



# SHAPE JOURNAL

## CYCLES II

CIRCLES INTO HELICES INTO SPIRALS (PARTS 1-6) - THE EVOLUTION OF CIRCULAR PROCESSES  
THE DIALECTICAL TRAJECTORY OF COSMOLOGICAL DEVELOPMENT



## Cycles II

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## Circles into Helices into Spirals

### The Evolution of Circular Processes

#### Cycle I

by

**Jim Schofield**

The realisation of a seemingly-stable Cycle of Processes, initially and necessarily (in order to even begin to understand it fully), must always assume that it will continue-as-it-is, perpetually.

Thereafter, we assume a complete independence of the System from its Natural Context, determined solely by its own internal contents alone, just as we might for a wheel on a trolley, or even a precision cog in an expensive Swiss watch, with its century-lasting jewelled-mountings.

But while that view may deliver an understandable and useful approximation, it is most certainly NOT the permanent, on-going Truth: for, actually, absolutely all contexts, whether external or contained, will most certainly change over time, and will both deleteriously and even advantageously affect the normal functionings of any such system - and particularly those which continue to repeat incessantly in a dynamic context.

The Swiss watch is a brilliantly conceived-of exception (although even Swiss watches break eventually)! For overtime, in self-developing Nature, things don't progress rationally towards an intended objective, but instead can only find a consequent Development via undirected Variation. Thus, all contexts will change enough to alter any contained process: so, such a system will be likely to change its performance, due to variations in its determining context, which are likely to contribute to its subsequent decline, though occasionally alternatively instead to its growth and even its consequent range of significant Effects, instead of those solely determined by any internal deterioration.

Significantly, with multiple contributing causes to such a rotation, other changes might even cause positive modifications to emerge in the movement's own initial causes, and hence re-direct things in a wholly New Way. To always be aware of this constitutes the Holist Approach!

And always considering Causality in this recursive way significantly breaks away from the usual truncated approach we see in most science and technology (the approach that built that Swiss watch), which purposely constrains contexts so that they never drift away from what is considered optimum - the Pluralist Way!

Indeed, in considering any such system, we must, in addition to internal changes, also consider what significant-but-not-terminating external changes will cause to happen in its subsequent performance. And by far the most significant external Effects, will be those that actually move the whole local context off from its initially conducive starting point, which, in a subsequent on-going, wider, containing context, will change a Cycle into a Helix (like a constant diameter Spring).

While another very different external change might have a significant effect upon the speed of rotation: thereby, if on-going, changing the fixed diameter of the previous Cycle, into a Spiral - either shrinking into an ever smaller Spiralic System, with decreasing energy, or one expanding into an ever growing spiral, with increasing energy.

And, of course, such changes would be unlikely to be limited to these very simple cases, The Systems we are concerned with absoolutely never act within otherwise



stable situations: and though the most significant accompanying and consequent extra changes will be also related to other, as yet unconsidered, lesser driving changes, and even these themselves will have been caused by external changes that were also the initial reasons for already-considered, more obvious changes.

In addition, changes in such Systems will also happen in both directions, as natural systems are never mechanical, as in a watch or machine. Indeed, some on-going changes will certainly lead to terminations or even ultimately elicit wholly new behaviours.

These forms when they occur in a Living Economic Structure, for example, will occasionally lead to Total Collapse and even Revolutions!

Now, the highly constrained version of The Natural World we understand - because of is unavoidable transportation into a more reliable, but-strictly-Pluralist World - will always, if so adequately controlled, deliver the expected results achievable via Mathematical Equations - for Mathematics is a legitimate Pluralist Discipline: it will validly deliver equations that fit!

But no such equations are available for Reality-as-is (without the pluralising straight-jacket we impose). And Holism cannot ever be encapsulated within any such equations - the Fixed Law we uses, indeed, mechanistic fixed relations, involved in such equations of Plurality, are wholly illegitimate in The Real World as it is!

For reality behaves holistically, things profoundly affecting one another over time, and natural phenomena never exist in perfect isolation - and its changes are therefore Qualitative, rather than being Fixed and Quantitative, as everything is rendered in Plurality. The "laws" involved in Holism regard quality, and hence always changing and even transforming into other quite different Laws as contexts change.

So all the substitutions and manipulations of Algebra as essential in Pluralist Science, are illegitimate in the Holist Real World. Literally NONE of the essential dynamic holistic Laws are even considered currently, which is why Karl Marx, in attempting to explain historical development holistically, spent his whole Life tackling an explanation of Capitalist Economics, in his master work Das Kapital.

And, as should be no surprise to anyone appreciating the stance of the writer of this paper, there is as yet NO Dialectical Alternative in any of the Sciences - least of all all my key specialisms, Physics, Philosophy and Mathematics itself.

Indeed, even in the absolutely vital areas of Sub Atomic Physics and Cosmology, Plurality still Rules, but it is certainly not OK!

POSTSCRIPT:

Though this researcher, requiring a powerful Rationality within his core specialisms, has begun to tackle some of the key questions. But though demanded in other Major

Disciplines, he has been forced to enter the underlying Bases, only clearly available in Philosophy.

For, if positioned deep within Reality-as-is, and within its most demanding areas, the usual pluralist get-outs are legion and appear as the only known way to deal with understanding reliably.

And as will have become obvious at the start of this paper, as soon as holist alternatives are undertaken, the number of available options increases rapidly, and the study seems to be "spiralling out of control" in multiple different directions, with NO priority Path to make the task not only easier, but even possible!

Yet Reality itself, though containing ALL these diversions, does NOT follow them all at once! So, what is it that correctly limits its route?

In other words what Holistic Stabilities, though always temporary, are sufficient and long-lasting enough to enable initial steps to be made, before a general cataclysm terminates a meaningful analysis?

We have to begin to understand Holistic Stabilities!

Now, interestingly, I have a very wide range of interests, and it has been some of these which enabled my first successful steps into real Holist development! Indeed, it was within a deep venture into pre-Life Evolution of organic processes in the Sea. It was an ideal place to choose because, with a planet-wide connected System

of Oceans, and spinning Earth receiving Day/Night differences in radiation, along with a seasonally varying weather system, as well as planet-wide circulations of water, via rain, rivers and ocean currents, not to mention more or less constant and differing contents carried by those rivers from very different land areas, and even their transformation by volcanism - and with the Earth's tilt, varying Seasons!

For, these considerations immediately slowed down such Global Effects, delivering contrasting long periods with more limited Stabilities, and also enabled simpler scenarios with time-limits, therefore making available reasonably-long investigateable stabilities, as well as regular major change-overs to different Stabilities - the possibility space for Evolution.



## Circles into Helices into Spirals

### The Evolution of Circular Processes

#### Cycle II

Now, though these investigations are still at an early stage: there already has been some significant progress, for though the wholly Pluralist ideas of Stability are illegitimate in the Real Developing World, there is now no doubt that entirely-Holistic-Stabilities are wholly natural in that real World, and give us the “commas” and “Semi-colons”, the Pauses and Connections that serve as both sources and targets for both causing and caused Changes in its inevitable Development: for dialectical change is the only guaranteed consequence of a holistic system!

And the first realisation of these, started with Karl Marx's Revelations concerning Social Revolutions, as the Major Events in the Development of Human Societies, as well as suggesting less obvious forms involving less dramatic, but always, in the end, significant smaller Changes too.

For though there have been gigantic Cataclysms absolutely everywhere and at all times in the past. they are, usually, never available for study as they happen, and only leave the merest, and well-buried traces, for us to analyse. So, a currently available means of extraction by a generally applicable model upon these usually totally unavailable cases, was truly brilliant: and it was Marx's description of the trajectory of a Social Revolution. along with still available models in other still developing areas that have finally given us a series of revealing processes - much of course from Marx's studies of History, alongside Micheler's truly magnificent History of the French Revolution, immediately prior to Marx's birth.

For, despite the major gains of Science involving revealing Experiments: those alone could never deliver exactly why such things happened as they did! They could be a reliable source of related facts and data - BUT, to take things any further, those facts had to be soundly related to one another, and the only available means before Marx's treatment of Dialectics was Mathematics.

But, Mathematics always was, from its original definition in the Greek Intellectual Revolution of the 5th century BC, and still is today, a wholly Pluralist System - with exclusively Fixed Laws: it was though the first generally applicable system, it was still wholly limited to only Pluralist situations. It remained both solely Descriptive and limited to only non-developing aspects of Reality.

