

## **Downwards Through an Emergence? – Paper I**

### ***Penetrating the producing Level***

In discussing Emergences, we have been concerned with the upwards trajectory of development – the Emergence of a New & Higher Level ABOVE an older, simpler Level. The narrative has been forwards in time, as the necessity has been to explain how succeeding Levels of increasing richness actually “come to be”. It was, of course, the only way to address the subject.

But, our studies of the Universe have not always been in that same direction.

Confronted with evidently different Levels from Physics all the way to Human Society, the problem of integrating all these into a coherent whole, had to be in determining the true nature of the process of simple to complex development.

Now, generally, such investigations were always “local”, in that they were well within a subject, whether Physics, Chemistry or Biology, and the obvious search would be for a series of causal steps, explaining one phenomenon in terms of underlying ones. This crucial method is termed Reductionism, and has been a wonderful achievement of Science.

BUT, it turned out to have significant and misleading limitations.

The crucial problems occurred when an explanation was required across an Emergence event. It turned out to fail miserably in every single case. Reductionism was not the universal method that it had been thought to be. It simply could not cross an Emergence!

Now, the general occurrence of multiple Levels of Emergence is NOT universally accepted at the present time, in spite of the “beacon example” of the Emergence of Life on Earth, which is impossible to dismiss.

So, let us take this problem and see how it has been approached.

Before I go any further, however, I must indulge in a small, but essential detour – that of the significance of Mathematical Formulae in our efforts to understand and harness aspects of Reality.

It has been imperative for all of Science that, not only should phenomena be “explained”, but they should also be practically embodied in some quantitatively useable form – the Equation, so that this could be used predictively and productively in putting the knowledge to direct USE. Now, it turned out that ALL such formulae, though eminently useful in *precisely controlled situations* – their Domains of Applicability, were also strictly LIMITED to those Domains. Any transgression across a Domain boundary would ALWAYS result in the catastrophic failure of the formula, which would deliver incorrect and useless results.

This element of describing and understanding the World had, therefore, very limited applicability. But, when confronted with such situations Mankind was NOT stymied by the seeming “dead-end”, because they had also developed Explanations, which were NOT Pure Form (as were equations), but the construction of related qualities and processes into causal, qualitative reasons for things being as they were shown to be.

These alternatives are very different, but had been developed “in parallel” as the necessary culmination of a comprehensive method of scientific study.

So, using such “explanations” the scientists were able to “bridge-the-gap” with their explanations, which were not limited in the same way. I will not go into examples here, but they abound elsewhere in my many writings directly addressing these issues.

Now, the reason that the above detour was necessary should become clear. For not only may a Level transition be essential in dealing with a situation, but this would ALSO involve the crossing of Domain boundaries – so all previously used equations would NOT pertain in dealing with the new Level. In ALL elements of the new Level, be they entities, processes and indeed Laws, these would be entirely NEW and require a new set of descriptions, explanations and formulae. Now, such transformations were very hard to take. Not only were all gains from the lower Levels unable to cope with the features of the New Level, but the explanations as to what caused the new Level and caused its new features was also NOT available. No Emergence could be causally predicted from its generating predecessor Level! Now, this “impossibility” is crucial. It is put in inverted commas because it certainly is impossible using the methods used in plumbing the

nature of “within a Level” phenomena. They were generally possible to explain using Reductionism, but here such methods were impossible. If the Emergence of a New Level were to be explained, it would NOT be by Reductionism.

**To be continued**

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