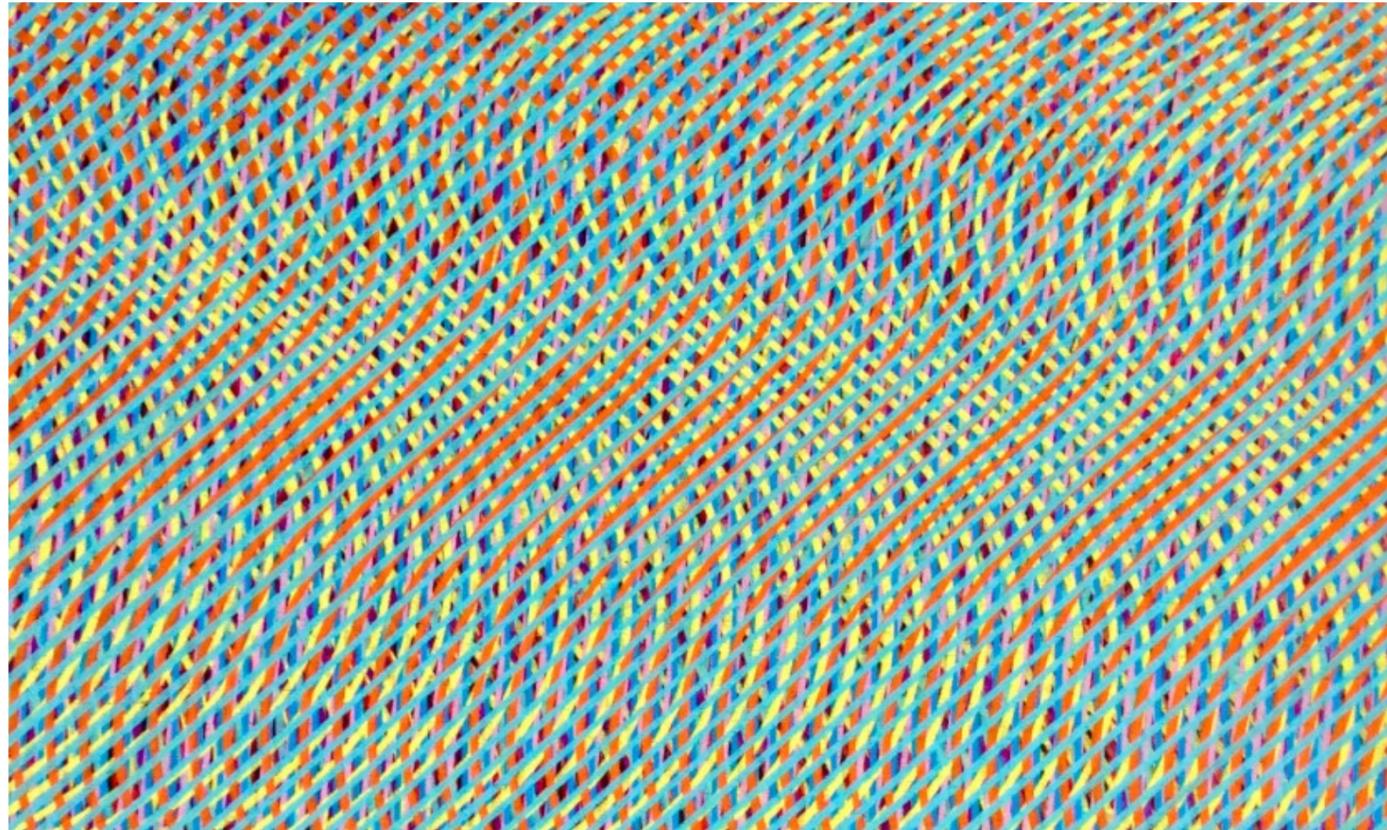


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**HOLISM  
AND  
SUB  
ATOMIC  
PHYSICS**

**JIM SCHOFIELD**



## **Holism and Subatomic Physics** Special Issue 75 / November 2021

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## Holism and Subatomic Physics

### A Necessary Introduction

Jim Schofield

Though I have been approaching the mysteries of the Subatomic world for a very long time (see *Substrate Theory* and *The Theory of the Double Slit*) - I now must tackle the many anomalies of this area of Physics, *Philosophically*, to have any chance of establishing a new Holist approach, before Physics effectively destroys itself, with its increasingly generated contradictions.

For Physics, along with all Science and General Reasoning, was pragmatically-restricted to a technological approach and method - in order to achieve certain goals within subsequent Production - for the Intrinsic Holist Nature of all these important Disciplines, unavoidable made them Holistic in all their contained relations too.

Now, this simply meant that multiple processes were always simultaneously acting-together within every natural situation, in applying very different causality - NONE of which were under any ongoing control, as they all affected-and-changed one another to some extent. So, Mankind had pragmatically learned, long before Physics was a subject, to limit what they used, to relatively-unchanging materials, such as dead wood and inert stone, and only very slowly learned how to both simplify and constrain environments sufficiently to bring them under the necessary control, to reliably predict their outcomes. (They always wrongly assumed that they were merely isolating an unchanging property, which stayed-the same in all circumstances - an immutable Natural Law)

And what turned out to be a Terminating Nail in all such processes, was then delivered by the Greek Intellectual Revolution of the 5th century BC.

With the invention of Mathematical Rationality, they apparently-legitimately imposed those same conditions literally everywhere - as if they applied to all situations, all the time - you simply had to hold the world still.

But, of course, that was untrue if you desired to Understand the dynamics of Reality-as-is - but fine if you only sought a particular and predictable outcome.

So, that technological stance thereafter dominated All Rationalities totally-illegitimately! And, especially as a valid rationality if applied to everything to be Understood, actually also enabled an alternative way of addressing problems - via Thinking alone!

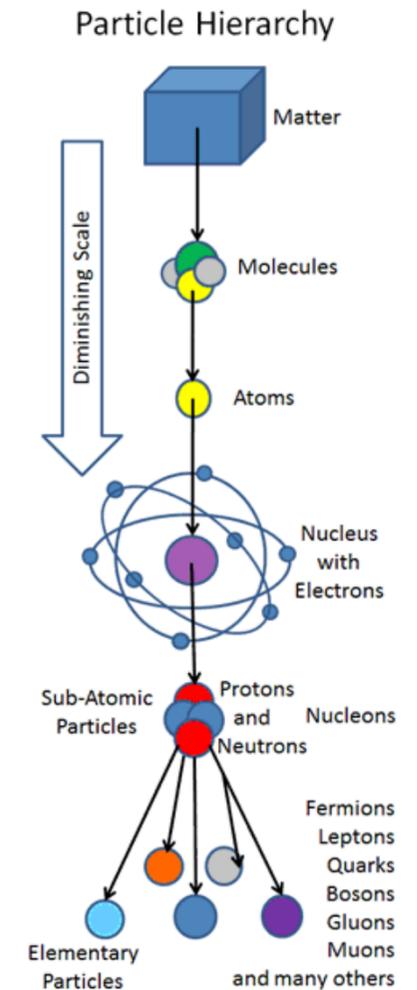
Now, even the Greeks had an inkling of this, but considered that their integrating means of attempting to overcome it, was their own brilliant invention of Mathematical Rationality.

But sadly they were mistaken!

Mathematical Rationality imposed Fixed Laws upon all situations. It just wasn't Holistic - interrelated and evolving like Reality-as-is - BUT entirely and wrongly Pluralistic, like the relations between inert Forms alone.

What was thereafter implemented, therefore, was the imposition of unchanging relations involved by severely limiting what was possible. They were no longer investigating Reality-as-is, but instead a Pluralistically-held alternative - almost like a simulation - delivering, what in those conditions could only ever be Fixed Laws.

*How might these philosophical acknowledgments affect how we see the hierarchical Subatomic world and the Standard Model of Physics?*



It meant, of course, that to achieve a Final Desired Objective, the task had to be converted into a series of different and fixed contexts, each of which, separately, delivered an ideal Pluralist Environment to produce a single objective.

But, to get all that was needed, required a different context for each one! There was NO Common Ground for all of them - except, of course, Mathematics: but that only related those within a single Pluralist Environment: and that isn't the Universe as we find it.

So, the Equations arrived-at by substitution between those entirely differently-situated Equations, were illegitimate!

They were the Laws of an impossible World that could never exist as such! So all subsequent further relations achieved in that same way didn't, and indeed couldn't, exist in Reality.

All the achievements of substitutions between those Laws meant nothing! And though they may occasionally deliver workable approximations, they would also inevitably deliver an increasing number of Contradictions and Impasses, due entirely to the illegitimate Mixing of incompatible abstractions.



## Helpful Wrong Turnings I

How could we ever believe we could access the Subatomic world directly? The Path to Truth is neither Easy, nor is it Direct! It is, in fact, very difficult, and full of many easily accessible, and also temporarily helpful, *Wrong Turnings* - and this set of available contributions will inevitably begin to introduce the latter, as the “seemingly best way forward”, and also, hopefully, also, finally, begin to reveal how such errors are exposed, and our various ways of effectively dealing with them when revealed!

It would, however, be better if these constructs immediately led us away from the apparently vast quantities of evidence, also revealed: but that is not, and has not been, the outcome - so far. Indeed, the *Wrong Turnings* include some significantly useful element of the Truth, as well as a clearly-defined Path-to-Nowhere, which is, thereafter, only very slowly, and with much greater difficulty, finally revealed.

This seemingly contradictory performance arises out of the Holistic Nature of Reality-as-is, which could not intrinsically be further from our usual simplified logical conceptions.

So, instead of Reality being directly buildable, in any Lego-like way (as we usually assume), it, instead, delivers both directly many eminently-constructible series of elements, along with many contradictory-yet-crucial components, which together deliver a very confusing picture.

So, many false “rational-aths” are often revealed, which, in the short term DO often suffice, but, over-time, inevitably, prove to be increasingly misleading and inevitably lead us astray...

Crucially we cannot just discard slower-tempo contradictory elements - often appearing to us as useless background noise - for it is they alone that lead to all Qualitative Changes (*The Theory of Emergences*), and hence also to both all Natural Development - and within Life, its vital Evolution!

So, our initial efforts are always well-defined, seemingly obvious, steps - as if Everything was merely obeying the forever-fixed Rules of a Game (just as Physics sees things); and will, therefore, suffice in short term local or artificially-controlled situations, BUT, invariably FAIL outside of such necessary limitations.

And such assumptions were always vital but significantly mistaken! Merely to survive, Mankind, very early-on, found that naturally fire-killed animals, after a Lightning Strike or some such, delivered excellent and nutritious, killed-and-cooked animals for eating - so that they themselves eventually conquered Fire, and used inert substances effectively in supplying their needs, and, without knowing why, they became so useful! Mankind gathered Knowledge in this way, but only very slowly, becoming an active participant in consciously intervening-and-changing Reality! It took literally many, many thousands of years to even perfect the Knapping of Flint into effective tools and hunting weapons.

So, there was an incredibly long and increasingly successful History of *Pragmatic* Lessons, based upon what was merely seen and learned from, without any significant development in *Thinking!*

What had been achieved, would not be readily replaced with an alternative, and vastly more difficult approach!

Indeed *Thinking*, when it began to emerge, was limited to privileged Classes of people who were NOT involved in the above described basic provisions necessary for survival - as they used very different means to gain their privileges. They based their Thinking upon how they succeeded, which was generally about Power, Force and War. Indeed, most of the Work was done by Slaves, captured in War!

Now, before we get too deeply into that other vital area, let us first attempt to address the actual Nature of Reality-as-is, which so misled Mankind's initial and even consequent conceptions of it! For, in addition to that primary question, it will also indicate the nature of our own initial Thinking, and its very different role and subsequent actual, and indeed, essentially changing-nature as we delved ever deeper into Attempting-to-Understand the True Nature of Reality. Our initial conceptions, particularly in *describing* things, were almost entirely Pluralist: that is, they were assumed to be governed by Totally Fixed and Unchanging Laws.

And, in the Greek Intellectual Revolution, this approach, via the valid extension of Relations to include Abstract Forms, enabled the first-ever System of Reasoning.

And the effective use of this Rationality in theoretically relating features in Theorems via Rational Proofs, via such means, then vastly extended their use to many legitimate (as well as many wholly illegitimate) areas.

Now, simultaneously with the developments in Greece, in the 5th century BC, there was a wholly contradictory philosophical standpoint being suggested by The Buddha in India. It was wholly incompatible with the Greek conceptions, because it was primarily based upon Human Consciousness, Living Things and their natural processes of interaction and development! This stance rejected Plurality entirely (the position of the Greeks) as being totally incompatible with the Living World. So, he attempted to understand Development: NOT it must be stressed, as a Rational Process, but as an ever-changing set of effects caused by one thing-or-situation upon another! Buddha, therefore, concentrated upon Qualitative Change. And, he began to realise that it could NEVER be due to the effects of Fixed Laws.

