

SHAPE JOURNAL

THE SECOND LAW OF EVERYTHING
INTO THE COLD / THE SEEMING HEGEMONY OF THE SECOND LAW OF THERMODYNAMICS
DOWN THE PLUGHOLE TO LIFE? / HOW ORDER ARISES

1. The Refuge of the Second Law - Introduction
2. The Seeming Hegemony of the Second Law of Thermodynamics
3. Into the Cold: The Dead Icy World of Pure Form Alone
4. Points to be Addressed in Vedral's Paper
5. Down the Plughole... To Life? I
6. How Order Arises: Dominance, Stability and Life
7. Down the Plughole... To Life? II



Introduction

The Refuge of the Second Law



Welcome to issue 29 of the **SHAPE Journal**.

This small set of papers was a response to a significant change in the position of an establishment group of physicists, as their latest adjustment in coping with the continuing and unresolved Crisis in Physics.

For, though for many years (and even decades) mathematical-physicists have been rummaging through the seemingly endless depths of the World of Pure Form alone (Mathematics) for a solution to their evidently pressing need for a *Theory of Everything*, their many and varied, speculative journeys have become ever more unbelievable.

Yet, without in any way dramatically changing their avowed stance, these theorists have switched their attention to a very different area in the search for this required “end of the Rainbow”, and it is interesting what their new turn has involved!

For it does seem to acknowledge the real cause of their continuing dilemma – the lack of an appropriate philosophy as a basis for their driving laws!

So, from a purely descriptive/predictive pre-occupation with quantitative Form (equations) they have finally turned to the most “philosophical” of the Laws in their collection, with the purpose of finding there the hoped-for salvation.

They have turned away from trusting only Pure Form to instead address Pure Chaos!

Of course, though Mathematics has been, and still is, used even in this area, it is the Second Law of Thermodynamics that seems to fit their requirements most accurately. For it is not a relational law!

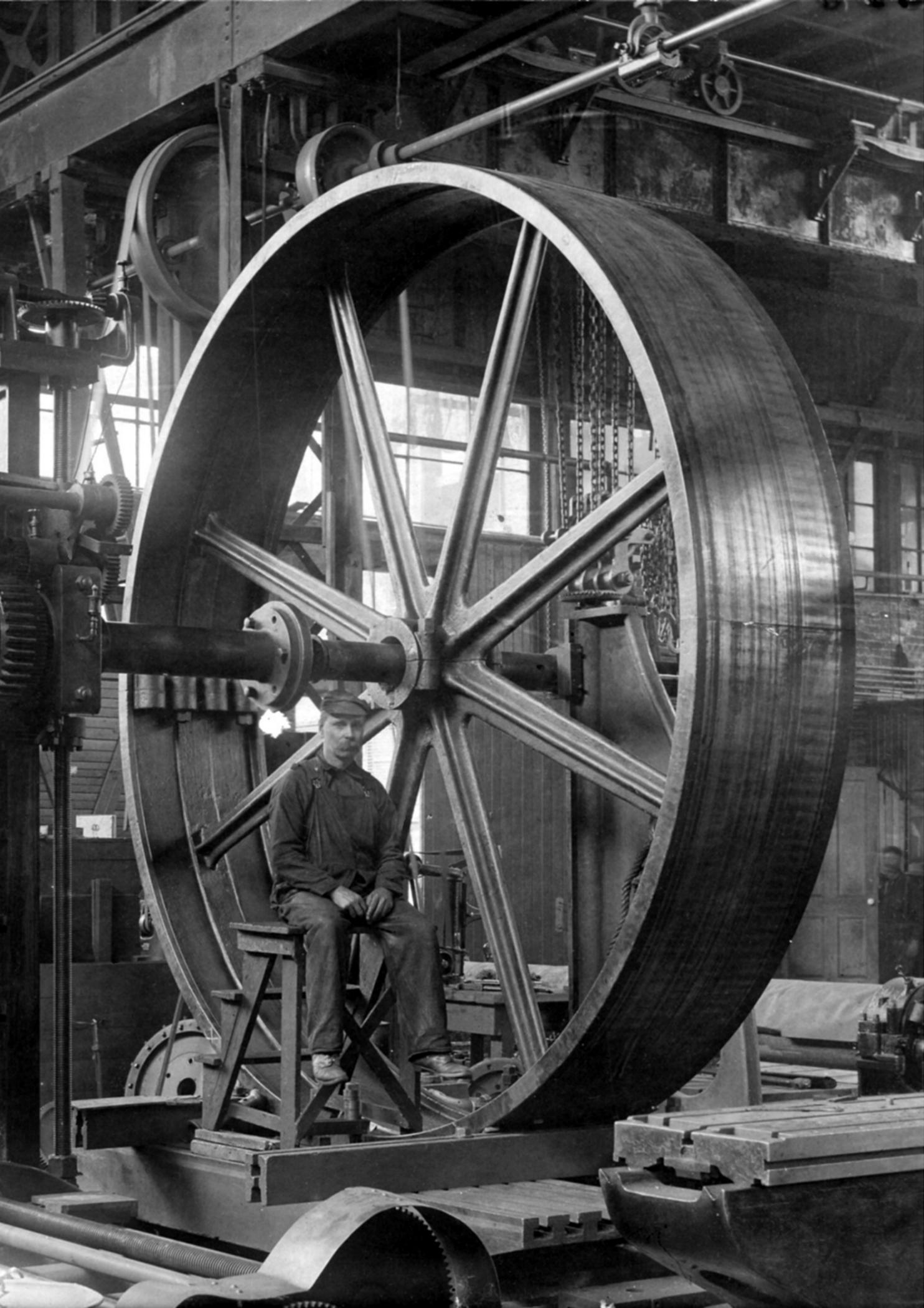
If anything, it is a philosophical Principle: that everything is perpetually running down: all Order is dissociating into all Chaos!

