

Eureka! It's Populist Science ***Informing the uninformed?***

For many years now I have been highly critical of what currently passes for Science at a whole set of different levels across the majority of scientific disciplines. Some of these would perhaps be seen to most people as examples of the usual type of prejudice, or even anti-science snobbery. But, with the internet and the present much wider uptake of Higher Education, these forms have receded in importance and have everywhere been replaced by a new consensus with regard to Science.

To demonstrate what I mean, let us take the currently most populist of science “dissemination” with the launching of ***Eureka*** by **The Times** newspaper. This appears to be a Science-dedicated monthly magazine supplement to this prestigious newspaper, and follows a long line of glossy extras stretching back to the 1960s. But, it is interesting that it should appear now in this form, and at this precise time. At the same time the many TV channels specialising in “Knowledge” have all commissioned and are now beginning to show a whole series of expensive science series such as **The Universe** (though there are currently several similar new products on other channels too).

It is also fascinating who it is that the publishers of The Times have commissioned to write in their new publication. This month's well trumpeted issue is dominated by a “set” of Photographs, diagrams, Information Panels and a major article on the **Large Hadron Collider** at CERN on the Swiss/French border. This mammoth experimental construction is surely considered to be the successor to Space Exploration as the popular offering of the Science Community to the public at large.

It has cost an amazingly large amount of money to erect and staff, and taken many, many years to build as the latest in a series of smaller but increasingly larger and more powerful predecessors.

It is essentially an Atom-Smasher for Protons (the nuclei of Hydrogen atoms - the simplest of the elements).

It is generally agreed to have been the very first atomic creation at the beginning of the Universe, and the basic unit from which all other elements were later constructed.

Throughout the last century there has been a trajectory starting with the so-called **Copenhagen Interpretation of Quantum Theory**, via the Atomic Bomb, and these have led to a “history” of the Universe from a conceived of **Big Bang** some 13.5 billion years ago.

But this has become a vast edifice of “theory”, which now requires a long overdue final confirmation of how this relates to the creation of the very first Matter.

This is the question that the LHC *has* to answer.

It has to reveal the **Higgs Boson** – the “necessary particle” in the first production of Matter.

The energies possible in the LHC are considered, for the first time in history, to be large enough to finally settle this crucial element of the overall theory.

So now, all these forms of publicising Science are now focussed on this great experiment, which could *prove* the Theory, or maybe *deny* it!

It appears that the usual conceptions of Science, by most lay-people, desperately need a major updating (and even inflating), and all these popular publications and programmes are being re-vamped to be the vehicles for doing precisely that.

But, all this has also to take place within the clear period of a dumbing-down phase of popular culture in general, where the old criticisms of the elitism of the privileged classes can no longer suffice to keep the masses happy.

Returning to ***Eureka*** and its main article on the LHC, it was commissioned to be produced by **Bill Bryson**, the american writer, now resident in the UK, who writes about us from the point of view of a friendly alien.

He is no scientist, but he too has also been carried along with the new tide, and seeks to embrace Science as it appears today.

On reading the current issue from cover to cover, I was surprised to find that really nothing new was presented there at all. It reminded me of **New Scientist**, but whereas *that* journal is aimed at “scientists”, this one is certainly aimed at the “interested layman” in mind instead. And one of the characteristics of such disseminations is that they are totally subservient to the “experts”.

No longer do we have hostile antagonisms by arts-types and other non-believers, but in the new attitude of embracing Science in all its current glory, all the participants merely swell the ranks of the consensus merchants, who “wonder” at the might and power of Big Science as propagated by its producers. This removes that absolutely vital criticism which Science has always needed to continue to progress, and which is now, more than ever absolutely essential, as its ageing philosophy and consequent methodology becomes increasingly inadequate to cope with the major unanswered questions that are daily arriving at the top of every agenda.

Such an uncritical adulation can only turn into its exact opposite as more unavoidable failures appear.

Consider what will be the reaction when the Large Hadron Collider, for example, completely fails to find the Higg’s Boson!

How will the general layman’s attitude to Science change? Will it not turn from adulation to condemnation?

I believe that it could then go no other way!

But, the *popularisation* of Science is in fact no such thing!

As a scientist myself, I am daily aware that what most “scientists” now think of as Science, is, in fact, merely Technology.

The supposed continuity from discovery and invention to development and exploitation may now be labelled as “Science”. But it isn’t actually Science at all!

Science, from its inception, was always Natural Philosophy: it attempts to *explain* the World – to make abundant sense of the World!

I well remember reading what the Nobel Science Laureate **Laughlin** had to say when talking about the **Manhattan Project** in the Second World War. He clearly characterised it as a merely pragmatic achievement.

They could **make** a bomb, but their real understanding of what was actually going on, and even more crucially, knowing WHY that was so, was literally non-existent!

The fact that work, money and resources in abundance can and does produce useable things, does not make the processes involved *Science*.

They can only be described as Technology!

In addition, over roughly the same period of time, what was considered to be Real Science has changed beyond recognition.

Most so-called “theory” now takes place at a desk or blackboard - doing Mathematics.