What was needed was an Explanatory means of relating Active Causes, and to deliver that New Relational System, would have to relate *Functions*, and, absolutely crucially, for the first time, explain how these were modified qualitatively.

Now Mankind had long known how to make use of reliably unchanging things. So, in his first steps towards Science, he already knew that he would find out new things, most easily, by concentrating upon those unchanging things, and then, beyond those, he would concentrate upon things that could be kept relatively constant. And thereafter using Pluralistic Thinking he might well reveal a new Fixed Law, “normally hidden” by its simultaneous action along with others delivering a joint additional effect.

The Rationality of Mathematics delivered relations of Fixed Laws! The Rationality of Thinking via Dialectics relates Variable Laws!

Yet Pluralistic Thinking and Science was well able to deliver a wholly effective Technology, solely by Pluralistic means: but its explanations were always limited to Fixed repeatable contexts only. For complex situations were converted into a sequential series of rigidly-controlled entirely separate situations, to which they already knew the outcomes, and then using those outcomes in further known and suitably limited situations, so that taken as a necessary series, they would obtain their desired Final Outcome.

But, of course, though claimed to be such, it certainly wasn't Science! For with only the means of Pluralistic Thinking, absolutely NO General, all-embracing Laws could be produced. Real, Natural Explanations were impossible - only families of related Technologies! Indeed, as all the products of Pluralistic Fixed Laws are Quantitative, even those produced by multiple simultaneous Pluralist Laws will also be such too! So, it should be no surprise that Holistic Laws in the Real World are generally Qualitative, and are usually unpredictable from prior conditions no matter how fully they seem to be described.

Indeed, all truly Holistical Laws are never predictable before they come into existence, which is why only they are genuinely Emergent. If you can predict it, it isn't Emergence. So, Robert Sapolski's insistence that his Quantitative Laws are Emergent is wholly mistaken. Indeed Holist Science alone defines the first appearance and true nature of Emergent Laws, and only Marx, in particular, in his profound explanations of Social Revolutions, approaches what Real Emergences actually are, and hence opens the door to Explaining the Wholly New!

Indeed, as will be shown later, Qualitative Laws are fundamentally different to Quantitative Laws, and always essentially require verbal Descriptions and Explanations: they are the results of Laws, which qualitatively affect-and-change other laws - so no mere relations between numbers, as are the sole contents of Pluralist Laws, will ever suffice! They are not reducible to form.

Marx's interpretation of the full trajectory of a Social Revolution, was the first wholly dialectical attempt to

explain such an event entirely in terms of real qualitative changes, that overall wholly dismantled one apparently-permanent Stability, and, via an vastly accelerated series of usually-impossible qualitative changes, ultimately arrived at a very different and entirely New Alternative Stability!

But the means by which this avalanche of qualitative changes triggered them, one after the other to finally arrive at a Wholly New yet naturally stable outcome, were NOT based upon the usually employed Thermodynamics, but upon Dialectical contentions and balances: they were about Opposites-within-Holism!

Now, in attempting to reveal the underlying-causes for, or within, such qualitative changes, the very long-standing problems associated with simple direct opposites, have tended to severely limit the cases mostly studied, initially at least, to those only involving sudden flips between opposites, usually associated with the identifying of threshold-numerical-values, at which such such flips occurred.

For that frequently limited the study of qualitative changes, to be seen solely as mere Quantity-into-Quality Changes, and Robert Sapolski has gone to great lengths to make all such changes what he wrongly identifies as "Emergences", thus effectively terminating the investigation of Real Emergences, which though appearing initially similar, are in fact very different and the actual change was not as seen by Sapolski to be solely caused by that change in value - whereas, in fact both that and other intrinsic results were changed by the real cause, which was consequently in Real Emergences never further pursued.

And the reason was clear: such an event could be used in association with a Quantitative, Pluralist Law as an "if-then" conditional add-on. Real Qualitative Emergences were never actually pursued.

## Circles into Helices into Spirals

### The Evolution of Circular Processes

#### Cycle III

Clearly, in spite of the general overall title of this series of papers, not much has yet been revealed about Circles, Helices and Spirals!

However, that has been for the very best of reasons!

For, as soon as these topics were even affectively considered, within a Holistic Context, it was immediately obvious that such studies would powerfully inform some of the key ways that laws are modified, and in attempting to do that many usually unconsidered features of Reality would hence begin to deliver the means of understanding Qualitative Changes within the Real Evolution of Natural Processes.

And this would necessitate a real grasp of all that is involved in doing so and thereby enable a final breaking-free from the limitations and consequent mistakes of a solely Pluralistic Form of Reasoning, which has dominated both General Reasoning, and also the consequent domination of such Permanently Fixed Laws throughout all the Sciences for well over the last two millennia.

For instead of these (and many other commonly identified repeating processes), they were all considered in such contexts, it was unavoidably evident that they could, and indeed would, convert into one another, and for these newly produced forms, to react back and even change their original causes. All Processes, that repeat, would, indeed, gradually change, as they did so, and even affect their producing contexts too.

But, to address such things, the usual straight-jackets of Pluralistic Thinking, and their severely-limited, and forcibly maintained Contexts for All Scientific Experiments, have turned Mankind's attention away from such variabilities, and wrongly extended Fixed Pluralistic Laws, by merely adding-them-together with others, without in any way things being changed by these interactions,

And, this has supposedly "validated" the "truth" of those Fixed Laws, as lego-like, unchanging constructible units, but actually only delivering an "imagined Complexity", instead of any Real Modifications being actually involved!

One profound aspect of this emerges in Recursion.

For, when an oscillation from a driven source, by Resonance, also affects a distant susceptible other potential oscillator, by transmitting the necessary energy to do so, via an intervening medium: it is then clear, that not only will the now Resonated Entity, also now act as a new source - even resuscitating the original source, if it has now stopped, but also including other contributions from elsewhere, delivering related frequencies.

Indeed, within a veritable cacophony of such sources, many different but related frequencies can become involved AND crucially, the resultant overall effect can cause surprising calamities!

Now, it must be admitted that any attempt to comprehensively study such effects were, at that time, almost impossible - especially for a Mankind with little or no control over natural processes, so they did the exact



opposite and gradually learned how to suppress many troublesome contributions, and so increasingly-simplify processes, until they became pluralistic in nature - which they then wrongly-interpreted as a revealing of a “Natural Property”, so delivered

And having converted unfettered Reality, in particular circumstances, into the same Plurality as they had recently discovered in Mathematics, they also now had a Rationality (that of Mathematics) to use in relating their carefully-and-selectively extracted features of a subsection of Reality wholly consistent with their Fixed Laws in Science.

Now, for almost 2,500 years this myth has been maintained, NOT because it is true of Reality - it quite definitely isn't - but, because it is true in both Mathematics AND in the Technology it helped invent (the modification of Reality to allow mathematical forms to reliably fit that easily modified and maintained as such version of Reality!)

Now, one might consider that such a decision was both useful and necessary, BUT Science is NOT Technology! For Technology enables the successful carrying out of certain processes only. It is essentially pragmatic. It does not allow the explanation of anything beyond that: for that would involve understanding why natural things behave as they do - and hence the development of Theory!

Now for millennia Science and Technology managed to co-exist, by putting down discrepancies to inaccuracies in measurement, but that was not the reason. And as Science delved ever deeper into Reality, the differences became increasingly insurmountable, and drastic changes were inevitable!

Yet they couldn't be allowed to happen in Technology, so the result was the increasing demotion of Theory into a creature of Technology, and explanatory Theory was abandoned. And this involved the abandoning of the Aether - the usual conception of the Universal Substrate, and the institution of the Copenhagen Interpretation of Quantum Theory, which abandoned physical explanations at the Sub Atomic Level, for Wave/Particle Duality, and a solely Mathematics based Theory!

Now, by the middle of the 19th century, after the Dialectics of Hegel and Marx, the New Holistic Stance in Philosophy was clearly promised as a resolution to the problems in both General Reasoning and The Sciences. But neither of these great thinkers was a scientist, and the revolutions in Social Development threw NO revealing light upon any of the Sciences, and working down from Social History to Physics was the opposite of the usual reductionist Method! So literally nothing was done in the main Crisis Area of Sub Atomic Physics! Indeed, the conceptions in Marx's works were so difficult that even the self-proclaimed Marxists disagreed with each other and NO world-wide agreement allowed an all out Holist assault upon the Key area of Science!

