

Explanation via Chaos – Paper IV

The Inexplicable Nature of Crisis

Funny how many things we manage to successfully carry out as we go about our daily tasks, isn't it? I'm afraid the "demolition only" methodology employed by the experts assembled for this TV programme is not scientific. An alternative schema MUST address all the extent forms of phenomena.

We can't pick a dichotomous pair out of Reality, then say we have proved something about Reality as a whole.

"There exists a...." types of argument do not prove **"everything conforms to...."** conclusions!
Are our group of experts really informing us of the tenet "Give up now you'll never do it"?

To "prove" that such things DO happen we are next diverted by a nice piece of cinematography and indeed convincing CGI, wherein a single bullet in Sarajevo in 1914 caused the cataclysm of the First World War. No-one could have predicted it.
Just think of it, the actions of a single anarchist precipitated millions of dead.

Indeed Ruelle recast the whole war as being rushed into with universal confidence of all concerned in the ability of their mathematics of war to bring them certain victory.

"But, both sides were not fighting each other. They were fighting the Chaos of Reality", insists Ruelle.
And I thought it was all down to the inhuman greed and ambition of the ruling classes of both sides!

About this time a certain Alexander Niapolov(?) in Russia was studying stability in fluids, and particularly the change over from streamline-flow to turbulence. He asked the question, "When does this change over occur?"

He began to see that there was a flip over from equation-determined smooth flow to chaotic disturbance via a particular, findable "tipping point".

[NOTE: Such things were to become crucial many years later when the first simulations were erected, for these were an amalgam of deterministic equations and "tipping points" of various kinds]

Peter Cox next explains the current take on such "tipping points", which, of course, happen in the Weather and many other complex situations. His "illustrating" model was the classic one of stability and instability of a perfectly round ball in hilly landscapes. Stability was, of course, illustrated by the situation at the bottom of a valley, where a ball, once there, could not escape. Whereas, instability was when the ball was precariously positioned on the very cusp of a sharp hill, where the tiniest disturbance could send it crashing down unpredictably in one of many alternative directions, and into one of very different valleys..

In October 1917, Niapolov (following the death of his dear wife) shot himself!

Literally millions of other Russians were losing their whole families but didn't take this way out, so the actual date – October 1917 – seems to remind me of something else that to a certain class of person might seem even worse. There was another "tipping point" about then wasn't there: another totally unpredictable and uncontrollable Event which changed things for ever?

Next, we turn again to Ormerod from the Henley Centre for Forecasting (he ought to know his stuff). He explains how economists (such as himself) used to believe in the old classical idea of Equilibrium to construct (and use) models of the Economy of the World. But, nevertheless, they proved incapable, using these models, of predicting the World Crash of 1929.

Now, the alternatives offered by these mathematicians did not present a by any means comprehensive view. How could they? They were *only* mathematicians. They terminated any contribution they might be making to a world view at the precise point of their producing of useable equations, and when pressed took a position very similar to that of Laplace. Even when this was proved to be wrong, they could still only see the world as governed by mathematical rules, but at the same time totally undermined by unpredictable and random Chaos.

Yet there were much deeper views of Nature, not least the **Scientific View**, which went beyond equation to a wider holistic and explanatory narrative. All the equations were for the adherents to this approach merely the currants in the cake, delivered by their all-encompassing and integrating Explanation.

True, this version of Reality was also flawed, but in the accompanying narrative were the seeds to a coherent view.

The barrier was, of course the seeming complexity and myriad factors of a consistent, and indeed useable holistic account, and the contradiction posed by equations that could be relied upon only in appropriate circumstances.

To be continued

(750 words)