It is certainly appropriate in very many areas (and the engineers, who first thought of it, would insist that it pertains absolutely everywhere).

Two major contributions to this standpoint have recently appeared. One in the pages of *New Scientist* (2886) by Vlatko Vedral, and the other in a two-part TV series by Jim Al’khalili on BBC entitled *Order and Disorder*. Here are my responses to these positions.

Jim Schofield April 2013





The Seeming Hegemony of the Second Law of Thermodynamics

What we call Science is a very unusual beast!

Initially, in attempting to make some sort of sense of Reality, Mankind was unable to extract much from a varying and unreliable complexity. It was too intricate and changing to investigate properly.

And though, for a time, they could avoid the difficulties by concentrating upon the Heavens, where things were much more static and easy to measure and to relate over both time and space.

But, what was found there certainly whetted Mankind's appetite, and they returned to the everyday Reality that surrounded them, with the determination to force it into submission, and force out the relations that they knew must be there.

They sensibly picked the most stable situations that could be found, and investigated how they could make them more amenable to detailed study. They began to hold certain features constant, and eliminate, or at least drastically reduce, the effects caused by others.

Finally, they found that they could indeed modify a defined locality sufficiently for it to become an ideal Domain for both displaying clearly and unambiguously a particular relation.

The required objective in the real World had been established as entirely possible, though only in given conditions, and with a single relation in mind.

Mankind had found a methodology, and thereafter everywhere investigations were set up to construct appropriate Domains tailored for finding a particular relation.

Man began to extract more and more such "laws". But, sadly, on attempting to use them, he found himself in the same old difficulties that he had encountered in extraction. He just couldn't rely upon them. His area chosen for productive use of the given relation was in the same sort of way, beyond his necessary control. It was, however, soon realised that the same controls and maintained conditions that he had used in extraction would have to be once more provided when trying to use them.

Indeed, this overall methodology became standard, though considerably more difficult in production of some sort of required outcome, than it had been to merely extract a single relation.

Nothing useful could be produced by a single relation: the engineering task was to orchestrate a whole series of such "laws" to some conceived-of, complex and final outcome. Nevertheless, the heroes of several generations were certainly the brilliant engineers who marshalled "laws" to extremely useful purposes, and the Industrial Revolution was really down to their successes.

Sequences of appropriately "farmed" areas began to be used with confidence.

But, nevertheless, there was always "The Devil at the Door". If, for a moment, the user failed to maintain a particular necessary Domain, then all his efforts went to pot.

This whole set of processes was never an investigation of Unfettered Reality – exactly as it would be found without intervention to adjust it, but, on the contrary, it had to be both appropriately set up and then rigidly maintained. Each Domain had to be made ideal for a give relation to be reliably used within it. Making even fairly simple things became a Sequence of different processes, each performed within its ideally constructed and maintained Domain.

Now, let us be crystal clear.

In such operations, Science was conceived of as the "truths" of a succession of unnaturally constructed sub processes – each in its own mini World. And the relation in one of these Domains would NOT be true in the others: each "law" had its own accompanying World. You couldn't separate the law from its Domain.

And the sequence of Domains had to be rigidly controlled, and the transfers from each to the next carried out without contamination.

Any loss of the necessary control both within the Domains, and between them, would bring the production process to its knees.

The required outcome would not be achieved, or, if it did, it would be much less than an ideal system.

Scientists (or more accurately Thinking Engineers) began to call this pernicious problem the work of a single Law – the Second Law of Thermodynamics. It was the natural state reasserting itself that caused the best-laid plans to fail, due to this ever-present law, which naturally countered any stated intention.

But, it would look like that, wouldn't it?

Into The Cold

The Dead and Icy World of Pure Form Alone



Two things ensured this view. First, the engineering intentions in such areas, where quite unnatural outcomes were being achieved by the control, maintenance and marshalling of a of totally unnatural Domains, which together could make a brick house out of clay, sand and other natural resources, or a killing-gun from even more re-routed natural ores.

Of course, the maintenance of both the Domains and the finally produced product were necessary actions opposing-the-completely-natural processes, and if the rigor in such necessary routines slipped in any way, of course, there would be a re-instatement of the natural processes and their natural outcomes.

Our engineering was NOT self-maintained as happens with Living Things, for example. On the contrary, it was always precarious and subject to natural dissolutive processes if not energetically opposed [as Brian Cox took delight in demonstrating in one of his “Wonders” TV spectacles on the Devil’s Coast of Namibia with similar intentions to Vedral in his New Scientist article].

But, the Second Law was a conception inevitable from the position that we had come to espouse, all the time, and everywhere.

To make IT a Theory of Everything shows a very skewed homocentric view. It isn’t a scientific law, but an engineers’ conception, for it seemed to oppose everything they were trying to do.

It was certainly NOT a relation as his farmed and extracted laws were, but a background dissociative hum. To make it into a Law was unique. It was really a kind of philosophical conclusion, and a packing into a single “law” of innumerable natural processes against his Domain constructions and maintenance, AND the continuing existence of the products gained by such methods.

But, it was a recognition of the reaction of Reality to our unnatural methodology, and correctly qualified our extractions also as unnatural.