Indeed, not a single Marxist was able to challenge the current orthodoxy in Physics (although Lenin tried) as the technological achievements in the Sub Atomic Realm appeared to be unchallengeable. There was currently literally zero Holistic Science to compete with the prodigious achievements of the technologists, so what was needed was a successful Holistic assault upon what currently passes for Theory in this illegitimate amalgam. And though in the last decade this is now underway (mostly in this journal), it has been limited to a single researcher. What is needed to give credence to this effort has to be a major revelation of New and Revolutionary Explanations of the ever growing number of anomalies in what is currently considered the best stance.

And that appears to be immanent (Funding permitted) in the Efforts of physicist Eric Lerner and his team, with their brilliant design of a Nuclear Fusion Electricity Generator. For unlike the usual entirely Pluralist efforts, Lerner et al do not seek Pluralist Stabilities in their experiments, but instead, work with, and ride the natural instabilities, to employ them to increase the concentrations associated with each instability to ultimately precipitate a maintainable Fusion.

And simultaneously with Lerner's quite separate efforts, this Marxist physicist (the author of this paper) is embarked upon research to reveal Holistic Stabilities within Natural Developments, to finally reveal bases for a superior Theory of the Nature of Reality, which can also tackle the proliferation of anomalies mentioned above.

## Holistic Stabilities

The initial obvious Stabilities arose out of the recognition by the idealist philosopher Hegel, that the most evident problems occurred when direct opposites were simultaneously involved, though initially with only one of them evident due to it being the dominant one of the two. What would happen without an evident cause was the immediate changeover to the one one becoming dominant, without the cause being evident!

BUT, it was discovered that the value of a certain variable passing a fixed threshold value was always accompanied by the flip between direct opposites. No actual cause was actually identified, but instead an if-then clause could be associated with the usual Pluralist Law, to add-in the flip at the correct situation. But these were a special case, and of course, a purely pragmatic adjustment to a fixed law: how it came to be, was never revealed.

And it wasn't the only case of opposites being significant - for opposites could actually cancel each other out to leave no evidence of either. And such situations could be caused by oscillating direct opposites of the same or related source coming together at a particular point or matrix of points to leave no trace at such positions of either, indeed on-going balancies of such cancelling opposites, if somehow maintained, would deliver a "seemingly-extended", but certainly non-permanent period of time.

And in certain collected populations, with multiple, differing contents, including direct opposites, differing processes could be maintained at surprising relationships with one another, while both are driven by the same forces.

For example, in social economic circumstances, the same relationships could be maintained as constant for considerable periods of time, even while others are changing, and so appear as fixed. But at a certain stage could suddenly alter quite radically.

While climatic circumstances could also be maintained long enough to produce deserts as oceans of sand. And in Cosmology shattered moons could gradually become seemingly permanent rings around a planet like Saturn.

But, of course, situations of diverse seasonal change, in particular, if it includes volcanism too, can produce sufficient changes, and stabilities too, to produce the widest possibilities for diverse types of Life, which add further contributing factors to such an environment, which once they have come into being, may survive far longer than their initial creating conditions persist, and find other places to survive long after they should have died out.

Clearly, the most significant survivals will be populations of processes existing as a self-maintaining set, which somehow, as a system, tend to maintain both their individual balanced pairs, AND their overall bundle of such contributing component sets, to persist overall for considerable time periods - millions if not billions of years.

For these seem to be the crucial means of producing changing-yet-persisting elements of very long lasting overall systems, within what we term Balanced Stabilities.

What is Life if not such a Holistic system?





## Circles into Helices into Spirals

### The Evolution of Circular Processes

#### Cycle IV

Continuing with the consequences of a consistent Holist Treatment of Reality, we have to start with Marx's brilliant descriptive analysis of a Social Revolution. But also, in order to tool-ourselves-up to deal both descriptively and in an explanatory way, with all the underlying causes of that remarkable, multi-phase trajectory.

For, there are many levels of Reality wherein such revelations, which are by no means as obvious - and the achievements are certainly made and understood most easily, by actually experiencing them, at an addressable and analysable tempo, in order to then attempt similar developments, more generally, within less-accessible areas, which also often occur at much more at inconvenient tempos.

For this was attempted by Marx, but only in other limited (if vitally important) areas of Reality. And even a fully comprehensive treatment of Social Revolutions, is a much more recent development typified on the one hand, by the experiences of Lenin and the Bolsheviks, and more recently still, by the diagram of an Emergence, by this theorist.

And, clearly, this diagram still requires a comprehensive treatment of both its many Evident-Different Phases - along with their accurate descriptions, but, in addition, also necessarily including their internal causalities, their consequent internal qualitative changes, both those terminating each and every Phase, as well as those driving their further consequent oscillations, though always terminating the Whole Event, with a significant persisting Stability, which could survive for many millennia thereafter!

Now, such an analysis would certainly be absolutely essential in using what is revealed by such a signal, instituted, carried-through, and completed process - the whole thing having begun from a seemingly permanent Stability as its origin, to end up as another long-lasting Stability as its seemingly steadfast result.

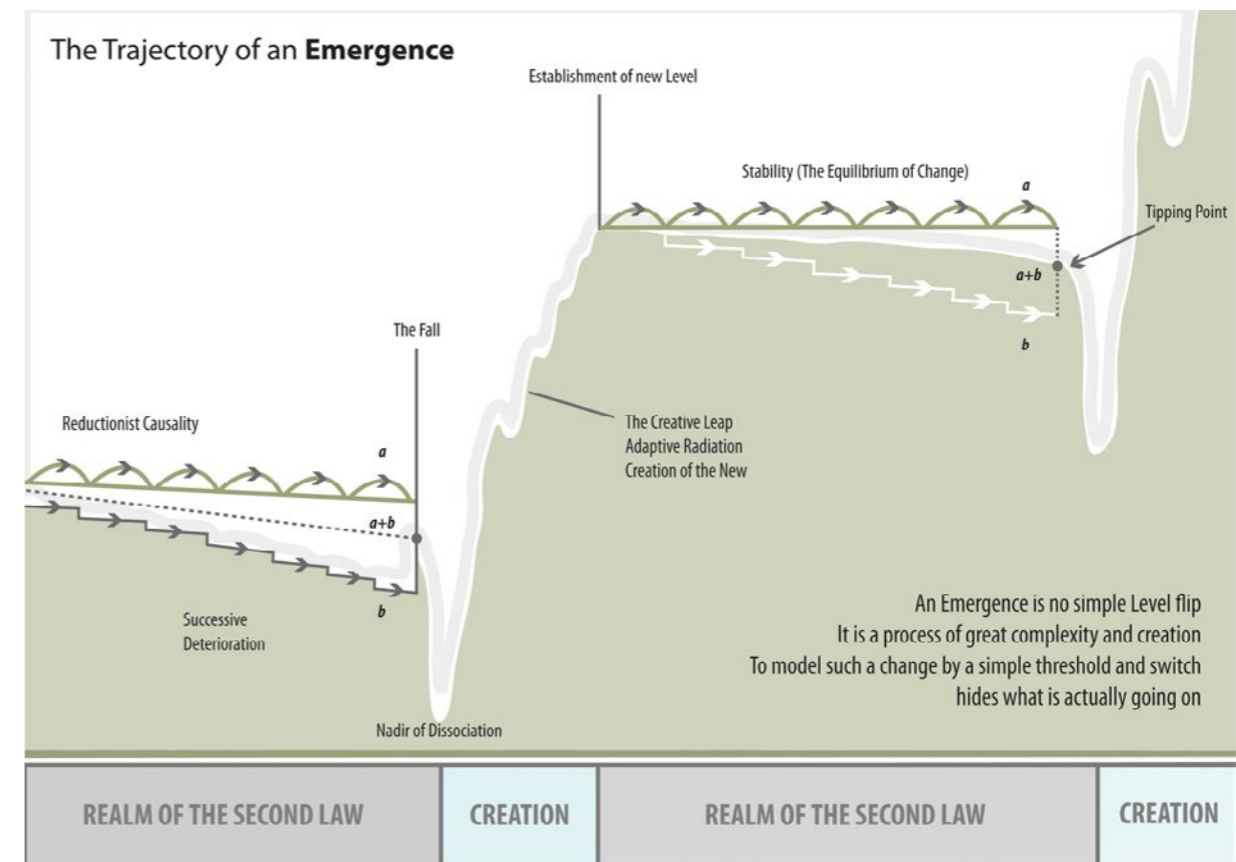
For such a described-trajectory immediately questions the usual approach of always treating Stabilities as the natural minimal-disturbance Final Situations, and hence treating them only as results - and absolutely NEVER as the natural sources of all causes of Qualitative Changes - indeed, actual Active-driving-Engines of all Change.