So, instead of always restructuring situations, so that they always behaved exactly the same way: he instead repeatedly observed them in what appeared to be the

same natural situation, and carefully observed what happened.

The clearest descriptions of such studies are described in some of his Loka Sutta writings. And he developed a strategy for studying the same set of processes repeatedly, cycling around a limited set of sub processes, noting the variations, until he arrived at the most consistent case, before addressing the next set of variations.

He would arrive at a most reliable collection of these kinds of changes, and this was the basis of his universally-renowned Wisdom, which he would give when asked for advice. But it also formed a general approach, acknowledging interconnectedness, constant change and natural cycles.

Now, of course, what The Buddha had discovered, and made only the initial contributions to, was what we now call Holism, but compared with the Greeks' alternative of Plurality, it wasn't anywhere near being capable of delivering its own Cogruent, Consistent and Comprehensive Rationality. Plurality was very useful and for millennia Holism was rejected by large sections of Mankind as irrelevant to any reliable System of Reasoning.

But, in the 19th century, both the German philosopher, Hegel, and his follower Marx, settled upon flaws in Pluralistic Reasoning, which could only be addressed by employing a Fully Holistic stance - certainly a new development for Western Philosophy.

And though Hegel, could go no further than defining a system of Dialectics, and did so without ever departing from his Idealist position, Marx, with the imperious sweeps of History as in his key area of study, not only switched decisively to Materialism, but also, and for the first time, vastly extended Holism's Power to Deliver, not only in the detailed analysis of Development, but also, profoundly-and-significantly, in the Revelation of the True Nature of Social Revolutions, which rarely but devastatingly-and-radically transformed Societies from Bottom to Top!

And these were complex Holistic systems that Pluralist Reasoning could never ever deal with,

In addition, Marx was able to develop Holism upon all fronts! But, effectively doing it alone meant that in spite

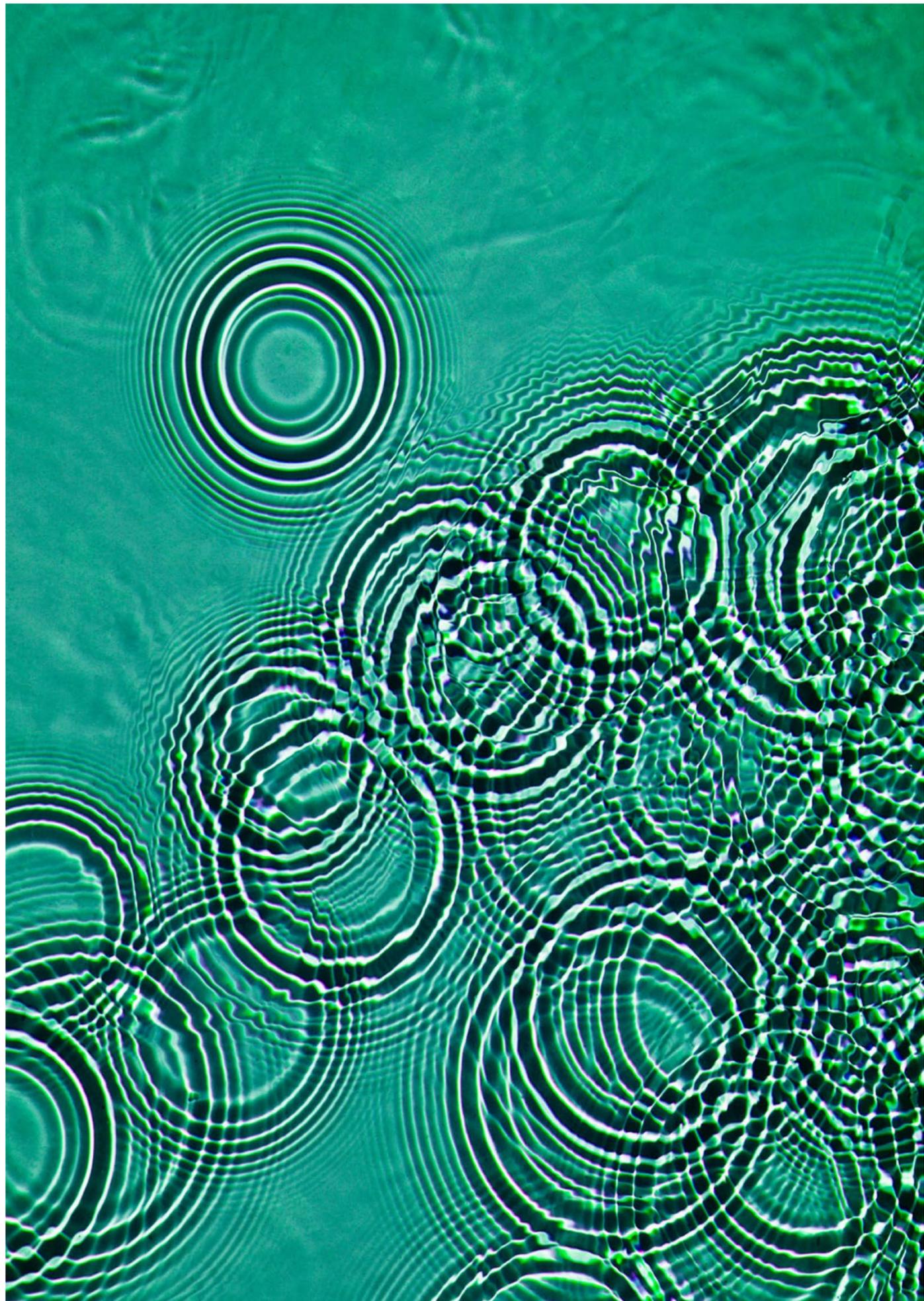
of spending the rest of his life successfully applying it to the development of Capitalist Economics, he was never able to import it comprehensively into The Sciences, where it was absolutely essential!

For, the dominant Pluralist approach could never deal effectively with the intricacies of Real World relations-and-changes, and guaranteed that all Laws so extracted would have the character of being useful only in the simplest organised and maintained contexts, and elsewhere could only deliver Wrong Turnings!

And it will be these that will begin to be addressed in the next paper...



*Straightness Before Fluidity* by Selma Dronkers



## Helpful Wrong Turnings II

The two and a half millennia of Pluralist conceptions has left an indelible-and-misleading character upon the ways that Mankind interprets and deals with the Physical World. This has both led to significant Pragmatic Progress (via the artificial successes of Technology) on the one hand, while also crucially undermining all Real Understanding of the Natural (Science), on the other.

One must approach this Dialectically - Contradictory Developments both greatly enhanced Mankind's Practical Abilities and Mastery of the Environment, while, simultaneously, both damagingly and forcibly holding-back new Theory. And, whenever such a situation remained-entrenched, such Contradictions were both inevitable, yet also very strongly-maintained by the successes in Technology! Those successes were understandably used as evidence for the success of our general Scientific approaches. The powerful and necessary Complementary Role of Theoretical Thinking became wholly unreliable however!

And, the situation was, to a major extent, convincingly Wholly Self-Maintaining. But, most important of all, it actually actively-prevented any real development in Mankind's Understanding both of Qualitative Changes and all-subsequent Empowering Developments in Thinking! For, all solutions were deemed to be solely Pluralistic and Technological.

Indeed, all Qualitative Changes were put down ultimately to ONLY Quantitative Changes. So, all real Solutions were forever-chased-but-never-naturally reached or explained! (Consider Climate Change as the current perfect example of this).

And, what was Entirely Absent within such a Universally-Applied Approach, was any conceptions of true Dynamical Change, which is demonstrated in most people's experiences by the Conception, Gestation and Birth of all Wholly New Life. For Conception involves the Fusing of the Living Gametes of two entirely separate individuals of the opposite Sexes, which then produces a wholly new Single individual (either Male or Female). Then, this New Life grows entirely inside its mother, getting all Air and Food from its Mother's bloodstream, via the remarkable, also created, Placenta, which directs them through The Umbilical Cord, through the Baby's Knavel, and into its own already-working bloodstream - powered by an already actively-pumping Heart! And, as this first stage is finally completed, the baby needs to be Born, as a separate unique individual: and the baby begins its descent down the Birth Canal and into the Outside World. And, on emerging, is given a slap by the Midwife, which causes the baby to cry, that opens its mouth for its first-ever breath. The Cord is tied off and severed from the child, and the Birth of the now redundant Placenta begins: so, it, in turn, is also born, but, as its task completed, it dies. Please explain that Miracle Quantitatively! You can't.

So let us identify the Basic Misconceptions of Pluralist Thinking!

### 1. Reality's Nature - *Contexts*

Now, the whole topic of dealing comprehensively with supposed "Wrong Turnings", is made difficult by the diversity of so-called Sources or Explanations that are used to fill the evident gaps in our various Theories, which are, most certainly, NOT helped by the regular reliance upon Clearly Uninvestigateable Areas, which

make any thorough-going scientific investigation totally impossible! So, let us clarify what these areas actually are - starting with those almost totally unavailable to our concrete visitation, testing, and intervening and even measurable experiments - for example, in Empty Space itself, and the Universe beyond our experimental reach as studied in Cosmology.

The whole Developable and Eminently-Testable Approach of Science, has always been to devise and implement *Interventionist* Experiments - involving applied-and-affecting actions, that will actually change things in various ways, thereby throwing a revealing light upon that situation's built-in properties, and hence, if sufficient, revealing enough to significantly aid an attempt to consequently say with some measure of confidence, both what it can do now, AND, how it managed to arrive at its current situation, and even deliver some inkling of its original, contributing state, and the role it could well have played historically in that situation's past development to where it is now.

[Note that the differences of such an Approach compared with mere Technology, which, on the contrary, limits itself to a far narrower and entirely pragmatic objective using an entirely Pluralistic Approach]

### 2. The Properties of Processes & their Products - *Accessibility*

Now, Cosmology generally excludes any possible deep revelation of the Nature of its Components, most certainly those in its past, and also mostly not even those assumed to be present currently. So, Mankind is unavoidably prone to merely assuming such things, and, nevertheless, then resorting to them to "explain" what can never be fully scientifically investigated, and maybe confirmed. The always referred to "Proof", that our assumptions were correct, is always totally dependant upon any confirmation of what we derive from what we have merely assumed. A fine definition of a Wrong Turning!

Of course, that is NOT Science: it is Formal Speculation, and can never be trusted! Indeed, it will always mislead us, especially if the steps in the "explanation?" are many and varied!

### 3. Designing Unknown Elements - *Invention*

But, the Daddy of all such tricks is when an element is *totally invented*, endowed with the ideal properties to enable any of the seemingly necessary tasks to be apparently "adequately explained"! Yet surprisingly, as well as this regularly happening in subjects like Physics, it is frequently "assumed to have been proved", and is then employed further in explaining more deeply buried and currently unobtainable problems!

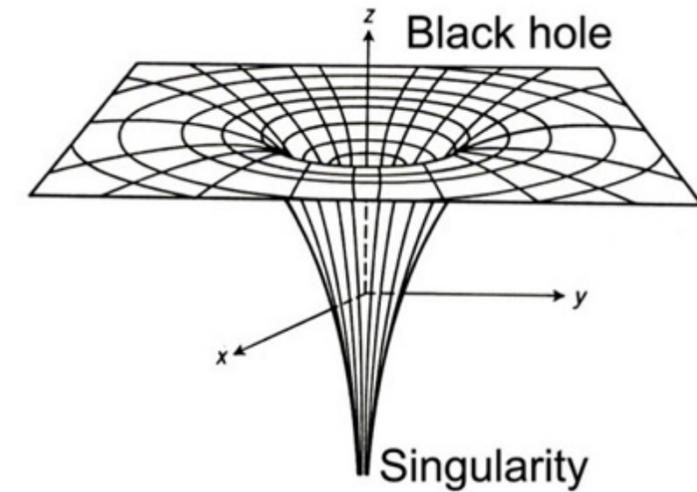
Clearly, the consequence of a strictly Pluralist Stance, is wholly incompatible with a truly Holistic approach to Science.

Now, this detailed establishment of the many basic-and-inevitable errors in the usually employed Approach to the Sciences, has been absolutely essential in also demonstrating exactly how the many significant Wrong Turnings, are both arrived-at and illegitimately excused!

