

CHAOS, LIFE and FREEWILL

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This article was prompted by Chris Nunn's interesting article *On the Freedom of Free Will* (Network number 68). The issue is the relevance of chaos theory to views that go beyond materialism.

I am an engineer by training and from my late teens I have been convinced of two things: 1) that there is more to human beings - and indeed all life - than mere materialism, and 2) that if there is an etheric or subtle body as part of that something more then it must interact with the physical in some real and effective manner, or of course it is redundant (the "engineers approach"). But how? As long as we subscribe to the picture given us by materialistic science there appears to be no "entry point" for the work of an etheric body. I believe chaos theory remedies this and I was very excited when it first became widely known for this reason. However, a subtle approach to the way we think about it is necessary. We do not want to repeat the old fallacies to do with vital bodies which change physical laws, or the preposterous ideas of "parallelism" whereby one body follows the action of the other without any real interaction. Neither do I wish to propose that chaos itself gives rise to life or freedom, which seems to be the kind of approach that is rightly dismissed e.g. by Nunn. The distinction is subtle and I failed to get it across at a Network working group some years ago!

What I am suggesting is that complexity - at the edge of chaos - makes "space" for other forces to work in. Thus a living organism may be regarded purely physically as being on the edge of chaos, so that were physical forces the only ones at work then it would degenerate and decay. Thus its structure and function are not sustainable by physical forces alone, as indeed we observe. It is only an act of materialistic faith to pretend that all the complex processes in an organism are reducible to the physical, for that reduction is in actual fact far from having been accomplished. Certainly the substances involved are being described with breathtaking detail, but not what "drives" the whole thing.

If physical forces are not the only ones at work then the very sensitivity characteristic of chaotic systems enables other forces to be effective, by providing a bridge between them and the physical. Thus forces of life can work into the physical organism without breaking or contradicting any physical laws. In mathematical language physical laws and forces are then necessary but not sufficient for life. It should be born in mind that although chaotic systems are rightly described as being so sensitive to initial conditions that their future behaviour is not predictable, this property is continuously present, not only at start-up.

Thus I am proposing that an organism is in the realm of complexity such that it is on the edge of chaos, and without the presence of the etheric body it would behave chaotically, but if such a body is present then it does not do so. Instead it behaves as we observe: growing, reproducing self-repairing etc. These activities are characteristic of

quite other laws than those exhibited by machines (discounting the obvious mechanical mimicry that is possible and which is not based on chaos).

Now, we should not adopt a "ghost in the machine" theory either, and the view being proposed does not warrant that. Rather we have in a living body a wholeness embracing both physical and other laws in an organic whole, not a physical marionette being manipulated by an etheric body. It is a wonderful whole such that both physical and living laws are in symbiosis. This is where I differ from the vitalist theory which imagines that a vital body is required to change or oppose physical laws. It is thus not to be wondered at that experiments designed to show that physical laws "break down" in an organism have never, to my knowledge, produced any results. But that does not prove a negative i.e. that no other laws are at work.

Thus the role of chaos is not to explain life or freedom, but to crack open the mechanistic nut by showing that the mechanistic determinism spawned by 18th and 19th Century thinking is quite simply false. However, the use of Hamiltonians and Laplacians in the 19th Century to analyse deterministic systems already then showed that under certain conditions the orbits in phase space become indeterminate, a favourite topic of study by chaos theorists. However, the issue was largely ignored until more recent times when increasing computing power enabled a practical study of the theory to be carried out.

Once all this is recognised we no longer have to wonder how life can influence matter, for the basis for an assumed paradox is removed. The issue of freedom is then shifted to another realm, as it is a spiritual question not a physical one. That free will can be effective (i.e. have real influence on events) - whatever its spiritual basis - can be understood in principle if the mechanistic refutation of its possibility (such as that of Laplace) is removed. A new kind of science is needed to study it in its own terms rather than borrowing inappropriate analogies from the physical realm.