

The “B” in Bang!

Episodes not Continuities!

The key paper included in the Shell Universe set that necessarily had to deal with the Big Bang itself as an actual Event was that Entitled **The Primary Cataclysmic Event**. And this had to be much more than a “formal cipher”, as it is in most current Cosmologies (for example – *from Nothing via a Physical Singularity*). For what this crucial Event was, how it occurred, and what it then bequeathed to our Universe, could not be shelved, if any meaningful and supportable initial Phases were to be soundly postulated.

Otherwise, you do as the physicists of the Copenhagen persuasion do, and you turn it into Pure Mathematics (derived, almost exclusively and somewhat dubiously, from modern Accelerator experiments alone).

And, therefore, as likely to be accurate as the belief that the Moon may be made of cheese!

So that paper was written and inserted into the set as a kind of preface.

But it soon became untenable. It simply wasn't good enough.

To, in any way, fill the seemingly unknowable void of the Big Bang, it had to deliver supportable ideas based upon sound principles and experience.

And the only candidates for this were two distinct and very different sources.

SOURCE ONE: had to be the evidence for the enormous collapses and explosions in stars, and particularly the terminations termed novae and supernovae, and

SOURCE TWO: the theoretical/ philosophical possibilities expressed in the Theory of Emergences, of which there is by now a tremendous amount of indirect evidence both in Cosmology and in Terrestrial Geology, and in addition, quite direct evidence in History with Social Revolutions.

Thus, in mid-stream, this author was stopped in his tracks and impelled to address these sources and attempt some form of description of this amazing Event.

The resultant pre-paper is included here.

We must assume that the Big Bang was an Emergence!

And, in addition, that it is closely related to such known events as Supernovae, though instead of being concerned with what can happen to a single star, it must have been involved in something vastly more enormous than that.

Let us therefore make an initial comparison between a Supernova and an Emergence to get an idea of what our unique Big Bang might have been like.

Taking the latter as the more general case, we know that it is always the major crisis and revolution articulating the end of one era of Stability, with the establishment of another very different and higher in Order Level, and thus delivering a wholly new Stability.

And such a Revolutionary Event always arises out of a stable, balanced system or Level, which has survived intact over such an extremely long period, that any consciousness within it can only see it as permanent and unchanging.

But it never is, and this long-standing stability was possible, in spite of the its effective and continuing ability to contain constant, multifarious, and even contending activities within it, without itself being compromised.

Clearly, to accept such situations, we must do more than merely label them. We must both explain the persistence of Stability, and also its inevitable demise at some crucial and terminating crisis point.

And such a task can never be amenable to eternal relations and formal equations; for **they** are always constructs founded upon Stability: you have to pin Reality to the floor to extract such things, so they are incapable over delineating major, cataclysmic and strongly qualitative changes.

Such considerations demand a very different philosophical standpoint, which is usually termed Holism.

Now this is not a philosophic treatise, but it was necessary from the outset to make clear what is being attempted here, and to insist that the usual standpoint and methods will reveal **nothing!**
Such events can never be encapsulated into formulae!
Patterns don't make Revolutions!

So, we must start with some quite general considerations.

And the usual mutually exclusive ideas of **Order** and **Chaos**, of **Stability** and **Dissociation**, must be set aside for a view which sees them all as equally valid, and what is even more surprising, the transformation of one side of such dichotomies into the other.

We must explain how Stability is established, how it is maintained, and how it is terminated.

What is eminently understandable and appears everywhere, turns out to be a central idea in these considerations.

It is **Balance!**

When considering clearly opposing tendencies, we have not only to assume the possible vanquishing of one by the other, but also the special and maintainable conditions which can result in a **persisting balance** between them (what has been called the transcending, yet maintaining, of the contention).

We must investigate, and understand such balances, and they are everywhere around us. Indeed, every single Constancy, that we assume will persist forever, will on careful study, be shown to be such a balanced solution.

The essential ingredient in all such equilibria turns out to be Negative Feedback, while the termination and destruction of such constancies is always when the situation changes from such self maintaining Negative Feedback, to the wholly dissolutive Positive Feedback (as of an avalanche).

Indeed, perhaps the most important development in our thinking has to be when we begin to remove such processes from the purely mechanical to the **systemic**.

Indeed, can we conceive of a **constructive** Positive Feedback – a rush **towards** Order?

And can we conceive of Negative and Positive Feedbacks turning into one another?

The barrier to such transcending conceptions has to be our universally accepted assumption of **Plurality** – the principle that a possible analysis of all Wholes into their constituent Parts can always be achieved, and the subsequent reapplication to all those revealed Parts, level upon level, can continue until some fundamental entities, governed by eternal laws are reached, which are the basis of absolutely everything that exists.

This what most scientists believe, is it not?

And the **Large Hadron Collider** scientists are sure that they are on the cusp of finally completing the process.

