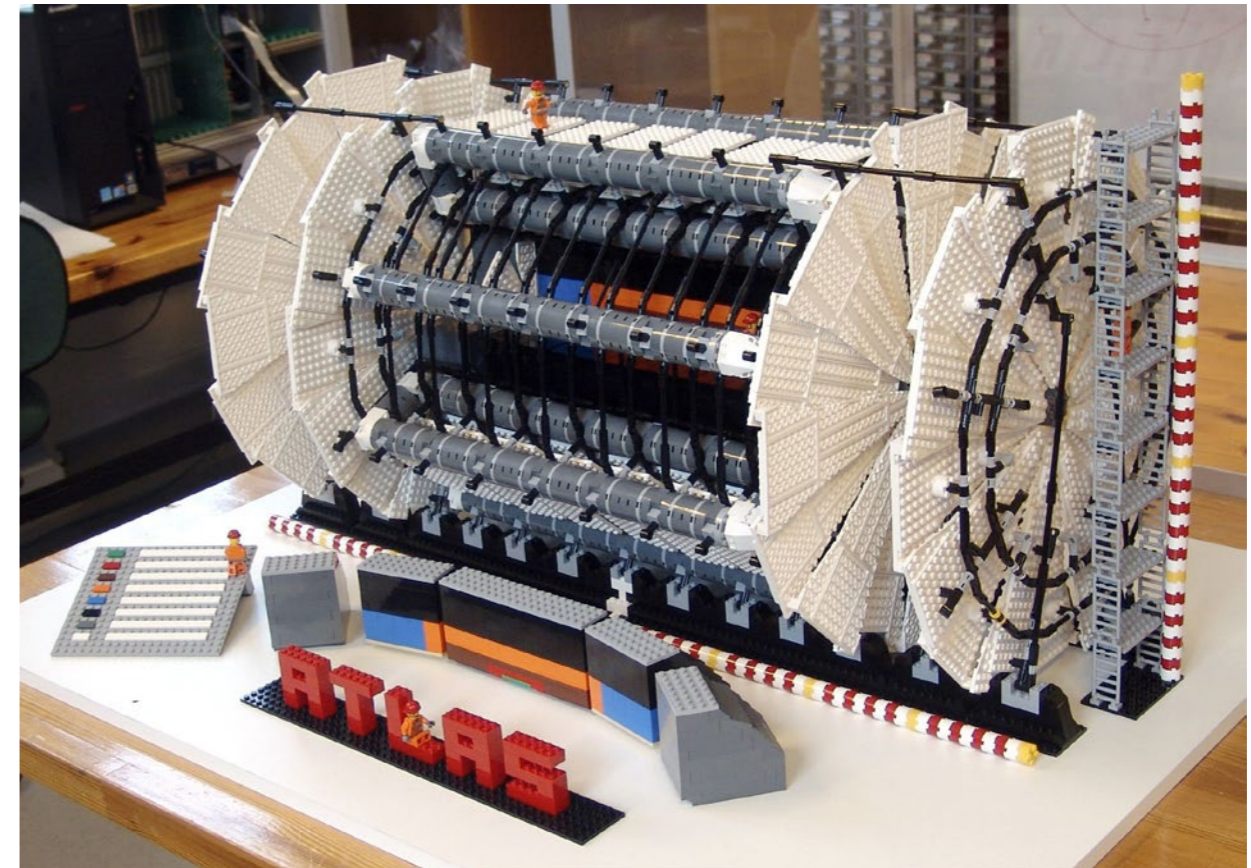
So, instead, we are delivered of Speculations, not only empty of everything but form, but also involving things that cannot exist in concrete Reality, but only in the extreme unexplored corners of a non-existent Ideality!

Now, having personally spent the last ten years creating an holistic alternative to the Copenhagen Interpretation of Quantum Theory in Sub Atomic Physics, and am therefore acutely aware, as probably no one else currently is, of the immense difficulties in rescuing that area of Physics from Plurality, and hence aware of the size of the job in Cosmology too, where the vast majority of possible scientific techniques are wholly unavailable.

POSTSCRIPT:

I have to add that there are many brilliant extractions that Cosmologists have achieved in studying the Heavens, but their Story of the Universe is clearly a Fairytale.

