



SHAPE JOURNAL

WORK IN PROGRESS: MARXIST PHILOSOPHY 2014

KEY TASKS OF MARXISM TODAY / REALITY & MIND / DIALECTICS
SPECULATIVE POSSIBILITIES / MULTI-DISCIPLINE MARXISM

©2014 Jim Schofield
Words Jim Schofield
Design Mick Schofield
Original Photography Michael Coldwell
"Work in Progress" 2014

www.e-journal.org.uk/shape

Shape Journal
Bild Art
11a Woodlands Road, Lepton
West Yorkshire. HD8 0HX UK



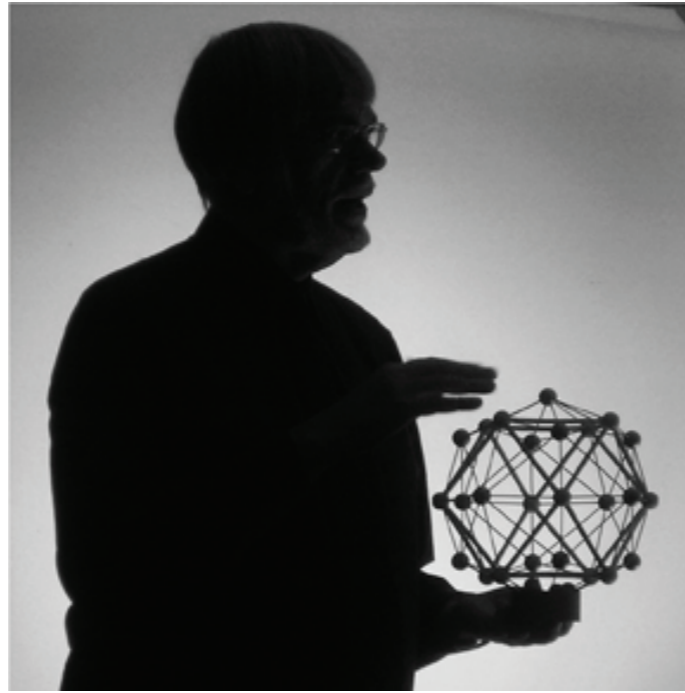
Special Issue 29

Work in Progress:

Marxist Philosophy 2014

1. Introduction
2. Dialectics
3. Reality & Mind
4. Key Tasks of Marxism Today
5. Current Marxist Works
6. Introducing the Fourth Law
7. Socialists for an Independent Scotland
8. Speculative Possibilities
9. Multi-Discipline Marxism
10. Dynamic of Real Qualitative Progress
11. Rock Revealing Ideality
12. Synchronised Resonances and Recursion
13. To Be Or Not To Be

Introduction: Work in Progress



Welcome to the 29th Special Issue of the **SHAPE Journal**.

This Special is somewhat different to our usual offerings of this form in SHAPE Journal. It has a very different purpose! Indeed, the reader may well be immediately aware of its unfinished nature, and take issue with some of its note-like offerings. Good!

For this form is intended to encourage criticism and opposing contributions by other present day Marxists out there.

SHAPE gets over 100 hits a day, 7 days a week and 365 days a year, and an analysis of the topics accessed (on the SHAPE Blog for example) indicates that it is the philosophical works that are by far the most popular. There are readers of our sites in 120 countries (Sorry, 121 – someone in Guatemala added to the total today), and these include not only the usual “surfing” nations, such as the USA, but also an increasing number from Russia, Ukraine, Romania and many other ex-Soviet nations, as well as literally the whole of South and Central America, and recently France, Germany, Poland and Slovenia have arrived in significant numbers too.

But, when the usual outlets for other Marxists’ work are monitored, they are, to say the least, disappointing.

What is needed is a new generation of serious and committed Marxist philosophers – constantly extending and deepening the Marxist View. And, they should be addressing the very areas where the non-Marxists are signally failing to make any real contributions.

This Special, therefore, hopes to get a response from them! Comments and even contributions are welcomed. And, as we don’t usually work within the usual Social Networking methods on the Internet, it is suggested that these should be sent direct to us by email: shape@bild-art.co.uk

If writers permit it, their contributions will be published in a Special Issue, (so say which country you are from), and if we get sufficient this could become a regular feature. None of contributor’s details will be given to anyone else! Use nom de plumes if you want to. This philosopher has written almost 650 papers over the last five years and could do with some help tackling these difficult questions!

Jim Schofield (an English Marxist philosopher)

November 2014



Dialectics

What is it?

Dialectics was a discovery of Frederick Hegel – the German Idealist Philosopher, who, some 200 years ago, considered his area of study to be Thinking about Thought, and realised that all our conceptions about Reality are unavoidably constrained by our experiences and the current extent and depth of our understanding.

He further realised that such understanding would always be compromised, most particularly, by what we still didn't yet know, but also, and primarily, by our own arrived-at assumptions, concepts and principles. The journey to a "full understanding" was not only never-ending, but was also strewn with passage-impeding rocks of our own making.

Now, that doesn't sound either very profound, or even optimistic! Indeed, it is often used as an argument for – "Give up now you'll never do it!". But that wasn't Hegel's view! It may appear defeatist, but that wasn't what he took from this discovery. He recognised that our assumptions were absolutely necessary, to make any progress at all, and, crucially, they were never pure invention. On the contrary, they were always based upon some aspects or parts of an as yet unrevealed Absolute Truth. And, this content gave those conceptions a definite measure of objectivity.

But, invariably, such extractions from Reality would be useless if each of them only applied to a single solitary thing. Mankind wanted more general conceptions that could be used across the board.

So the correct parts and aspects were turned into "general truths": and that was both a vital breakthrough, and an error! For, the incompleteness of these forced generalities – clearly unavoidable when they were made, would also unavoidably confer a distorted outcome upon our subsequent uses of these generalities. Though they would work in many cases, they would also, and inevitably, lead to a point where they would deliver contradictory pairs of consequent concepts. These pairs were clearly mutually exclusive: they were in direct contradiction to one another, and yet were BOTH outcomes of our earlier assumptions. They couldn't both be true! Yet, neither one nor the other could be sufficient to cover what the pair delivered. They were both wrong!

Now these Dichotomous Pairs indicated to Hegel (just as the pair Continuity and Discreteness had indicated to Zeno some 2,300 years earlier) that the underlying assumptions, in spite of containing a measure of Objective Content, were also, in fact, both at fault in important ways.

The question was, "How can we possibly transcend both these erroneous concepts, and come up with better ones that were not contradictory?" Hegel, therefore, used this to set about finding ways to transcend these impasses that seemed insuperable if we were to keep both of the contradicting concepts.

By a careful study of the members of a Dichotomous Pair, he was able to reveal the assumptions upon which they were based, and his task would be to replace them

with other assumptions that could deliver the positive aspects of both, while removing the contradictions. The impasse would only be transcended and a better basis for understanding put in place, if the new suggestions dug deeper and revealed more aspects of the truth than were embodied in those they were to replace.

He knew, of course, that even if successfully achieved, this would nevertheless be a never-ending oscillation. For each new premise would, in spite of the gains it had delivered, in the end, reveal its own shortcomings by producing yet another Dichotomous Pair, and with it another seemingly final impasse.

Hegel called this method Dialectics, because instead of obvious adjustments to one or the other of the pair, the solution had to deal with both, testing what was suggested for one, as it affected the other. In the end the premise had to be as good as possible for both: the process was a dialog between the requirements to solve both the members of the pair. At the end of the process a single new basis, which dealt effectively with both, had to be delivered, if the achievement was to be anything other than a clever trick.

Clearly, such solutions would never be easy to achieve, and the underlying causes, would not only be well entrenched, but would have repercussions in many different areas. The new assumptions would be revolutionary!

Clearly, the most important feature of Dialectics was that it rejected the methods based upon Formal Logic, for they

underlay massive tracts of the prevailing culture. The building of greater truths out of lesser truths, as was the basis in Formal Logic, was totally rejected. Instead of a mere accumulation of new knowledge being sufficient, it was clearly a transformation of how we thought about things that had to be achieved. And, this had to be done every single time! [As V. Gordon Childe, the great archaeologist said, "Man makes himself!"]

Hegel's contention was that the building of Truth could never be cumulative, but came in fits and starts as prior, misleading bases had to be demolished and replaced on a regular basis.

You may have heard of Dialectics as the method used by Karl Marx, and the evident basis of Marxism, which it certainly was, though, of course, Marx had transferred Hegel's methodology wholesale into a materialist perspective, and hence renamed his method Dialectical Materialism!

But not many know what it actually involves?



Reality & Mind

The as yet not totally defined alternatives for a philosophical standpoint

For, perhaps 2,500 years, Mankind has zigzagged, to and fro, between two seemingly mutually exclusive standpoints in their attempts to make sense of both themselves, and the World they inhabit. These are, of course, Materialism and Idealism!

And though for a time, one or the other would predominate, in those areas where such things are considered, the inadequacies of their current conceptions will always have forced a ready, if temporary, swing over to the opposite stance.

NOTE: Surprisingly, even in this considered-to-be primary basis, the forms actually dealt with by Man have managed to turn the obvious alternatives – Idealism and Materialism, into a Dichotomous Pair, and the trajectory of their uses has taken the same sort of route as with all such Pairs. Even the definitions of such basic stances will have involved inadequate underlying assumptions: they will mean different things at different times!

Of course, these underlying assumptions that cause the uncertainty is NOT the clearly apparent key issue, which is “What is primary – Matter or Mind?” For, we don’t consider these standpoints only from that Primacy Issue alone: they are necessarily also underpinned by a whole set of other assumptions, and these, inevitably, can never be totally objectively defined. They will be, necessarily, coloured by a mutually-defining set of premises, beliefs and principles, which will be primarily determined, and indeed limited, by our then current knowledge and understanding.

Now, if at all possible, this continual switching between these two must finally be terminated, and a real and more profound resolution discovered.

Yet, of course, there has always been the pragmatic “solution”, as there always is with any Dichotomous Pair. The thinker switches between the two alternative standpoints in addressing problems, as their particular circumstances and required solutions dictate, and this seemingly unprincipled stance turns out to have two main advantages.

First, solutions can be found to certain currently significant problems, by simply choosing that stance which has the most easily reached and usable solution. Yet, secondly, the continuing opposition, between the two, does make possible important advances in their attempted resolution. So, such “flexibility” has come to be the norm!

But, logically, of course, it is an insufficient compromise, and the gains that are achieved, come in through the gaps and cracks of the insufficiently defined alternatives, while the monolithic main opposing stances continue to keep most things tidy or is alternatively left completely unaddressed.

Now, before anyone thinks that I will just put yet another (maybe cleverer) gloss upon this – merely sitting on the fence, I should make clear my chosen standpoint. I am most definitely, a materialist! But, certainly NOT a mechanical materialist as is the usual basic stance in Science. The basic fact is definitely the certain existence of the “Earth before Life!”

How can an idealist standpoint predominate, when NO living things were in existence, never mind thinking minds? No, Materialism – as the priority of Matter over Thinking is indisputable! And, the various positivist strands (somewhere between the two), like the Empirio-Criticism of Poincaré and Mach, and many other similar positions ever since, are accurately described as either shame-faced Materialism, or agnostic Idealism.

But, we must never lose sight of the fact that all these arguments and explanations are, without any doubt, products of human minds, and therefore, inevitably bear the stamp of current capabilities, knowledge and understanding, in addition to the total impossibility of completely delivering such things entirely by such means. Whatever we consider what Idealism and Materialism are, they will always be mistaken in significant ways.

As a materialist, I have also to list, among my heroes, philosophers who were, quite definitely, idealists. The three who transformed my thinking were Zeno of Elea, the Buddha and finally Frederick Hegel, whose concentration upon Human Thinking was a crucial contribution, even to a materialist. And my primary giant of materialism has to be Karl Marx – a disciple of Hegel, who took his master’s gains and transferred them wholesale, into the very heart of the materialist standpoint and approach.