It had to be considered. But, unlike the limitations of our general methods, which were pragmatically accepted – “If it works, it is right!”, the dissolutive responses were philosophically grouped together as an overall Law.

You can see why these scientists realised its universality. But they did not see it as a reflection of their own methodology.

Vlatko Vedral’s piece in New Scientist 2886 (13 October 2012) entitled *In From The Cold* makes the Second Law of Thermodynamics, the long-sought-for Theory of Everything.

He starts well, considering probabilities as the technique of producing predictions when the usual determining equations are not available. And in this, I believe it was a correct line to take into considering our knowledge of Reality, and how we construct pragmatic means of formulating that current knowledge into useable Forms.

It is quite genuinely the other side of the coin from Laplacian Reductionism. Instead of looking up from below, it looks down from above, and sees overall patterns. But though research in this area must be crucial, you have, at the same time, to also be intensely critical of the general policy in current physics, a philosophical standpoint that is profoundly idealist and distorts current Science into dramatically aberrant growths.

For, instead of seeing Reality as the producer of all observed laws, they see it as the result of prior and eternal Natural Law. They actually invert a materialist position into an idealist one, for what determines their laws?

Disembodied, purely abstract Form is considered to be prior to concrete Reality. They even have such laws delivering the Higgs’ Boson as also prior to Matter itself.

Now, you can see Vedral’s objective: it is the same as that of all his consensus colleagues. He requires a Theory of Everything – effectively a Basis in Law for everything that exists in the current Universe

Now, it is interesting that both he and I are looking in the very same place with entirely opposite intentions. Whereas he is looking for the Theory of Everything, I am looking to expose the universal basis of Mathematics – in equations and patterns.

In his case, he will explain the World, and in my case, I will explain their formal World, which I call Ideality, and which is not the real World: that is most certainly Reality, and not the purely formal reflection of it.

Nevertheless various aspects of the position of Vedral and his colleagues are worthy of study. For example, his look at probabilities and their usual role, and the distorted role in the Copenhagen Interpretation is certainly important, and will be at the heart of the demise of that standpoint in modern Sub Atomic Physics in the future.

Points to be Addressed in Vedral's Paper

ONE:

At one point Vedral mentions Constantin Caratheodory, who in 1909 suggested that in any physical state, there are other states, which cannot physically be reached if we forbid exchange of heat. Now, he had the usual problems in mind, but his assertion could be seen much more generally.

For it has been clear for some time to this writer that the construction and maintenance of tailor made Domains must do exactly what Caratheodory suggested. Indeed, it would, at the same time as clearly displaying the sought-for relation, would also have to hide all others getting in the way of the simplest possible exposure of that relation.

So, this point must be related to my previous contributions on Plurality, and the double-edged sword that it most certainly is – by, on the one hand, delivering idealised and “separated” versions of contributory relations, while, on the other, deliberately reducing or even eliminating others which should not be so removed, for they do not merely add to the chosen relation but also change it.

And, though Vedral doesn't feel it necessary to mention it, David Bohm, for many years opposed the Copenhagen Interpretation by suggesting that there were “hidden variables” masked by the consensus position, and clearly his position also could be another view of the same pluralist distortions.

TWO:

Another point that arose in this paper was that of Bennett, who answered the problem posed to the Second Law of Thermodynamics by the existence of Life on Earth, which definitely took the elements involved in the exact opposite direction. This must be addressed in full and buried.

He seemed to insist that the content of Mankind's various models and theories extracted from Reality was seen as Information and would vanish on the demise of where it was held, thus restoring the Second Law's position. But, though this is drivel, it clearly has a basis in the role of Epistemology – the state of Mankind's effort to understand Reality.

Clearly, a full treatment will be necessary for these points too, if this atndpoint persists.