The bulk of it needs replacing via a strictly Holistic approach to what is currently available! And many conundrums such as Dark Matter and Dark Energy, as well as an attempt to deal with Cosmic Electricity and Magnetism, and a more realistic Overall Trajectory of its development will always be impossible when addressed from a strictly Pluralist Stance.



LEGO Large Hadron Collider

Truth and Falsity

in Pluralist and Holist Worlds



Temporary land art by Jim Denevan, Lake Baikal, 2010

On listening to a Gresham Lecture by Professor Tony Mann upon this question, it became increasingly clear that actual unresolvable Paradoxes are legion precisely because of the universal dominance of the Principle of Plurality (or something even only roughly equivalent) within the ways that we generally describe things.

The terms we use are the problem!

For, as we do not have access to Absolute Truth in the allocation of descriptions of things, they can always and only contain aspects or parts of the Truth - what has come to be called Objective Content, so all appellations that we make will unavoidably suffer from this inadequacy.

Single descriptive words will deliver only a part of the Truth required. Indeed as I have insisted elsewhere in addressing the power of Language, that means it is clearly a mere collection of such partially true descriptors, AND these will also never remain unchanged forever: they will, without any doubt, not only change in their individual meanings, but also, and crucially, as parts of various sets of closely related other words too, as both Language itself, and the experiences of users EVOLVE over time.

Indeed, we don't usually modify the word into another different one, but associate relevant meanings with appropriate sets of other words, which together with it convert the various different meanings. We do it this way because we need to retain the commonalities in the various uses of the same word too.

Remember Language is NEVER a collection of single meanings. To get the best out of it as we develop it, we find its commonalities absolutely crucial in developing understandings, while always also developing various differences via the appropriate sets of other words as our experiences develop.

The commonalities just have to be shared with many other Speakers of the Common Language, while the language-contexts will usually, and always, at least initially, vary.

Tony Mann and a great many other mathematicians, in line with the Rationality of Pluralist Mathematics, consider it THE most powerful and truth-delivering discipline that exists.

They have done so ever since the Greek Intellectual Revolution of 2,500 years ago, when they exported its Pluralist assumptions to both Formal Logic and to emerging Science too. And that remains the case, to this day, within those disciplines, particularly as they are considered by the non-specialist users, and even, it also seems, among prestigious Professors as well.

Clearly, in many of Mann's examples of Paradoxes in various logical puzzles, he isn't always restricting himself to purely Mathematical Logic, and is frequently drifting into the much wider area of Formal Logic, he uses self-referential cases.

Now, in the alternative stance to that of the Ancient Greeks, and formulated at about the same time in India, The Buddha, in his Loka Sutta, stressed the need for regular self-referential checks in any Reasoning, because terms are NOT permanently fixed descriptors, as assumed by Plurality, but are actually undergoing incessant changes as in the alternative Principle of Holism: so repeated loops at every stage would be absolutely essential to detect for such changes.

In a odd way Mann, with his very narrowly defined examples was demonstrating how NOT to use Reasoning, and in a somewhat different way to the Greeks, he was extrapolating the Primary Logic (for him), which he often correctly used in Mathematics into

The Variability of Natural Law

in a Holist Universe

the more general Formal Reasoning. And, in naby of the standard techniques of Buddhism, like the many forms of Meditation, the object is to intently concentrate upon a limited thing, so that its apparent sameness resolves into a diversity of inherent composing interludes, usually buried in the usually superficially perceived sameness, but becoming ever more active in content and/or context and changing, as can be revealed in effective Meditation.

But, though on the right track, the Buddha was a spiritual leader, within an agrarian economy, and his methods though personally useable with appropriate guidance, was almost impossible to apply to Production: and in today's World, that has to be instituted, to finally vanquish the dominance of Plurality still ruling the roost in Modern Day Culture.

Indeed, for many years now, this Marxist philosopher (which involves subscription to Holism), has been attempting to transform both Formal Reasoning and indeed Science to that principle, and when it comes to Science, which Marx himeself was never able to tackle, the difficulties are legion, having been totally dominated by Plurality for literally millennia.

For, that context can never be addressed primarily at a personal level: it just has to be on a social level involving the by now diverse varieties of Production, dominating all aspects of modern Life, and even extending to Global Questions. The always both locally delivered and solved questions of the agrarian village, are no more!