So, is there a non-agnostic stance encapsulating both? The simple answer is quite clearly, “No!” But, what is essential is that the materialist stance must stop dealing in “absolutes”, and admit that every single currently-held materialist conception will always be the product of human minds. NOT, it must be emphasized, as having inevitably mechanistic consequences, but, on the contrary,

as incomplete yet leading-edge extractions from the development of a material Universe, AND capable also of affecting what produced it and even changing that into something different. True materialists do not, and indeed cannot, deal in Absolute Truth! They are forced to deal only in aspects and parts of actual Reality, which are also deformed by our current lack of sufficient knowledge and understanding to deliver them exactly-as-is! What we achieve may well be taken from Reality, but also distorted not only by our inadequate means, but also by our still limited mental abilities.

What we achieve, at best, is something with more Objective Content than what they replace. But, at the same time, they are never pure invention. They always have a source in Reality, yet are never absolutely true!

So, there you have it. The elements of Reality that we manage to extract, are modulated significantly: they are never pure, unaffected Reality-as-is, but forms selected-for, by our means of setting up and controlling our Domains of study, and then simplified and abstracted into purely formal quantitative reflections of what actually exists.

Though Materialism is most definitely the sounder basis for what Reality consists of, it is solely dealt with through the minds of human beings, and therein significantly adjusted to “make sense”, along with all our other current knowledge and understandings. Clearly, a materialist, who knows nothing of this unavoidable process, will inevitably be some form of mechanist: he will not take into account the changes imposed *within human minds*.

NOTE: The consequences can be remarkable, for in the 20th century, the current assumptions and principles that underlie all Science, had the effect of causing physicists working in the Sub Atomic Realm to abandon materialism entirely, when they completely failed to deal with the discovery of the Quantum effectively. Their only means of repose, was to abandon explanation entirely, and replace it by the perfect, idealised forms of Mathematics, which, having been transferred from concrete Reality into a World of just such idealised, perfect Form alone, were able to avoid the contradictions of pursuing their still-extent and determining assumptions of Reality.

The concerted attempt to understand Reality, materialistically, was historically deemed to be Science, and, of course, it was indeed a significant development compared with all prior attempts. But, it had to be addressed by real people with their actual knowledge and understanding determined by their histories, experience and social imperatives. Mankind could NOT leap directly into an accumulation of Absolute Truths, All the bases that were available were unavoidably simplified and abstracted assumptions – so what was interpreted could not but be determined by the current level of those doing the investigating.

And, they had no choice when attempting to pull themselves up by their own bootlaces, but to make essential simplifications to what they had unearthed. The first defining basis was to study only Stable Systems. Clearly, situations that were all over the place would be impossible to tackle, while things that “kept still” would be much more amenable to study.

So, Formal Logic, with its Identity Relation, $A = A$, set the initial tone, and anything that was changing all over the place, was set aside for later study. So, such a study only of Stabilities, involved a set of assumptions, including what were seen as Eternal Causing Laws. Science, from its outset, only studied Stability, and Real Qualitative Changes, or Developments, were NOT addressed!

Clearly then, though even this primitive Science was materialist, it was incapable of addressing the ongoing development of Reality. It sought to explain constant things – steady state situations. It therefore soon became a series of different sciences, and even within these- specialisms, the crucial developments were shelved “for now”! The clear way forward was to study Stability “first”, and indeed, even individual investigations could get nowhere until a stable Domain of investigation had been set up – carefully filtered and controlled to visibly reveal particular possible “laws”.

And, if we couldn’t find such a stability we would have to construct one!

Nevertheless, even this enforced limitation was able to reveal a great deal. But, of course, it was a very selected set of features in mostly very non-natural environments that were investigated and theorised about.

So, the question became, “How could this be remedied? It would certainly require a very different and thorough study at an entirely different level – that of Thinking Minds to correct the always stabilised bases.

A revolution was required in Science! Without it, as has already occurred in Sub Atomic Physics, the whole discipline careers off into very narrowly defined lines of investigation, which prohibit a real critical review. Primarily, the Principle of Plurality, which underpins all scientific experiment and extracted theory, must be replaced by a thoroughly holistic approach.



The Key Tasks of Marxism Today

This is the text of a prepared speech by Jim Schofield, an experienced Marxist philosopher and scientist, to young Marxists striving to prepare to play a role in a coming Socialist Revolution

Greetings Comrades!

I am here as a very rare person at the present time, whether within a Revolutionary Party or not! I am a Marxist philosopher, and I consider it to be the most important role possible for addressing the tasks we face today.

There is no Marxist method, analysis or guidance worthy of such a description, in the movement today. Never forget that Lenin made a deal with the Germans, in the midst of war, to travel to Russia in a sealed train in 1917 to rescue the Bolshevik Party from its then woeful stance within the already underway Revolution. Without his essential April Theses the Party would not have successfully led the crucial October phase of the Revolution.

Though I have spent the whole of my adult life in Revolutionary Parties, I was never taught Marxist Philosophy. To “pick it up” you were directed to the works of the masters, and there sought out, for yourself, the crucial standpoint and Method behind the application of the philosophy involved. But, it was NOT explicitly and finally embodied in the writings of my heroes Marx, Engels, Lenin and Trotsky! For, in spite of their brilliant contributions, they could not possibly completely define the standpoint, nor deliver the answers to all subsequently arising questions. It had to be their philosophical standpoint and consequent Method that must be understood, and, by applying it constantly equip activists to successfully address questions as they arose!

To explain what I mean, I should take the trajectory of developments in my other significant professional discipline, Science, NOT I must emphasize, as a means of correcting Marxism, but to retrieve and develop it, while in relation to Science, by detailing how both the gains and catastrophes of current Science can be both understood and transcended by this crucial necessity within Revolutionary Marxist approach. Indeed, I will show that only that approach can have any hope of solving the current century-old Crisis in Physics.

As to the gains of Science, it has always been evident that we could not depend solely upon the contributions of

giants like Newton, Maxwell and Einstein, for they were inevitably both of their Time, and of the then level of understanding reached by Mankind. So today, a physical researcher, depending solely upon the contributions of past greats will get nowhere. Indeed, every gain historically in Science has never been absolute, and in every case would ultimately become a hindrance to future progress. Nothing in our ideas was the Absolute Truth, and the task was, by appropriate methods to forever extend and deepen our understanding.

Yet, even in that confined area of study, the ossification of past gains, and the lack of any real development in both philosophy and method has ruined the area of current Sub Atomic Physics.

What they had settled upon turned out to be wholly insufficient to tackle what was occurring in many different but intrinsically related areas of study. The Halt was called at the Solvay Conference in 1927, when Bohr and Heisenberg put forward their Copenhagen Interpretation of Quantum Theory, which is now the “bible” of that area of studies, and has led a proud and important Science into the backwaters of Idealism!

Amazingly, this standpoint is now the consensus throughout the whole of Physics, worldwide, and I recently had to write a severe criticism of a self-professed Marxist for embracing this drive!! [see SHAPE Journal: Special Issue No. 11, July 2012].

The central question currently in Physics is considered to be the search for a Theory of Everything! And this is based squarely upon the Copenhagen standpoint and Einstein’s General Relativity. The real frontiers of Science have been abandoned, NO real advances are being made: Physics has become a subset of Mathematics only. It has ceased to be about Reality, and is now only about the perfect realm of Form alone - Ideality! And, at this crucial situation, where a better and more comprehensive philosophy would be invaluable, the self-professed Marxists have absolutely nothing to say.

What it currently exhibits is either entirely retrospective or damagingly revisionist. The former being a mere worship of past gains, while the latter is an outright betrayal!

Committed activists forget what Marx was. He was a philosopher, initially a member of the Young Hegelians, and the sound basis for what he subsequently understood was his creation of Dialectical Materialism, amazingly got from the foundations laid by Hegel in Idealism, but transferred wholesale, by Marx, and in so doing, he completely both extended and transformed its range of application. For the materialist standpoint expanded its applicability from Hegel's area of Human Thought alone, and into the Development of material Reality in general!

Upon this revolutionary realisation, Marx knew what he had to do.

He had to get himself tooled up to solve the problems of the day by intensive research, but now using the revolutionary methods of Dialectical Materialism to do it. He spent vast amounts of time in the British Museum seeking and finding whatever he required to address in his wholly new way to arm the Class to which he was now committed – the International Working Class - as the only class without a vested interest in the status quo.

The question has to be, “Do you really know what those methods were, and are?” And also, “How can a philosophical method reveal the truth of situations?”

When deciding what has to be done, and how we must prepare and arm our activists, where does our philosophical standpoint transform what we understand and what we can do? Can we go out each day without a reflection on what we are to do and why? For, if we don't, whatever our stance, we will merely be good intentioned, but inadequately-equipped activists - ”doing without thinking”, and that will not succeed! The theorists of our movement must be at the leading edge of developments in philosophy, for we are fighting a determined and indeed merciless foe!

To deal with such questions we must be absolutely clear what Marx's method was all about. Indeed, what is Dialectical Materialism?

It identifies contradictions within our thinking by seeking and revealing Dichotomous Pairs of concepts or principles. For, though these could be effective, individually, in appropriate contexts, they are also mutually exclusive – indeed essentially contradictory, and hence policies, or forms of actions developed from them, will ultimately lead to contradictions and hence failure. They couldn't be correct!

They occur due to prior conceptions based upon experience and understanding, which gave us the opportunity to extract them from that experience. But, though sometimes

useful, they were inevitably insufficient. They delivered, NOT Absolute Truth, but only what is termed Objective Content, and this inevitably limited their applicability.

Initially, what we had achieved could inform many of our problems, but not all of them. And when they were inappropriate they were bound to lead us astray! And, if the applications were pushed as far as possible, we would always arrive at what seemed to be an insurmountable impasse. And, this was always revealed in the form of a Pair of totally contradictory principles or concepts. Marx knew that it was his task to seek out these Dichotomous Pairs if a transcendence of the impasse was to ever be achieved.

So what are we to do? Having identified the Dichotomous Pair, we must study both of them and attempt to reveal their common underlying assumptions, concepts and principles, and then seek alternatives to these, then not only carry forward the cases when the old forms worked, but replace the flawed pair with something to allow an even greater applicability. Only then will the impasse have been transcended.

That is Dialectics! Do you do any of that? The likelihood is that you don't, and this means you are not yet a practising Marxist!

Now, this described method is NOT direct. It doesn't go directly from experience to new solutions. It is an intellectual exercise to begin with, and is always demanded by failure of prior ideas and methods. It needs failure to force us to seek the Dichotomous Pairs and a great deal of thinking to suggest alternatives, but when successfully complete, it will guide our actions, in part to solve the revealed contradictions, but also to effectively intervene in Reality too.

Let me be clear! An overall analysis, no matter how well informed, will not necessarily deliver success. Only a true transcendence of old and proved to be mistaken ideas will rigorously motivate and purposely direct our actions. You can't just “Look it up!” The works of the masters are not recipes for success, but “examples of a method”, which must be understood, if it is to be used in new circumstances!

So, if your actions are not bringing success, then you must address your assumptions and see how they deliver Dichotomous Pairs. Once that is clear, you have concrete bases to help you unearth the assumptions that are to blame!

I cannot blame you, if you are still unconvinced. So, I will reveal the famous, classical Dichotomous Pair discovered about 2,500 years ago by Zeno of Elea.

It involves the contradictory pair Continuity and Descreteness. Now, these were, and still are today, not





considered to be a Dichotomous Pair: they are seen as merely different conceptions in different circumstances. But Zeno proved this idea to be wrong! He took various examples of their alternative uses, when dealing with movement. And via his Paradoxes showed that each led to an impasse, and even switching over didn't help in certain entirely valid cases. They were invalid conceptions, and Zeno proved this multiple times in a whole set of his Paradoxes. Clearly, neither Continuity nor Discreteness were totally correct: they were simplifications covering only certain special circumstances. Pushed far enough they would each fail. So, even if an identification of such Pairs proved to be possible, there was still much to do. In Zeno's cases, it took another 2,300 years, only coming to fruition with, first Hegel, and then Marx!

So, if you are having difficulty with Marx's *Capital* or Lenin's *Philosophical Notebooks* (Volume 38 of his collected works), you must look for the method I have been describing in their treatments – The Dialectical Method!