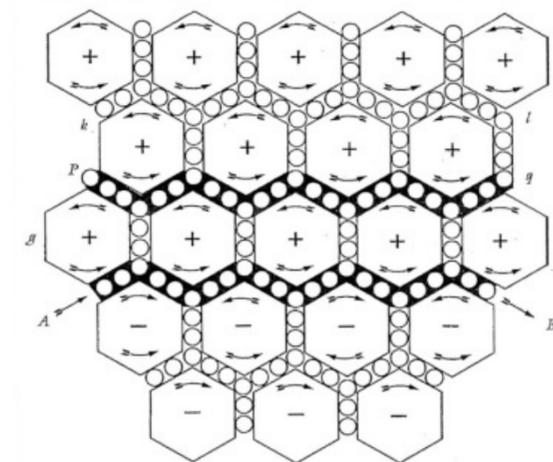
For, there are many flawed methods of Reasoning, and mistaken Assumptions, and deeply flawed Methods, to enable incorrect solutions to problems of Explanation in Science! For these never stand-alone, and totally outside and independent of illegitimate conceptions. Indeed, they are resorted to everywhere, and have been around for literally millennia! They can even occasionally stand-in for the Truth, in specially-limited-and-maintained situations, and thereby only locally enable a distorted advancement, "at least for a time", and hence give the false impression of being Universally True!

The perfect example, for me, is James Clerk Maxwell's Theory of the Luminiferous Aether, which enabled his truly brilliant venture into Magnetism and Electricity in the Nineteenth Century (we still use his derived equations today), despite Physics' total rejection of that original Model.

For, he worked-backwards from well-established facts and processes, within this major area, to thereby define a *Medium*, consisting of a fixed system of Rotating Vortices, with moving currents of Charged Particles, flowing constantly around and between these Vortices. With this Model - which we now know is NOT true - he nevertheless, with this Temporary but effective Analogue, went on to establish the Major Features of this crucial Branch of Physics! It was certainly a Wrong Turning, which nevertheless enabled significant progress



Which of our Physics models will turn out to be useful 'Wrong Turnings'?



to be made. It was a classic temporarily advantageous Wrong Turning!

And, indeed, in spite of its many short-comings, the Overall Discipline of Technology, embedded within a more dependable Science, has actually delivered The Whole Modern World, despite its flawed Theories! And that was because it was primarily the product of highly skilled and knowledgeable technicians who discovered how to manipulate and build things, often through trial and error.

As a critic of most of what is termed as Scientific Theory, I must include myself in this group, dominated by temporarily advantageous Wrong Turnings!

For from my very first term at University, studying Physics, I knew that The Copenhagen Interpretation of Quantum Theory must be incorrect, but was, at that stage in my life, unable to determine why it was so. My basis was that after a highly successful schooling as a very able Mathematician, I had rejected that Discipline as any sort of possible Explanation for the Nature of Reality, and had turned instead to Physics, which throughout my time at school, had been taught by teachers who primarily explained everything by Causality, and that certainly seemed to deliver a better way of Understanding The World! But, as soon as I got to University, it was evident that Causality was successively being rejected in favour of Mathematics, and revealed formal Mathematical Equations as being the *Driving* Laws of Reality! And that, I already knew to be impossible.

After a vast trawl in the University Library, I finally discovered a book that agreed with me! It was *Materialism and Empirio Criticism*, by Vladimir Ilyich Ulianaov. His arguments totally rejected the position of the physicists Henri Poincaré and Ernst Mach, who were supporters of Positivism, which snuggled in, without proof, Mathematical Laws whenever Causal Explanations were unavailable. I had to know more about Ulianaov, who I discovered was a follower of Karl Marx, and as leader of a Marxist Political Party had taken the pseudonym LENIN!

It turned out that Marx and Lenin had the same stance as myself - so I turned to the original works of Karl Marx - an approach to studying Reality Holistically, but that also rejected Idealist philosophy - an approach termed Dialectical Materialism.

Now, this substantial diversion was absolutely necessary, as the major problem for Sub Atomic Physics, which underpinned the universal turn to The Copenhagen Stance, was the infamous Double Slit Experiment, which though it was easily dealt with classically when performed using Light, surprisingly delivered the exact same effects, when responding instead to Charged Particles. For, the only way that such a version could be explained classically, was if a charged particle managed to go through both slits simultaneously, and “intefere with itself” on the other side, like a Wave, to produce what was observed. The immediately suggested solution was that the charged particle involved could not simply be a particle alone, but a Unity of such a particle with an Associated Electromagnetic Phenomenon too. But NO such Joint Entity could be detected! It was merely a particle interacting with the Double Slit and seemingly totally Empty Space! It was, therefore, inexplicable how the actual results occurred. Many attempts were made to explain the phenomenon, using an associated “Pilot Wave”, accompanying the particle, but they were all theoretically impossible and caused the idea to be rejected throughout the whole Discipline!

But, I considered that I had a solution. The other interpretations of this experiment were entirely Pluralist - and the solutions offered by those Scientists lead to Idealism (Uncertainty, Observer Effect etc etc). I considered there must be a Materialist and Holistic explanation for what was happening - and if I found one, it would undermine current Sub Atomic Physics, totally.

My Substrate Theory involved a Totally Undetectable Medium lying behind the experiment - in some ways similar to Maxwell's Aether - but it would consist of a mutually-orbiting pair of known Leptons - one Electron and one Positron. These were of opposite matter-types as well as having opposite charges (hence invisible), but being of exactly equal size, to form themselves into a single mutually-orbiting Unit. And as such they could carry different quanta of Electromagnetic Energy in their orbits, entirely invisibly to us - yet pass it on to an adjacent identical joint-particles, effectively propagating energy throughout the Universe.

This was initially suggested, by the supporting obervation of the “mutual annihilation” of these same two involved component particles, AND also by their supposed spontaneous *creation*, from a disembodied Photon of Pure Energy alone. What if there was no Photon - that

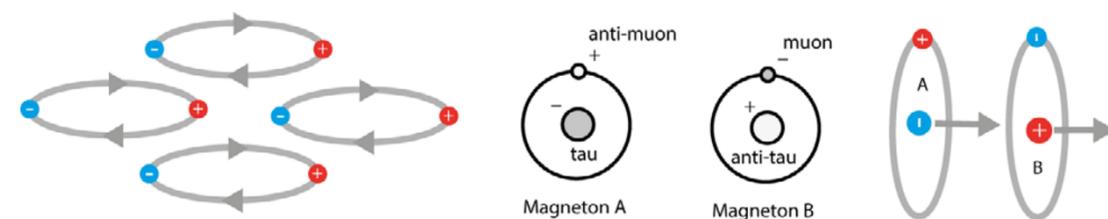
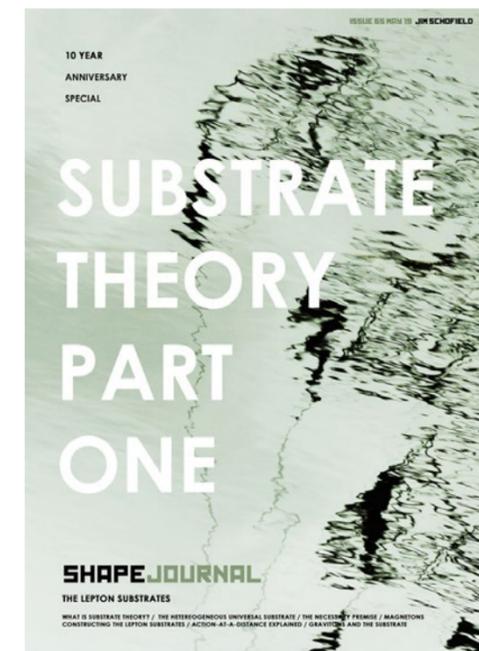
a Photon was actually just the energy passed on from Unit to Unit of the proposed Medium? No Annihilation would be involved, just the transitions from and to an undetectable joint Particle, which I termed The Neutriron! (that very Particle was fleetingly discovered also at Fermilab, where it was named The Positronium).

The new Model was a complete shot in the dark, until I realised just how much it could explain!

Was it, I reasoned, the Holistic answer to the Pluralist Copenhagen Stance, or was it another advantageous Temporary Solution of the Maxwell type? Either way, I pursued it energetically to see where it led.

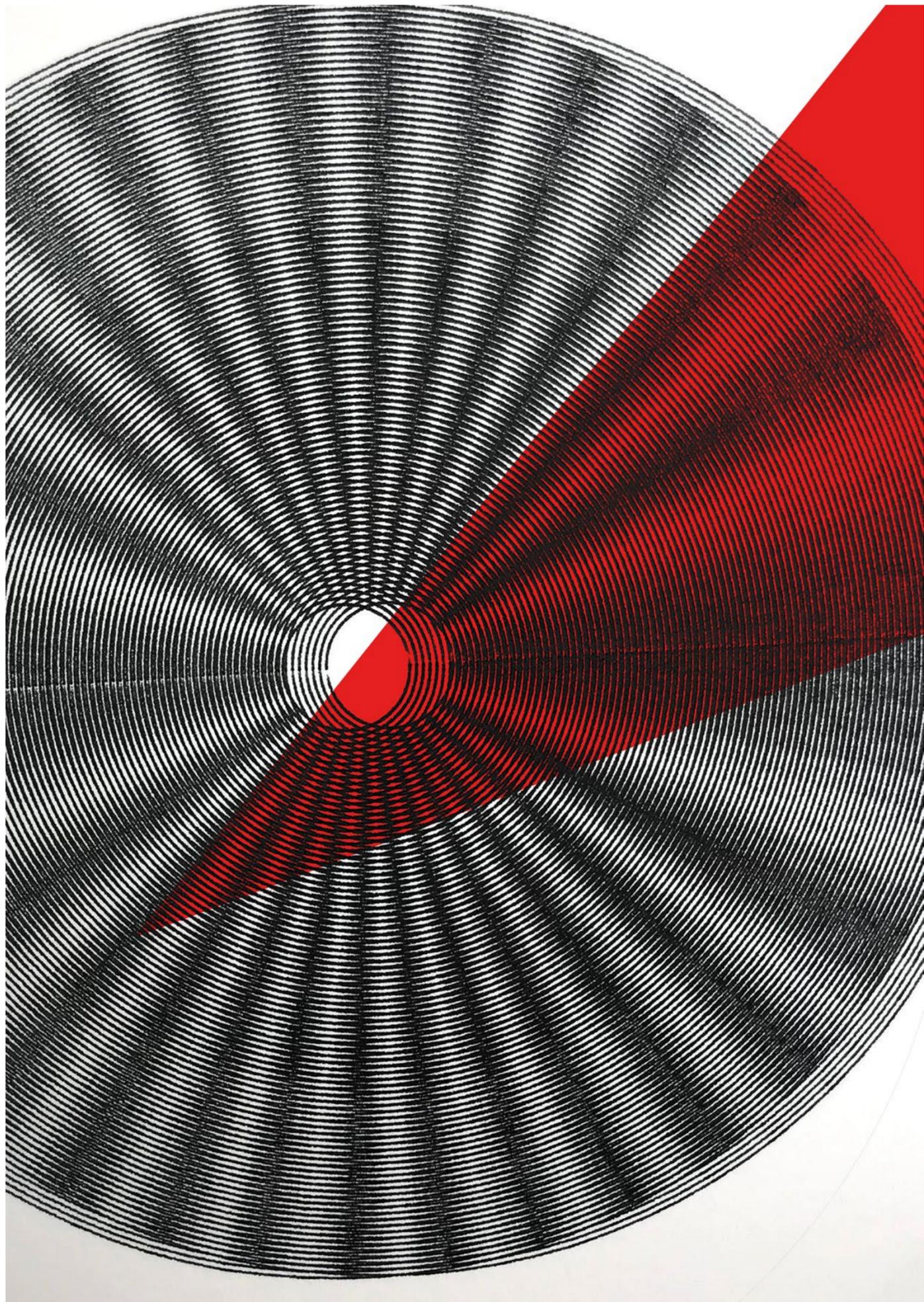
Now, I can and could go on with listing other Wrong Turnings of this type, but I believe the examples described also throw light upon many other such Theories, as possibly being of the same type, so I will, for now at least, turn to other aspects of Holist Theory.

[Editor's note - for more on Jim Schofield's Holist Subatomic approach see *Substrate Theory*]



Neutriron substrate composed of electrons and positrons

Magneton substrate composed of taus and muons



## The New and Vital Path

It has taken a considerable amount of time to reach this position. I hope that I have, by now, gained sufficient ground to present a wholly New Approach to Subatomic Physics and the Sciences in general.

