

The Second Law of Thermodynamics *of* Man – Paper I

The Second Law of Thermodynamics involves a totally abstract quantity called Entropy, which naturally tends towards a maximum. Thus a completely random, indeed chaotic, system will have maximum entropy, whereas a very well ordered system will have a much lower entropy approaching zero. The Law therefore makes the natural processes of Reality to go from Order to Chaos; for all things to “run-down, decompose or deteriorate.

The Law has proved useful in Engineering and various other areas, and has even been identified with “times irreversible arrow” – one way only!

But, in spite of its seemingly unapproachable standing, it still throws up many crucial questions, and indeed contradictions.

In my youth I asked questions about it to many of my teachers, citing the seeming exact opposite to the Second Law as evidenced by the Origin and subsequent Evolution of Life, I was immediately rebuffed with the answer that Life as a whole is but a miniscule fraction of the Universe, and that any decreases in entropy due to Life, would be cancelled out by a more than corresponding increase in the rest of Reality. I was assured that the move from chaos to Order seemingly effected by living things was a total illusion, fostered by a homocentric view of Reality, and that the opposite was the *real Truth*.

But, I was not convinced! A tendency to dissolution could not “include” the remarkable subordinate(?) tendencies towards increasing sophistication and self-maintaining order, that even included things like the emergence of Consciousness. Such assertions sounded to me more like, “look, what do you know? I am speaking from a much wider knowledge of Reality than you, so please shut up!”

But my youthful awareness of the move to Order in Living Things, by no means exhausted this anti-second law tendency. It was clear that such “order-making” processes also occurred in non-living systems too.

The initial creation of a Star from dispersed clouds of gas, is hardly a rush towards Chaos, and if the universally agreed model of the Big Bang is correct, then the whole thing at the outset was hardly “maximally ordered”. It was an explosion – not much like an intricate watch or a living organism. Indeed, most assumptions used to trace developments *from* the Big Bang, more or less assumed maximal disorder, indeed total randomness, and the components involved also ran directly counter to assumptions of Order. Indeed, it is said to have been entirely composed of Pure Energy alone! NO Matter was said at that time to have yet “evolved”. It seems to me that to go from Pure Energy to Matter involves an increase in Order and hence a decrease in entropy. So, if we are to accept this model, we start with the ultimate in formlessness – an explosion of Pure Energy, and the nature of that Energy must also be considered. Because no Matter yet existed the form of the Energy could not bear the stamp of an origin from within Matter. As such, that Energy was therefore distinct from ALL the Energy available today, which has been produced by release from electrons in their orbits (energy levels) within atoms. Come to think of it, what possible form could initial energy take? The obvious assumption that it would include all frequencies sounds to me again more like Chaos than Order.

I think there is a good case for saying the the Second Law of Thermodynamics is NOT an unassailable property of Reality.

What then is this Law a description of?

Somehow, the scientists must have walled off a very special section of Reality *in which* such a law did encapsulate a general Truth! But if this was the case, we have to ask, “How could this occur within the methodology of the scientists, and perhaps even more important, what selection FROM Reality could possibly deliver a coherent set that seemed to go in the opposite direction to things outside its limits?

There are cultural narratives which could be seen as supporting such a stance, of course. Looking at very old, man-made structures of almost every single kind, they do imply deterioration and decline. Indeed, the most superb of Mankind’s inventions, such as the winning of metallic iron from unpromising rocks, always when

left to themselves rust away until they seem to return to something very similar to their original state. Also tended fields and organised forms soon revert to a totally wild state, when not constantly looked after and improved. Many such examples can be given, but all are contradicted by the example of a single flowering plant, with its trajectory from seed, through growth as a seedling and mature plant, to a crescendo of flowering and seed production. The situation of Living Things, starting with the actual Origin of Life on Earth, and continuing through myriads of Evolutionary changes, including almost incredible developments such as consciousness are clearly NOT deteriorations “downwards” towards Chaos.

There are important questions to be asked about the Second Law, but most of them must also be asked about Mankind as the interpreter of Reality.

The true “nature of Reality” turns out to be actually an intention of Mankind. It ONLY appears through the actions and Thinking of Mankind. Nothing and Nobody has direct access to the truth of Reality. It can only be that view which Mankind has pieced together over his time on Earth.

Somehow therefore, the whole approach of Mankind must have filtered out a selection of things in Reality which ALL do seem to point to dissolution and decay. Now, we must ask how this could happen?

Could it be to do with Early Man’s evidently gathered ideas of, and use of, things in Reality, while he still at that time totally lacked the control necessary to bring off any of his schemes which he had devised via observation?

Let us attempt to address the ONLY path that he could take, and why!

The Nature of Reality imposed major problems on Mankind, for essentially everything affected everything else, so it was difficult to see causes. At the same time these influences were NOT of equal weight, so this enabled Mankind to glimpse relations which seemed to offer possible uses. Yet the holism of Reality never allowed such glimpses to be turned into effective extractions for Mankind to use. Whatever he did at that stage, his schemes would inevitably fail. They still remained encapsulated in a complex interconnectedness, which Mankind could NEVER counteract. The reason was that though he could conceptually extract relations, he could not *physically extract* them for use. All his early attempts would fail and fall to dust. The Second Law ruled OK!

The main battle for *homo sapiens* – a thinking animal, had to be to bend Nature to his needs and wants, and for the vast majority of his time on Earth, he simply could not do it! Reality seemed to thwart, damage and ultimately destroy ALL of his extractions and erections.

BUT, these comments only reveal a disposition towards pessimism in a stage of Mankind lacking the wherewithall to master sections of Reality. That alone is surely insufficient to answer my original questions about the Second Law and Mankind. Attempting to capture a holistic tiger by the tail, was certain to fail.

We have to see what it is in Reality which does possess the conformity to such a law, and exactly how Mankind was, by his methods, to ONLY select this slice of Reality to deal with.

Before I address this paramount question, I must add yet another strand to the arguments outlined above.

The peculiar abilities of Mankind must also be added to this interesting mix. In spite of the difficulties I have been at pains to stress, Mankind’s attitude to the World must have been influenced by his successes as well as his failures.

(1,301 words)