I first realised the importance of the Marxist method when I was a first year University student. I had been impressed by the political positions taken by avowed Marxists, and I had joined the Communist Party. I was soon running a Marxist Bookstall in the Students' Union, and hence had access to a vast library of the Communist Party.

As a physicist, I immediately found Materialism and Empirio- Criticism by Lenin. It was about the philosophy of physicists! The Empirio-Critics, led by scientists like Poincaré and Mach, were having a bad influence on undeveloped Bolshevik Party intellectuals such as Lunacharsky, and Lenin knew that his primary task at the time was to demolish the philosophical stance of the Empirio-Critics. His intervention via this great book ensured that he succeeded in winning back the errant Bolsheviks. And crucially, in the Revolutionary Government after the October Revolution, Lunacharsky was made Commissar for Education.

You might think, as many professed Marxists often do, that such work is not as important as other specialist contributions, but you would be wrong! The essential backbone of the revolutionary is his Marxist philosophy, for without its constant development, activists and even theoreticians would naturally back into the norms of bourgeois intellectualism.

So, going back to us and now, the biggest problem for Mankind, philosophically, at the present time, is, once again, in Physics. It is the so-called Copenhagen Interpretation of Quantum Theory, and its idealist philosophical stance has been propagated throughout Society in general too. [Indeed, the popular Post Modernism is based entirely upon the same compromises]

The only philosophic standpoint that can possibly address the perceived Dichotomous Pair of that stance – namely that of Waves on the one hand and Particles on the other is.... you've guessed it – Marxism!

“Too specialist!”, you may think But, Lenin, in his day, didn't think so! He was a brilliant Marxist, and the author of this paper is also a Marxist, and doesn't think that either.

The major cornerstone of Copenhagen is the series of experiments involving the famed Double Slit Apparatus. So, any serious attempts to dispute the philosophical stance of that position must address the amazing anomalies thrown up by those experiments, and thoroughly rubbish the unsound conclusions drawn from them. No one else has been able to do it, but this Marxist physicist has managed it. [The appropriate papers were published on SHAPE Journal Special Issue No. 3 in February 2011]. And, not only that! A whole set of arguments extending Darwin's Natural Selection to non living Development have also been produced under the overall title of Truly Natural Selection. [A series of papers covering this concept was published in SHAPE Journal in a series of Issues during 2010]. And, applying new assumptions to development not only in the Origin of Life, but also in a generalisation of the trajectory of a Revolution he has produced a generalist Theory of Emergences. [The papers involved have been published on SHAPE Journal, Special Issue No. 1 in 2010]

Indeed, the collection of SHAPE publications on the web has now been going for five years, and includes the SHAPE Blog and the SHAPE Channel on Youtube to accompany the main Journal.

But, in spite of 61 full Issues of the Journal containing 300 papers, and a Blog with 250 Posts, and even 6 animation/ videos on our Youtube Channel, this seemingly substantial body of work only scratches the surface. Reading these contributions will not deliver a full set of answers, but it might well assist greatly in amplifying more clearly what the Marxist Method involves, as well as the vast number of things that still remain to be done.

Postscript

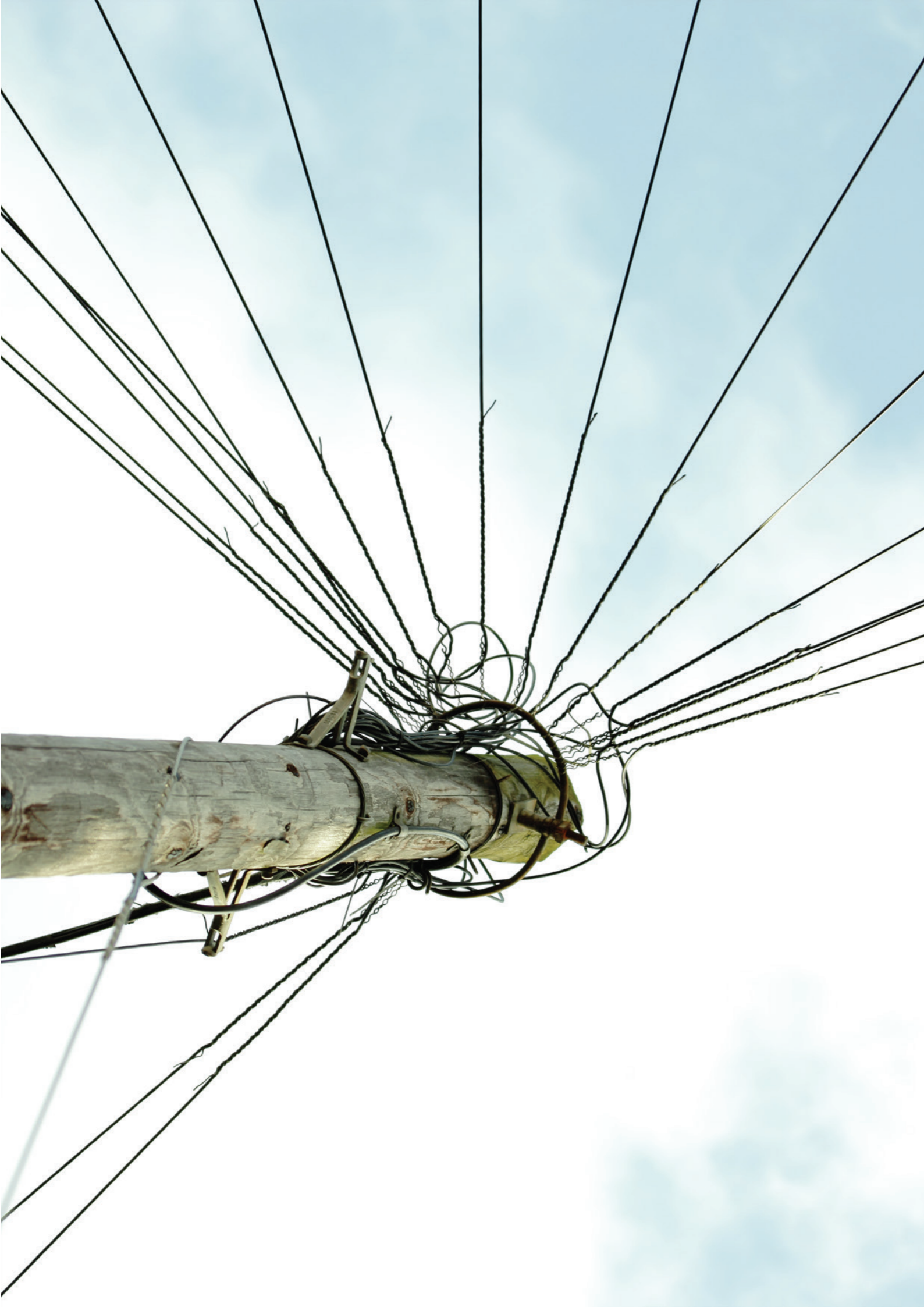
Surprisingly, many dedicated revolutionaries do not use the real content of what Marx, Engels, Lenin and Trotsky developed as the most advanced materialist philosophical standpoint and method – The Dialectical Materialist Method, and its power is truly breathtaking. Quite apart from the areas of application usually considered to be the main ones – in politics, there are also profound and revealing uses in many other disciplines and areas of study. This scientist, wearing various other hats, has used it in Dance Education, in the Analysis of Movement, and in the Design of Multimedia Aids and finally in Mathematics. While, perhaps, the most generally useful area is as an alternative to Formal Logic, and in the usually ignored articulations involving Dynamic, Qualitative Change. It is no accident that this writer has, over many years, been, in addition to his already mentioned preoccupations, also a specialist in Biology, Sculpture, Music, and Computer Programming – all of them in professional posts, and ended up in a professorial role in London University, as the culmination of a career which included Hong Kong and Glasgow, and following an earlier period in Schools and Further Education. Marxism is, undisputedly, the most advanced Philosophy in History. Use it!

Current Marxist Works

Some idea of what a modern day Marxist Philosopher does can be illustrated by the following lists of papers, produced by Jim Schofield during the month of August 2014. It isn't representative of the full range of topics addressed, reflecting not only his scientific specialisms and current political priorities, nor his contributions in Sculpture and Music, but it does show what an active Marxist philosopher is doing in daily producing original work. Indeed, the simplest description of this writer's activities would be "One paper, 1,500 words, a day, seven days a week". Though, of course, they don't all end in publication, at least, not immediately. For, many pieces are seen as possible contributions to later, more comprehensive works, which will require research in various areas before they are ready for publication.

So, the first list concentrates upon current contributions produced in a single month that have already been, or will in the near future be, integrated into published works. The second list, covering a period of about one year is of final publications in the form of contributions to General Issues or complete Special Issues of the SHAPE Journal, which is now in its sixth year, and has amounted to 61 Issues since its launch in 2009. It is a unique publication, for it, as its name suggests, includes:- Science, Holism, Abstraction, Philosophy & Emergence (or S.H.A.P.E.) as its contents.

This is a wholly free, Web-based Journal, and is supported by the SHAPE Blog for the usual kind of posts, and a Youtube SHAPE Channel for animations and videos. SHAPE Journal is unusual in the almost half of its Issues are Specials, in which several related papers upon a single topic are presented together, and these are useful as introductions to areas not normally evident in political Marxist publications. While others take the issues involved to much greater lengths and depth. Some idea will be demonstrated by the Special entitled The Theory of Emergences, which takes Revolutions to all aspects of Reality. And The Theory of the Double Slit, which is about the Crisis in Sub Atomic Physics and the confusing anomalies evident in the famed Double Slit Experiments. Other areas are covered from Mathematical Chaos to the Origin of Life, and even an extrapolation of Darwin's Natural Selection to non-living developments.



Current Marxist Papers August 2014

01/08/14	The Emergence of “Policeman Processes”
02/08/14	Resonances & Recursion in Pendulums
03/08/14	The Myth of Equation-Based Theories
05/08/14	Abstracted Forms I: Quantitative
10/08/14	Dialectics (PANEL)
11/08/14	Abstracted Dforms II: Qualitative
13/08/14	Defeat the Tory Onslaught
18/08/14	The Phoenix
18/08/14	The Tasks of Marxism Today
18//08/14	Ecce Habilis
25./08/14	Following a Supernovae
25/08/14	Synchronised Resonances & Recursions
25/08/14	Zeno’s Paradoxes (PANEL)
25/08/14	Contradictory Bases in Science
26/08/14	Clean Hands Profit?
28/08/14	To Be, or Not To Be?
30/08/14	Reality and Mind

Recent issues of SHAPE Journal

Wave/Particle Integration	Special 20
The Loka Sutta	Special 21
Marxism III	Special 22
Programming Today	Issue 31
The Evolution of Matter	Special 23
Rethinking Physics	Issue 32
The Holist Revolution	Special 24
The Logic of Change	Issue 33
Yves Couder’s Experiments	Special 25
Mathematical Chaos I	Special 26
Myths of Tegmark I	Issue 34
Analogistic Models I	Special 27

Key Early Issues of SHAPE Journal

The Theory of Emergences	Special 1
The Theory of the Double Slit	Special 3

Introducing the Fourth Law

The possibility of a Fourth Law of Thermodynamics (usually suggested as a counter to the totally pessimistic Second Law), is usually dismissed out of hand by most critics, as they all bring in such supposedly “illegitimate” biological concepts as Evolution, and in one sense you can understand that view. They are, after all, “Laws of Thermodynamics” that were derived as Meta Laws in the purposely-limited area of most scientific studies.

But, in addition, such a restriction is certainly incorrect anyway. The Second Law is seen as being extremely general by many physicists and philosophers, insisting that all Order is on its way to dissociating into Chaos. So, it may be true in the contexts in which it was first defined, but is NOT applicable generally, as Life, Evolution and Consciousness prove conclusively.

