SELF-ORGANIZED REALITY[1]

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I shall describe a new approach to modelling reality, synthesising ideas of Steven Rosen, Ilexa Yardley and Stuart Kauffman. Conventionally, physics presumes a specific fundamental mathematical equation, the solutions to which represent all possible realities. The alternative that we discuss is that domains of order progressively self-organize into more comprehensive domains of order, with the longevity of complexes at the various levels being a decisive factor in determining what manifests, as is the case in biology.

This is emergent law rather than pre-existent law, and demands very different kind of thinking to the usual kind. For example, there is no universal description of what is the case but instead many descriptions, corresponding to the variety of effective divisions of the totality into figure and ground. Such descriptions are not merely 'in the mind of the scientist' but (again, as is the case in biology) an integral part of nature's processes, while the determination of the nature of space is also an aspect of these processes. These ideas have clear implications for parapsychology.

DISCUSSION

ROE: Brian, one theory that does suggest an organizing principle (that can support or supplement epigenesis) is Sheldrake's notion of morphic resonance. I wondered what your views were on his theory.

JOSEPHSON: You probably could include it, and generation of form is a part of this whole picture. Is there much evidence in favor of it now?

ROE: I think theoretically it is rather vague—which, given the account you just gave, might make it more appealing—but empirically those tests that have been published have generally supported his predictions. The problem is that his theory does not uniquely make those

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[1] Due to the complexity and novelty of Professor Josephson's presentation he preferred to give a verbal overview rather than publish his ideas prematurely. These will be developed elsewhere in due course.

predictions; parapsychology in particular offers us other accounts that might expect to see the same differences.

VARVOGLIS: Brian I was fascinated by some of the things that you said about this interplay between chance, necessity and intelligence, and the third factor is one that people do not normally acknowledge. If you follow the intelligent design idea, is the intelligence something that is already there ('dark intelligence' or whatever), or does it emerge out of the interplay between structures and chance, as something that emerges and is then reabsorbed in an entropic fashion, much as biological systems drop back into the disorder after a short time? Is there something necessary about the emergence of intelligence?

JOSEPHSON: It may be everything. People talk about the possibility of beings in another reality able to interact with us. However, with mathematical creativity there may some interplay between a mathematician's mind and background structures. There may be a complex of answers but there is something pre-existing that is an essential part of the process, and has to be taken into account when explaining any given outcome, but cannot be taken into account in advance because of the infinite number of possibilities.

ROLL: The whole logic of this was unknown to me and is very exciting. Professor Josephson has hinted in an earlier paper that there are similarities made between quantum physics and quantum mechanics and a biological corollary of that. To see step by step the logic of how we can arrive at quantum mechanics from a biological perspective that is combined with psi is quite amazing.

JOSEPHSON: Our papers on this are available on my web pages, at http://www.tcm.phy.cam.ac.uk/~bdj10/mm/articles/PM.html.

VON LUCADOU: I am interested in your notion of a third observer. It has been shown mathematically that if you have two entangled systems that are separate, under certain conditions these systems are entangled too. So you create automatically a third entangled system which is the entanglement between those two systems. Does this fit with your notion of the third observer?

JOSEPHSON: Yes, it fits very well and I think entanglement is one of the things where there is a link with quantum mechanics. And there may be some special kind of entanglement of systems that know each other well. I think the idea that a third system can affect the way that other

systems interact is important, and could have implications for ideas about psychological space and inter-relationships and so on. There may be all sorts of hidden concepts in complexity that are only now just coming out, just as information theory produced something new. One hopes that the string theorists will make similar discoveries—the way that strings turn into branes seems to be a parallel.