NO! These methods are applicable only **within** Stability, whether natural (and hence temporary) or man-made, requiring constant attention and active maintenance. These methods are not wrong. But, though valuable, they do not address **unfettered** Reality in the vast majority of cases.

So, if these points are valid, we have to address the Big Bang from the standpoint of Stability and Revolution. We have to see the Big Bang as a crisis in a prior Stability, and we must attempt to see the cataclysm in terms of the End of that self-maintaining Stability, the descent towards Chaos, and, somehow, the ascent to new forms of Order – to general and system-wide balances between processes, which in isolation seem wholly incompatible and irresolvable.

NOTE: As an example let us consider the **neutronitron**.

When delivered of a high-speed **electron** of ordinary matter and negative charge, and a high-speed **positron** of anti matter and positive charge, how could they become a stable and invisible joint entity?

The received wisdom is that they can't, "**They will just mutually annihilate into pure energy**", we are informed.

But, what if they mutually orbit one another, with their joint attraction held in check by their centrifugal force? It happens in the atom with electrons orbiting a positive nucleus, why not here? And it does, in fact, happen and has been observed to happen.

They call it a **positronium** and it exists for a fraction of a second in Accelerators.

Immediately we have a problem for the stability/dissociation consideration (unless you are a dyed-in-the-wool pluralist, of course).

So, with our arrived at standpoint, we must address the Big Bang as we do all Emergences, both in the achievement of New Stability as a product of the Event, and as the inevitable subsequent demise of that Stability in the next Emergence, with a seemingly “permanent” stability in between.

Let us consider active balance – the enclosing of perpetual activities and changes within an overall and seemingly permanent Stability.

We cannot dispute the incessant, differing and even contending processes within our stable systems: they are everywhere present, but seemingly kept in check and made to conform to pre-existing “Laws”. “ *It isn’t a problem!*”, we are assured, “*They are bound to obey these absolute laws!*”

But, that isn’t an explanation, is it?

How can a disembodied and wholly abstract law determine concrete events? It sounds like Idealism to me.

What is required is a concrete Explanation!

Now, this will be delivered, but not before we have amplified in more detail what is actually going on.

Let us also include those ever-present deleterious processes that are constantly undermining, opposing and even defeating any laws of production – that “*Rust Never Sleeps*” contingent that we curiously deposit into another collective, abstract law – *The Second Law of Thermodynamics*, and which will, we are also told, ultimately triumph and dissolve the whole Universe into Chaos.

Pluralistically, that is the only possible conclusion.

But what really happens?

Apart from the productive processes and the dissolutive processes, there are others, which don’t appear in any pluralistic laws. In unfettered Reality these processes are also deleterious but *selective*, and also benefit on other fronts too. And if these are integrated into systems of processes, because they both benefit by such a relationship, and also, direct their deleterious activities ONLY at processes *outside of*, and *in opposition to* their parent system, then these defend it against attack. They become “policemen processes”, and help to maintain the systems.

Let us re-assess what is going on.

All sorts of transcending forms of association can emasculate what seemed to be unbridled opposition, while other deleterious processes, can be brought in as defenders of the system: bully-boys can become policemen, and poachers can become gamekeepers.

The new arrangements can help particular systems into ever-greater dominance, so the rivalry and opposition is either defeated or avoided. But, even so, as certain system grow in complexity it becomes ever more difficult to make a wholly reliable “team” of contributors, and also the deleterious, parasitic processes are also competing with each other, and the most effective will come to dominate there.

The overall effect of these independent deleterious processes, which after selection, will constitute a much more complete set, will increase, and gradually undermine the established dominances, and in time will certainly pass the necessary threshold to precipitate a general collapse of the whole Stability.

Such causes of Emergences are therefore wholly internal to those systems.

But they can also be provided entirely from outside. When the asteroid that ended the Era of the Dinosaurs hit the Gulf of Mexico, it did the whole job in an instant. That calamity also caused a following Emergence, though such an external triggering is certainly NOT always necessary.

NOTE: At this point, it is certainly worthwhile to compare the description of an Emergence with the cataclysmic changes of the various production modes within a star. When the required resources for nuclear fusion of the current type drop below a certain level, the overall chain reaction quickly declines, and the upward rush of matter and energy becomes too small to counter

the inwards pull of Gravity. The termination of this balance causes an almighty collapse of star material towards its centre, and with vastly increasing density, pressure and temperature. At a particular point a new fusion commences with new and available resources, and wholly new products.

Now, we have to be clear exactly how such a thing could possibly happen. For the critically injured system is both complex and multifarious, with vast numbers of very different processes, many of which are in conducive, mutually supporting mini-systems – involving both sequences and cycles of such processes. For, having both gained and maintained their dominance, they are, in a sense, the very basis of the Stability. But, that is, all too clearly, insufficient!