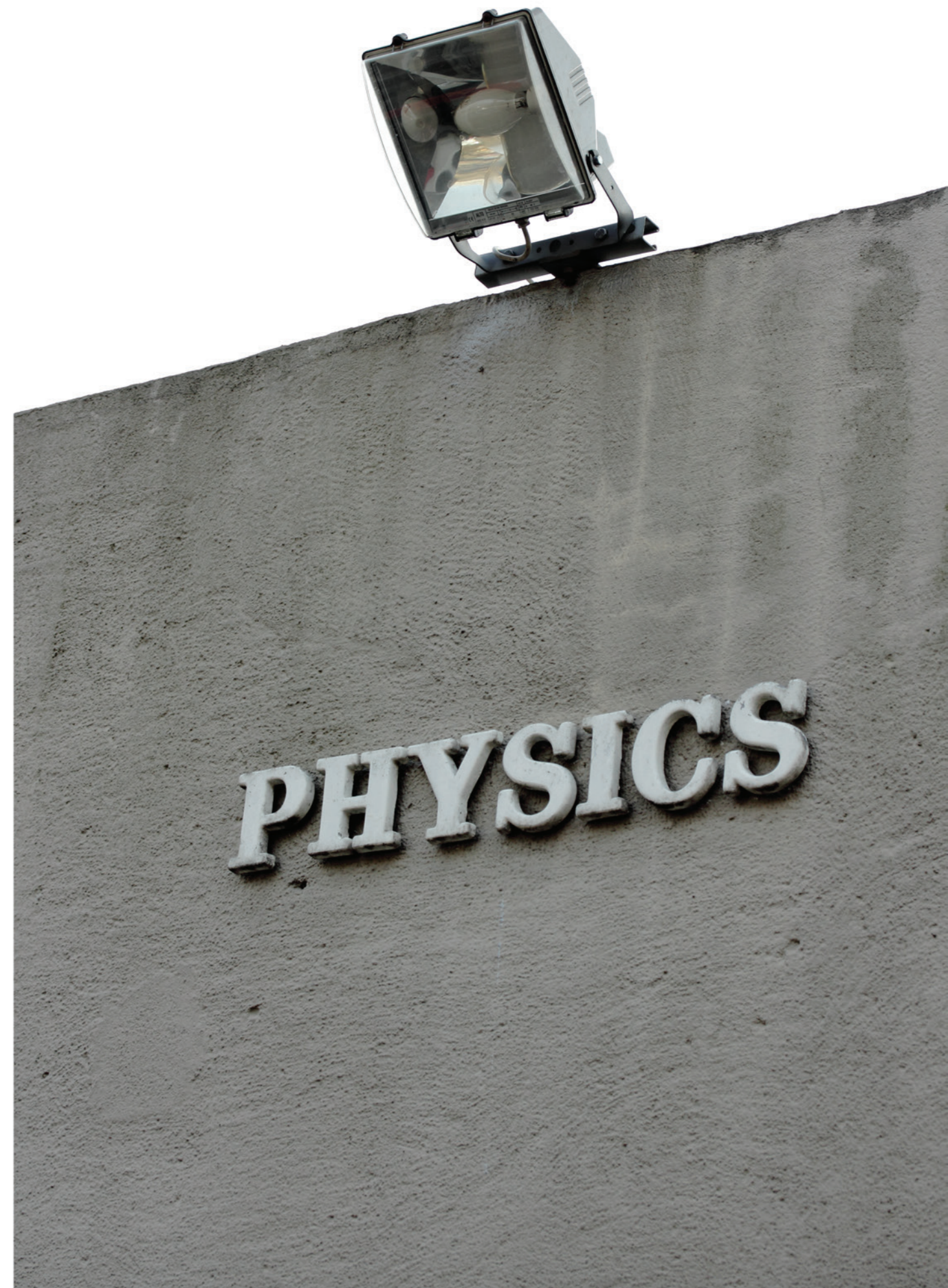
So, what are, variously, put forward are not in the same context as Carnot’s and Clausius’s ideas, for all contributors to these established Laws of Thermodynamics came from a standpoint where any weakening of the essential conditions imposed via specially constructed Domains of investigation, that had to be carefully prepared to enable the revelation, extraction and use of all physical and chemical laws, would inevitably lead to dissociation (as the Second Law certainly proposes). They were unquestionably predicated both upon Stability and the pervasive Principle of Plurality. Clearly, when considering the development, not only of living things, but of all that occurs in Reality itself, such an artificial context is not required: indeed,

it imposes a very different set of possibilities upon the phenomena involved, and the self-movement of totally unfettered Reality is clearly essential for natural, integral development to occur, and the whole basis will be at odds with that of the engineering era of Science!

So, though these alternatives were invariably called The Fourth Law of Thermodynamics, these counter Meta Laws were grounded in Reality-as-is, and not as we might like to make it.

So, this set of papers will not concern itself with abstract (invented) scalars, such as entropy, but with the trajectories of qualitative change that take place outside of the necessary stabilities of “Thermodynamics”! Indeed, the first step in addressing the “Wormhole to Oblivion” of the Second Law, has to be an investigation of the trajectories of change in Reality-as-is, in particular the clear alternation between long periods of stability, and the crucial short interludes of significant qualitative change in what are beginning to be termed Emergent Episodes.

While the Laws of Thermodynamics were arrived at by studying only stabilities, the “Fourth Law” can only occur in the *revolutionary* interludes termed Emergences.



Socialists

for an independent Scotland!

It is clear that all the pro-capitalist parties in the UK oppose Scottish Independence.

It should tell socialists that these people couldn't give a damn for the people of Scotland. They have used it as a dumping back yard for generations.

The Scottish People deserve better! And they wont get it as part of the UK.

Independence will change all political agendas. And because of this all socialists must support Independence.

Why?

It is because the Scottish people have been socialist for a long time. Kier Hardie built the Labour Party for the Working Class. There is only one Tory MP from the whole of Scotland! Even among the SNP there are socialists.

What has been missing both in Scotland, and in the rest of the UK has been a clear and resonant socialist call for Independence!
Think about it!

If Independence is achieved, what will be the agenda of the SNP? They will have achieved the reason for their existence, so what will they do then? The answer is NOTHING! They will no longer have a populist and invigorating policy! Their leaders will revert to being what they have always been – pro-capitalist!

But, what will the people of Scotland expect as a result of Independence as the Will of the People? They will expect Socialism! The nuclear backyard will be kicked out! And they will expect the Oil and Gas reserves of both the North Sea and the Firth of Clyde to be used solely for the benefit of the People of Scotland!

We must shout loud and clear for an independent Scotland!

Forward to Socialism!



Speculative Possibilities

How Philosophy Directs Theory

Here is a key question concerning method.

“How do most scientists explain the differences between Earth, Venus and Mars?”

For, as more evidence has been accumulated from fly-bys, orbiting satellites and visiting landers, there are increasingly discontinuities in their evident histories, which cannot be shoe-horned into a single trajectory: indeed, without any doubt, several bifurcations must have occurred in each development path to result in what we quite clearly have today. Yet, the consensus standpoint in Science is that everything that exists is based upon a single Set of Eternal Laws. But, nevertheless, there can be absolutely no doubt that each planet has taken a very different course!

So, the obvious question, “Why?” is posed in very different ways, which elicit very different answers, depending upon the investigators adopted philosophy!

For, with such a limited, shared set of “causing laws”, any explanation must, somehow, deal with the indisputable forks-in-the-path of their clearly different developments. What could possibly cause things to carry on upon such divergent paths to very different outcomes?

So, in addressing this important question, let us first take the positions of those that make up the vast majority of scientists, who subscribe to the Principle of Plurality. They see everything that now exists in terms of this fixed set of basic and eternal laws, for, with this Principle added, no actual modification of the fundamental, driving set of laws is allowed. They are unchanging and deliver everything.

All the very different outcomes, whatever they are, are considered to be unquestionably and entirely down to the result of different mixes of these fixed laws – differing only in their quantitative contributions. But, juggling with a mere handful of differently “coloured” components couldn’t possibly do this, if all were restricted to happening at a single level! So, even the supporters of this conception have to have more laws generated by particular given mixes of the limited number of those eternal. Indeed, they have to concede an ultimate multi-level and general system, though ultimately and entirely based upon those bottommost, fundamental laws.

You can see why! The explanations of phenomena are produced by showing how currently acting laws produce the observed results, and then, going on to the next level down, an identical process will again be possible.

This multi-level Reductionism, theoretically, will only cease when the final, eternal and basic laws are reached.

You can see the “power” of such a conception!

The advantages of such a World are obvious (if true) for all currently-evident, discovered laws, will be logically driveable, ultimately, from those basic eternal,

NOTE: Needless to say, the most avid supporters of this standpoint are those whose area of study is the Sub Atomic Realm; in other words the place where these basic and eternal laws are likely to be found. They will, they believe, be studying the most basic essences that produce the whole Universe!

Potentially, the possible, quantitative mixes, therefore, over innumerable levels, theoretically, can be almost infinite, but, of course, some will be more common than others, so they can be concentrated upon. All conceivable things that turn out, by investigations, to be true, are merely as yet unconsidered mixes of lower level factors.

Clearly then, all qualities are merely reduced to different quantitative mixes of eternal laws. So Quality is reduced entirely to Quantity. Indeed, all is accommodated retrospectively!

But I’m afraid that isn’t anywhere near good enough. It is a purely pragmatic standpoint. Surely the actual trajectory of the changeovers involved must be delivered as a detailed account, whereas the usual placeholder for an explanation is almost always merely the passing of a quantitative threshold value of a key variable. That isn’t an explanation; it is merely a description of what occurs. It is like saying that a Social Revolution automatically flips over into a new system, when a certain key variable passes a threshold value.

Clearly, the other thing that has to be included is the Trajectory of Development - that is how situations will change, and not only will the relative amounts of the “laws” involved change and re-balance, but also, and crucially, the laws themselves will change, and the old stability-balance will become impossible to re-establish: Indeed, completely new stabilities will appear, with wholly new capabilities, which could never be predicted from prior available evidence - they are only available retrospectively - they are inventions (speculations) that fit the observed facts. While what actually occurs will indeed be a New Path!

But, notice that, in the pluralist version, NO eternal laws are ever modified! With that explanation, it is just complication and particular mixes that wholly determine absolutely everything. NOTE: If you want to study an expert at this kind of speculation study any of the TV series by Professor Brian Cox!

Now, there is a very different standpoint to Plurality, which addresses these things in a way that has been briefly referred to in the prior paragraph: it is called Holism! And, in the holist view, there are NO eternal laws at all. Indeed, to seek such laws as the fundamental drivers of Reality is not only pluralist, but also idealist, for it makes disembodied relations as the motive forces of all physical things including their behaviours.

But, the holist view, tends to be much more materialist, and sees absolutely all found laws as the result of many varying factors, which certainly can affect one another, and in given, critical situations, also change one another.

All laws are the result of given physical contexts – even the presumed to be unchangeable basic ones. Can you conceive of a law without a defining context? For, though things often stay the same in periods of Stability, Reality also and crucially actually develops, but only in interludes of major Quantitative Changes termed Emergent Events or Emergences.

To allocate all the ever-new qualities that appear during these interludes, as merely due to different mixes of fixed basic laws, means that mere changes in quantities deliver all major qualitative differences, as mere complication! Clearly, that interpretation a placeholder for what really happens.

So, if the holists are correct, how is it that the pluralist view has been so successful in the past? For it most certainly has!

That success is entirely due to the circumstances in which these ideas are both investigated and applied. Reality gravitates into stable situations as the most easily found and maintainable states. And, these stable states are due, after a short “gestation period”, to the mutual balances possible between conflicting factors, which though initially drive seemingly towards chaos, always by mutual and even self-modifications as well as conducive relations and interactions, finally settle into more stable states – indeed, they always produce a long-lasting, if temporary, Stability, due entirely to selectively, built-in, defensive mechanisms.

And, it is the evident domination of long periods of Stability, which give us what we wrongly consider to be a permanent state of affairs. For, it is only in such Stability, that Plurality even gets close to being true! You can reliably use it within stability, whether natural or man-made.

Indeed, if we very carefully farm experimental and productive situations by extensive modifications and controls, we can regularly approach situations in which Plurality almost holds. So, this is exactly what we do!