We simply never look at Stabilities as *dynamic* - for there lies the true Causes of Change in Development!

Indeed, the Greek Intellectual Revolution of the 5th century BC promoted their successfully-devised Rationality of Mathematics into the Generally Applicable Form for all Disciplines, which unavoidably limited them all to a Common Determining Principle of Plurality, incorrectly making all relations, in all contexts, totally unchanging, and all consequent Laws Forever Fixed!

And this very quickly made Stabilities the Natural Bases of All Situations. And with the consequent result, within Causality, of never considering any Stability as capable of *causing* anything.

Now Clearly Natural Stabilities are not as they are usually considered - as being without any internal activities, On the contrary, they just had to be containing multiple



and even opposing sources of change, but existing self-maintaining temporarily quiescent collections,

The clue to this appeared in the very first criticism of the Pluralist Greek ideas, made by Zeno of Elea. who, in his work on Paradoxes, had revealed consequent contradictions, whenever the Pluralist Stance was applied to moving bodies. But, the only significant and developable means had to wait for the corrections to General Reasoning, millennia later, by Hegel: who addressed the whole buch of contradictions - associated directly with delivering exactly opposite outcomes, arising from seemingly very similar situations.

But, the necessary full explanations were still unavailable, until regular balances between active causes were no longer delivering themselves as persistingly Stable situations! Opposites were becoming increasingly important, in changing what resembled a permanent self-maintaining, chaotic situation, into one where development was not only possible, but actuately inevitable!

And, if the reader has been wondering where Circles, Helices & Spirals were finally going to be addressed: this is it!

Any real investigations concerning Development-generally, could never take place in a Human Thinking still dominated by the universally accepted Pluralist conceptions of the Greeks. For, they unavoidably pushed all Qualitative Change into being supposedly imposed from without! It was totally inconceivable that significant qualitative changes could arise from within clearly "stable" situations

But, separately from Real Qualitative developments, Quantitative changes could do that, and did! Natural, implicit Forces did separate Reality into distinct and limited regions, by being endowed with Movement!

So Matter and Movement alone would produce spins, and rotational orbits, localised systems of complex multi-factor systems of diverse, simultaneous processes.



And, within these separated regions Direct Opposite processes undoubtedly emerged - which, in a totally random situation, would, as with the many other process, over time, generally maintain the regions random nature!

But, a wholly new factor had emerged that allowed Repeating Cyclic Processes in isolated regions to gradually perform differently, and lead to a significantly different composition of the overall mix. And this was due to the presence of Direct Opposites!

For they alone could be maintained by "Balanced Situations", whereby they could continue to exist: but now, as neutralised joint processes. Whereas all other contending processes would continually reduce their contenders, and, cycle-by-cycle, removing them, while the Direct Opposites would be maintained in their "balanced pairs"!

So, in these conditions, wherein what constituted an isolated region's mix, was both constantly replenished, to an extent, from the context of that region: but, at the same time, constantly reduced by internal contention - except, of course, in the case of Balanced-Direct-Opposites, which would increasingly-grow, and hence predominate!

Now, as such relevant processes are addressed, in attempting to understand such naturally-formed-regions, consequent attempts to explain certain, surprising phenomena always fail - mainly because, the sorts of phenomena, that we are addressing, are too general to be tackled within current

simplifications, and will, therefore, never be addressed by such versions of "Supposed Reality" no matter how improved by new helpful additions, for clearly still of too restricted a defined situation type - one of those beloved of Pluralist Science. So, the imposed, limited slant of that posing of the problem is simply not capable of delivering a solution!

Clearly, many of these unsolved problems would require still further widening of what was considered present, in order to cumulatively address sufficient aspects to make a comprehensive explanation possible.

The mistake is understandable, because the now thoroughly well-embedded Pluralist nature of the Method of investigation, which on principle would always immobilise as many aspects of a situation as possible, to simplify Reality into a stable form, presenting easier, if, at best approximate solutions.

So, clearly, the attempt to address the still outstanding problems, will have to do so by involving these new revelations, in order to develop valid Explanations.

The task identified earlier in this paper, will be addressed in the next one!

## Circles into Helices into Spirals

### The Evolution of Circular Processes

#### Cycle V

Now, the main objective of this paper has to be the important corrections to Science in general, both in its philosophy and its assumptions, but also in its significantly-flawed Methods, in particular with respect to the Qualitative Changes unavoidably-involved in all True Development.

Yet, to even begin to address these questions will, most certainly, involve much more particular and accurate revelations, concerning all the real, creative developments, occurring generally, and thereafter into the revealed wholly new ground, especially, in the absolutely crucial Circles, Helices and Spirals that recent research has proved to be extremely important!

For, constantly-repeating cycles of the apparently very-same-processes, within their identified Systems, are clearly vitally important, as was made very clear by that previous detailed theoretical work by this theorist: for not only must those conclusions be applied in detail to all concrete relevant examples of them all: but, also be demonstrated, via crucially-confirming experiments, which will have to be devised for all of those consequent areas! For, what has emerged, is a majorly-surprising and counter-intuitive discovery - indeed, one in which Time alone, within the seemingly very-*same* repeated processes, leads inevitably to Qualitative Change!

Though of course, errors and divergences, from the usually developed generalities, will also be unavoidably encountered, and will be essential to either confirm, or alternatively, further correct, what had previously been arrived at by purely-theoretical-means.

But, in addition, those prior theoretical means, even of the most recent discoveries, will definitely have themselves to be modified, to allow any further progress.

Now, initially, such discoveries would seem to promise an Infinite Sequence of such Necessary Modifications - which certainly isn't a confidence-inspiring basis for the development of a sound means of understanding our world!

And, that explains why, following the Greek Intellectual Revolution, Mankind turned its attentions to investigations only within rigidly-maintained and severely-limited areas. What else could they do? They always used achievable Stabilities as Revealed Natural Stabilities, and hence, thereafter, as their valid grounds for investigating "Reality-as-is"!

And though that allowed an achievable Technology, IT DID NOT deliver any real Science - which must involve Understanding *Why* things behaved naturally as they did.

It was guaranteed to omit many features that had been excluded by the sets of allowable scenarios, being the only ones easily investigatable, and hence investigated.

The choice between the Devil and the Deep Blue Sea, seemed to be the only possibilities. But, there is another option!

Reality, left entirely to itself, actually-delivers its own Natural Stabilities, which though never permanent, can indeed deliver (sometime very) long-persisting interludes, in which experiments could be carried out,

while only later, quite-naturally exiting, from that state when crucial changes naturally (or artificially) were then inflicted upon it.

Mankind has always been experiencing these kinds of Natural Stabilities, but always read them as being the same in causes for their existence, as in those man-made scenarios constructed for "Science". They were assumed to be either man-made or natural, but always *permanent* - indeed enough to deliver the Eternal Laws of Nature.

The temporary nature of *all* Natural Stabilities was never realised. The collapse of stable systems were seen as rare freak events - and when they did happen precipitated by some Non-Material-Cause. And all acquired "understanding" was, therefore, based upon the assumed-to-be-permanent Stabilities of Nature - achieved by a revealing experimental method.

Now, such conclusions must immediately dispel the Pluralist illusion that the Laws of Nature are both Fixed and Cumulative - they are simply supposed to add together. For, both of these major assumptions are totally incorrect.

A more accurate Basic Principle to that of Plurality, is that of Holism - wherein Reality is composed of multiple, simultaneous component contributions, that affect one another, to deliver, in diverse compositional circumstances, an extended range of differing properties: and, in addition, these cannot be merely added-together to still achieve both of their individual Effects! But, in fact, many kinds of differing effects are possible, from enhancing a particular basic property, to changing it in

some way! Direct opposition is also possible, so that a property can be cancelled in its effect, or doubled if the affecting component has the same effects.