A complete restructuring is clearly required, to begin to overcome the long built-in, yet many and mistaken, diversions, unavoidably imposed upon Scientific Thinking. This has been, of course, wholly unavoidable, for Mankind has now, for a very long time, been ploughing wholly new furrows into the still constantly-emerging, and hence changing Nature of Reality. Yet, there is not, and never will be, an already fully-appropriate, available and reliable Revealing Approach to such a demanding task - not least, because that History has necessarily been one of constantly making and then painfully-and-inadequately attempting to correct approaches - not only as a vital path to getting-it-right, BUT, also, as an absolutely essential Self Development of Ourselves - AND YET the significant changes that we unavoidably made in that very same World, which we were primarily attempting to understand (and many of which contributions, in fact, only made many old, existing problems worse, and also to wholly new ones constantly being generated!)

But, not all of Mankind were of the same mind, in this undertaking. Indeed, as the generated possibilities grew within society, there were always those who demanded and took a Giant's Share of what was achieved, and used their consequent superior positions, to try keep it that way! Indeed, Humankind, as a whole, were never at the same level with generally shared Common Aims! Throughout various evolved Economic Systems, there unavoidably arose Different Classes, which developed

with very different, and opposing, interests-and-objectives. And, for those In Charge, what benefited them was far more important than what was needed by the majority - or any claim as impractical as "seeking truth".

Now, this current, increasingly wide-ranging series of essays, acknowledges the above described distortions to Mankind's objectives, in attempting to deal with Reality-as-is, BUT, in order to effectively address political agendas too, it must also achieve certain objectives with regard to that Reality itself: for the Class Distortions peddled by the Ruling Class will only, in the end, be defeated by The Real Truth - the original Task of The Sciences.

For Science this is not a turn away from studying the Natural World, and for Marxism it is not a turn away from the essential Political struggles! They will still have to be dealt with! But, as a lifelong Physicist and Marxist Philosopher, I also knew that the assault upon Reality-as-is will also be absolutely essential in equipping Mankind for all the struggles still to be addressed upon all Fronts!

There are more lies in current so-called Science to allow it to ever play an objective role in all the many current situations to be overcome. Let us prohibit the liars from perpetuating their domination via their currently misused and distorted version of Science!

So, let us begin to totally renovate The Present Approach to The Sciences - primarily by the revelations due to this and other researchers, taking a very critical approach within Modern Sub Atomic Physics, and the significant consequences for Science in general, and Cosmology in particular!

In describing the new revelations, I will NOT repeat the full arguments here, as they all exist-in-full elsewhere in these published papers: but, I will strongly emphasize just how devastating these changes are. Indeed, I have extended things into wholly New Areas of Study, which radically change many previous “fixed certainties” into qualitatively-changing situations, primarily via a wholly new Division of Reality-as-is termed *The Systems Approach*.

This is NOT a small adjustment, either, but a Total Transformation. It has been a very long-and-arduous effort following my first inklings of dissent, as an Undergraduate in Modern Physics, early in 1959, to the latest additions, finally culminating within the current year of 2021!

I spent a long time entirely alone in this endeavour, and hence it was always, as a consequence, very slow-going. All the obvious places to go for information and help originally came up totally empty. But there were, however, occasional accelerations, such as coming across the work of the French Physicist Yves Couder - his experiments with Quantum Analogs certainly hinted at a Holistic alternative to our current view of the Quantum world - his “Medium”, silicone oil, reproduced many of the anomalies thought only to exist in the weird Physics of the Sub-Atomic world.

The biggest philosophical leap forward came from a very surprising area however - I was asked to help a researcher in Dance Choreography (in my then current discipline of Computer Systems Design) within her analyses of recorded footage of complex creative movements (for teaching purposes) that I realised the very same problems occurring in literally all Dynamical Analyses, which involved a great deal of experimental work with various kinds of recording, and particularly noticed the similarities to those within Sub Atomic Physics.. Like natural motion captured through a series of still samples, the continuous was always subsumed into the discrete!

It was still a long road, but finally accepting that it was down solely to myself, and, consequently, it was only within an extensive 14 years of full-time investigations and writing, and thereafter, publishing, that I finally realised exactly what had to be pursued.

I had to bring the Holist Stance unto the heart of the Sciences, to totally defeat and expel the established

Pluralistic Stance (involving an exclusively Mathematical Rationality), and a consequent Pluralist dominance in all reasoning ever since, within all the Sciences, and totally replace it with an extensive-and-transforming modern update of The Buddha’s Holistic Approach to Nature, wedded intrinsically, thereafter, within all scientific methods.

This was, of course, not at all easy to achieve, for the trouble with the old Holism, is also its truly profound-and-indeed-immense difficulties: it was initially immeasurably more complicated than Plurality, for it had none of that stance’s easy-to-work-with Stabilities and separable elements - it almost constantly varied in everything involved!

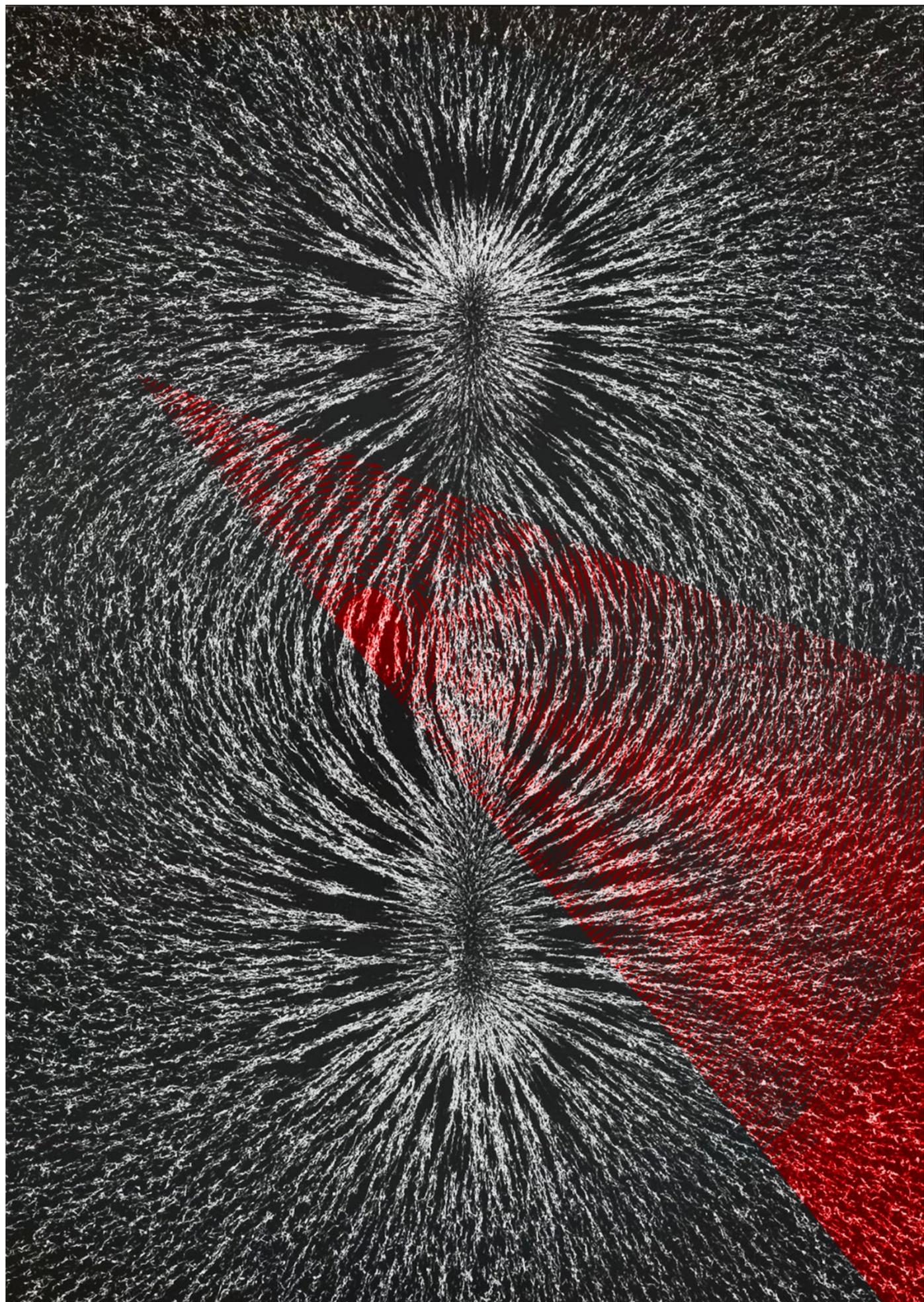
How could it be analysed, controlled and dealt with, while maintaining its vital natural variability and interconnectedness?

Now, the key to dealing with Holism is precisely what was totally banished from all of Pluralistic Science, which was the multiplicity of many simultaneously active Processes not only many of that exact same single process, but also, of all others, in the same space, involving an overall varied mix of an active tumult of mutually affecting processes.

And, this mix was no co-ordinated set! They would all be at different stages of their individual processing. And their products would then be taken up by other possible processes. Indeed, over time, the situation would be one comprised not only of many of the same Chains of Processes, but all at different stages: and apart from the necessary Initiators and final Products, they would all be taking in other necessary components as they went along, and also be delivering many side products too! So, along with other different always-there processes, also with their retinues of requirements and products, the situation would involve a cacophony of available elements.

But, given a single starting point, the mix would invariably and drastically change! Only if there was a continuing source of the requirements could the situation be in any way maintained, because crucial processes always could find what they needed. Indeed, these would enable Key Processes, due to the dominance of their required initiators.





But, this is NOT Plurality, so though it might be maintained for long periods, it would never be infinite, and it would perhaps, in time, promote what was initially a minor process, feeding only from produced side products, it might, in time, replace the previously dominant process, as it finally ran out of its initiators! Also, in certain circumstances a Given Chain of processes might, at its termination produce, as output, exactly its required initiator, and turn the Chain into a Cycle: when it would become to some extent permanently maintained. We could go on with all such possibilities, revealing a potentially constantly varying collection of very-slowly-varying Systems, though NOT causally linked, yet, nevertheless, capable of both changes AND survival!

NOTE: I had originally come upon these ideas many years ago, not in Sub Atomic Physics, but within a period of Research into the Origin of Life on Earth, following attempts to extend the Stanley Miller's Experiment!

But, at the time, my own grounding in Holism was restricted to Marx's applications solely within History and Capitalist Economics: and, as it slowly became increasingly clear, the Tempos he revealed were the easiest because they were entirely driven primarily by the Actions of Men, even if unconsciously, and were, therefore, much easier to access and comprehend, than most of the Tempos generally involved in the Development of Reality, that were necessarily either much too fast (the speed of light), or far too slow (the evolution of matter), to easily discern by Mankind, and are still, to this day, rarely acknowledged!

Indeed, very little progress was made in the most crucial area of all - that of Science, until the highly productive Backwards Definitions, so ably pursued by James Clerk Maxwell in his significant contributions in Electromagnetics, which also began to be applied once more, by similarly-working-back from known, but currently inexplicable, and hence to, as yet, still profoundly unrevealing phenomena. And, these were now primarily applied to previously inexplicable phenomena discerned initially by Marx at the very hearts of all Social Revolutions!

Also, explaining the maintained-and-persistent Stabilities, that always occurred within the interludes between Revolutions, which then, via a series of increasing though usually terminating Crises - always

finally resolving, into a Total System Collapse, followed surprisingly by an immediate Turn-Around involving an increasing but again failing Series of Crises - resulting finally in the establishment of a Wholly New and long-lasting Stability of a New Kind to conclude the Overall Revolutionary Event!

Now, though Marx described these Phases accurately, he neither explained them in detail, NOR did he realise that the very same Holistic Processes he observed in societies pertained, though at very diverse tempos, at all Levels of Qualitative Changes in Reality!

Yet, they were the Key, if adequately-explained, to delivering the Entire Engine of Qualitative Changes throughout Reality-as-is. Yet, they were also Special, because, unlike Quantitative explanations, which just gave Quantitative results: these Holistic Explanations delivered what were often Wholly New Qualities! And, this meant that the Definitions for these New Qualities were NOT known prior to the producing Event: instead they only came along with the explanations: they were entirely Unknown prior to first being Explained!

So, very clearly, the initial explanations of these Transformations in actually happening Revolutions, would be crucial across the board in dealing with Qualitative Changes throughout Reality!

Observations would tell you what they were, but they had to have been looked at very carefully, and even undergo further tests to define exactly how, and by what, their nature was determined! My own experience in Qualitatively explaining evident outcomes took a considerable amount of careful consideration. Indeed, the usual approach is to not even try, and to merely describe the outcome when a signalling Quantitative limit is surpassed: no Qualitative Explanation is even attempted! Physicists consider them misleading - only Mathematical form can be trusted!