And, as long as we replicate-for-use exactly those contexts, which we set up for extraction, our abstracted laws will hold reasonably well. Of course, any science, which deals exclusively in Stability, has got to have explanatory difficulties, when it comes to Major Qualitative Changes.

So, when these laws fail or systems collapse, Plurality is, quite evidently, totally useless!

When it comes to development in general – as is proved by the “explanations” of our three exemplar planets, the explanations can only be totally retrospective – that is initially speculative and incorrect, is then modified by what is subsequently discovered.

Now, even more interesting, is the effect of a pluralist standpoint upon our supposed Eternal Laws! The “explanation” of these either vanishes into infinite regress, or comes to a halt at fundamental final basic laws. So, scientists needed a regime where such things could be handled “absolutely” – and they found it not in Reality, but in Mathematics!

Very early on in Experimental Science, farmed situations could deliver relationships, which could be fitted-up with purely formal relations – gleaned from Mathematics, and these conformed brilliantly with the pluralist standpoint. NOTE: Now, of course, the scientists involved were certain that their careful adjustments to the context were merely an effective means of revealing hidden, but definitely present, driving laws, so they could build a whole system upon such methods. The problem was, and still is, however, that their farming might be actually significantly changing a situation, and their targeted “law” within it.

Indeed, following this marvellous “discovery”, Science soon became the necessity of “revealing eternal laws in mathematical forms”. It was not only easy for mathematicians to manipulate their forms to deliver very effective fits, but they could also stretch them into new, extended realms of possibility by taking the ranges of variables beyond those that occurred in the founding experiment.

[Form is a one-size-fits-all means of describing many causally different, natural relations, but of course, it does not, and indeed could not, ever explain ALL, or even any one of the particular possible fittings.]

Thereafter, it soon became a route for mathematicians (claiming extensive access to fundamental, driving forms) to suggest as yet unobserved phenomena as possible to occur. And, consequently experiments were devised and set up purely to confirm these extensions! The retrospective





limitations involved in such laws were seemingly vanquished by such formal means alone. But. Let us see how such an alternative process would eventually play out! And, the easiest area to demonstrate it is that of Dimensions! For mathematicians had found a geometric way of displaying formal relations in what are termed Graphs. And, with three (and only three) possible physical dimensions, they could construct graphs for up to three variables. Now these spatial forms were very much more revealing than the standard, symbolic equations, for they could simultaneously display a whole range of possibilities, so that features of changing relative amounts could be seen very clearly, including dramatic changes such as so-called Turning Points (Maxima and Minima). They rapidly became a standard facility for scientists too! NOTE: But, they also led to Singularities and Asymptotes, which effectively signalled just how those relations “blew up”!

But, think about it! Do all natural (even stable) situations only include three-or-less significant variable factors? Of course not! So, two consequent things occurred.

First, situations for investigation were set up filtered and controlled, so that ONLY three-or-less factors were allowed to vary, and the resulting farmed situations were only then investigated. Or, alternatively, more variables were allowed, which would require graphs of more dimensions than were physically available.

So, you can imagine what the mathematicians would do! They were NOT scientists! So, they would investigate purely formal ways (along with concepts drawn from up to three dimensional graphs), so they turned their methods from the seeable dimensional situations, into algebraic forms, and merely applied them to extra dimensions as if they existed. For example a conceptual fourth dimension was conceived as being at 90° to all the others, impossible, of course, in 3D Reality, but formally useable in the Mathematical World termed Ideality! They thus constructed a formal way of dealing with literally any number of variables.

But, it was a trick, and data extracted from reality was gathered in the same farmed ways. Certainly NO data was gathered in from totally natural Reality-as-is – it would be all over the place. Many more restricted experiments were employed and from several up-to-three variable extracted relations a many variable form was constructed, and the new pseudo-graphical methods were then used upon these.

Now, all this is feasible, and in suitably tailored productive situations could be effectively used.

But, soon, these were considered to be REAL dimensions. So that apart from their use as an extended Conceptual Space, they were seen to be real extra dimensions, that were there, but unseen. They could even contain other Universes!

So now, we must return to our initial problem of why Venus, Earth and Mars are so very different in spite of seemingly occupying the “habitable region” of the Solar System.

Clearly the mistakes outlined above were speculatively applied to these planets ONLY after concrete evidence had been established, which demolished all prior and clearly unfounded speculations. And, of course, this has been repeated for prior conceptions about literally all the planets. The important question is posed! If our prior methods were so useless, what must be changed, in order to deal with such absolutely vital diversions in development? It is already clear: pluralist Science is incapable of doing it!

Multi-Discipline Marxism

Most readers of SHAPE are surprised at the width of topics addressed in what claims to be a Marxist publication. They even bemoan the lack of a constant stream of political arguments to equip them for their day-to-day activities in their essential tasks within the Working Class. They even protest that much of what is addressed will put most people off – “being too intellectual and esoteric to mean anything to ordinary workers”. But, they mistake whom these contributions are for. It is themselves, who are necessarily targeted!

What they will need to reliably come up with the best policies and methods is the most penetrating philosophical stance and method that exists – Marxism! It isn't “Public House philosophy”: it is the most sophisticated Philosophy devised by Mankind.

And, such a position and method requires the most dedicated and professional approach. Indeed, it is considerably more sophisticated than any of the usually revered professions in our society. It has to be a full-time job, using the best and most powerful philosophical methods yet devised.

So, the inclusion of Art, Science, Archaeology, Politics, Economics, Biology, Evolution, Mathematics etc, turns out to be imperative, not only to communicate difficult and profound things, but to be in a position to constantly and necessarily develop and extend this standpoint.

“These are a diversion from the prime necessities of such a publication?” is a common criticism of our width of topics. But such a criticism is most certainly mistaken. Marxism is a Philosophy! It involves a universally applicable standpoint and method, and is the only one that can be applicable to absolutely everything.

Indeed, without a true and successful multi-discipline approach it rapidly ceases to be really Marxist, and inevitably takes on the unstated assumptions and methods of the disciplines it is restricted to. Indeed, most solutions to difficult impasses are necessarily found somewhere unpredictable in the width of serious studies purposely referred to for possible ways out of the quandary. Analogies from all studies can open up new lines of investigation.

For example, for many years this researcher was involved in designing Multimedia Aids for use in the teaching of Art Dance (both for performance and choreographic design), and the multiple objectives of Dance Pedagogy and Movement Analysis, as well as the limitations and powers of Digital and Analogue capture, presentation and control were what made the products delivered successful worldwide!

Indeed, still after 25 years, and the moving on to other studies by this contributor, that body of work still leads the field. The Multi-Discipline approach was absolutely vital!

And elsewhere, as an able mathematician, I spent many years chasing abstractions in what are called Tessellations (tiling patterns in 2, 3 and even more dimensions), before I realised that what I was studying was not Reality, but Ideality – the World of Pure Form alone.

And as a physicist, I also took too much time realising how, in the Sub Atomic Realm, investigators and theorists were also limiting themselves to a purely formal realm, and had drifted inevitably into a totally idealist stance, in what was supposed to be a materialist science. You begin to discern the confines of philosophical limitation to such single disciplines, and the impossibility of transcending the unavoidable impasses caused by mistaken assumptions and principles.

The proof was finally made overt in the tackling of the famed Double Slit Experiments, which rapidly had become (and still remain) the cornerstone of the Copenhagen Interpretation of Quantum Theory in Sub Atomic Physics. The anomalies of that interpretation of these Experiments have since been resounding without any satisfactory resolution for almost a century. Yet, this Marxist, within a period of about a month, was able to present a non-Copenhagen model of those experiments, which explained all anomalies *materialistically*.

While elsewhere, studies in Emergences (Revolutions) but applied to Thermodynamic principles was able to show that the Second Law (concerning the inevitable dissolution of all Order into Chaos) was a mistaken single view, taking absolutely NO account of development and evolution – and the revelation that within short-period Emergent Episodes, the exact opposite - termed “the Fourth Law of Thermodynamics) predominated, and created the wholly New! Indeed, everywhere the power of a multi-discipline, Marxist approach delivers real progress and understanding. Can you leave the problems to discipline-limited practitioners? No, you cannot! Their stance and methods prevent solutions!





The Dynamic of Real, Qualitative Progress From Stability to Chaos to Stability again?

We must start with the questions, “What is Stability?”, and, “What is its affect upon progress: does it allow, encourage or actually hinder progress?”

The situation is that we actually tend to celebrate Stability as the means by which a necessary Order is established. And once it is achieved, the World then seems to be a more rational and potentially understandable place. Indeed, it appears to give us ground, on which to construct explanations, as well as the means to both predict and control situations –whether for good, or for evil!

Not a speech goes by these days from our politicians, without some insistence on both Order (Stability) and the “Rule of Law”, as the necessary ground for their policies and their promises. But, as well as these “seemingly virtuous” interpretations, there are others concerning Stability that are simply and totally untrue.

The main one is certainly that concerning Progress and Development. It is the old “Pax Romana” argument – the one in which the creation of the Roman Empire both “established and maintained” a widespread and fruitful Peace for everybody involved. Yet that same Roman State was without any doubt a militaristic one, and built its wealth on conquest, tribute and slavery. The same lie today infers that progress requires Order and the Rule of Law to take place. And this is completely untrue!

Indeed, it is closer to the truth to insist that real progress is never a moral achievement, nor ever an automatic outcome of Peace and Order. In fact, all significant and crucial changes only occur in what is generally seen as Disorder, or even Chaos.

Now, if this diametrically opposed alternative is true, how is it that its opposite is the usually accepted position agreed to by almost everybody? That is an excellent question, and the answer to it could also reveal how consensus beliefs are established and maintained, whether true or false!

Let us see if we can reveal why that is the case!

First of all, the dissolution of a long-standing Order seems to threaten absolutely everything and everybody: it promises complete disintegration, and threatens an irrecoverable Chaos. And, there can be no doubt that such a collapse does indeed seem to happen! In fact, so desperate do such situations initially appear that a return to the old Order seems infinitely preferable – most certainly to those who benefited most from the old and now disintegrating regime, but also by everybody else, who are inevitably

made to suffer most in such a disintegration, and are usually blamed for its occurrence.

Indeed, in the social sphere these crises are termed Revolutions, and they do indeed include desperate times, mostly it must be insisted upon, and by the forces of the old order, attempting to re-establish themselves, and in which, in most revolutions, they usually succeed in that objective. The whole gamut of the Arab Spring Revolutions has that negative and incomplete character. But, to use only that universally atypical case, which, significantly, also includes active intelligences rigorously striving to STOP the process, does distort the more natural examples which occur in other more intrinsic and self-developing Emergences (as Revolutions are called when happening in all other levels of a developing Reality).

In the oscillation between Order, its immanent Dissolution, and its reinstatement, it will always be Stability that appears best. But, of course, that is not the only possible outcome. More generally, therefore, Stability is NOT the ground for progress and development, but for a pause or even a complete halt, in such changes – indeed a situation in which all significant changes are strongly opposed - so much so that such a situation is apparently considered to be in a permanent stable state, and the “natural order of things”!

In fact, the whole of Science is also based upon that very same assumption, so that all its found laws are presumed to be both fixed and natural as Eternal Laws of Nature. With such as stance there is also, consequently, the idea that absolutely all phenomena are directly and unchangeably caused by these Eternal Laws alone! Thus, because of this, Science usually becomes the Study of Stability.

We are therefore forced to see Stability solely from within stability. And it is important what this comes to mean! The easiest revealing metaphor has to be the stability of the bottom of a valley, determining the result of all caused movements there. Such a topological stability persists for long periods, and even quite major, if transitory, disturbances soon settle things down again back to the prior stable state once more. Clearly, in stability in general, the allowed processes will always in the end cooperate to bring things back to the maximally stable situation. The processes, which originally got things to that state, to form a self-maintaining system. Other things can happen that can temporarily move things “uphill”, but they will be episodic and will always subside, and things will usually return to what they were before. The dominating and continuing set are all “downhill”! And we give them an

overall name – like Gravity in the valley-bottom metaphor, or *Entropy* more generally!