Though, it is clear to anyone, who studies Science and Mathematics, which they are NOT the same thing at all. For Mathematics is the study of Pure Form in isolation from Reality, and cannot ever *explain* any phenomena which occur there. Indeed, its strength is that the Forms, which it deals with, are both separate and *different* from their occurrences within Reality, for exactly the **same form** can be applied in many different, diverse and, indeed, unrelated areas in Reality, but always under different and necessary constraints *to make them fit!*

For these forms *never* quite fit Reality **as is**, but only isolated, constrained and rigorously maintained subdivisions of Reality – we call “Domains of Application”.

Mathematics is about idealised patterns, which can only be achieved *from* Reality by such artificial means.

Oh yes, I DO know the justification for supposing that such procedures are entirely valid. It is, of course, the idea is that such a methodology *releases* such essential natural relations from their distorting embedding in a multifarious Reality.

But such an assumption is, in fact, incorrect!

It is based on the principle of **Plurality**, which sees Reality as the product of a summation of Parts to produce every single complex Whole, and that these methods are designed to separate out each and every one of these contributing elements for their study in isolation from everything else.

But, of course, such an assumption can only be true, if the opposite thesis of **Holism** is wrong! For that alternative sees everything as mutually affecting everything else, and hence the process of isolation, extraction and abstraction does not reveal a **real** “Part”, but actually the properties of an artificial and constructed Domain. And any relations derived from that Domain will be different from those pertaining in Reality as is.

Indeed, Plurality really **ONLY** considers **bottom-up** causality and hence is bound to be incorrect.

Also its corollary, **Reductionism**, can only lead to either infinite regress, or to some fundamental entities and basic laws, as the eternal and immutable foundations of ALL of Reality.

Yet, any new “theory” derived by such pluralist means is entirely mathematical and “made-to-fit” by control and the pragmatic “fitting” processes available via technological methods.

As a practising scientist and philosopher, I know that Science has been in a major crisis for at least 100 years, and that most lines of research are now drying up when addressed by purely pluralist methods.

But a “patchwork” looks like a continuous surface from a distance. And the achievements of Science in the last 100 years are just such a patchwork collection of separate patches of law. Though short sequences of reductionist explanation are possible, they are all **local** to a given Domain and *terminate* at every significant boundary.

The continuity of Science as a whole is an assumption (indeed, a belief) and is more accurately described as a collection of sequences of merely *local truths*, which can be effectively used, but each set only within its own required conditions. And that “version” of Science is also vastly preoccupied with quantities and numeric predictions, and when presented with qualitative changes, creations or emergences of any kind, it is quite unable to cope.

Take the Origin of Life as a perfect example of this. It is an area that has been my main concern for many years, and constitutes the best example of what is an Emergence.

Try as they might, researchers into this crucial Event turn out to be totally ill-equipped to traverse the actual Event itself. Indeed, even the generally agreed most significant contributions *have to* remain either side of the Transformation.

From Miller’s very important experiment, which was grounded NOT in the Emergence Event itself, but in its precursor requirements, to Darwin’s contributions located solely within already existing Life, all such contributions only highlight the total absence of the avalanche of “missing link” type processes, which must have been involved in the actual transition itself.

NOTE: Indeed, in another recent article in New Scientist entitled *The Cradle of Life*, the content clearly says absolutely **nothing** about the emergence itself, and is yet again more to do with the early stages in the *evolution* of an already existing Life, than its creation.

The actual trajectory of Qualitative Change from the non-living to the first occurrence of Life is nowhere addressed – it is only *inferred* or *assumed* from precursor developments.

How can it be other with the still existing assumptions and methodologies of present day pluralist Science?

Now, though I emphasize the Origin of Life, it is only ONE of many, many such transitions, which have occurred at significant points throughout the history of Reality, and must include such things as the First Appearance of Consciousness.

One feature of our thinking confirms this!

It is, of course, the Categories, Sciences and Subjects, without which we cannot even begin an attempt to deal with the World.

What has occurred is that every Emergence in Reality is recognised by us, NOT as an Event, but *only* as a Boundary! And we immediately the trans-boundary area as a potentially new “land” to discover and explore, and to which a new name can be applied. We ignore the miracle which brought it into Being, and concentrate instead on the potentialities and relations within the new area of study. Clearly, the boundary between non-Life and Life is embodied in the separate subjects Physics and Biology.

And even within these areas every new Emergence again “creates”, for us, yet another area for study *without* addressing what happened in the transition.

So, let us return, once again, to *Eureka*.

Though it is **full** of dramatic pictures of various parts of the Large Hadron Collider, and intimates that great things will be just around the corner, the sense of “immanent discovery and progress” is misleading!

Scientists have been atom-smashing for many, many decades, and what they have produced by such activities have been smaller and smaller types of debris, which last for tinier and tinier moments. Indeed, the results of their endeavours have been dubbed “The Particle Zoo”, and try as they might, they have never, repeat NEVER, managed to *continuously* traverse the transition between the Sub-Atomic and post-Atomic Levels of Reality. Their investigation of the transition seems only to deliver an infinite fund of “new things”, and the more and more frantic search for some sort of **closure** has led to bigger and bigger atom-smashers, with the claim to be getting closer and closer to the “moment of creation” of the Universe itself.

It will be a forlorn hope!

Do you really think that they will crack it?

Will pluralist scientists incapable of dealing with any Emergence get anywhere near an understanding of the actual creation of Matter?

The answer must be obvious!

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