Yet without such explanatory efforts, absolutely NO framework is available to aid our understanding of similar Qualitative Events elsewhere.

## The Levels of Reality

Underlying Systems:  
The Hierarchies of Existence  
Leading to the Habitats of the Sciences

Science, as it is currently constituted, can never address Reality-as-is at every possible Level, as it is just too vast, rich, complex and various, both in Scale, Locality and also in The Differing Natures of its diverse Habitats, to ever be capable of presenting only a Single Dominant Character. Think of all the very different possible Ways of Dealing with it, to consequently reveal its various Natures, their Primary Determining Factors, at each and every Level, with different contexts and possibilities, with the Single Drastically Simplified Version of an interpreting Rationality, that it initially inherited from Ancient Philosophy long past its sell-by-date.

Indeed, because of these diverse Natures, as well as the increasingly clear Relative Independence of the Causing Levels, it behaves very differently at its various Scales from the Sub-Microscopic, on a place like Planet Earth, to the Cosmological, effectively contained within seemingly Totally Empty Space!

As a matter of fact, the Version assumed to be underlying them all actually exists, Nowhere-at-all: it is in fact completely impossible Everywhere, yet in its cut-down Version does present a coherent, consistent set of conditions, as long as situations are artificially maintained, conformed to Mathematical Rationality, as the Greeks had so brilliantly developed and logically established by those exact means.

In fact, its many features are not only often Scale-bound, but also Context-bound too: it behaves like different Substances at each and every Level of existence. And, to “compound the felony”, caused transitions between Levels are also, if more rarely, still possible!

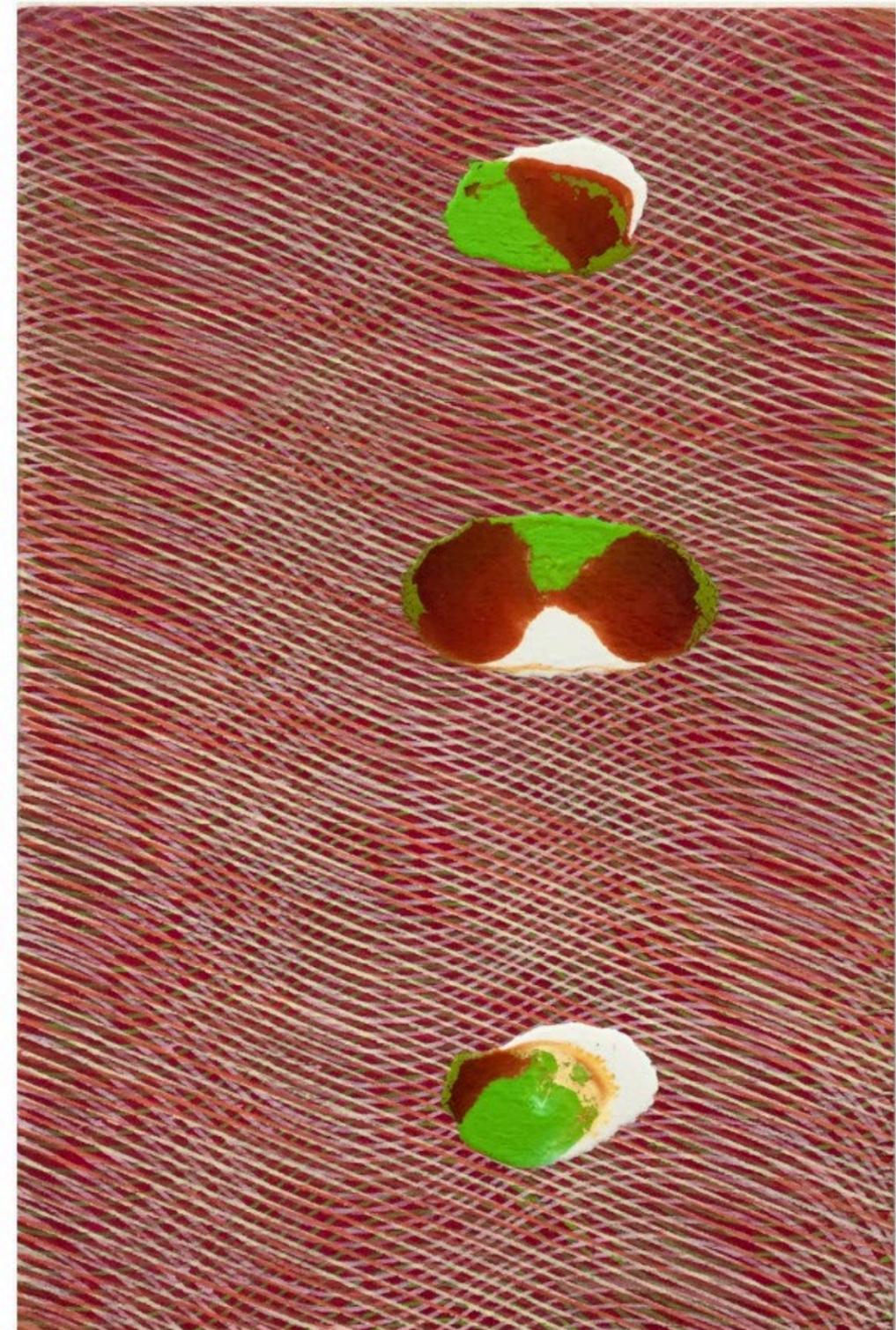
Clearly, Mankind had to tailor thier studies to match its apparent Context, Content and Nature at each and every Level addressed. Or alternatively this Context had to unavoidably be further limited at each and every level to prevent an almost infinite set of factors quite wrongly making its real control impossible or even necessary.

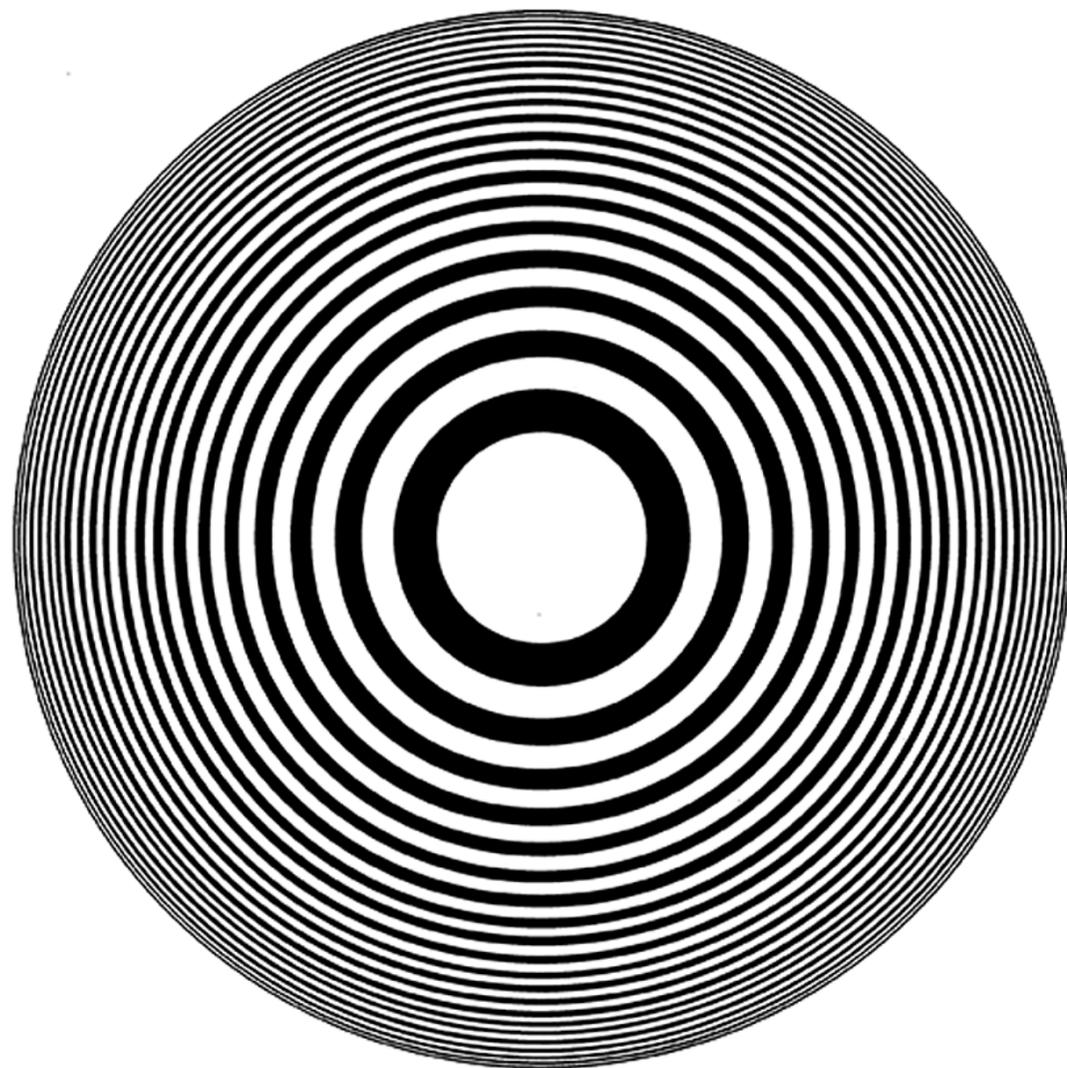
The problems obviously occurred most in going beyond mere descriptions to Necessary Causal Explanstions - achieved entirely theoretically! So, scientists had to define their limited contexts, and then experiment effectively within them, to begin to both arrive at accurate descriptions of them all, and then attempt to deliver Explanations, as to both how and why they changed.

Now, these could, and indeed did, transform the studies, because they delivered Explanatory Theory: and this was an alternative to experiment in revealing what would happen in many different situations. So, if enough reliable Theory was available, consequences could be worked out via the consequently revealed ideas, and the results arrived at and described *in words!*

Note: These are the forgotten tools of Sub Atomic Physics.

Of course, the Theories were initially confirmed by experiment: but soon theorists (especially teachers) were even delivering their lessons entirely in that form! And as





many of these theories had associated values appended to their conclusions, they were soon formulated in concise Mathematical Forms termed Equations.

The famous American University Lecturer, Leonard Susskind, will totally fill his whiteboards with such Equations exclusively, and use Mathematical Rationality *alone* to deliver consequent "Theories". Now this supposes that Mathematical Rationality is validly useable in this way to both describe and explain all of Reality-as-is. But Mathematics most certainly isn't the Language of Nature!

Mathematical Rationality was a vital part of an Intellectual Revolution that led us to where we are today, but despite its countless successes it involved major restrictions upon the assumed Contexts AND Content involved, which severely restricted all such Relations to deliver only Forever Fixed Laws of the situations that had to be made Wholly Pluralistic first - and that was NEVER the case within unfettered Reality.

Indeed, this applied assumption enabled a vast yet erroneous development in Science, but it was never about Reality-as-is. Instead, it was concerned only with significantly simplified situations, which could be both easily achieved-and-maintained. It doesn't need much imagination to realise how wrong that would be in dealing with things in Outer Space!

So, for literally millennia, "so-called" Science was restricted to straight-jacketing Reality, more or less limited to where such conditions could be artificially made to exist, and was nowhere conducive to dealing with Reality outside the Laboratory or carefully calibrated devices!

And, this, of course, made the consequent "Science" totally unuseable outside of the limitations we constructed, and its associated Mathematical Formulae totally unapplicable to Reality-as-is!

So, to necessarily extend that limited account to accurately represent Physical Phenomena in the Real World, Science will have to be rescued from its current debilitating restrictions, to apply where it would actually be acting - in the many diverse levels of Reality-as-is!

The main difficulties facing Mankind today, are due to these increasing problems - huge gaps in our knowledge of natural systems and their dynamics - as Crises actually spread to ever more areas of Everyday Life - Climate Change, Pandemics, and an ever-worsening Global Economy - causing growing inadequacies in Health Services, and the downgrading of most jobs into inadequate Private Services for the poor, in place of the once excellent Nationalised Services in Employment, Transport, Education and Health, declining inexorably with the increasing power of the Right, and separate facilities for those who can afford them!

But, the most damaging deteriorations are mounting most dramatically in Education, with the constant decline in the Explanatory Sciences, and the once uniformly developing and necessary Areas of Understanding, now sidelined to concentrate exclusively in keeping the Profits flowing into the pockets of the rich!

Now, in such declining social conditions, the necessary Revolution in how the *Sciences* are conducted and taught will be impossible. There exists no urgency within the powers that be to currently transform the whole basis of our Understanding of the World - they have many vested interests in maintaining this deeply flawed system - yet that is precisely what will be needed for further progress to be ensured. Our survival as species may even come to depend on it.