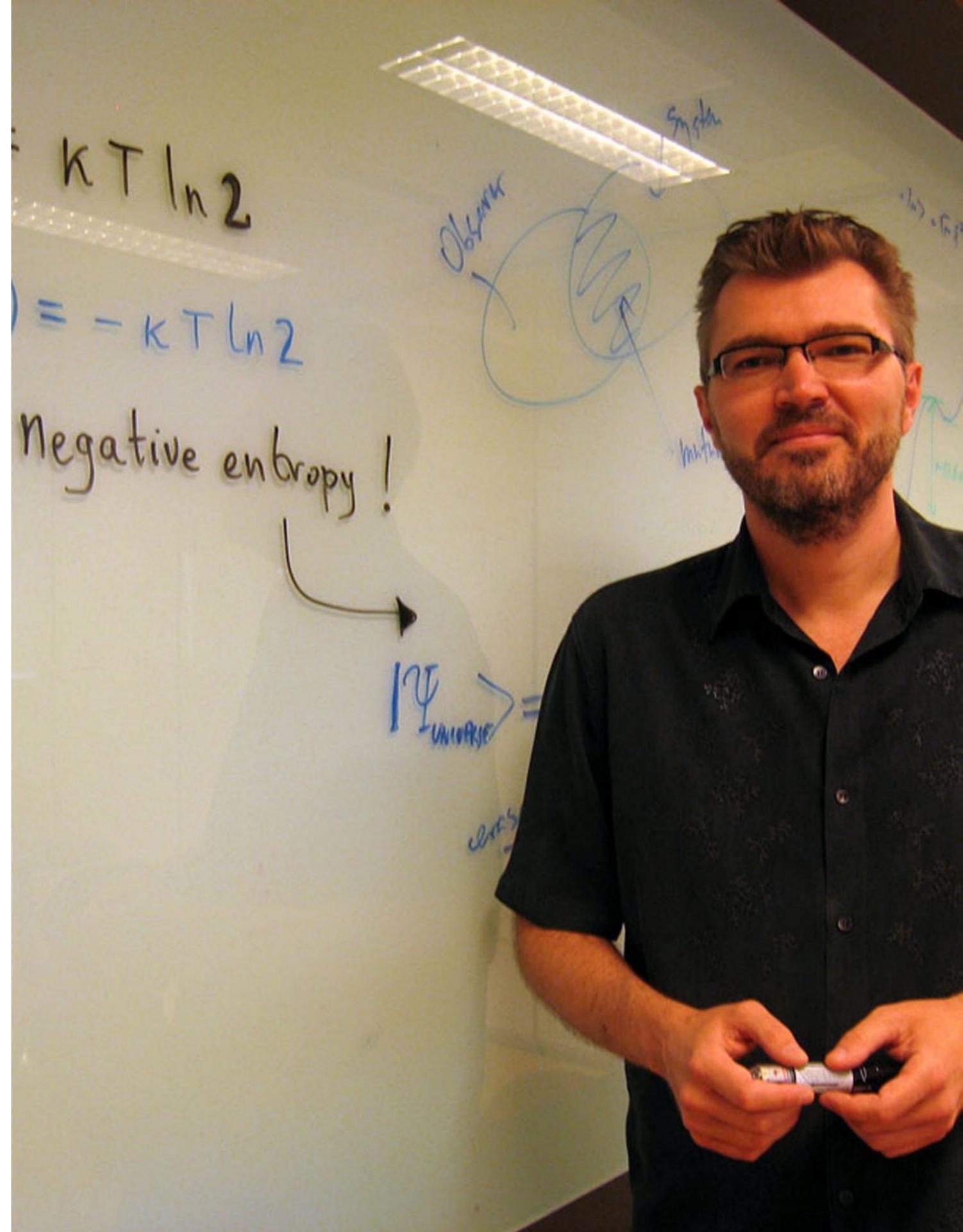
THREE:

The Fabric of pluralist Science, and the impossibility of either its comprehensiveness (due entirely to its discrete equations; why look for a Theory of Everything), or its incoherence, also due to those same separable relations, are clearly the reasons for rejecting this standpoint.

How can a bag of separable relations be a Science? It is surely merely an engineer's Tool bag!

FOUR:

It is suggested that the various scientists and mathematicians mentioned in Vedral's paper be individually dealt with, and criticised (or applauded) from a totally unrepresented and alternative position – that of Modern Holism, interactive development, Stability and most crucially of all, Emergence. These seem to be:- Carnot, Clausius, Clerk Maxwell, Bennett, Landauer, Shannon, Boltzmann, Laplace, Schrodinger, Muller, Dahlsten, Hanggi, Wehner, Deutsch, Caratheodory, Joule, Einstein





Down the Plughole.... To Life? Disorder and Jim Al-Khalili

Having read and responded to Vlatko Vedral's recent piece in *New Scientist* (2886), I turned to Jim Al-Khalili's TV contribution *Order and Disorder* for BBC 4 a couple of days ago to find a closely related position, though in a much more populist garb. Again, we are introduced to the imposing Second Law of Thermodynamics as the most crucial and directional of all laws. Once again the dissociating imperative that turns all Order into Chaos (Disorder) is identified as the real driving force(?) of Reality.

His introduction re-iterates the usual beliefs, such as the one that sees Reality as driven to what it is, and then becomes, solely by eternal laws (like the Second Law). The task of scientists then becomes primarily that of discovering all these laws, and then automatically "being able to understand" (?) everything!

Such a standpoint is, of course, primarily pluralist in that it sees all these laws as both separable and eternal, and idealist in that it is abstract, formal descriptions of relations that make Reality what it is, rather than that the exact opposite – that Reality makes the laws what they are, and then only in very specific contexts.

Clearly, with such a view, none of these laws are eternal or universal in concrete Reality: they only become so when abstracted out into the World of Pure Form alone. This turns out to be crucial.

But, significantly, the settling upon the Second Law, in a sense, reveals their unease about their usual view. For the Second Law is intrinsically different: it isn't a relation mined from a constrained Domain to reveal the way certain measureables are linked. It is, in fact, a kind of "philosophical law" (still eternal and primary, but NOT a relational law). It is more like a Principle! It is seen as underpinning everything. The natural flow of all change is seen as being from Order to Disorder.

Now, it was, of course, first realised by engineers, who were attempting to use normal relational laws to some intended purpose, and they noticed that opposing their efforts at every turn was an all-pervading dissolution. Any cracks in their necessarily constrained and maintained Domains of Applicability, led inexorably to this dissolution.

As I mentioned in the paper on Vedral, even Brian Cox made similar points whilst standing among total dereliction on the Skeleton Coast of Namibia.

But, of course, the Second Law of Thermodynamics isn't a law! It is the summing of many dissociative processes into a single direction – downward!

When Rule Number One is to rigidly constrain your area of study with all sorts of altering, weeding and controlling modifications, in order to most clearly display your sought-for relation, then these opposing relations seem to be aspects of a single countering law. They are not! They are just parts of actual unfettered Reality doing what they always do. Why make them King?

Now, you can understand pragmatic engineers formulating such ideas as "the Devil to fight" (at least it isn't a displeased God!) But, the presenters of this programme are supposed to be *scientists*. They don't just succeed in making something that works: on the contrary, their job is to understand and explain why things are the way that they are. And they know it!