And literally everything has Global significance, and between those vastly-separated Levels, there turn out to be a host of other affecting Levels!

So, beyond the personal, there have arisen multiple causalities, with their own Meta Laws - all of which reflect incessant changes, and require to be holistically understood too!

Indeed, the most vitally important Laws are all holistic, and are about the dynamism of Qualitative Changes: some are atmospheric, others chemical, and some even cosmic.

But the most important, occurring in various forms, at all the different Levels, are crucially to do with Interludes of major and dramatic changes, which are termed Emergences or in everyday language, Revolutions.

From a range of Sciences, all currently described solely by fixed, pluralist laws, we are now being catapulted into a World with a plethora of mutually-affecting, holistic laws, which also vary too.

So science must be wholly transformed to deal with this situation, evident everywhere and all the time.

Only Marx, with his remarkable Dialectical Materialism managed to extensively address one complex area - that of Capitalist Economics - but that demanding approach has now to be applied to all the Sciences.

It will be quite a job!

On listening to many current Sub Atomic Physicists (of various different individual persuasions), when describing one aspect or another of their considered conceptions of the World, certain premises are immediately evident, which are invariably "taken as given"!

By far the most important is the assumed Constancy of all Natural Laws.

Indeed, researchers' objectives are always primarily to reveal such eternal Natural Laws, as the essential pre-requisites to enable the detailed explanations of anything-at-all within their chosen stances.

It is *the* Banker assumption.

There is, consequently and inevitably, an implied belief that with sufficient knowledge of all these Laws, absolutely Everything will be clearly explicable. And, within the means used to both display and extract these Laws, there is always a Key assumption that whatever modifications we make to facilitate that overall process, the consequently extracted "Eternal Natural Laws" will never be affected or changed by our interventions in any way. So, they then may be "summed", as Fixed contributors, in various ways, within Reality-as-is, but as such they will only merely complicate to deliver each-and-every situation.

The Laws are presumed to be permanently fixed no matter what complications they are involved in. But, the consequences of such an assumption are always both profound and surely also wrong. Is Reality due only to sums of Fixed Laws, or are there also Qualitative Changes too? We already know the answer to this rhetorical question!

Yet, it must have been an unavoidable initial assumption, by Mankind's earliest thinkers, in order to allow at least

a some partial success, in any of their first attempts to understand why things behave in the way that they do. And, such an assumption must have seemingly been regularly confirmed by the ubiquitous appearance of Stabilities, almost everywhere in unfettered Reality, which invariably lasted for extended periods of time - even billions of years.

Plurality was apparently a commonly-occurring state of Reality, when addressed over relatively shorter periods of time, or constrained contexts. But, it was NOT true of Reality, either in general, or over even modest periods of time.

It was, at best, only a local-and-temporary approximation usually only achievable in suitably-restricted and maintained contexts. And, over time, Man became increasingly adept at forcibly-extending such pluralist conditions, over ever longer periods of time, to facilitate "productive" research, and consequently reveal what certainly seemed-to-be the underlying eternal Natural Laws involved.

Indeed, as long as those conditions were precisely replicated-and-maintained, in all situations of their subsequent use, the Laws would indeed behave, and predictable outcomes could regularly be achieved. BUT, and this is extremely vital, in interpreting the Natural World exactly as it is, such engineered conditions would almost never be naturally encountered on Earth.

Indeed, the naturally-occurring-norm would be for multiple factors to literally always be simultaneously acting all together, and a carry-over of the pluralistically-acquired-Laws in such circumstances would always be wrong! But also, and perhaps surprisingly, multiple, simultaneous processes would be competing-among-themselves for their commonly required resources, while also, to some extent, unavoidably effectively countering



one another's contributions in an overall effect. Two significant features would invariably accompany such an apparently Stable situation.

First, there would be a different jointly-produced overall effect, similar to that from the most dominant individual factor, but modified by the simultaneous effects of the presence of all the others.

And, secondly, there would be only an apparent Stability achieved, consisting remarkably of some kind of Balance between all of the possibly contending factors - effectively delivering an opposing version to a Pluralist Stability, but this time contrastingly only temporary, if occasionally remarkably long-lasting, but most certainly already, from its first appearance, including the crucial and active seeds of its own subsequent demise.