So finally in the next paper in this series, I will begin to outline that necessary undertaking, while also being clear that without the necessary political transformations alongside, they will never be implemented.

## The Systems Approach I

While Substrate Theory was a major step forward in developing a new Holist approach to Subatomic Science, it lacked a certain understanding of Natural Systems which inevitably came afterwards.

The Universe we find ourselves in is too Innumerable, Complex and Multifarious to be generally addressed exactly as it is, so Mankind - the most advanced known of its Living Products - had to, first and foremost, and at their own particular Level of Reality, consider most carefully those entities that appeared (upon Man's own Scale) to be relatively unchanging, to initially feed, supply and equip all their evident needs. It was a hostile World we first appeared in, and to even survive they had to fight off predators, and gather only safe foods. So, generally absolutely Everything had to be correctly allocated to their correct categories and treated accordingly. Many things were just too dangerous, and were given a wide berth, but others soon proved to be valuable things to eat, while others enabled simple defensive weapons to be made and used! In time to communicate with one another, and inform them of both dangers and opportunities, improving, extendable Languages were developed, but were initially for both naming things and possible necessary actions.

I feel I had to start in this way to explain the initial and continuing Nature of Language, and its categories, which were still a very long way from what they would have to be in the future. These words we used for millennia, limited its categories and capabilities - many of which still remain to this day! And even the Great Greek Intellectual Revolution STILL failed to equip our Languages properly, beyond Mathematical Rationality, which thereby limited it to solely Pluralistic Descriptions

and Explanations! And though The Buddha attempted to construct a Holistic alternative, it failed to address the necessary elements of nature comprehensively too!

And it wasn't until the contributions of Hegel and Marx in the 19th Century, that the beginnings of a potential Holistic Science began to be constructed - but it was never really taken much further - its successful descendants still entirely limited to Social History and Capitalist Economics.

So this extended series of essays alone, are now addressing the key questions, extending the Full Holistic Approach to the Sciences, involving Qualitative Changes and their Explanations for the first time.

Now, this is, in fact, more significant than would initially be realised, as Qualitative Changes have always, thus far, only been described: so, bringing in Holistic Explanations for such events, no longer even attempted, and when it long used to be, and as it can now be attempted holistically, in order to finally address many very important previously hidden issues, for the first time ever. And, most people will be amazed at what will unavoidably and necessarily have to be considered to even begin to do that... So, let us begin!

At the outset, we simply must critically question the usual way that we normally attempt such "explanations"!

And, to do this, we had, ever since the Greek Intellectual Revolution, always started by totally ignoring the multiple, simultaneous and different affects, all happening together, and, instead, treating the situation both Wholly Quantitatively and hence also Strictly Formally! Indeed,



as if Everything involved was entirely due to a Single Quantitative Process - A Formal Law, with different, contributing components coming together to produce a resulting Quantitatively defined product!

There was always, and still is, absolutely NO Contentions considered, from any of the other many simultaneous contributions, which, though they might frequently be from another simultaneous version of The Very Same Process, as that already being considered, and which could, indeed, also be at a very different stages in the process! Or even be due to a wholly different process altogether.

NOTE: This was by no means a trivial assumption! It had become a necessary enabling Principle of the thereafter-established Pluralist Method: For all processes were assumed to be absolutely independent of one another.

Both of the above additions (and more), could well be involved. And, as we will see as we use The Systems Approach later in this set of arguments, that supposed total independence is erroneous. Indeed, the Single Process assumed to be acting alone, could NEVER be an actual real case.

Let us stress the Real Situation!

Many Identical Processes, though at very different stages in each one, will most certainly be the simplest possible real case! But, usually, there will also be a few different interloping processes, but totally swamped-overall, even though always present, by multiple versions of, at least one, Single dominant process, due to the multiple contributors of those many dominating processes.

But, such will be there, as will consequent processes initiated by the availability of the many other final products of diverse included processes. It could never be a well-organised System! Or even a mix of separate complete processes! It will be a mixed bag of opportunities ALL attempting to find their necessary, unattached resource, required for the next step.

The Tempos of completion of individual processes will vary: and will actually be composed of many fragments of composing-processes - seeking their next required component. And, the same will be similarly true, for all the other initiated processes generated by their previously-final and now-required products too.

As you can see, representing even this mêlée, by a Single, Purely-Formal Process (as we see in Physics) will certainly omit many real happenings - and I haven't finished yet! All the products produced within this, so far described, natural situation, could initiate other processes, so very soon WE could very easily lose track of what is going on!

I am reminded of my Chemistry experiments at school, when every time we took measurements, we got different answers! You can guess why from the above discussion. So, we were urged to "Stir Vigorously before measuring, then repeat the whole process several times: finally averaging the results!" This is also similar to what happens in Copenhagen Physics!

However, very much later, working with a Chemistry Researcher at a University in Glasgow, by a very careful selection of the substances used, we were actually able to see the *series of processes* actually oscillating to-and-fro between two situations, and could even discern the reaction fronts displaying complex patterns emanating from a single starting point in the containing transparent liquid.

You would NOT find out much about this delicate natural phenomenon underlying reactions, after a few vigorous stirs, would you??

And, of course, there would, ultimately, in our Experiments, be many more contributions, due to the exhaustion of certain substances, and also new incursions from elsewhere! You can see exactly why our forefathers insisted upon strictly controlled-and-maintained experimental situations, which were kept as artificially simple as possible! But, of course, they were NEVER really investigating Reality-as-is - were they?

But, as their Wholly Pluralist Results bore NO direct and fruitful discernable relationship to what happens in Reality-as-is, they would be very misleading, and, therefore, also wholly unreliable in Absolutely All Theoretical Interpretations. They would simply be wrong!

Now, I am definitely fully aware that these revelations currently do nothing to aid in finding reliable Truths within Reality-as-is: indeed, they seem to infer that you should "Give up now, you'll never do it!", on that intension. But that is certainly NOT the case: these difficulties simply must be further addressed!

And, believe it or not, these revelations also reveal what, initially-at-least seemed to be unanswerable questions, concerned with what I call *Systems Stabilities* - which are both very different from the usual Pluralist Imposed Stabilities, but, indeed, are the only means by which some real sense can be extracted, out of what superficially seems to be a confusing and impenetrable natural mêlée!

And it is this aspect that I will now attempt to reveal.

Returning to Marxism, it is most clearly revealed within the extremely long-persisting Stable Interludes, that most definitely occur between Social Revelutions - for these certainly need some explaining!

They are NOT, however, without any apparent major threats to the continuing Stability: but these ever-evident Crises never usually precipitate a General Collapse of the Overall Stability, and the failure is usually so dependable, in its subsequent almost immediate repair, that it can explain, if further pursued, not only the usual continuing Stability of the Overall System, BUT ALSO, throws a necessary light upon what is needed for the much rarer Revolution! For it reveals, better than anything else, what would be needed to precipitate a general Collapse too.

Clearly, when many processes do occur simultaneously in the same Locality, they indeed DO affect one another - not directly, of course, but INDIRECTLY, but nonetheless critically. But, if only a single process is effected, the adverse condition will indeed, in time, pass, and the situation can be retrieved. But, if too many processes are affected, simultaneously, in this way the damage effectively multiplies, and soon a General Collapse ensues!

Indeed, the usually-assumed simplified conception of many totally independent processes acting wholly separately in the same locality turns out to be misleadingly incorrect!

In fact, there is always a very large number of processes simultaneously present, most of which are comprised of a limited and sufficient set of required components, but also including many wholly unrelated others, and some of the latter, usually being the same as those Complete Processes also occurring within which form both Chains or Cycles, as their necessary input resources and consequently produced output Products as their Main Onward Linkages.

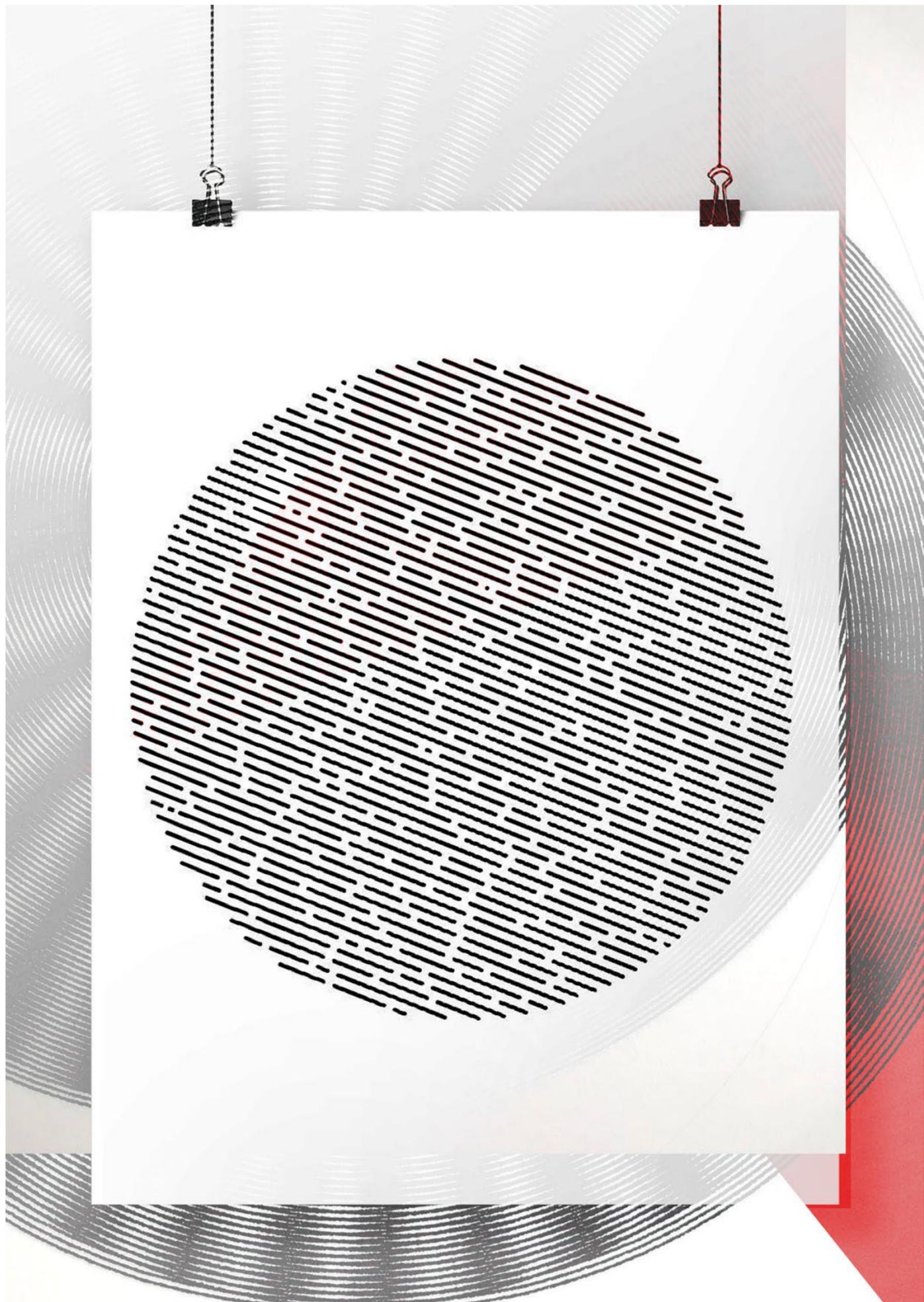
But in addition containing incomplete fragments of these that will be at all different stages, yet also delivering as fragments, their usual, side-products and also the usual receiving mechanism of secondary resources.

So, as an initially established stage, we will get a continuing mix of as yet unattached entities, which when necessary could supply missing components within a previously established, but now incomplete Chain or Cycle.

So, such previously Halted Processes can then be restarted laterally- using these now available and appropriate entities.

And, this sort of natural Mix was, and still is, what is normally happening in such circumstances literally ALL the time and at all Levels of Reality. Indeed, ONLY the above subscribed scenario explains the actual normal situations, and how they function in all possible circumstances...

This is your first taste of Systems Explanations. But there is certainly more yet to be described!



## The Systems Approach II

Now, having finally embarked upon a Truly Systems Approach to Science, I must now systematically replace all the other remaining and simplifying Pluralist Short-Cuts, with much sounder alternatives, which as fully as possible, acknowledge the presence of all the various-and-detailed interactions now happening, at this newly-defined-Level, before then attempting to do something similar, at all any other relevant Levels too.

Yet, in spite of the basic revelations thus far, I haven't as yet addressed the most evident one - that is The Effects of the Crowd of other current process, upon any Lone Interloper!