But, Stability is a selected-for system of cooperating processes, whose main feature is the resisting of all qualitative change. It causes a kind of understandable stagnation.

It is not, however, conducive to what we call progress and development.

And, in addition, from the point of view of thinking human beings, stability, once established, does indeed proffer the possibility of analysis. It keeps still! It is investigatable!

So, what seems a contradictory thing, Stability, especially for those who benefit from it, can be investigated. Indeed, the original so-called scientific investigations were of the most stable things that were apparent in the World of our ancestors – the Heavens. Always the same night after night, even year after year; it did seem to suggest a Natural Producing Reason for such steadfast order. Indeed, perhaps the first successes were in Predictions – the recurring patterns in the heavens could be used. Also, once these had been revealed, what else could they be interpreted as, but Eternal Natural Laws?

Notice that those people existing at the other end of the social scale were never in a position to see things that way. The iron manacles of necessity and powerlessness promoted very different imperatives. Whatever could be extracted from stability was really limited to those with the repose, the wherewithall and the power to pursue them.

Now, this demonstrates that the knowledge that could be gained within stability would necessarily return with the stamp of that context. Indeed, even Science was the necessity revealed within stability only.

Now, at this point we must address Technology, for that is the main plank of the position that Stability both is the NORM, and leads to progress! For, Technology amounts to the reliable use of what has been discovered and described by Science. And, to effectively use a given law, you must always re-establish the precise stability, under which that law was originally extracted. Thus the practical skills involved in achieving such states in diverse areas, and hence the effective application of known laws, in an increasing number of applications, gives the strong impression that progress is actually occurring. Such increasingly wide activities are interpreted as real, intrinsic developments.

But, that isn't true.

Real development is not just more and more successful applications of each extracted law. Neither is it accumulative or quantifiable. Sometimes, Technology can indeed run at breakneck speed even in the most reactionary situations,

as History has frequently proved. Indeed, in the Second World War, the best continental scientists had been forced to escape the increasing Nazi Empire in order to survive, never mind continue their investigative researchers. Yet, Technology was literally unaffected, because it is ONLY the use of already well-known laws. All the devastating achievements of that regime were entirely technological. Real *understanding* did not develop at all.

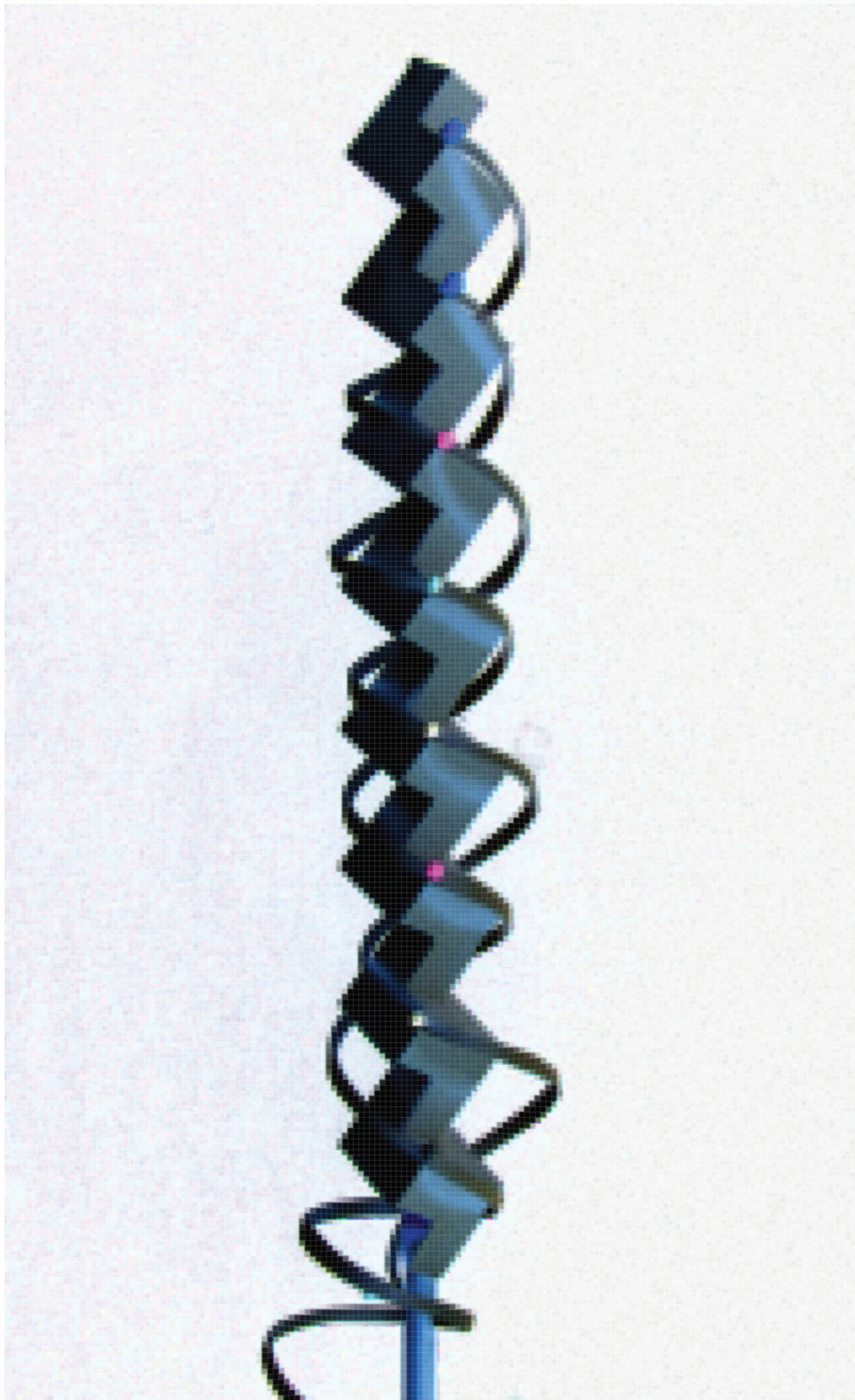
But, choosing either Stability or Real Progress is not usually an even-handed choice in other non-social situations: there occurs a natural trajectory, which in the end will always pass from a preceding stability, via a crisis and collapse of prior systems, into the interludes of major change and thereafter, an ascent to another, very different Stability, involving many new properties and laws.

So, to attempt to get the necessary handle upon such an Emergent Event, we simply must study the much more frequent non-social and non-living cases in order to get closer to understanding just how Stability gets established, is first maintained, then undermined, and, thereafter, begin to dissociate, and even finally to inevitably collapse.

Now, these sub phases in an Emergent Interlude can be studied, and a great deal is already known about them, but, thereafter, something truly remarkable begins to transform, indeed re-create, everything, and about this we know literally nothing. It is the turn-around from a seemingly terminal Chaos, into a rapid, multi-phase ascent that finally results in a new and long lasting stability, which occurs, without any extra ingredients, entirely from the prior sub phases, but, nevertheless, leads to a very different, and wholly new, stable state.

Indeed, to study such things, the norms of traditional Science prove to be woefully inadequate, for all the gains made there are predicated upon stability, and built upon principles and assumptions that are ONLY true within each such stable era.





Rock Revealing Ideality? How Abstractions can Direct Research

Many years ago, in my youth, I too thought that Mathematics - the study of Pure Form alone - was the means to understand all natural phenomena, so instead of investigating concrete Reality, I switched to the dazzling World of Form, which is the parallel World where Mathematics dwells, which I now, considerably older and wiser, call Ideality.

It is, indeed, a fascinating place, but to position yourself exclusively there, means to see Reality through a purely formal filter, and hence to concern yourself not with Reality-as-is, but only with an abstract idealisation of real things. What is found there is both wonderful and useable, but it is NOT the driving set of essences that mathematicians believe it to be, but, on the contrary, an abstraction of factors from an unavoidably complex and mutually-determining Reality into purely formal and idealised patterns, which do not exist, as such, in totally unfettered Reality.

Nevertheless, it was a stimulating and conquerable area, and led into the most wondrous World of Pure Form alone. The elements dealt with in that formal world were, of course, also highly useful, in the Real World, as long as you could maintain the necessary idealising physical contexts that allowed successful analysis, and revealed those selected-for, idealised forms. It was because of this that the remarkable pair of disciplines – Science and Technology, could be effectively built upon that foundation, and thereby transform the Real World too.

Now, the above short preface was necessary because I spent quite a bit of time chasing the ideal, believing that in so doing, I would be revealing Reality as it really is! My area initially was tiling patterns, or Tessellations, not only in two dimensions, but decidedly more painfully, in three dimensions too.

The former area was a delight, and I concentrated upon re-entrant tiling units (straight-sided shapes, with a least one vertex facing inwards – like a T or an L form for example). I did a great deal of investigating of Families of Re-entrant Tessellations that could be compatible with one another, enabling tilings without any gaps, and made some interesting discoveries.

As time went on I switched my studies to 3D, and stuck to re-entrant shapes there too. I finally found a form that did fill space completely – and, surprisingly, in three different ways. It was an infinite strand, with identical, L-shaped, re-entrant faces. And, surprisingly its outwards pointing vertices traced out a pair of helices (as in DNA)

I called it the Soma Strand.

No-one was the least bit interested, in spite of a great deal of model making, and the completion of a proof of the three different ways of stacking of the strands to completely fill space. They also acted as ideal templates for self-replication, which also seemed important to me.

Now, having, myself, moved on from such a stance, I now find that famous physicists, including Paul Steinhardt (of Cosmic Inflation fame) and of course Professor Roger Penrose have been interested in the same sort of investigations as I had been pursuing. What has emerged from these investigators has been the attempt to extend Roger Penrose's mixed-unit quasi-tilings into 3D, as quasi-crystalline forms, but these were clearly mixed solutions and worked from known non re-entrant crystals into more complex "minerals".

Paul Steinhardt finally theoretically established that such a mineral could exist, and after 30 years of searching he finally found an actual concrete example, and could properly investigate it. But, his explanation seemed to have only been possible via a series of amazing coincidences, including colliding meteorites in space, and a capture of the results by Earth. If nothing else, that mammoth undertaking proved where pure form could take you – a very long way from concrete Reality, and into the extremely unlikely, if not the actually impossible!

The fact that Steinhardt and Penrose's approach is now the norm in sub atomic Physics, and in order to find what they theoretically predict takes absolutely enormous undertakings to match Reality to Theory, make it clear that what is determining the route is indeed "out of this World"!

NOTE: The article, which elicited this paper, is in *New Scientist* (1986) under the title *Rock From a Hard Place*

Synchronised Resonances and Recursions

Why does a system, with a part that is susceptible to resonance, actually resonate?

If we have ideal arrangements like tensioned strings, or appropriate length tubes, they very easily pick up energy from vibrations that are, or include, the same frequency vibrations as the part affected. The most obvious such source, is some sort of closely adjacent, or even purposely linked, initiator, and though the energy involved in that apparent source can be quite small, the resulting vibrations in the receiving part are certainly a great deal more noticeable. Yet, entirely unrelated sounds or other vibrations don't have this effect, and the potentially resonant part is unaffected. It also seems likely that the absorbed energy is NOT solely from the appropriately tuned initiator, for once it has triggered the resonant response, the now vibrating system or part seems to gather energy from other sources that are NOT ideally related to the resonant frequency at all.

NOTE: If this assumption turns out to be true, it will be extremely important. For it, by some means other than a passive, direct transfer of energy alone, must be delivered on quite a different basis. For, the resonating part would then be doing something different: it would be increasing its own amplitudes of vibration at the expense of unrelated, though energy-involving, other sources. If it does turn out to be the case, it would mean that already resonating entities could also absorb normal temperature-caused vibrations of non resonant surroundings, and would hence cause a loss of energy, and therefore a drop in temperature of that source.

The resonating experiments of Yves Couder seem to extend what is actually going on in some resonant systems in important ways. Indeed, his basic materials for his experiments were not what you would normally expect for a resonant system, which is normally conceived of a structure of solid parts, though including surfaces or volumes of air that could also be affected.