So, in contrast to the usual assumption of a general continuous phase, consisting only of eternal Natural Laws, delivering stable results, out of component fixed Stabilities - we get instead a series of persisting-but-temporary Balanced Stabilities, separated by Short Emergent Interludes of real Qualitative Changes - wherein the Old Balanced Stabilities are fully self-dismantled, and wholly New features come together and form a different Balanced Stability at a wholly New Level.

On Levels:

The Nature of Reality has to be alternatively-seen in terms of Organisational Systems, rather than as physical Layers. Indeed, the so-called "Levels" can occupy the very same space, but are organised in a hierarchy of Systems. New Levels with wholly New properties are produced in Emergent Interludes, so are constructed out of processes from lower Levels, but organised in wholly New ways. [You have to dispense with assuming a "jigsaw mode of construction", and instead address a process wherein "Everything affects Everything else"!] Remarkably, once produced, the higher Levels can display new influences over the very Levels out of which they emerged, and even change them recursively!

Many of these features arise consequently out of the Holist Philosophical Approach, and will not be familiar to those with experience of the pluralist approach alone - which is certainly most scientists and researchers. Artists, philosophers, historians and evolutionary biologists may see something that they can recognise.

Now, this will come as a surprise to a committed pluralist scientist, but it alone, termed a Dialectical Account, effectively both dispenses with the anomalies of Plurality, while also, for the first time, including Qualitative Change - but occurring only within the not-always-evident Emergent Interludes.

Indeed, such Interludes occur at all Levels in a multi-level hierarchy, while they alone are responsible for delivering all of the properties of Reality-as-is.

And, this was first discovered, for the Physical World, by Karl Marx within Social Revolutions, as they occurred in History, but have since been extended to all of concrete Reality, but clearly with very different contents occurring in each and every one.

Now, we are finally approaching the necessary Major Turn, in how we interpret and explain Reality - already suggested by some of the changes already instituted, but now requiring a complete overhaul of our current methodologies, now essential, if we are to reap the many benefits of the truly Holist Stance.

From this point on, eternal Natural Laws are dead!

From now on all Laws are essentially variable, and are only temporarily fixed, by certain persisting contexts - even if these contexts persist for billions of years, does not make them either fixed or eternal!

Different Laws acting-together will affect one another, in various ways, and though some are mere adjustments, others could be part of a series causing wholesale Collapses, and Revolutionary Changes in a current apparently permanent Stability.

Without Variable Laws there can only be Complication!

They are the reason for all Qualitative Changes!

The Causes for all Development!

The Holist world is one of Qualitative Change and Natural Innovative Development. And, with it we will finally step beyond mere mechanistic summations and views of reality, and into the developing of the Wholly New! And, it all arises out of the multiplicity of simultaneously contributing factors, which affect one another and make possible a whole range of

Alienation and Teaching

The Necessity for an Ongoing Process

qualitatively different combinations, but are usually prevented from switching over, due to the conservatism of currently dominating Overall Systems of processes, which are self-maintaining and based upon Balances of multiple contending processes in what are termed Balanced Stabilities! Sufficient simultaneous challenges to the conserving balance will be necessary to undermine that situation and cause an Emergent Interlude, in which wholesale changes can and do occur.

NOTE: The current political situation is clearly approaching such a juncture at the present time, but no-one seems to be using Marxist Dialectics, as are being discussed in this paper, to analyse the situation!

For though, most of what happens in such a crisis is independent of what people and even organisations do, there will be moments when only a thorough understanding of such “balances” will suggest exactly where the most telling interventions will have to be made.

On addressing Marx's descriptions of Alienation within Capitalism, especially with regard to the day-to-day labours of the Working Class, and coming from precisely that background myself, I can see that I have managed to avoid it through my vocation - considering the changing trajectories of Marx's own development upon these questions from the early Philosophic and Economic Manuscripts, via the changes in the Grundrisse a decade later, to the more abstract and yet still developing conceptions occurring throughout the three volumes of Das Kapital, still being written right up until his death.

I find myself in a relatively privileged employment, which has always and increasingly in day-to-day work been by no means totally alienating - for I am a Teacher!

But, as my long career, was at literally all possible levels in that profession, it has demonstrated, that such a situation most certainly wasn't the usual experience of the majority of my colleagues. nor were the producing conditions equally conducive in all possible subjects.