And we must not forget that the components could be processes producing products, so certain other joint effects might be to absorb that product and hence remove its effects. So in a complex mix of such processes the effect could be to proliferate or totally remove an active product.

Now, this important set of possibilities becomes profoundly important in constantly repeated Processes such as occur in Cycles, Helices & Spirals: all of which will initially, and thereafter, will present themselves, as a kind of Stability - endlessly repeating the exact-same sub-processes and hence being subject to scientific study, and even encapsulation into a Mathematical Equation to deliver its capabilities.

Clearly, Reality is not just a bottom-up production - based upon "at-base" Pluralist Fixed Laws, but an actual hierarchy of Forms, at different Levels, that are mutually determined and determining, in both upwards and downwards causalities.

Reality has long been misinterpreted through reductionism, and a restriction of causality to Stabilities, which it also constantly misinterprets, and so never addresses Qualitative Change and the role of dynamic but stable systems at all levels.



## Circles into Helices into Spirals

### The Evolution of Circular Processes

#### Cycle VI

We must begin to address the Evolution of Circular Processes, with Circles, Helices and Spirals as qualitatively self-modifying, and hence as crucially Evolutionary Processes!

The key to these being capable of such qualitative changes has to reside in their unavoidable simultaneous multiplicity of their composition: for this makes them the contexts for every single one of them - so, the natures of such a diverse determining context guarantees, first of all, a more or less limited range for each and every contribution if they remain the same. But, even those can-and-do change over time! And, with such a wide range of different contributions, they could in the oft-assumed norm, still be sufficiently random for some to effectively Cancel Out! And alternatively, the increasing predominance of certain components, could make a particular process Dominant, thereby effectively masking many other, still-present contributions.

In addition, opposing processes could completely-balance-out their joint effect - giving the current appearance that they are not even present - yet variations in their quantities could change an apparent absence of both, into the Dominance of one or the other, or at the very least to making a noticeable contribution.

So, now it becomes abundantly clear why Constant Repeats, as occur in such on-going cyclic processes, can, and in the end, always *will*, lead to substantial Change! Paradoxically, repetition will lead to both Predictability in the shorter term, and also ultimately in Change in the longer term.

Therefore, within the Natural Stabilities of Reality-as-is, the extraction of appropriate Laws is legitimate for a time, but they are never eternal.

So, a strict logical manipulation of such Laws is NOT a legitimate and complete way of exposing Reality's workings - and hence Mathematical Rationality, which promises entirely that - is wholly illegitimate in this endeavour.

But, the question arises, "How can we investigate such between-processes effects in Reality-as-is?" Plurality's Sole Method was to attempt to isolate each individual process completely, and, thereby, presumably display its unique contribution. But that extraction would never happen, as such, within any and all natural situations: so having got this idealised version, how would we meaningfully successively (and cumulatively) modify this with each and everyone of its modifiers? That is not as easy as it sounds!

Indeed, what we actually did was never an investigation of Reality-as-is, but, on the contrary, only ever a series of man-made, idealised-and-rigidly-maintained situations, wherein Fixed Laws could be revealed, used and correctly-represented in wholly Pluralist Mathematical Forms ONLY. And, each such Law, only ever, held within its own determining context! So, any consequent production process had to involve a *sequence* of such Laws - each one in its own legitimate context.

It could NOT be the Science it was professed to be, because that would have to deal with dynamic Reality-as-is. and investigate all possibilities.

Scientists were not unaware of multiple, simultaneous Laws, but they ignored their separate contexts, as just a way of isolating each one for detailed study, and blythely merely added them together to get their combined effects. It was a study of a merely complex, but certainly Non-Developing World!

Now, we are not only concerned with real effects, instead of artificially maintained ones, but also Repeated Cyclical Processes in such a real World too: and that definitely means that no such repeated cycle will ever remain exactly-the-same as we would assume for a Single Incidence Process.

For some small differences will occur in every single repetition: and they will accumulate as the cycles play-out. Things that were ignorable could gradually become ever more significant. While things under continuing threat could ultimately be eliminated!

A Pluralist Law is like a Snapshot of Real Laws within a fixed instant (maybe artificially extended by Man). While a Holist Variable Law is like a moving Film! The Dynamical treatment is the only way to see how Qualitative Changes actually happen.

Now, the problem is, of course, how do we attempt to reveal the underlying Laws of Holist Science, which in a direct comparison with Pluralist Science, appears increasingly difficult, not only to solve but also to apply, in order to achieve the results we might well desire. For unlike the situation with Plurality, both of these desirable outcomes seemed impossible to achieve.

But, things are a great deal better than they initially looked: for though artificially-arranged-for Stabilities are not available in the same way as in Plurality, it turns out that even Reality-as-is has its own Natural Stabilities, which can also be used to reveal important relationships. but to find them, we do not seek them at low levels, but, on the contrary, at Levels so High, as they appear to be in a Different Discipline altogether.

And it was the brilliant follower of the first real Dialectician Hegel, namely the historian/philosopher, Karl Marx, who attempted to find Laws in the development of Societies, and noticed the great importance of Social Revolutions, within the necessary developments in Societies, and with the French historian Michelet's blow-by-vlow Account of that 25-year-long French Revolution, he was able

to both recognise-and-explain the various precipitating Crises and resultant stable Phases, that seemed common to all Revolutions, as well as their Trajectories of Change, through the whole of Mankind's History.

There could be NO quantitative Pluralist Laws determining such a Trajectory, so Marx determined to identify what was it within those cataclysmic Events which always broke the moulds of all prior causes, and changed the direction of the very Movement of History, when the old ideas had nothing to give, And to get an objective set of handles upon these new levers, he investigated the Classes of those primarily involved, and their relation to the then Means of Production to deliver their Ways of Life and in each case their Resulting Dead Ends.

#### Qualitative Causalities

Now, if Marx's Das Kapital is studied with the purpose of understanding the causalities of Social Change, you will see that they are both many and always entirely Qualitative! Marx took the rest of his life to complete this work. and though many read it, always looking for Solutions, Policies and a Program: they should instead read it looking for his unique analytical Method. His kind of researches did NOT deliver Ideal Programs and Necessary Actions, *at all*, but instead revealed the Means-to-Understand Crises and Change at all levels of Reality.

Now, the many mistakes of professed, ardent followers of Marx, even within the very same areas that he concentrated upon, clearly demonstrate that the vitally-required-reading, and the necessary, modern-day conclusions are proving to be by no means easy. So, to re-situate his approach to the Sciences themselves, has been attempted literally nowhere thus far.

For neither Marxists nor Scientists have understood what Marx was struggling to deliver. It certainly wasn't eternal Truths! It was a means to grasp a moving-and-developing nexus of multiple active, and even changing factors: and one which regularly self-modified as New Crises were encountered. You couldn't just apply a already-made and fully-developed approach to today's situations! You must, first, be able to explain-their-causes and still developing trajectory.

In my first Term at University as an undergraduate student, I knew immediately that my Lecturers and

Professors in Physics were wrong, but I was incapable (using the means I had been given in my Education) to devise an alternative, for the whole approach of Mankind in such areas had been wrongly-established for 2,500 years!

Our whole method, ever since the Ancient Greeks, of dealing with things cerebrally-and-theoretically was henceforth addressed in a misleading and inadequate way! And though it could-and-was fitted pragmatically to Techmology; it was wholly inadequate in Science.

But, in spite of its considerable potentialities, Technology dealt only in things that could be fixed and controlled. It could reveal Properties, and enable their effective use in fixed products, but it was either useless or misleading in most aspects of things that actually developed! Change could only be seen as a feature of dramatic, forcefully-active individuals or ultimately - The Gods!

For, in attempting to delve deeper and determine the Actual Causes for particular effects in the Real World, we immediately-and-significantly restricted the context of the area to be studied, to that which would straight-forwardly replicate the thing we were trying to explain! So, "Pluralist Sciece", if we can call it that, was a direct bastardised offspring of Pluralist Technology: for, the should-have-been consequent Tail, instead, quite definitely, came to wag the "scientific" Dog!