Couder, instead, used a shallow tray filled with a silicone liquid. And, even his initiator wasn't so constructed to give a single appropriate frequency either, for it was a falling drop of the same silicone liquid. When you think about these two essential components, it is hard to imagine any kind of resonant system being set into motion. But, Couder had chosen his basic substance very carefully, and had an idea how it would be more suitable for his intentions than almost anything else! He decided to localise his inserted oscillations into a single direction – the vertical. His tray of silicone liquid would be bodily oscillated vertically, and his drop would naturally be falling vertically too.

Now, these choices may still not immediately suggest resonances, for even his oscillating tray displayed no waves in its contained liquid; it was apparently “still” within its moving tray. But, the contained liquid would indeed suffer some internal stresses under gravity, as the tray changed direction twice within each cycle. Also the silicone liquid would have the usual surface tension effects if affected in any way.

Now, as you may have guessed, the drop of the same liquid would on reaching the tray of liquid, be simply absorbed, with a transient surface wave occurring at the point of impact, which soon passed away. But, remember the whole tray was under a forced, vertical vibration, so it could be possible that the tray of liquid could be moving UP, just as the downwards falling drop reached it, immediately followed by it moving downwards again. There was a chance of a kind of impact! So, Couder varied the amplitude and frequency of his tray of oil, AND the height from which the drop was released. Things began to change! And he finally got the drop to bounce.

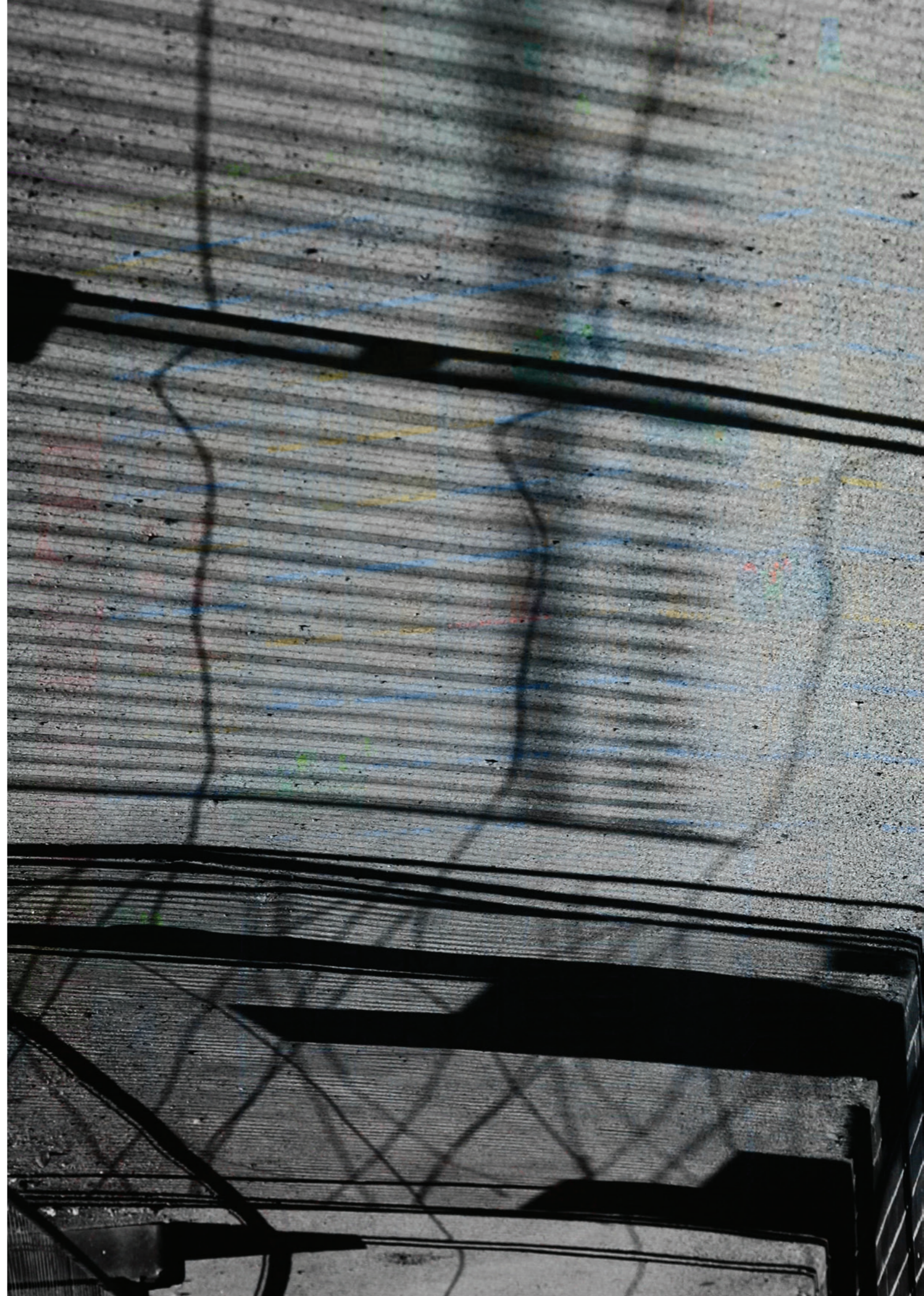
Continuing his adjustments, he managed to get his drop to bounce every time it fell back to the vibrating tray. And, that wasn't all! Clearly the properties of the silicone liquid also came into play, and the repeatedly bounced drop also produced a maintained surface effect in the tray of liquid, which became a maintained standing wave.

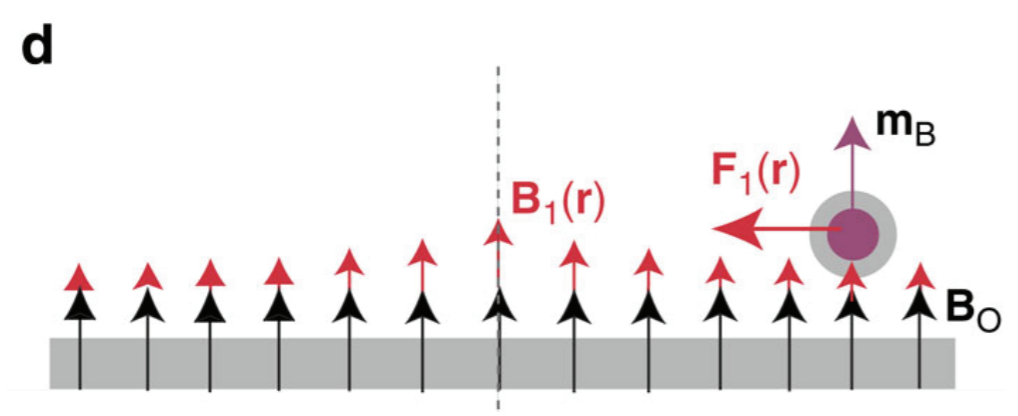
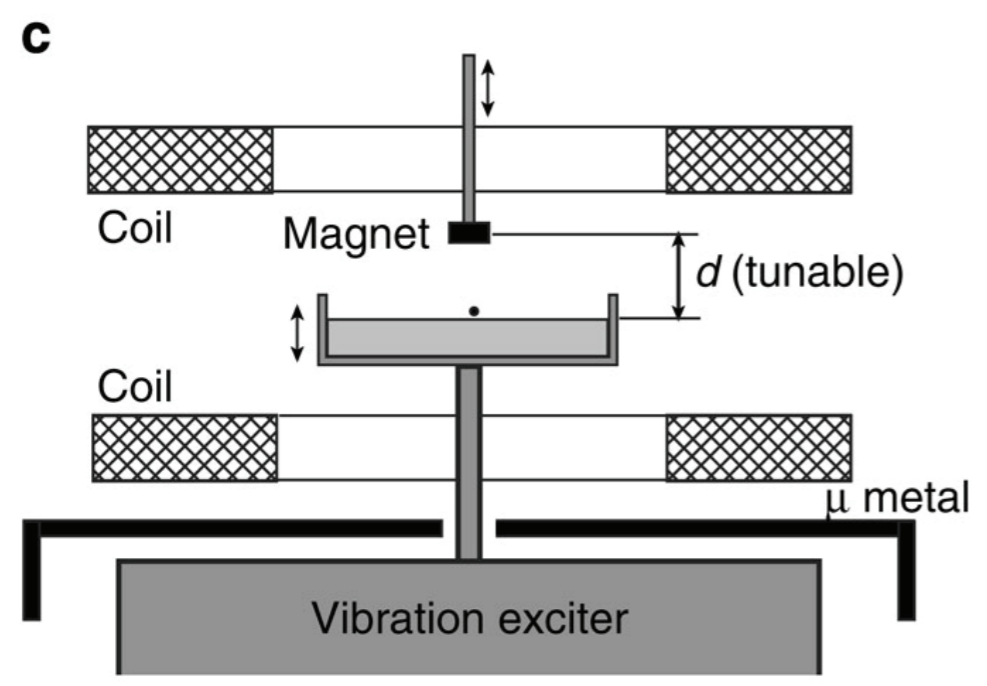
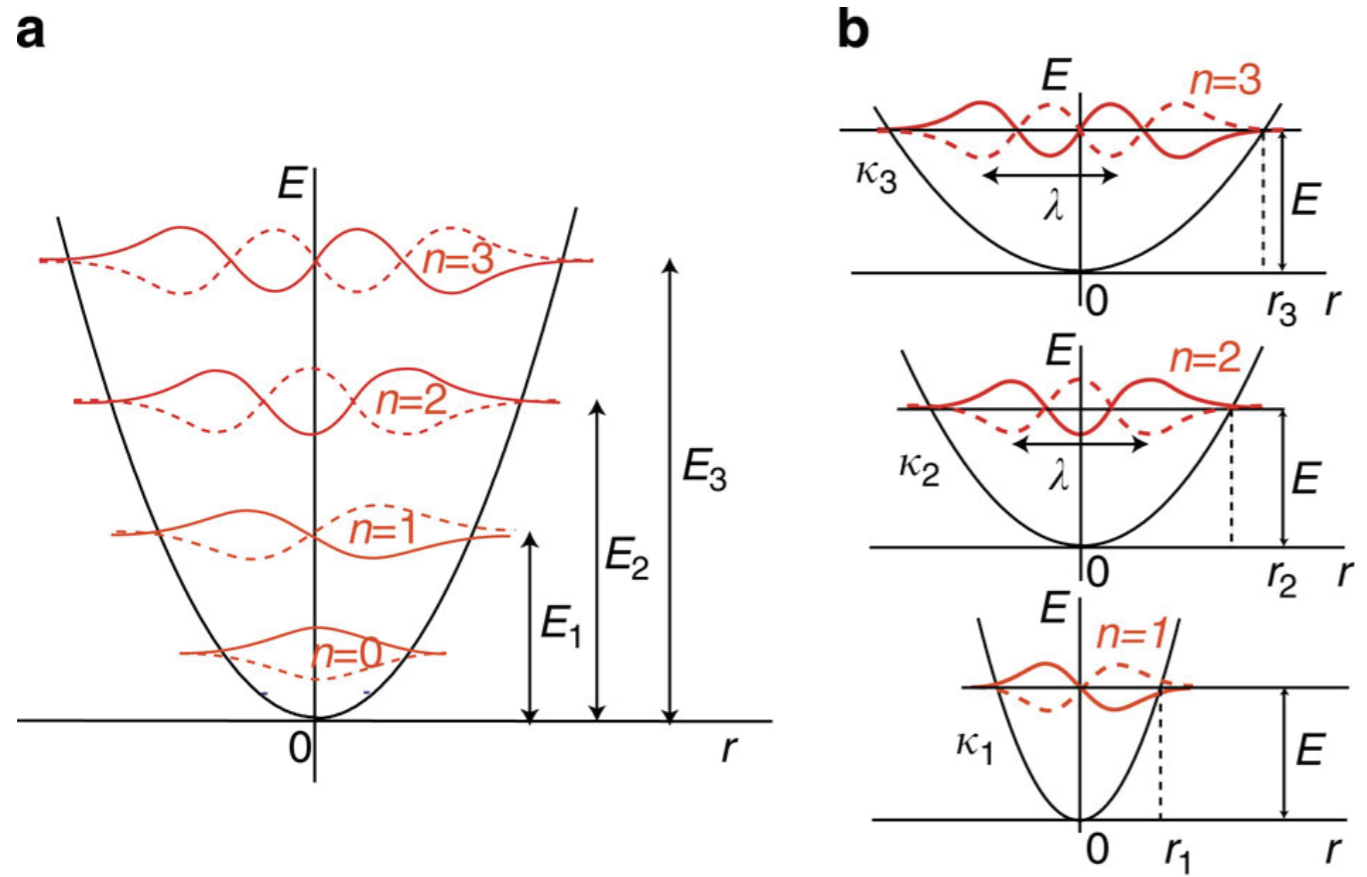
This produced “system” persisted without any further intervention. Clearly, this wasn't merely an example of resonance, for there had to be recursion too. It was a mutually-interacting system, which out of JUST a liquid had produced a persisting stable interaction.

