Emergence & Reductionism – Paper II

The Alternative Methodologies

This necessary Study of Emergences is made excessively difficult for a number of important reasons.
Firstly, such a study doesn't exist at the present time.
The major Turnovers are not seen as being Creative and Epoch making. They are just seen as not yet explained areas, which will, in time, be conquered by the usual well-established methods. This attitude is proved by the general acceptance of reductionism – Pure Mechanism, as the adequate method for all studies of all kinds of phenomena.
Yet, it is becoming clear that the generation of new entities, with new properties and related by entirely new laws can never be predicted from their pre-Emergence initiating conditions. For the entities and laws which were the basis for all Reductionism with the previous Level actually ***vanish*** during Emergent turnovers. They are not available for explanations: they are NOT the causes!
Clearly reductionism **cannot** cross a Level Boundary.

Reductionism is ***always local*** to its own Level, while The Emergences actually ***create*** New Levels.
Emergences therefore can only terminate all prior reductionist sequences.

Finally, it must be demonstrated exactly how the new Levels constrain processes, still existing at lower Levels, to trajectories consistent with the survival and the maintenance of the newly emerged Level.

Higher Levels actually can control lower Level processes within their own aegis!
[Consider the Chemistry of Life as compared with Chemistry in the test tube]
And this last property is unusual, in that lower-Level entities, properties and processes are NOT changed after the Emergence, but they are ***selected and controlled*** – they are marshalled into the maintenance of the new Level within that Level.
Now, there has been a loudly-trumpeted activity in this area by a very prestigious group of world-class scientists (including Murray Gell-Mann) at the Santa Fe Institute, but their efforts have produced nothing of real consequence. The reader will have to satisfy himself of the success (or otherwise) of their efforts in this area. But, I would insist that whatever path they have embarked upon, it has been strictly defined by their banker ideas from Modern Quantum Theory, and Computer Modelling, and has therefore NOT been about the three main areas which I have characterised as the essential features of Level Emergence as described earlier. Their work is entirely mathematics-based and displays no philosophy apart from that erroneously established almost 100 years ago around the Copenhagen Interpretation of Quantum Theory.

This study is, of course, both inter-disciplinary and philosophical, BUT the content of it can only be established by scientists! I have worked extensively with a number of non scientists with absolutely nothing agreed.
They seem frightened to death of Science, and consider it to be the enemy of creative endeavour.

The trouble is that even scientists **hate** to be dragged to the always-frayed boundaries of their specialisms (and certainly their subjects) and it is also indisputable that they do **not** like philosophy. If you discuss with them about the incipient philosophy of their current studies, they usually get very upset. You seem to be wantonly undermining their efforts, and insisting on airy-fairy notions that do not form any part of their well established (and decidedly head-down) methods.
But they are wrong!

From Zeno, through Russell and onto Gödel, the most precious assumptions at the base of our studies have been found wanting, and indeed, in the modern era, threaten our continued progress.
Do you doubt it?

What about Parallel Universes, Physical Singularities, Big Bangs (without an explosion) out of NOTHING(?), Dark Forces pushing the whole Universe apart at an accelerating rate, and indeed many others? Are you really relaxed about all this?
I am not! And I have been a physicist/mathematician and a philosopher for 50 years.

The crucial questions concern whether we can assume reductionist sequences "through" all our disparate gains over the last few centuries? And if not, where are the watersheds, the boundaries, the Emergences which lay down the limits?
Taking Hawking's ideas on the beginning of the Universe, is it legitimate to construct a ***continuous*** scenario from the Big Bang to the present day Universe? Or, is the post-Quantum area actually an Emergent Level?
These questions also continue through vital areas such as Life, Evolution, Consciousness, Thought, Abstraction and everything in between.
Here is a question! Can you clearly explain the basic processes and Productions of Abstraction that are the bases of Science and indeed all Thought? What is the difference between Explanations and Mathematical Formulae? Why was Analogy a legitimate and "scientific" method? How do we differentiate between legitimate models and Speculation? Why do mathematicians deal in Absolute Truth, while scientists can never surpass Relative or Partial Truths? Is Post Modern Eclecticism legitimate in Science?
These are the crucial questions and will be at the centre of the contributions to this new Journal!

(807 words)