The "Explanatory Theory" was extracted - NOT from Reality-as-is (as it should have been), but, on the contrary, only from a situation tailor-made to deliver a Fixed Relation only! How, then, could it ever deliver the Origins, or even the Demise of that relation?

So, the usual means of discovering Real Laws, has always, and wrongly, been in the past an Experiment-First operation. The Law was always extracted from that.

But, my contention, following Marx, was that it surely MUST be a Theory-First operation! Indeed, getting to the hidden causes in an extensive study of multiple-factor Real World situations, should be studied-and-thought about First, at a higher consequent Level, to indicate what sort of factors might be involved, to produce what we see there.

For, the usual assumption in Science, has always been that to get to the causes of natural relations, the scientist

had always to delve ever deeper, to arrive at the causes of particular properties, and their consequent effects. But with the Emergences of the Wholly New, it became increasingly clear that they were always totally unpredictable from the prior contexts that precipitated them. [Only later did the actual set of causing factors qualitatively change to cause the wholly new effect]

Indeed, Reductionist Explanations would never be possible for such innovatory, first-time occurrences. And, therefore, a detailed look at Higher Lever Trajectories - their dynamics and their cyclic systems, would always be more informative than digging ever deeper into the mire.



## The Dialectical Trajectory of Cosmological Development and its Philosophical Bases

Though long overdue, in the 21st century, along with the Dialectical Materialist Approach to Science, we unavoidably arrive, as Marx did himself in its application to History, at a crucially revealing High Level situation, wherein all its constantly varying and piecemeal-component-trajectories of underlying causes, could finally begin to be discerned, and without which, further progress would have been imposable.

Once again, such things can be revealed, only in the tumultuous interludes, which occur when a veritable Avalanche of Qualitative Changes trigger one another to completely transform the overall situation, into something Entirely New (as new, indeed, as the Origin of Life or Consciousness or the Universe itself, must once have been).

And in their discernable trajectories of transformation, actually reveal, and crucially, at a discernible tempo, for Mankind to begin to both perceive and unpick its causality, AS WELL AS, revealing, thereby, an effective general approach to all such Qualitative Change, but often well hidden within unavailable Levels, or occurring at inaccessible tempos of the Key actions involved.

Marx's touchstone was, of course, Social Revolution, especially if you actually experience one personally - or, as in Marx's case, he had access to the most detailed blow-by-blow account, by the French Historian Michelet, who ably recorded, in great detail, the whole of the 25-year-long Emergence, only then recently terminated.

But, Marx also had fragmented records of other earlier Revolutions (being a professional historian and Philosopher of Antiquity himself).

But, he was only ever capable of addressing Economics comprehensively, and that took him the rest of his life.

He certainly did enough to bequeath a significant approach, to those who would follow him, in this absolutely crucial endeavour, which became termed Dialectical Materialism.

Though without its dedicated, exhaustive application, and consequent essential further development, that could only be achieved by a similar comprehensive application of Dialectics to SCIENCE!

Now, to even begin to appreciate what is involved in such a task, Mankind had to sort out their various sets of assumptions, from which ever since the Intellectual Revolution of the 5th century BC, had subsequently totally dominated the then generally agreed Rationality, as being based upon Mathematics. But, of course, in spite of its successes, when concerned solely with Form and its kinds of inter-relationships: that Rationality, which is termed Pluralist, is NOT true of most other things in concrete Reality, as well as many other purely intellectual Disciplines. For, it turns out to only be true for situations that DO NOT change qualitatively: it is the rationality of Qualitative Stability ALONE!

NOTE: Elsewhere, I have comprehensively dealt with how that occurred historically, and its underlying assumed bases, but, it single-handedly and damagingly curtailed the rational study of ALL Qualitative Change, wherever it occurred. And instead actually created a non-existent version of the underlying Reality: indeed a purely Idealist reflected version of it, which has dramatically misled both Formal Logic and Science ever since.

Now, such a mistake was constantly-underwritten by Mankind's usable everyday conceptions of Reality, and particularly in their efforts to bend situations to their evident needs, by assuming Stability as the underlying Natural Basic State of Reality, and hence were constantly working to "reveal" that version of it, which is also most easily enabled in its control and modification thereafter.

So, for two millennia (and more) following that Intellectual Revolution, what constituted "Science" was always only a Stable Subset of it, supported strongly by the ancient tenet of "If it works, it is right!", and which should more properly be entitled Technology.

For this was the study of "How" things could be changed, when rigorously controlled, as distinct from Science, which should address "Why" things changed, in all possible circumstances!

The major difference is revealed by the ability of Technology to describe all kinds of changes: whereas Science alone had the objective of *explaining* those changes. I have worked in these fields all my adult life, and am well aware of these differences!

Now, the Consciousness of Mankind had split in that 5th century BC revolution, along geographic lines. The dominance of Plurality in the West (following the Ancient Greeks), and the dominance of a very different stance, termed Holism, in the East (following the ideas of The Buddha).

But each stance, taken alone, was insufficient, for it took a further 2,300 years before Hegel finally settled upon the major flaw of Plurality, which was the total absence of Qualitative Change from its processes, which, inevitably led to FIXED, supposedly Natural Laws, within that stance, and hence in Formal Logic and Science too: while the Holists of the Orient did indeed address Qualitative Change in Living Things, but they had only a rudimentary Technology, left over from the Pragmatism of the earlier period.

Yet, in spite of its disadvantages, the Pluralist approach in the West did lead to a belief in Causality, but limited only to Stable situations, and hence necessarily was exclusively-and-unavoidably Quantitative - thus fitting in very well with Mathematics and the Technology that was consequently developed there.

Indeed, historically, with the expansion of Western Nations beginning to build Empires all over the World, it led to Western Pluralist Technology becoming the established norm literally everywhere.

Now, with the gains first made by Hegel, and then transformed by Marx into History and Economics, the expected breakthrough into General Reasoning and Science, surprisingly DID NOT OCCUR, and it wasn't until 2010 that this theorist (the writer of this paper) was able to deliver *The Theory of Emergences*, which was a significant component of his contribution to the logic of changes, presenting a map of The Trajectory of an Emergent Interlude or Revolution! [Ed. see page 17].

Based upon Social Revolutions this became a sort of rough guide to Emergences at other levels of Reality, even those at a Cosmic Scale, concerning the Evolution of the Universe, simplified, at least initially, to somewhat lesser incidents in that development, but having the same reoccurring dynamics.

Now, this was devised some time ago, and is by no means the latest embodiment of this trajectory as it is now seen. And will most certainly change when we apply the same Dialectical Principles of Qualitative Change to aspects of the Cosmos, from Solar systems, to Stars in general, and their collections into Galaxies, and even Super Galaxies and the like.

But, until this research has reached such a stage, we can still get a great deal of guidance from this simple Diagram, as it certainly illustrates some of the most important Phases and Transitions common to all profound Qualitative Changes - though the tempos will most certainly change radically, and must be all accounted for in a general picture of the various phenomena involved.

So a brief explanation of what is embedded in such a diagram as this will not be amiss.

By far the most important assumed features that give this account its meanings and dynamics, come from The Holist Conception of Reality, which differs markedly from the more usual Pluralist Conception, in exactly how and why multiple contributing Laws interact to produce the observed results in everything we see in Nature as it is (and of course in Cosmology, where the limitations imposed by the Pluralist Approach in Laboratory Experiments are impossible to apply).

But, from the outset of Mankind, in attempting to do this, they found much of what they saw almost impossible to explain and understand, so they made certain simplifying assumptions that greatly clarified their ideas of what was going on.

They assumed that the many Laws of Nature were fixed-and-unchanging, and produced absolutely everything by merely diverse complicated summations of Pluralistic Laws.

And, for the things they could control effectively, it could-and-did suffice. But, there were many situations and multiple-law features where it was wholly inadequate (such as Life itself), and those were, therefore, usually reserved for Magic and/or Religion to "explain".

NOTE: In addition, it has to be strongly emphasized that without an exceptionally broad familiarity and problem solving, within a very wide range of very different Disciplines, the "General Cracking" of a means of covering the required explanations, has proved totally impossible to achieve. For though primarily involved in criticising the infamous Copenhagen Interpretation of Quantum Theory in Sub Atomic Physics, I only found the necessary wherewithall in Researches into the Origins of Life, and (I kid you not) in Solving Multimedia problems in order to produce effective Aids for the Teaching of Professional Dance Performance and Choreography!