So, this "more philosophical law" seems a good place to start, IF and only IF, they not only remain doing what they are doing, but also explain why the World is the way that it is.

They know that a natural general change of Order into Disorder cannot stand-alone. For, as such, it is incompatible with Reality as it is, and as it has developed over billions of years of its history.

Too many quite obvious questions are banging incessantly upon their doors.

"Where does any Order come from?"

"What is Life if it isn't Order?"

"How can you explain Evolution in terms of increasing Disorder?"

And, of course, innumerable others of a similar kind demand to be answered. These scientists have a major problem!

How can they explain Reality using only a dissociative imperative such as the Second Law? Believe it or not, they think that they can do it!

At this stage in the series of TV programmes, they haven't yet delivered their explanation. But with sweeping statements such as, "The Second Law is what actually caused Life to appear!", and similar stuff, they, I believe are

most likely to take Bennett's contributions on Information Theory as their basis, but we will no doubt see their line in future episodes.

So, in anticipation, let us take this assumption of mine and try to describe how the conundrum of the emergence of Life is explained by such ideas.

They seem to add a rider, which allows more Order in special circumstances, but only at the expense of much less Order elsewhere (kind of arithmetical don't you think?) I was given this sort of reasoning when I was a Physics student many moons ago, and I didn't believe it then either.

For they argue that the increase in Disorder (generally) always far-outweighed any increase in Order (in some special locality).

And it has been argued that the drive to Disorder is conducive, though only locally and temporarily to actually produce Order. Now, they get away with such nonsense because, in a very different way, it has a grain of truth within it.

Disorder does indeed play a role in the creation of Order. The timeless myth of the Phoenix Arising from the Flames of Destruction, was not a mere fairytale.

But, let us be clear, the revelation of what was behind this idea is absolutely nothing like what these scientists are peddling.

The study of Stability and Dissolution has revealed that Stability does not arise due entirely to conducive, mutually-supporting and constructive processes alone. An essential set of components without which Stability could never triumph, turn out to be fiercely dissociative processes selective of certain opposing competing systems. A Stability will only win against alternative systems by not only its intrinsically successful constructions, but also by its included aggressive and even destructive outwards acting "policemen processes"

Thus echoes of these things naturally become part of communal wisdom and can be diverted to support the position of these mistaken scientists.

Now, as with all debates (or arguments) of this type, most of the agreed bases on both sides never get aired, and, of course, then NO resolution is ever possible, unless the underlying assumptions prove to be so incorrect as to bring a whole edifice tumbling to the ground. But, it is necessary, therefore, to proffer the available evidence for this author's alternative position.

It can't, as you will appreciate, be stuffed into a single review such as this, but the major writings by this author

on these questions are all freely available on the Web, mostly in 3 years of issues of the SHAPE Journal, but also as postings on the SHAPE Blog, and as videos and animations on the SHAPE Account on YouTube. Indeed, the latter has led to many comments, which have been responded to with both postings on the Blog and articles and even Special Issues of the Journal.

For those who require more than an argument confined to a review such as this, these much more extensive offerings are recommended.

The Tuesday 9.00 pm offerings of Jim Al-Khalili & friends will be followed with interest and responded to immediately.



How Order Arises

Dominance, Stability & Life!

Dynamic Holism versus Static Plurality

Now perhaps, we must go much further in considering Dominance, for it occurs throughout a whole hierarchy of levels in Reality, and thus complicates and enriches classical Holism to a considerable degree.

For our explanations, so far, have taken the classical holistic standpoint, which has ensured that it still does not deliver what actually happens, either in detail, or throughout that hierarchy to give it its undoubtedly creative nature.

In fact, in a classical, idealised holist mix, dominances will come and go incessantly, without leaving behind any significant or developmental changes, for, in actuality, such a purposely, idealised version does not generally occur.

Indeed, we must go beyond individual contributions as separable, yet sum-able processes, and consider just how these components affect and change one another, not only towards a possible process dominance, but also to produce overall Systems, where all processes would be changed by one another, whether dominant or undetectable. Hence, taking all contributing factors together, we must consider not only the temporary coming to prominence of individual dominances within any holist mix, but the association of processes into mutually conducive proto-systems, where particular individual contributions benefit from others, and also vice versa, so that collections of such operating processes grow at the expense of others not so collectively well-endowed.

NOTE: It is precisely in these objectives that we part company, in a totally principled manner, with the consensus scientific standpoint. For that is always pluralistic, and therefore sees analysis as totally legitimate. It is their firm belief that all contributions to any complexity are always separable – that is independent of their individual contexts. For then, the usual scientific Domain farming prior to a subsequent confined extraction of an eternal relation is considered valid. But that is certainly NOT the case. It may well be a necessary pragmatic technique to enable certain objectives to be fulfilled, but philosophically, that is concretely, it isn't true!

Now, even such a higher-level system could also clearly zoom off to dominance, not as a single process, but here as a System of Processes. Yet no such system can ever be entirely independent of its environment. It will depend on its context for its initial resources, and will still use that same context as a dump for its useless-to-it waste products.

It can, therefore, both exhaust its supporting environment of required resources, and even poison it with a surfeit of its wastes.

So, it is conceivable that such a system could more or less out-perform its less well-endowed rivals, to finally totally dominate, only then to surprisingly collapse by ruining the essential environment on which it rests.

We are, clearly, deeply embedded in a holistic World, and NOT the pluralistic World that we constantly attempt to make it.