For, the usual widespread assumption, involves the supposed Total Independence of all individual Natural Processes: so that even with the usual major Pluralist simplifications, they are, nevertheless, left completely unchanged, which certainly means that such a Loner, along with its new processes to reveal, will be relatively unaffected, and this turns out to be totally untrue!

Indeed, once we see such a situation as being composed of multiple accompanying processes, as all the many contributing parts of all present processes, the new Loner will be hard-pressed to easily find all its own next-required-Parts, while the existing and dominant Processes having all their many Parts readily available, will literally always complete most of their individual processes relatively quickly: they will easily find their following Parts. But, while any relatively isolated Loners will frequently fail-to-do-so over time - so in such circumstances the interloper will be Progressively Selectively Eliminated!

Dominant situations will always be Self-Reinforcing!

Thus establishing such situations as ever more Stable!

So, instead of situations becoming ever more mixed and effectively randomised: they could with a measure of dominance rapidly become an everywhere-related-area! And, it is even possible as Parts regularly link-up. that they also, in time, become more Self-Organised!

Absolutely none of this fits in with our usual assumptions, and where it is true, many of our assumed developments and means of characterising the consequent evident effects will often be mistaken! Indeed, even quite a modest measure of such self-organisation will turn out to be highly significant! But Systems Reasons will always then be absent!

These ideas are not merely way-out-assumptions, but they appear to be so, when dominated by our usual artificial and wholly mistaken conceptions concerning the "supposed true" nature of many features of Reality-as-is! And, when those are brought together with the installation of a Defining Mathematical Rationality, as being both entirely and necessarily adequate within those conceptions alone, the subsequent many evident problems become immediately inexplicable, and are ignored in favour of the many simplifications, so implemented.

For example, though they are OK within Mathematics: there are absolutely NO Fixed Laws in Reality-as-is!

Yet, along with the absolutely essential major restrictions to Contexts, these did deliver situations that enable an

important measure of success in both Experiments, and most important of all, in Production! And, as for millennia, that had justifiably been the main area of success for Mankind, it was predictably taken on board by Man upon its establishment in Greece, in the 5th century BC! But, in a diverse way, this diversion was to also develop a Wholly New Form of Thinking, which, in time, would increasingly cast major doubts upon its supposed virtues theoretically.

For, the most fruitful addition to procedures possible with such means, led to the theoretical processes of Theorems and Proofs, which, if appropriately generalised to be applied to the really-existing situations, would greatly undermine its "supposed truth"! Nevertheless, a very long diversion, based upon The Pluralist Conception of Reality, managed to "Rule-the-Roost", due to its widespread Pragmatic Successes in Production. Only very recently has Holism been seriously considered as the next important step for Science. And, even then, without many other extra and essential breakthroughs in this important area, it is energetically opposed by well-entrenched Experts in the Old Approach.

Indeed, let us be crystal clear, a Truly Prodigious Technological World has been effectively built, over a very long period of time, via the artificial maintenance of strictly Pluralist Contexts. And, thereafter, consequently truly massive investments and even vast Commercial Empires have been built on that same basis. It will take something very much more than a "Change-of-Mind" to halt such a fast-moving and consuming Monolith!

Nevertheless, what these Theoretical Efforts imply, must be pursued, to catch the Inevitable Wave when it is finally released! Indeed, though regularly criticised by the "Successful Achievers" in this World, sometimes simply even justifiably, the fact remains that Real Understanding is far more valuable than any unexplained collections of Pragmatic Methods, because they, congenitally, can never make the necessary transforming realisations that alone lead to ever greater Understanding!

Such things never come ready-made, but they are ONLY possible within developing Human Thinking. And, the final forms that are now revealing themselves, in these latest studies, has ventured into a wholly New Area, which has been, and is still, exceedingly well hidden under centuries of clearly-applicable, and effectively-useable Pluralist Alternatives, which have effectively

made these features impossible to observe, but never to adequately study! This Area, which I have now seriously embarked upon, I have termed *The Systems Approach*.

It is an essential New Aspect to the now well-established Holistic Stance, developed originally by Karl Marx! But Marx, being a primarily a historian in approach, was NOT equipped to extend his Holistic System into The Sciences, and, indeed, spent the rest of his life concentrating deeply upon Economics, and, therefore, never addressed the rich-and-important seam of Holism available there! Indeed, as a historian dealing exclusively with the ideas and actions of Societies, the areas that he studied were unavoidably constrained to the very same areas, as seen from the inside, and as such could NEVER extend to the wholly independent of those limited Studies - The Laws of Nature.

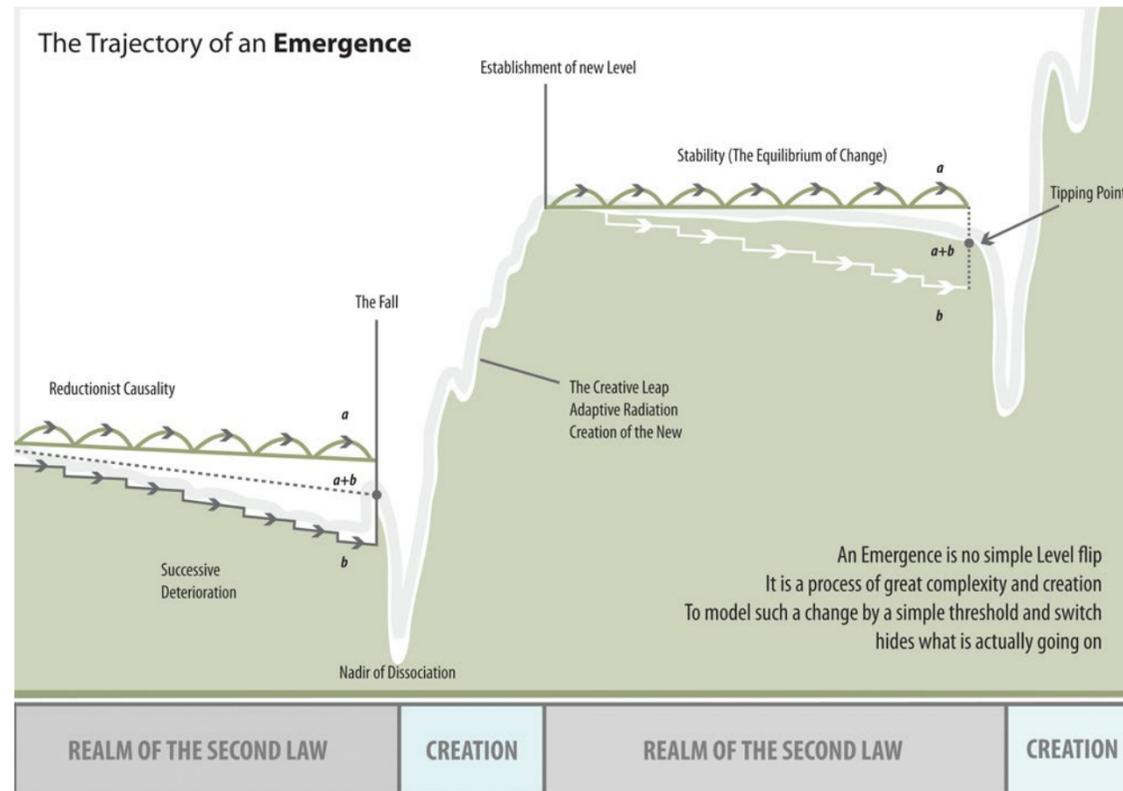
When presented with Science, Marx had no idea where to start, and certainly knew little or nothing about the techniques and purposes of Science, as pursued by Mankind. Yet, it was precisely that Holistic Approach that alone was absolutely essential in Science, to even begin to understand Reality-as-is - as an interrelated whole - and that was impossible for an historian or even a philosopher to address.

For, their studies were, and still are, exclusively concerned with the plans and actions of Man, politically.

And, to tackle such things you would have to look out as well as in.



## The Systems Approach III



Now, it is becoming increasingly clear, that to have any chance at all of effectively understanding Reality-as-is, and, thereby, transforming The Current Approach to The Sciences from a completely Pluralist and hence a Technology-Dominated Form, we will most certainly have to considerably extend the nascent Systems Approach, well beyond its present and very recent additions.

Whether we're looking at Sub Atomic Physics or the Evolution of Life on Earth, it will still involve an Essential Return to the Key Holistic Systems Findings of Karl Marx, within his profound Historical Researches into The Most Important Episodes in History - Social Revolutions. And, it is also crucially important why this has to be the case. For, it has to do with Tempo!

And, this is because even these Remarkable Events are all precipitated, and, indeed, then carried-out, by the actions of Real People: and it is only at such Special Times, when the immeasurably-slow actions of whole collections of People, actually considerably speed-up to be both clearly discernable, and also become consciously re-directed to be able to achieve some intended and radically different outcome - so that the causative actions involved were also clearly evident.

Indeed Marx didn't go on to fully explain why all of these events occurred: he initially only accurately described them. But both he, and his consequent followers, only gradually realised that Literally All Qualitative Changes also followed the same dynamic trajectories, but usually at dramatically slower, or greatly quicker tempos, mostly too difficult to discern!

This revealing diagram of a Social Revolution was created by the author of this paper, some years ago in *The Theory of Emergences*, and ever since, it has been an essential guide - eventually enabling the necessary delivering what has to also be Causally Explained! As with all of the other Sciences, phenomena must first be accurately Described, before they can then be Adequately Explained!

If we start, in the upper left-hand corner of the Evident Trace, in this diagram, we see a relatively-flat, but somewhat bumpy, left-to-right trajectory clearly indicated. But, it is by no means smooth!

It represents a Kind of Stability, made up of small lateral excursions, that never actually get anywhere new, and though it is constantly threatening to go somewhere, it never does.

It represents the True Essence of the usual and enduring Stability between Emergences, though its evident clumpy ride, does, though, also betray its modus operandi, which are composed of incessant-but-failing attempts to leave that usual Straight-and-Narrow! It is a Stability that constantly threatens to Change, but is somehow Self-Maintained.

Indeed, such features abound in all systems where Multiple-Contending-Factors are involved as precisely the given mix, which both promises change, and yet also effectively prevents it! And, of course, delivers all such situations as a consequence!

It also explains why the Pluralist set-ups of current Science can never deliver what they are assumed to give, namely Reality-as-is!

And, in fact, the always missing features in the usual representations, mean that it can never deliver, without the essential addition of The Crucial Underlying Systems Approach!

So, perhaps the time has come to say a little more about The Systems Approach! It is certainly not restricted to those that have so far been revealed. But, it is always a feature of complex, multiple and simultaneous mixes of Processes, which in such circumstances can never be conceptually reduced to a collection of complete *individual* Processes, as defined by their usual mathematically-rationalised separate individual formulae! For, that is a Pluralist Fiction, only ever useable in the rigidly curtailed and maintained artificial scenarios of Pluralist Science! And, hence, a gross mis-representation of Reality-as-is, which simply must-and-exclusively be the only basis and assumed context for ALL Real Situations, along with the inter-relationships of the all the involved components!

Indeed, the usually assigned formulae NEVER actually exist as such in Reality-as-is! Instead, what will exist are individual fragments of many different simultaneous processes in a confusing multi-Process-melée, all of which which have to find their next fragments to continue. And, of course, it will be the relative abundances of the processes and hence their required fragments, that will govern their effective rates of completion. So the rarer processes will complete at slower rates - and they will necessarily CHANGE the relative abundances of the Different Processes.

NOTE: In the usual Pluralist Experiments, where the objective is to limit the allowed Processes to a Single One, there will necessarily be only one rate of completion! But, that will never be the case in Reality-as-is!

Now, the reader will be aware that I haven't said much about causality within the Systems Approach, and this is because the ONLY known way of dealing separately with individual causalities was by so dramatically restricting the investigated Context, that only a single Law remained. And in such artificial contexts, the affects of different processes in the same contexts were never allowed - so they couldn't be investigated!

Now in Natural areas of Reality-as-is, many such processes are acting together, but of course you couldn't independantly deal with the individual contributions at all!

But you could deal with the *Systems Effects*, but they were never Causal, because they had to be Properties of different processes that are involved. But with Systems Effects NO property-based processes are involved: it boils down to mere abundance which determines their effects. So features due to processes, will be apportioned according to abundances within Reality-as-is!

And as those abundances can be modified, due to Systems Effects, they will vary over time, The Fixed Laws of Pluralistic situations, still have varying Effects in Reality-as-is... They will never be Fixed!

So, at the much longer intervals involved in the inter-Revolutionary-Interludes, BOTH the Causal Effects, and the current quantitative-mix of processes, will definitely vary, so overall processes and their Effects will increasingly run out of steam regularly, so that ALL tendencies will definitely be temporary, and will, in time terminate, at least for a while!