Without these breakthroughs in entirely unrelated areas, that Critique would certainly not have been successful! [Indeed I spent almost 20 years as a Systems Software creator producing tailor-made Software for University Researchers across the whole Range of Disciplines starting in the 1980s with an increasing measure of success, and finally a Professorial Level Post in a College of the University of London!]

#### Materialist Holism

Now, before we go any further, in extending Holistic Dialectics to Cosmology, we must first fully appreciate just why Karl Marx's transportation of Hegel's Idealist Dialectics into Materialism was so revolutionary! It was, because by so-doing, it also imported Reality-as-is, for the first time, as the determining feature of that kind of Rationality, which it certainly didn't have in its idealist conception.

Reality became the confirmer, or proof, of its structure and relationships: for they had to work in Concrete Reality, completely unmodified by Man!

And this came clearly into its own, within unavoidable Researches into The Origin of Life on Earth, for its Dialectical Reasoning became crucial in solving the early stages of development concerned with multiple simultaneous chemical processes - Indeed, in exactly how they inter-related, and consequently changed and even evolved to ultimately become the "nuts-and-bolts" of Life itself.

Think about how Plurality would this! Merely adding them together, like inert ingredients, to finally deliver "Life" as a mere complication?

And, then on to the even further unquestioned evolution to Consciousness and all the rest, all of which just could never be explained purely pluralistically! For, such developments are unavoidably imbued with incessant and ultimately wholly qualitative Changes, and Real Transforming Innovation - impossible to analyse Pluralistically.

In that past research, which I then entitled Truly Natural Selection, there were revealed the absolutely essential First Stages in the transforming inter-relationships between simultaneous, adjacent processes, which inevitably led to the first crucial Repetitive and Selective features - alone enabling entirely novel properties to successively become established.

The discoveries revealed in this much earlier work, opened the door, for the very first time, to the Emergence of entirely new properties finally becoming possible within Materialist Physics and Chemistry.

Indeed, the Theory of Emergences could never have been arrived at without the research done in that area! For, a wholly New Area of Study, has consequently arisen that would have been impossible, without the Discovery of what became known as "Balanced Stabilities" consisting of long-persisting bunches, composed of multiple pairs of direct-opposite-and-hence-contending processes, which also played a distinct self-maintaining role in the Overall Stability of the complete set - both correcting against potential dissolution with most undermining disturbances, while also, and contrastingly-and-surprisingly, contributing strongly to its ultimate



complete dissociation in the much rarer major avalanche of disturbances!

These “Balanced Stabilities” are revealed as delivering self-maintaining plateaus within the Trajectory of Emergences, which in actually experienced historical Reality, look exactly like “Permanent Stabilities”, BUT NEVER ARE, and, when they are most under threat, they display a consecutive series of increasing-and-re-enforcing Crises, which are, nevertheless, initially overcome, but finally always carry over into a terminal wholesale collapse of the prior “Balanced Stability”, and ultimately descend into a Nadir of Dissociation, which wholly dismantles that Prior Stability, and THEN begins to change direction entirely, under different now dominant processes, and actually builds-towards a Wholly New and different Balanced Stability, that ultimately terminates this Revolutionary Interlude, and, thereafter, persists until the next Emergent Interlude occurs - perhaps many millenia later.

#### Pluralistic Cosmology

Now, having introduced the reader to the Previous Gains achieved by using the Holist Approach, the time has arrived to relate the current Consensus Theories of the Cosmos, all based upon the usual Pluralist Standpoint, which, I am sure, the reader will now find to be a Wholly Untenable Account. The problem is, of course, that such accounts are only about periods of time long before, not only today’s theorists, but before any intelligent and researching of Life had yet arisen. It is similar to a character in a tale, reconstructing its situation’s distant prehistory prior to the writing of the tale!

In addition, it is clear that, from the outset, Pluralist beliefs dominate in even the most basic assumptions, about that unknown time - for what else can they be?. And, with a stance that can never deliver even a single innovative, developing trajectory, almost nothing could be evidence based, or even involve meaningful backwards extrapolations.

And, at the very best, what we have will, necessarily, be sparse and truncated sequences trapped in the oldest rocks, and so by now utterly transformed as to only deliver meagre patterns surviving in the wrong materials, as merely reflected fragments. What is absolutely certain is that Absolutely NO trace of the actual original dynamic processes will have survived.

For, even the oft suggested Big Bang, as has been conjured up from Red Shifts in the Spectrums of Light from distant, anciently shining stars, which suggest an Expanding Universe, with a maximum Age of some 14.5 Billion years ago. And also supposedly commencing the Whole Process from Absolutely Nothing - as no direct Trace Evidence from that beginning still exists.

Yet, in spite of these disabling absences, that Origin is said to have been followed, almost immediately, by a finite period of Mammoth Inflation, at a truly colossal speed, for which, no explanation is forthcoming, apart from an otherwise unexplained evenness in the then observed Universe.

Now, the stranger from elsewhere would immediately wonder why current Man is so taken with these impossible to answer conundrums, but the reasons reside deep in the past development of our consciousness, and the magical “solutions” that seemed always to be immediately assumed!

The reasons lie in the necessary vanquishing of those debilitating dreams! So continuing the tale, thereafter, to the only still present evidence, which appears to infer that initial “Surmise” is followed by a further entrenched expansion, but at a much smaller speed: again with no apparent cause, but merely an assumed continuance of what presumably started the current expansion.

Attempts have been made to possibly predict a final termination of that Expansion-without-a-Cause, due entirely to countering by Gravitational attraction, pulling it back, in the way it came, but none have been successful, and the Expansion is usually considered to likely be Infinite!

Also “Black Holes” are claimed to exist, as additional, Local Centres for multiple, inwards-swooping contractions, each having the same such ultimate tremendous Gravitational attraction, but with targets at given specific positions, so that they swallow everything that can come within their reach! But no endpoints or terminations in such Processes are clear, as the more global inwards attractions are considered to be opposed by the rotations of the enclosing Universes delivering an outwards concentering effect! And, they are believed to primarily exist at the centres of all the Galaxies - the suggested Island Universes of Stars and Planets, that make up this “infinite?” Cosmos!



But, of course, as past History in Science has demonstrated, the Pluralist Stance doesn't stop supposedly one-off Laws being recognised: but it does recast them all wrongly as eternal Natural Laws, which is most certainly not correct! They can, however, be more accurately re-drawn as legitimate-as-so-found, but only in the circumstances in which they were extracted: while elsewhere they most certainly, will vary with their different contents and contexts.

NOTE: The current endemic mistakes were voiced, once again, by Stanford Scientist Leonard Susskind, in his denunciation of the critics of the Pluralist Stance and means, when he condemned them for "seeking Analogues and Metaphors instead of the defining *Truth* of the Equations"!

So, the real questions must now be:-

- 1: Exactly how will the New Replacement Laws to his mathematical-pluralist alternatives be delivered wholly holistically?
- 2: Just in what circumstances, and in what way will the current approach be bound to fail?
- 3: In what circumstances, and in what ways, will it instead transform into a wholly new Law, and consequent New Form.

Of course, with this required, and very different nature, unavoidably always generating wholly new Contexts, with each and every such transformation: the then revealed Laws will tend to no longer become one-off, stand-alone Pluralist Laws, but each one will be applicable, as such, only in its own maintained context! But, hereafter, it will also, and for the first time, be only one of the many generally applicable Laws, forming legitimate parts of an important Dynamic Trajectory as a sequence of Qualitative Changes, changing their current context as they actually execute, and most commonly occurring in what became known as Emergent Interludes, which alone, would finally make it possible to explain Qualitative Changes, including not only all Developments, but crucially All Evolution too.

For, outside of a Holist Stance, no single-trajectory, comprehensive Explanations are ever possible!

Indeed, so called Pluralist Science (more accurately termed Technology), is always a sequence of necessarily tailor-made, and different contexts, with one for each Law separately employed.

Real Science must be Holistic, taking a current Reality-as-is, and naturally carrying out a legitimate Law there, which also produces a transformed-and-different context, and then, in turn, enables another different Law, performing naturally, to produce yet another result and consequent context!