So, the only salvation for such self-defeating systems is that its component processes, probably in conducive sequences, also form Cycles!

In such situations, the end process in a sequence would produce the required resource for the first process in that same sequence, and thus, to an extent, be relatively self-supporting.

Indeed, separate sequences may also form lateral associations (particularly of unconsumed, but vital, catalysts or inhibitors) where products become essential controls to other systems too.

Whole parallel families of sequences could grow up, feeding each other, and perhaps only depending upon the environment for only the most abundant and inexhaustible basic requirements.

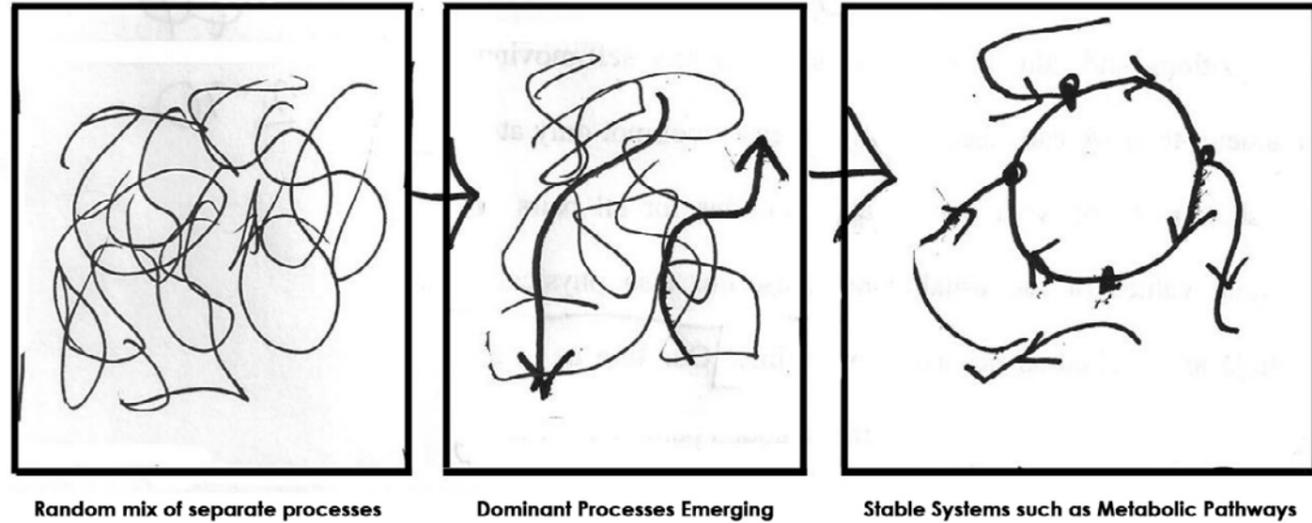
After all is that not what Life is, and the above description is almost a definition of the famous Metabolic Pathways System?

NOTE: Consider the environmental necessities for plant life – the Sun, the air and water!

Clearly, therefore, while chasing the definite appearance of Dominances in Reality, we find ourselves having to raise-our-game by having to consider, not only close advantageous relationships between processes to ensure a given process's increasing success, but also, and unavoidably, its role in systems of processes, the crucial contribution of cycles, and the inevitability of Stability, to plumb the question of Dominance completely.

Yet Tempo inevitably intervenes for nothing is eternal. In the end all things pass and the totality certainly changes.

Nothing remains permanent! Constant changes, though usually countered by appropriate sub processes within a coherent system, will ultimately breach the security of the system and weaken it, allowing other previously inhibited alternatives to grow and compete. Even Dominance is temporary, and though at a vastly different timescale, Stability itself is too.



Indeed, there exist both of the seemingly opposed kinds of change always present within Reality – the incremental, relatively smooth changes, and cataclysmic, revolutionary changes. For one actually causes the other: but *Level* is crucial!

In an ideally conceived-of holistic World, the bottom-up-only conception becomes inadequate for interactions become processes, and processes become systems, and systems become Levels, and at every stage, on this hierarchy, new relations are possible and these have top-down effects.

Now, this means that in an ideal, totally random situation some changes at the bottommost level have no major constraints; they can happen all over the place, and all the time. But, as such, they have no overall effect, and indeed do, “team-up”, and begin to form higher proto-systems, and (still in an idealised World), these will compete with other proto-systems. But, even there, surprisingly, such associations can ultimately demolish the assumed random, going-nowhere mix.