My experiences have been much wider than that of most practitioners in that field: for I have taught at every level from teaching my own five children - pre-school, complemented by posts in Middle and Grammar Schools, then in a Further Education College, and thereafter in Higher Education, finishing with a Professorial post in a College of London University.

And, the width of subjects involved that I was called upon to teach was also unusually extensive! For, though my degree was in Physics, I also studied Mathematics to a very high level, ran the University's Art Society for two years, and, then later as a subsequent teacher and lecturer, changed my specialisms to include both Biology and, thereafter, very extensively in Computing, finally getting a series of Higher Education posts in that Subject, but specialising in aiding colleagues in a very

wide range of Researches in Disciplines from Care Plans in Hospitals, and Taxonomic constructions in Biology, to the Computer Control of Engineering Test Rigs, to Computer controlled Chemical Analysis Systems, and Mathematical Modelling, to Model-Based Application Packages in Business Problems, and extensively in Systems Design in writing Computer Languages, and finally important facilities for wedding both Film and Video footages to the Teaching of Dance Performance and Choreography.

And, all these widenings forced me to concentrate more and more upon the Philosophies involved, and a full-blown Critique of the Copenhagen Interpretation of Quantum Theory in Sub Atomic Physics.

But, at the same time this career was by no means smoothly articulated nor conducive to appreciation.

Indeed, my career was never achieved via a series of simply-connected staircases: I, alone, controlled the development of my career by appropriately changing my job, when clearly necessary. I was only very rarely appreciated by my superiors, who saw both their job and mine in very different ways indeed.

So, though I am keen to reveal its many advantages, many others could justifiably describe their academic careers as constantly misdirected and effectively undermined.

So, I am keen to both show that such a job can be extremely fulfilling, effective and profoundly non-alienating, allowing concrete conclusions to be drawn as to providing fulfilling jobs in a future Socialist Society, while at the same time delivering just how even this brilliant occupation can be just as unfulfilling as work in a factory!

Photograph by Edward Burtynsky



ASIDE: There was a reaction to Factory-produced-work in the Arts and Crafts Movement of the 19th century, as a reaction to factory-made poorer-quality goods, but it couldn't supply the Working Class as its products were too expensive! But, interestingly, the current Salvage Hunters of today here, and the Pickers in the USA, can, and sometimes do, recycle some of those wares at an affordable price - though the usual way is to refurbish items in the old, skilled and expensive ways, and sell them back to their sources at suitably inflated prices. But those satisfied to sell affordably are being increasingly found by the suppliers-back-to-the-wealthy.

Now, clearly, there is a considerable difference between a single teacher solely in charge of a class of pupils (or even students) and the usual conditions in a factory, so even a thorough-going description of my methods will still not map directly and fruitfully onto the production line.

But, if they are instead compared with the worst examples of supposed teaching methods, there is a great deal that can be extracted.

If I walked down a corridor in any one of the schools I had worked in, glancing in at what was going in the classrooms, I would see the teacher sitting at his desk reading, or at the blackboard writing, while the students would be writing in their exercise books.

Lets contrast this with one of my lessons!

I was constant upon my feet drawing diagrams on the blackboard, talking, or walking round talking and/or asking questions: the biggest task was always for me to read the faces of my charges, to see whether I should try another tack in my teaching, or asking a particular question, mainly to see how many thought they could answer it.

I wasn't judging them: I was judging myself! Had it worked? Did I need to adapt to changing circumstances?

Then I would set them something to do, and constantly be moving around to see how they were doing, and occasionally suggesting things in a different way to help, either to a particular individual, or to the class as a whole.

I never marked their work!

Their exercise books were their records of what they understood. And if during my perambulations I saw mistakes, I would stop and help them to see the problem.

The objective was never to get a set of identical copies of my own notes, They should all be as different, as the pupils would be.

And when it came to revising, they would be reading their own versions, and NOT a possibly meaningless version of mine.

Now of course no factory could be like that!

But if it was a Workers' Co-operative, the workers involved would have decided upon the organisation involved, and to be competent in deciding such things, would all be better equipped if they cycled round the jobs, and then got together to decide the best way of organizing things, including how long an individual should remain on a particular job!

I can imagine a classroom, and even a factory, organically re-organised through practicing holistic materialism - perhaps we could mitigate some of that alienation through encouraging the right supportive connections.

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