IMPORTANT:

Whenever a law clearly works in Reality-as-is, without the usually essential achievement of the ideal-maintained-context, for a given pluralist Law: that new, actually-working Law, will certainly NOT be the assumed Pluralist one, but will, instead, be one delivering in a Holist context, which reveals a Law, alongside many others, also progressing simultaneously, and hence able to both co-exist and even also dominate those other acting, though perhaps-hidden, Laws, due entirely to the presence of relative preponderances, giving the "seen Law" an overall natural Dominance.

But, as a million School Science Experiments will always show, the lack of a super-tight dominating control of conditions always demonstrated - the Results were always so very variable, as to generally be wholly unreliable, and averages of many separate runs would be necessary to get the actually presenting "Law"!

Whereas, considering what might follow each Holistic Law, we see that though the context would be changed by that process, it would be such as to allow a following Holistic Law, matching the produced state! And, thereafter, a whole sequence of such Laws would each pave a new way for the next holistic Law! And, it may take some time before it does, but all other processes will have no significant results until a whole valid natural sequence has finally been completed!

NOTE: The producer, committed to a particular product can never wait for that to occur, so they developed Pluralist Science, in which each Law has a required-context for it to be active wholly predictably. So, the overall process separates the sub-processes completely, and has each one acting in a tightly maintained accurate version of the ideal context for its current Law.

But notice all the laws in these two scenarios are NOT the same! So, the development of real Holistic Science differs markedly from pluralist Technology, So, technological practice and theory, will necessarily be different to Scientific Theory, which alone is generally applicable!

#### Holistic Science Practice

Clearly, the effect of the continuing dominance of Plurality in what is claimed to be "Science", though it effectively enabled a Kind of Technology, has slowly piled-up problems for it as an Intellectual and Explanatory Discipline, because it is always dominated by only answering the Question, "How?" to the certain detriment of asking the crucial question, "Why?"

And, the reason is that Science needs to be able to use a legitimate Rationality to address problems in extending Explanations entirely cereably in Thinking about the Subject!

Now, a very different cornerstone of that same attempt at Science, has also been in Experiments, which are concrete investigations of Reality, in order to reveal its various contents and their separate inter-relationships. Ideally, that would only be possible, if that knowledge was independent of the Context: but, of course, it never is!

Now, Mankind has long made the assumption that the nature and properties of all things are not only independent of both one another, but also of the Containing Context, produced by everything present. But, they too are also assumed to be fixed and unchanging as well!

And, all of this was always considered to be reliably, if approximately true, and particularly over short periods of time: for that independence of Context made the properties involved also appear to be fixed!

Now, what consolidated this mistaken belief into a Principle, was the the Study of Pure Forms. For Euclidian Geometry, and, thereafter, for the whole of Mathematics, the Fixity of all such things (Qualitatively) was completely established as True. And to even more generally establish this Simplification, the extensive Discipline of Mathematics was demonstrated to be vastly and validly extendable via Theorems and Proofs to deliver a Mighty Discipline, legitimately founded upon a Principle of Plurality - Absolutely Always True within

that Discipline. And, it also involved a set of Rules and Processes - A Rationality, that cereably enabled that seemingly infinite Development.

And significant developments could be made by Thinking about Such Problems

#### The Role of Mathematics in Philosophy

As I have explained in great detail elsewhere, the successes with Mathematics in that First Ever Intellectual Revolution, concerned with the initially Mathematics-only establishment of the Pluralist Stance, which undoubtedly enabled a sound system of Rationality within all Reasoning possible within Mathematics. But, that gain soon became a significant distortion of Reasoning when applied to Everything Else, and most especially to both General Reasoning and most damagingly in the Sciences.

For that assumed Principle of Plurality is NOT valid in all of the many other diverse regions of Reasoning. Indeed, it assumes fixed relationships and Laws, which should almost universally be replaced by the far more accurate-to-Reality Principle of Holism, which emerged in the very-same historical period as did Plurality, but at a great distance away in India, with The Buddha, and took the diametrically opposite stance of constant qualitative variation in almost Everything, and thereby enabling both Growth and Learning in Living Things and even Qualitative Developments, both there, and in Non Living entities too.

But, any hope for a Rationality as straight-forward, and productively manipulateable as that in Mathematics, was never fulfilled, because instead of things remaining-qualitatively as they were (Plurality), they were instead always changing, and significantly doing so qualitatively in unpredictable ways.

Indeed, what changes there were, could never be predicted before their first occurrence, but could only be recognised in retrospect after they appeared! So, the role in Rational Predictive Thinking was always scuppered thereby, and observation and experiment became indispensable: as the thought-only methods, of the idealists and mathematicians, were finished-for-ever, whenever Real Developments, such as actual Evolution were involved!



Indeed, it soon became clear that Qualitative Changes, because they always involved a multiplicity of processes and causes, always took place at a new, higher System-Level. And the causes would not even be timewise predictable, as the same each and every time, and could indeed even vary in the final result! So, no easy “Formal Logic” would ever suffice: it would have to be both complex, varying and revealed-over-time! And, it could only be a physically caused & explained Process.

An early example was discovered, within Repeating Cycles of many simultaneous-and-different processes: because though what happened would appear to be unchanging, from Cycle-to-Cycle, the actual Containing Context would NOT remain exactly the same: so the repeating process existing upon a given, if variable, Context, might well change that context, and in time actually precipitate a change in the Main Process. Likewise, with a situation of one particle orbiting around another, along with both-ways energy-flows, occurring between the orbiting particle itself, and the changing-accompanying vortices, (originally produced and maintained within a containing medium), which might vary either way, until a maintained balance is finally achieved, when a so-called “Quantized Orbit” would be achieved, and thereafter maintained!

Indeed, a general feature of Holist Science, unlike the usual forms of Pluralist Science, is that whereas, in all Pluralist Scientific Experiments, the conditions required for a successful Experiment and consequentially-extracted Single Fixed Law, is always the necessary, and purposely-tailor-made conditions, that restrict the possibilities artificially to that Law alone! In Holistic Science there are always multiple components and consequently many equally-possible simultaneous Laws, all acting together, delivering an either naturally-occurring, or deliberately-organised-for drifts to turn into some sort of balance between opposing-direction processes, often also selected-for by preponderances in the available necessary components in the mix.

So that, the activities reduce to only a couple of opposing reactions, often with one dominant over the other, and enough hidden minor processes, still remaining, to affect the ever-present Drift. So, dramatic Flips between the TWO major processes can seem to arrive from nowhere, yet pluralists, not knowing why, will always seek, and usually find, a single key component, and a particular value of it, at which the flip will always occur! So, the

switch is signalled (from prior evidence), but never explained! Now, by far the most important Events that occur in multi-component and multi-process conditions, is what is termed a “Balanced Stability”, which is the usual real cause for what is erroneously-assumed in Pluralist Science to be a Natural and Permanent Stability.

But, after extensive experience seeking a more accurate Holist Account of such things, it has gradually become established that the usual “explanation” of Stability, as some Natural minimum-energy, and hence Terminal State in a given environment, is mistaken, and instead is shown to be a Temporary, if usually long-persisting Balance, made up of totally-opposite-processes, which are arrived in any Limited Locality involving multiple Laws, acting via many different processes upon multiple available components, which because of the overall maintenance of the involved components, constantly repeat, and yet gradually, in doing so, don't just constantly repeat the exact same processes with identical repeated results, but on the contrary also affect the overall situation selectively.

For, in so doing, they overall gradually remove all the inferior non-integrated processes, to leave a surprisingly-stable collection of the Main Processes, gathered into diametrically opposing Pairs, that though varying constantly effectively Balance each other.

But these are gathered together as a bundle of these Pairs, which together, and in a similar way, maintain the Overall Balance of all the Pairs in the bundle: so that when that balance is in any way threatened, the same kind of causes-and-reactions will affect others in the opposite way to maintain the overall balance.

Interestingly, most such disturbing threats are countered in this way, so that Crises are usually corrected-for! While, with a more general disturbance, the usual automatic corrective features are overwhelmed: and in such circumstances the imbalances proliferate faster than the corrections and the Whole Balanced Stability collapses wholesale.

This series of examples is all we can do on Holistic Science at this stage, But elsewhere in historical accounts and various Higher Level Systems many Dialectical Situations have already been recognised, even though Plurality still rules - though unsuccessfully - Everywhere Else!



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