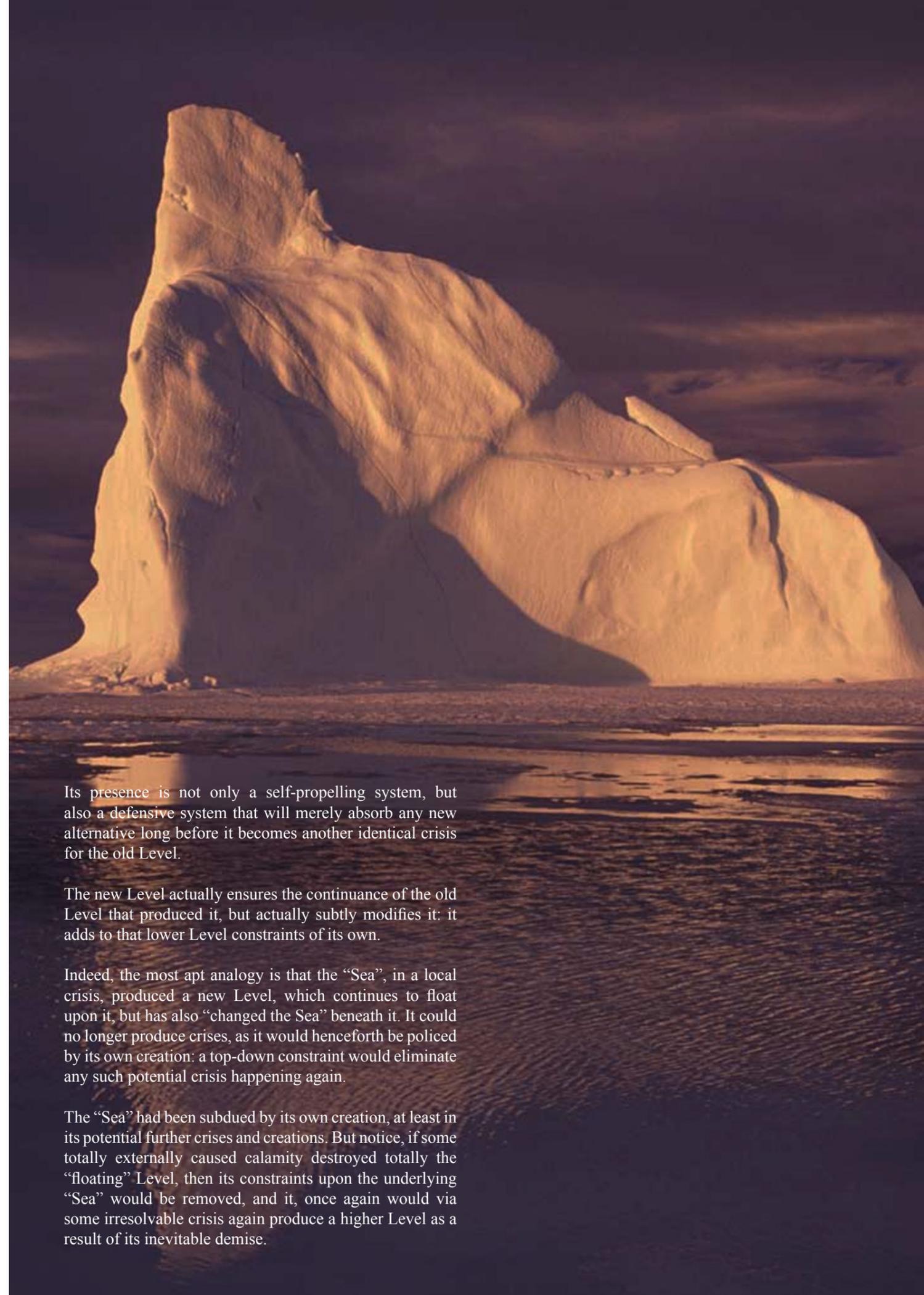
A particular proto-system can integrate purely destructive processes within its aegis, because they make its success more likely by attacking other competing proto systems.

Something new has occurred! And it changes the game entirely. The supposed ideal random mix is finally destroyed and Dominance of a proto system results in what we call a Stable Level – a Stability!

Perhaps the most perplexing feature of Levels is that though they form a hierarchy, and each new and higher Level arises out of the demise of its producing lower Level, that is never a global crisis: it is always initially a purely local Event. The producing crisis occurs where the prior stability is no longer sustainable, while elsewhere that prior Level continues as before.

Indeed, the new Level does not absorb the older Level everywhere. That never happens. Indeed, the new Level only appears in a locality where the old Level collapses. It is the result of the demise of the old Level in its own terms, but it occurs locally due to its own contradictions in that particular place.

Thereafter, the new Level and the old Level co-exist, and remarkably, the presence of the new Level prohibits any repetition of the crisis, cataclysm and creation that occurred in its own birth.