Couder called these entities “Walkers”, because if the drop came down onto a sloping surface in the Standing Wave, it caused the whole entity to move (or to “walk”, hence he called them “Walkers”)

Now, the reader would be forgiven for dismissing this creation as a cleverly produced trick, but it was certainly more than that. When he added an extra circular motion to his tray of silicone liquid, the “Walkers” still persisted, but moved around in orbits – but only at specific radii. Couder had created quantized orbits in a liquid without any QUANTA!

Now the commonest systems, at all levels in Reality, are those where one entity orbits another – all you need is a force of attraction and a relative speed of the appropriate value, so the sort of things Couder was experimenting with were certainly not exotic. And, if the system could be theoretically explained it could be invaluable elsewhere.





And, that appears to be quite possible: the phenomena involved are primarily resonances and recursions, interacting to create a stable system.

Now, that explanation is doubtless already underway, for Couder insists that once established, the drop never actually touches the liquid in the tray, the system has settled into a synchronised set of movements, and seems to be supplied with energy from the forced vibration of the tray of liquid ONLY!

Now this system cannot be explained by resonances alone: there has to be feedbacks from effects back to causes – there must be recursion too! There just had to be a feedback to the cause – the falling drop, not only by the upward oscillation of the whole tray of silicane, but also by the produced standing wave in the surface of that liquid. The latter is proved by the fact that if the drop came down upon a sloping part of that surface wave, it would cause the whole system, the “Walker”, to actually move about on the surface of the tray of liquid, without losing its integrity – it remained an otherwise unaffected Walker. Indeed, Couder found that he could cause several Walkers upon that surface, all moving about, and, also, “bumping off” one another and the edges of the containing tray.

Now, the reader might well wonder why these “clever tricks” were getting such attention. But, there are many important theoretical consequences of these experiments.

First, there is the obvious conclusion that a series of oscillations both of an object (the drop), and of a “substrate” (the tray of silicane oil) could form entities with persistence and properties. The Second conclusion came from his adding of a rotation to the whole system, which resulted in the production of “quantized” orbits for his walkers. Only particular radii were found to be possible.

Now, elsewhere, quantized orbits have been indissolubly linked with the Quantum in sub atomic electron orbits, while no such cause can possibly be associated with Couder’s discoveries. So, they put in question the Copenhagen Interpretation in the Sub Atomic Realm!

Could resonances, recursions and substrates be a more general context for such phenomena?

To Be Or Not To Be?

What must not be lost in replacing prior theories?

Here is an important question.

It is about my interpretation of the Double Slit experiments, for they are considered to deliver a cornerstone of the Copenhagen Interpretation of Quantum Theory.

Now, I am well aware that ALL theories will inevitably be insufficient: the best that we can expect is that they contain more Objective Content (aspects or parts of the truth) than what they replace. So, a steadfast defence of MY “important” contribution is NOT my concern here.

Other things are vastly more important.

For example, was that theory of mine a dialectical and transcending achievement, or was it merely yet another analogistic model - and hence did not defeat the Copenhagen position?

This question is important, because it is very easy for me to slip between my two main current areas of research, which are:-

1. Analogistic Models in Science
2. Dialectical Reasoning & the Holist Approach (Marxism)

And, these are not the same, though it is conceivable that a dialectical approach might well lead to a new analogistic model, by demolishing the prior assumptions upon which the older theory was based. And, the final product could then be debated and judged without reference to how it was arrived at, and what new stance had been necessary to generate it.

So, after a lifetime as a scientist, and a large part of that also as a mathematician and computer scientist too, it was almost inevitable that the methods, which I had learned in those disciplines, along with the current consensus standpoints within them, it would still be my first port of call, whatever my principled intentions might be.

So, I must make absolutely clear exactly what I did in that crucial period of work, and the outcomes that it produced. For, if it is merely a new and better analogistic model, then it will still be a very limited, if better, step forward, and will sooner, rather than later, again bring us to another halt.

My doubts are intensified by some of the consequent developments, arising out of my Double Slit theory. For, there is no doubt that the assumption of a space-filling substrate is significant, and that such suggestions have been

made before! But then it was on the old basic standpoint, and has been wholly discarded for reasons found even then, some considerable time ago.

The example I am referring to is the suggestion of such a substrate in the form of a transparent, elastic and massless medium, termed *The Ether*. For, that had seemingly laid the basis for an “understanding” of many previously inexplicable features of what was formally regarded as totally Empty Space, and for the very same reasons as my own suggestion of a rather different substrate - as the intermediary and communicator between entities occurring there, to promise an explanation of both the Propagation of Electromagnetic Radiation and the ubiquitous Action at a Distance.

And, of course, the expected reaction to this new proposal has been the dismissive – “But, you are just re-vamping the old idea of the Ether, which has been totally and finally dealt with already. So the rest of your theory undoubtedly falls with that insupportable basis!” But, there are some very important differences of the new substrate to those allocated to the Ether. The most import being that it is NOT a medium, but a 3D “paving” of already known sub atomic particles. And, these particles are both invisible and undetectable due to very acceptable reasons. Indeed, these same particles can be shown to be entirely capable of both holding and passing on discrete quanta of electromagnetic energy – this paving of space can propagate!

What’s more, with the holding of energy above a certain threshold, such particles naturally dissociate in one electron and one positron – the well-known phenomenon of Pair Production!

Now, clearly, by now, the reader will be impatient to hear what this already known particle is. It is in fact a stable version of the positronium - which has thus far always been considered to be very unstable, but as all observations of it have been in very high energy Accelerators, that is not surprising! The new, stable version will act in exactly the same way as the positronium, in those extreme circumstances.

But, elsewhere as a very stable entity, it has been renamed as the Neutriron. It is a mutually-orbiting pair of one electron (negative and ordinary matter), with one positron (positive and of anti matter). And, as such, it is not only undetectable but can hold a quantum of electromagnetic energy in the very same way as the atom – by the promotion of its mutual orbits.



Clearly the ubiquitous, disembodied photon is an individual moving neutrutron, while its nature when not holding such extra, carried energy will be as an Empty Photon. The idea of all propagation of electromagnetic energy through totally empty space as disembodied energy, is thus replaced, but NOT by a shower of such moving neutrutrons!

Instead, though individual moving neutrutrons do occur, the main mode of propagation will be by a bucket-brigade passing on from paving unit to paving unit of individual quanta of energy.

Now, there can be no doubt that this theory is significantly preferable to its Copenagenist predecessor. It explains more, and is consistently materialistic, whereas the many developments directly from the Copenhagen account are uniformly both speculative and idealist.

But, nevertheless, assuming such a substrate of the whole Universe has profound implications, and they are considered to be far too demanding of the wherewithall to deliver it, and hence to be barely credible. Indeed, some are so breathtaking that they may lead to the Theory being condemned – out of hand.

Yet, on the other hand, subsequent developments from that theory are regularly producing results, which could be of great significance – particularly in Cosmology. The most important of these are to do with the nature of the Big Bang, for the whole question of how such a substrate could have been formed must be seen, not only as a development of that Event, but as a still continuing process.

So, two crucial questions are immediately evident! The first is about a possible Edge to our Universe, and the second concerns just how even and dense would be that substrate in different regions throughout the Cosmos. Another area must be in the effects or hindrances such a substrate might be, with regard not only to all moving bodies, but also to all current theories too.

Indeed, such considerations have led to a considerable number of papers on several of these topics, and they are currently the most visited on the Internet [SHAPE Journal]. [And crucially, only a small fraction of the already completed papers have as yet been published.]

Yet, without a doubt, it is even more important which possible spaces are considered to be so-paved? Does it include the inner spaces within atoms? Are the electron orbits actually “ploughing through such an internal structure, or even interacting with it in some complex way?

Now, once again the expected cry of “Just Pure Speculation!” is the most likely response. Except that the current brilliant experiments of the French physicist Yves Couder, may well throw a very different light upon these arguments.

For Couder’s “Walkers” are stable entities seemingly occurring in nothing more than a single liquid context, which has as its basis a substrate of silicone liquid, on top of which he has a bouncing drop of that very same liquid. And, by a system of resonances and recursions, these Walkers act as persisting and movable entities.

Now, these can be, and usually are, merely passed off as clever tricks, but such dismissals rang very hollow, when he managed to be able to get his Walkers to move in “quantized” orbits.

For, in Couder’s experiments, the crucial, enabling component is undoubtedly his “substrate” – a tray of silicone liquid, which is kept constantly vibrating vertically at a fixed frequency. Without this basis, none of his remarkable achievements actually occur. And also without the correct frequency of that vibration the phenomena also do not appear. Clearly, it is not only the presence of this substrate that is important, but also the relation of its frequency to others in the produced system. The phenomena are initially and vitally about Resonance!

But, having clarified its role, it is nevertheless difficult to see that substrate as essentially similar to any more universal analogue. For, though his experiments are certainly only analogistic models, they do have a component (the substrate), which supplies a crucial vibrational component, and also a vital, continuing source of energy.

NOTE: We should not dismiss his work simply because he carried it out in the macro domain. He did it purposely to make overt what was going on, so that he could both see the effects, and intervene, until he achieved his objectives. Indeed, this transference did another significant thing: it excluded any “explanations” dependant upon the Quantum.

So, if my suggested “paving” and Couder’s “substrate” represent the same, real thing, then such a universally applicable assumption has absolutely colossal implications.

Indeed, that substrate MUST be material, and must, overall contain truly gigantic amounts of residual, constitutional energy, as well as that “free energy” currently being propagated throughout its extent. It also implies an Edge to the Universe!

Now, this possibility has long been an anathema to cosmologists. They do not like such boundaries, for they have profound implications for what we see. For example, not only will electromagnetic radiation be limited by the termination of that substrate occurring at the boundary, but also it is also likely to be impossible for such radiation to go beyond that limit.

And, even this has further implications! For example, any stream of quanta approaching the boundary via a passage through elements of the universal

paving must cease, for it has nowhere to go, except back into the substrate: a form of totally internal reflection seems inevitable.

Now, such a feature would transform what we actually see in the heavens. For, we will see both direct vision of real objects, PLUS virtual images of them reflected at the boundary, and in consequence appearing “well beyond it” AND in the wrong place. Indeed, because of different length paths for the light, we will see the same reflected objects as they were at different times in the past, from when we see them directly: they will undoubtedly appear different! In addition, any boundary will become invisible, due to seen virtual objects apparently beyond that real edge. Now, there is a great deal more that I could bring up here. I have written extensively about these effects.

But, crucially, its disproof might bring the whole edifice crumbling to nothing, as it effectively did with the demise of The Ether, and that might be yet another tragedy – a case of throwing out the baby with the bathwater! But, not for me, and my theory – for that is certain to be improved upon, but for what Objective Content it does contain. The anomalies of Empty Space must not be returned to as certainly happened after the demise of the Ether ideas.

I submit that the Double Slit contributions do indeed include an important advance, though, as always, couched in the only possible forms currently available, and hence requiring its inevitable replacement.

But, the gains must not be lost! And, even more importantly, the approach involved undermines fatally the myths of Copenhagen. And that was, and is, essential! Hence the correct assessment of these ideas is crucial.