As the *Theory of Emergence* has demonstrated, with **only** such competing mini systems, there could be no overall stability. In fact the very opposite is true, and in the heart of an Emergence such competing mini systems cause a vigorous oscillation between temporary dominants, while the forces of dissolution (encapsulated within The Second Law of Thermodynamics) defeat each dominance in turn though with a diminishing effect.

What transforms the trajectory is the inclusion of those fore-mentioned “friendly dissociative processes, within each separate mini system. For these are not generally and un-differentially dissociative, but **specialists** – they selectively act upon certain kinds of processes. And when these are, on the one hand, mutually conducive with their parent system, but wholly deleterious to other different systems, the dynamic is significantly altered.

In the end (and largely due to these “policeman processes”) sets of related, mutually conducive mini systems gradually, and then totally, dominate, and a new monolithic Level of Stability is established.

NOTE: Clearly, all these ideas cannot be fully established here, but full explanations (by this author) are available elsewhere. In addition to the aforementioned *Theory of Emergences*, there is also *Truly Natural Selection* – concerning such processes prior to Life, and there are also many individual contributions on the actual *Origin of Life on Earth*.

All these are available currently via the *SHAPE Journal*.

Crucially, it is not the co-operating, conducive mini systems that guarantee the New Order, but their “policemen processes” that safeguard the persistence of these systems.

Yet, all the while, the individual, un-allied deleterious processes (of Second Law ilk) remain and grow! Perhaps surprisingly, the constructive processes of a current stability are NOT what are successfully overthrown by these deleterious processes when the inevitable crisis finally matures. It is their “gluing” policemen processes, which defend and maintain those dominant processes, which can be, and indeed are, finally overthrown.

The result is both remarkable and surprising. With the demise of these seemingly peripheral processes, each and every mini system breaks down, and essential links into sequences and cycles disappear, the dissociation turns into a veritable avalanche – **without** losing the individual basic processes, only the **Form** is dismantled. The onset on all Emergences is about the wholesale dismantling of all these defensive and self-maintenance processes, which destroys the dominances, and returns all still existing processes, though now totally separated, into what seems to be a “Final Chaos”.

But, that is not what actually occurs.

Such a mix is the most productive and creative that could possibly happen. For, not only are the vast bulk of processes still remaining, but also crucially the total destruction of the constraining and maintenance “policemen” processes removes the all-pervading constraints that made the Stable Level such a restrictive and indeed maximally **conservative** Level.

Now, anything can happen, and does.

Alternative associations, never before allowed, or even actively stopped from attaining any dominance, now begin to assemble and grow, and via a wholesale zigzagging between such construction and Second law

dismantling, new dominance finally arrive which establish their “protectors” and ultimately a new and stable global Level.

Indeed, with the survival of individual processes, the amazing speed of the phase exceeds all others of past Levels, and the potentials are more fully fulfilled. The New Order is a significant step forwards.

The crucial heart of the whole episode has to be this Phase of oscillation between Increasing Order and Dissolutive Chaos, which goes through a multitude of sub-phases and temporary entities and laws.

How could there be any chance of causally “tracing through” such an Event, from one Stability to the next?

Now, if such a trajectory is true for all such major transformations, then it must also apply to the Big Bang itself, and we have to lay down a set of prerequisites necessary within Emergence processes, and the final resolution to complete the Big Bang.

NOTE: As will all Emergences, the Big Bang will be of finite duration, and, as will be shown later, guarantees a Shell Form for the resultant expanding Universe.

Indeed, with the Big Bang we are forced to presume a prior Stability, which existed before the Big Bang, and was stable for a long period, but finally, and indeed majorly, underwent the biggest of all possible collapses, which really did remove almost everything. It must have been of galactic proportions (or even bigger), and hence its collapse was all the more deep and destructive. Clearly, the much later emergences, which have enabled us to construct some kind of trajectory, must have been very much shallower than this almighty cataclysm. Events such as the Origin of Life and Social Revolutions could not be carried over complete in this Event.

It is generally assumed that this Event would reach down in its destructive Phase to almost the very basic elements. It must be closer to the collapses that occur in stars, to cause significant new eras of development. Yet even these are by no means big enough. It must be most like the collapse of an immense star in a supernova, where enormous amounts of energy are produced and even matter is disintegrated and even destroyed. The result on the scale of the Big Bang would certainly be truly enormous, for it clearly created a New Universe.

Such a cataclysm has to be on a very different scale to any “normal” Emergence, and, indeed, it could destroy more deeply and more fully, so that it would almost (but not quite) return the system back to Pure Energy, and hence “re-start” the system (but with added condiments – the unavoidable detritus from the prior state).

Such a phenomenon would also be far from the perfect Symmetry, as it would be from an emanation from a “Physical Singularity”. So from the start the necessary asymmetries for subsequent matter creation and following aggregations would be there.

(2,933 words)