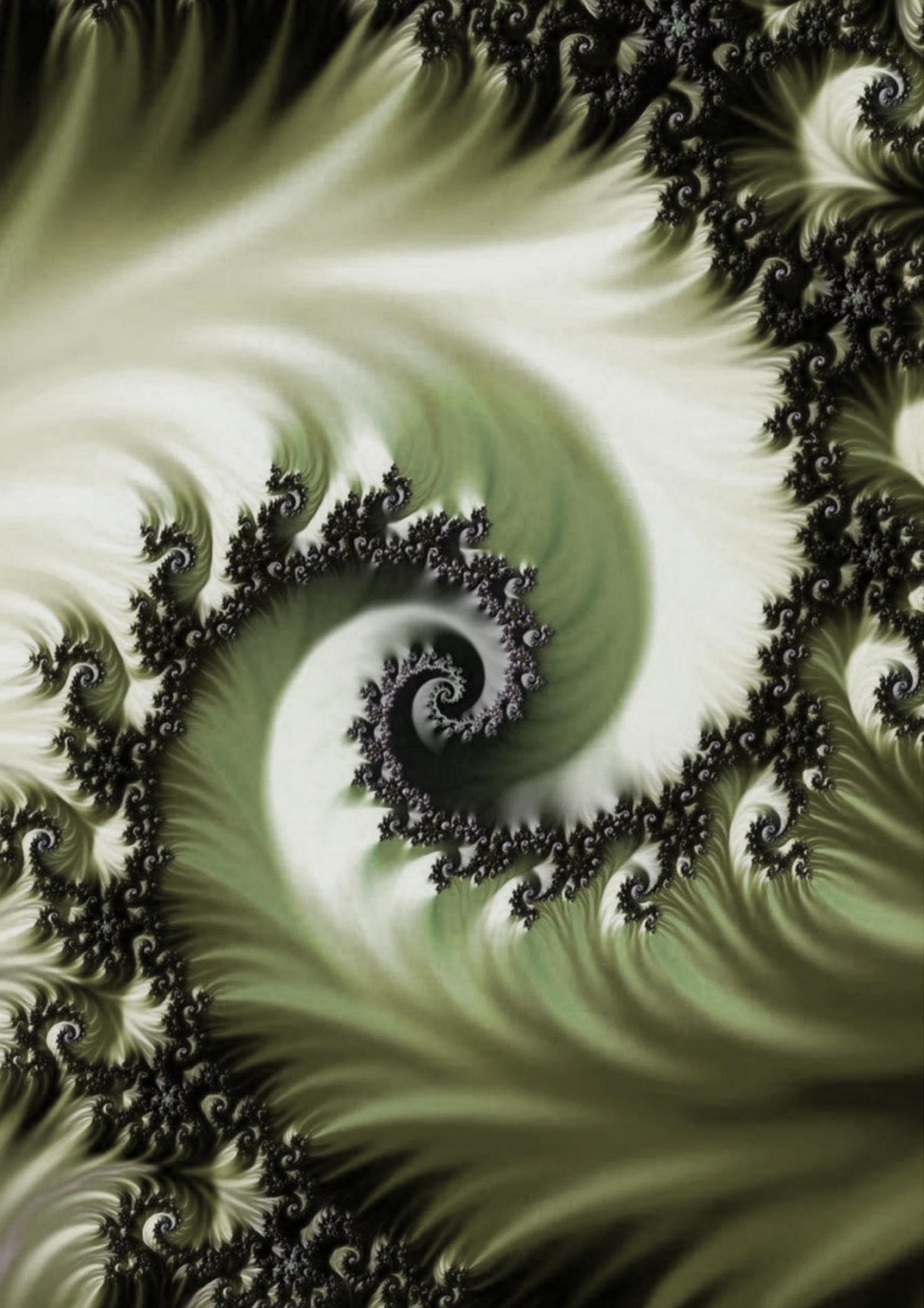


Its presence is not only a self-propelling system, but also a defensive system that will merely absorb any new alternative long before it becomes another identical crisis for the old Level.

The new Level actually ensures the continuance of the old Level that produced it, but actually subtly modifies it: it adds to that lower Level constraints of its own.

Indeed, the most apt analogy is that the “Sea”, in a local crisis, produced a new Level, which continues to float upon it, but has also “changed the Sea” beneath it. It could no longer produce crises, as it would henceforth be policed by its own creation: a top-down constraint would eliminate any such potential crisis happening again.

The “Sea” had been subdued by its own creation, at least in its potential further crises and creations. But notice, if some totally externally caused calamity destroyed totally the “floating” Level, then its constraints upon the underlying “Sea” would be removed, and it, once again would via some irresolvable crisis again produce a higher Level as a result of its inevitable demise.



Down the Plughole.... To Life? : II

So, as anticipated in my previous paper with this title on Jim Al’Khalili’s first TV programme in the series *Order and Disorder*, he did indeed turn to Information Theory to support his view of the Second Law of Thermodynamics as the underlying Theory of Everything.

The mathematical resonances between Bennett’s contributions and the Second Law were just too obvious to be ignored. And when your whole approach puts such extracted laws as the drivers of Reality, then such resonances could only be interpreted as “revealing” the same underlying basis for both.

And it is clear that the very same mathematical forms do indeed appear in both. The quantitative parameter if Entropy has a very similar reflection in Information Theory (or, more correctly. They possess same identical Form).

So, if you are a mathematician, or a pragmatic scientist, who has abandoned attempts at theoretical explanation, such formal resonances are like Manna from Heaven. They seem to confirm the idealist notion that Reality is due entirely to the playing out of particular formal rules, both relational (as with the majority of extracted laws), and philosophical/statistical (as with these dissociative and information laws).

So, this second instalment in the *Order and Disorder* series was one long monologue of Jim Al’Khalili’s beliefs – and I stress beliefs most strongly!

As a philosopher/scientist, myself, with some extensive ability in Mathematics, I can see exactly what he is doing, and it is clearly dishonest!

For, he uses his evident knowledge and ability in mathematics to seduce his audience into believing him. At all the crucial points, he slides over the inconsistencies and contradictions to build up a grand crescendo of worship of Form as the prime mover of all Reality.

BUT, he does not explain anything!

What he does is suggest that you accompany him in his trawl around his favourite Forms. He wishes that you too will be intoxicated by Mathematics, and believe that it will deliver the “meaning of Everything”, but, significantly, he even includes the Meaning of Life as well!

But, of course, though promising the latter in his first programme in this short series, he certainly does NOT deliver it in this one.

And, of course, that is because it is, in fact, totally impossible to do from Form alone!

Life could never be reduced to formal equations, or even when taking such equations along with the Second Law. That maths-led side of Science can explain nothing.

At its best, it can accurately describe certain aspects of Reality, but that is all!

I have been opposing such scientists as Jim Al’Khalili for many years, but, as their failures since the Copenhagen Retreat in Sub Atomic Physics has continued to deepen, their attempts to paper over the cracks have intensified, and their latest efforts, such as this by Al’khalili have become positively reactionary.

Where Science should be revealing and explaining Reality, it has been morphed over into a set of people vigorously working to turn attention away from their speculative inventions, and with them worship the pragmatists’ Baal, namely Form.

S H A P E JOURNAL **E**

www.e-journal.org.uk