

## The Demise of Formalism II: Part II

### *The Rise of E M E R G E N C E*

#### **Reductionism**

Let us start with another banker of thinking, this time in the scientific community. That “certainty” is the method of Reductionism! Scientists believe that via their well established methods they can reveal the formulate able relations that exist in all parts of Reality, and explain, in terms of its own constituent parts and their properties, why that identified part is the way that it is.

Having done that, the next step is clearly to investigate the nature of those constituent parts *themselves* in the very same way. Ultimately, by repeated application of these methods, the Whole of Reality will have been revealed in its final irreducible, fundamental units, and the similarly basic fundamental Laws.

That is Reductionism.

If you doubt that this is indeed the agreed consensus, look at any “scientists’ magazine”, where you will find a preponderance of competing claims as to what will comprise the ultimate Theory of Everything. Such an amazing Emerald City can only be deduced from acceptance of Reductionism. They believe that they will crack the whole panoply of Reality down to its fundamental bases.(For otherwise these would be examples of infinite regression.)

#### **Plurality**

But, the whole method is also based on the assumption of Plurality – that **The Whole is made up of its Parts.**

And this implies that the method of explaining the Whole is by investigating these parts. Once more we have to ask if the Wholes and their Parts are eternal, and the answer must be, “No!” As soon as we accept that these are not constant we have to address the fact that they will change, and even more drastically, that they will at some stage actually terminate – that is cease to exist as such.

Of course, what will happen in our systems when the assumed-to-be-permanent elements do indeed vanish?

#### **Change**

Now, that will depend on the individual cases, but the GENERAL answers to such questions can only be found in areas of study where it is crystal clear that things DO change. The most crucial area is that of the Emergence and subsequent Evolution of Living Things on this Earth. What, for example, in that context is an example of a thing ceasing to exist? - an extinction seems to be a good example.

But is that is, perhaps, too drastic, shall we be less dramatic and talk of the step by step changes in the evolution of species? We could take *Eohippus* (a primitive dog like horse now renamed) which evolved until we finally have the modern *Equus*. Can we explain the major changes to the feet using Reductionism?

The answer is clear. It is, “No!”.

And if this point is argued, I can easily switch to the parallel development in that sequence of evolving horses, which involved the remarkable and significant changes in the character of its brain over the same period. And most certainly THAT sequence cannot be explained in a reductionist way either, because the brain at the end of the process could DO many things that were impossible by the brain of *Eohippus*. When we look at broad sweeps of Evolution, we are struck by the evident innovation – the invention – by the regular *emergence* of the entirely NEW! How might Formal Logic deal with that?

And why are such dramatic changes possible?

### **Emergent Change**

To explain, I will use the touchstone case of Innovatory Change – the actual Emergence of Living Things from Non Living things when Life first appeared on Earth.

Could anyone reduce the first living thing to its preceding, non living components?

You know the answer.

It is “No!”

Will they ever be able to do it? Now, rather surprisingly, there are many who would, with confidence, insist that the answer to that is “Yes!”

### **But they forget Plurality!**

All studies are about “parts”, and attempt to explain them in terms of their own constituent “parts”. To involve ourselves in such a process we have to *cheat!* We have no choice of course: the infinite regression cannot be completed.. We cannot tackle the whole of Reality as one thing, so we choose an *amenable* “part” to study. In so doing we create a falsity. The “part” is considered in isolation from its concrete origin and continuing existence embedded in Reality. Indeed, the sequence of processes that we have developed for this purpose, are very clear.

### **The Pluralist Method: We isolate, extract and abstract its relations.**

These involve taking the “part” *from* its Real World context, and purposely and effectively physically isolating it. We then extract its relations, ignoring not only its context, but in addition, all hidden or seemingly negligible simultaneous relations. And then finally, we abstract each dominant relation into a general formula, (useable in many similar situations with the same FORM, and as such quantitative Form is universal, this can be done!

But, all the external connections and parallel processes, which were the concrete *producing* situation, have been dumped.

Now, all this is an accepted pragmatic methodology for addressing Reality. These techniques do enable us to achieve many things. But these are NOT the point here! We are not discussing Technology, but Truth!

The major question arises - “When a part CHANGES into something else, where do the factors come from to bring this about?”

They are clearly NOT those that have been maintained and processed, for those have been “solved” and served up in a final universal Form. So, I think you will all agree, that the changes are most likely to have come from elsewhere. Indeed, they must have come from other forces in the original **real world** context, or in the ignored minor contributions. Where else could they come from?

Now, if this is true, Reductionism cannot work in such situations for it does not involve the precise elements we need to deal with the any Qualitative Change. Now if this is NOT true, on the other hand, then your formulae must be wrong for they do not predict or explain the change.

Now the above is a very brief exposition of the arguments about Plurality and Reductionism.

But, that does not mean that the full case is unavailable. It certainly is, but I obviously cannot insert everything into a brief paper such as this. Many papers, by this author, hare available concerning these questions, and it must be to these that I recommend you.

**To be continued**  
**(1,078 words)**