So the still-unanswered-major-question has to be: What finally terminates for this Wobbly Stability and substitutes a General Revolutionary Collapse?

The answer lies, in spite of the constant variations at The Lowest Level, with an over-riding (and hence maintaining) Stability setting limits upon the contained mix of lesser instabilities!

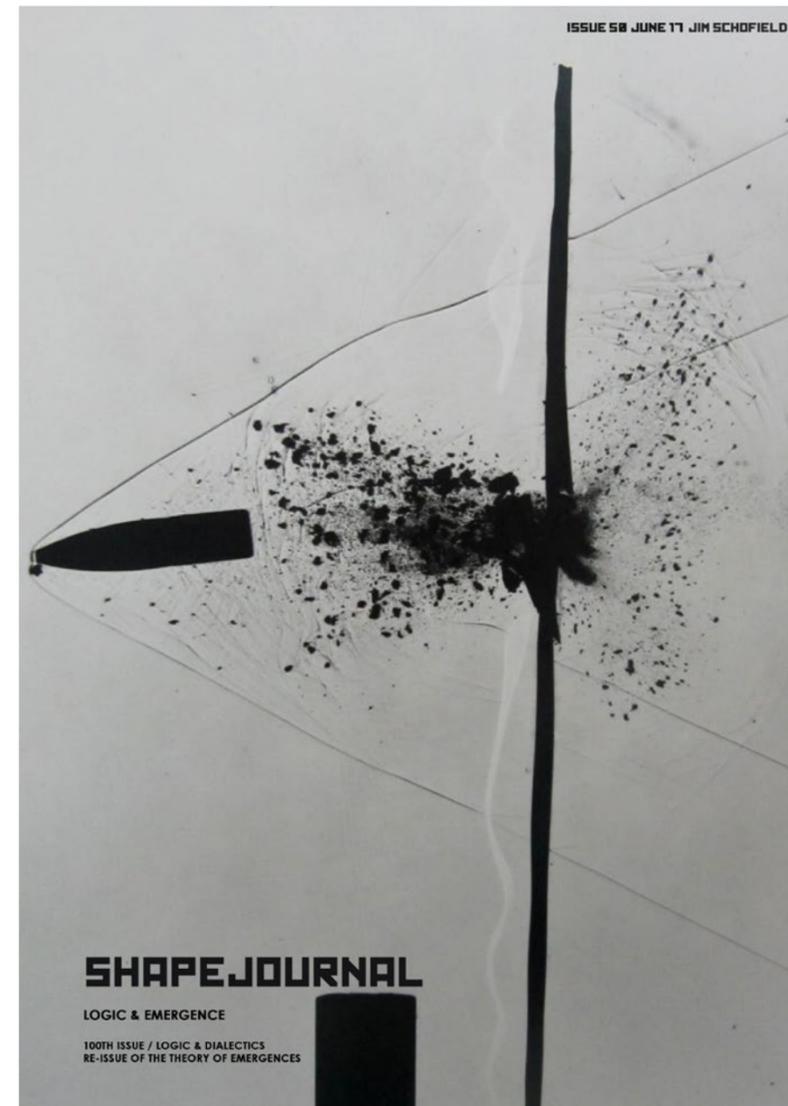
But it too is also, contradictingly, still dependent upon its contained instabilities, and in an unusual way!

For, they too act as they do relatively independently of one another - so they overall tend to contend with one another! So, if anything manages also to affect them all in a similar way, they will thereafter tend to go a little further in the same direction, and they can ADD UP to trigger a General Overall Collapse!

NOTE: And this is confirmed by the trajectories, not only of the Final Collapse: but also of the series of failed Crises on the way to the Nadir of Dissociations, but also the series of failed Crises, that culminate in the NEW Revolutionary Stability! What else could explain these phenomena?

In Conclusion, we must stress that the Long Sojourn using Stability as our route to Understanding Reality-as-is, is finally over! And, to make any further progress,

in such investigations as Stanley Miller's Experiment, a wholly different basis must be developed that INCLUDES these Hierarchies of Control, based upon a Congenital Kind of Variation in literally Everything!





## Invisible Media

### The Unseen Movers of Reality [Addendum to Holism & Sub Atomic Physics]

Substrate Theory proposes that an invisible medium of Leptons permeates all known space - a Materialist and Holistic explanation for all of the strange phenomena at the Quantum level, that somehow seems to lack accessible Causality. Here we begin to consider whether such Invisible Media could be operating at other Levels of Reality too.

Recent work designed to reveal the full, and yet often hidden motive forces within Reality-as-is, has begun to founder, upon certain important Effects, seemingly without evident Cause. In Sub Atomic Physics, they were the latest excuse for theorists to drift ever deeper into an out-and-out Positivism, by substituting purely-descriptive Mathematical Formulae instead of Causal Explanations!

Indeed, actual Causal Chains have been traced downwards through increasingly evident, yet relatively-independent, Hierarchical Layers involving multiple, diverse Effects, and their often Unknown or unavailable Causes, until, finally, an Invisible Wall appears to totally halt that process! And, which, therefore, effectively permanently terminates these investigations, and, indeed, stops-dead in continuing to supply both the culprits and their actual physical Effects: the investigations seem to encounter a Final Limit - as an evident inability to reveal exactly what needs to be changed further, in our descriptions and explanatoions, to fully deliver an adequate theory of the event.

Of course, much of this can be put down to loudly trumpeted misdirections by those who benefit most from such terminating advice to any campaigning oppositionists to the current Status Quo. But, not everything is down solely to such imposed difficulties!

Indeed, many of them seem to boil down to incomplete and hence wrong-and-misleading usually generally-accepted definitions, and consequent "Wrong Theories", by supposedly independent, or even seemingly fully-committed and serious prior researchers. Even the "experts" on our side can be the unwitting culprits.

It is always worth remembering that we do not have totally unhindered access to Reality-as-is! It is always insufficient and structured in the the easiest-to-grasp-way, due frequently to historically effective precedents. And these established ideas, as well as their clearly useful side, are also-and-inevitably misleading, when confronted with the Wholly New!

But, recent extensive investigations in entirely new approachess (by this reearcher) have begun to uncover wholly new definitions of previously-unknown, active causal elements, which seem to quite wrongly prematurely terminate investigations, as being incapable of further necessary revelations, as the currently involved elements appear to have exhausted all possibility for further change. And this is not the usual kind of added contribution, as it is subtractive rather than additional.

And, the reasons for these premature terminations seem to reside elsewhere in an extended overall set of limitations, only now making themselves felt, additional to the previously supposed only important causal factors.

And these are NOT, as you might think, as being due to purposely ommitted factors built into the usual inadequate definitions, but instead, actually due to a running-out-of-possibilities, due alternatively to wholly Invisible factors, that have become so, caused by the

wholly Pluralistic-and-hence-truncated definitions, instead of the Real and much more widely-defined Holistic definitions, which alone can enable certain factors, entirely from outside-of the usual, to both change, and even, sometimes, switch to different, and even Wholly Opposite properties, when the conditions pass certain significant thresholds elsewhere.

The actual Hierarchy of related Levels is not considered!

These occur because apart from embedded effects, due to the presence of certain agents - for in a truly Holistic World, collections of mutually-affecting factors can be simultaneously present, but usually in most circumstances only allowing a limited selection of possibilities, but can, if an unusual mix is arrived at, which implements the exact opposite of what had previously seemed to be always the same, and also delivering a very different outcome.

Finally, and perhaps most importantly, the Multi-Layered-Hierarchy of the semi-independent layers of causality is NEVER usually considered, and that is precisely when the causality originates in a usually correctly ignored Layer, so that the New Cause seems to come from Nowhere!

The Invisible Walls can be breached and Explanations from without are validly brought in!

NOTE: Inklings of such events were seen millennia ago by Zeno of Elea, and formalised very much later within Hegel's Dialectics, but a systematic revelation required

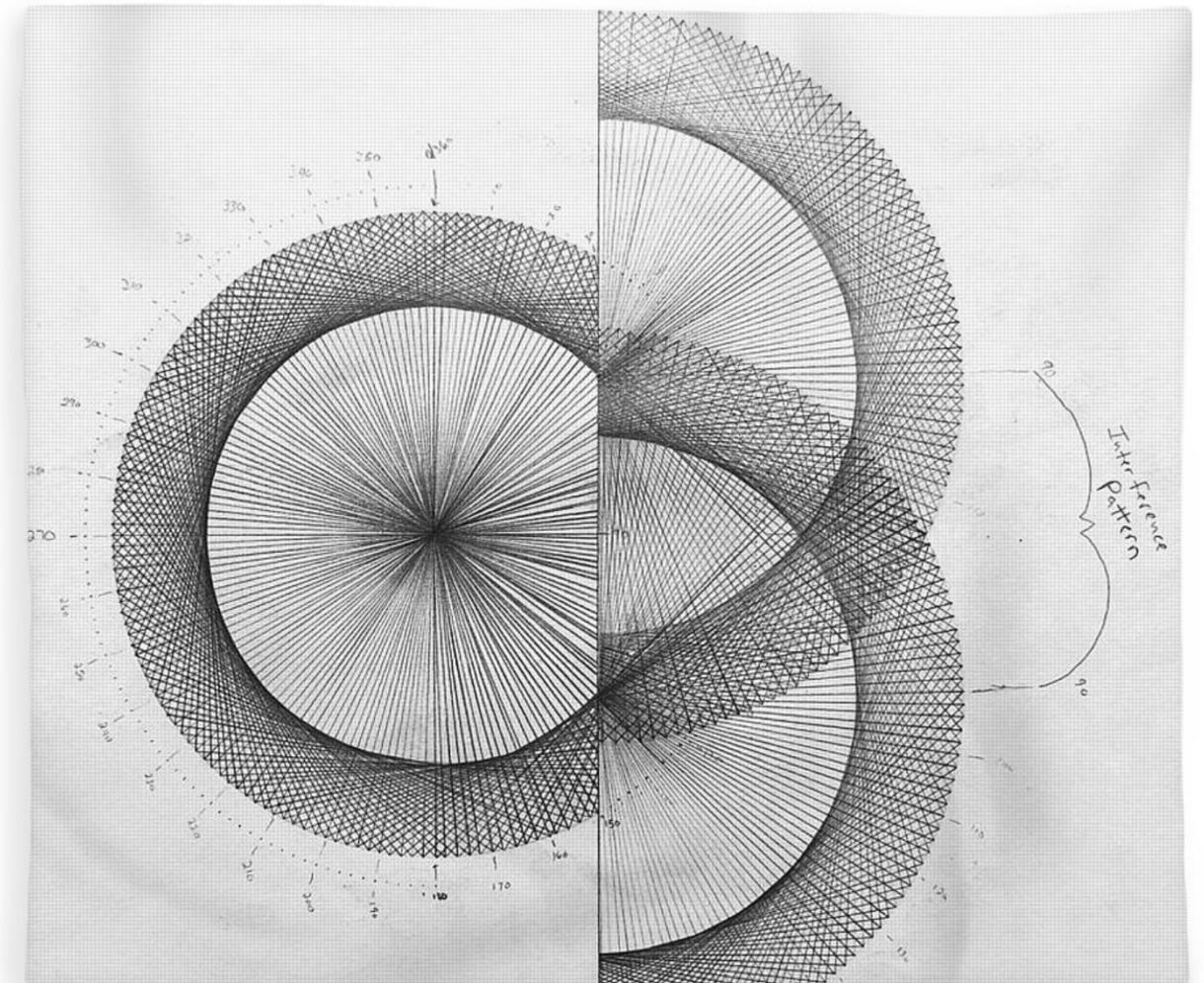
the revolutionary changes implemented by Karl Marx in his own Dialectical Materialism, which he predicated on his new Holistic and Materialist approach to History!

Indeed, the very essence to Holist Situations involving a number of interacting and mutually-affecting factors, is, first, that they don't merely add-up, but, actually to widely-varying degrees affect outcomes, and even in rare cases flip to the exact opposite of what pertained in seemingly all other cases!

NOTE: In the classic "if-then" clause in Programming, not only is there no Causal Reason ever given for the usual outcomes considered without any full explanation, but the third option (evident if the elsewhere factors are considered), actually adds "neither" as another outcome, which can also actually terminate a causal sequence also, with no-one being the wiser!

And this was previously taken to be a totally unchangeable thing, but, in fact, in this precise context, at least, could only flip to the opposite.

And this takes Holist Studies into a wholly new and usually totally unanticipated realm, which I have termed Systems Approach *Processes*, opening-up vastly extended, if also, rare ranges of options that initially are always deemed impossible!



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