

# Order out of Chaos: Possibilities for Transformation

*John Clarke*

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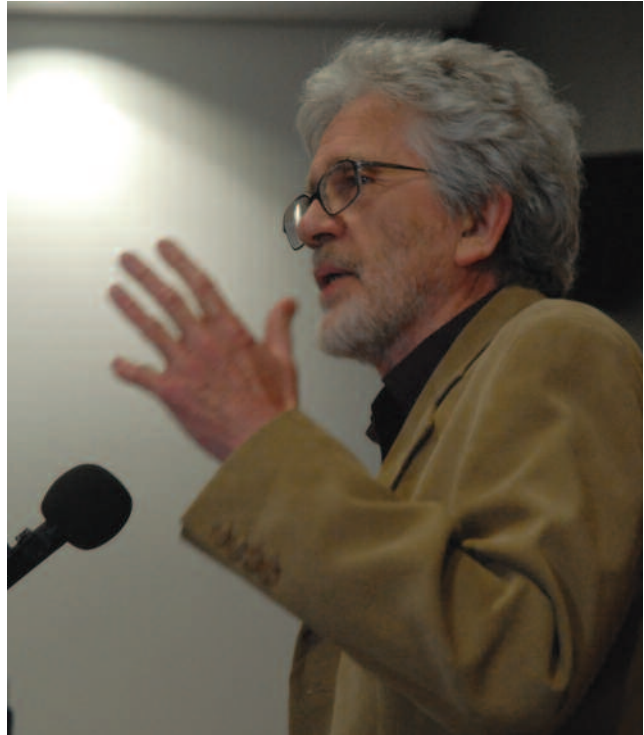
'In the beginning the heavens and earth rose out of chaos'  
(Milton)  
'Only if you have chaos in you can you give birth to a dancing star'  
(Nietzsche)

The question how the order of the heavens and earth rose out of chaos has long been a central philosophical and theological problem in the West. Does chaos arise from a preceding order, or is chaos in some way empowered spontaneously to produce order? In the philosophy of Plato, and in the Christian tradition that was deeply influenced by it, the former opinion has prevailed: ultimately nature is explicable in terms of a higher form of order, and the chaos we experience in the world is an unfortunate lapse from that original pristine condition. When the Book of Ecclesiastes pronounced that 'there is nothing new under the sun' it was laying down the long-enduring principle that only God creates.

In the past few decades there has been something of a revolution in this way of thinking. The creative potential of chaos has been intimated in a strand of Western counter-cultural thought that goes back via Nietzsche to the Romantics, but it has more recently emerged into prominence from a number of quarters beyond philosophy and theology. It has emerged from chaos theory itself of course, but also from a whole range of scientific and other developments which have drawn attention to self-organising systems that are evident at all levels of reality, from living organisms and social systems to the emergence of particles, galaxies and of the cosmos itself. An important breakthrough came with the introduction by Maturana and Varela of the concept of *autopoiesis* – self-making – to capture the way in which complex systems do not simply maintain stasis in the face of external conditions but dynamically recreate themselves.

Is a new paradigm emerging? The physicist Paul Davies pondered this in his remark that in this regard science 'is poised for a dramatic paradigm shift', and the biologist Brian Goodwin has drawn attention to "The shift of focus in the new biology that is developing out of the sciences of complexity [which] has its focus on the origins of emergent order in complex dynamic systems".

A similar shift of emphasis is also evident in spheres which on the face of it seem a long way from science. The new spirituality is a clear case in point. Many writers in this sphere have emphasized the need for a new approach to spiritual transformation which is premised, not on conformity to unchangeable, transcendent law but to the creative, transformative potential that is within us all. Some have taken this further and see this spiritual autopoiesis as a means whereby we can mirror the transformative potential of the cosmos itself.



The conference drew on many different sources of inspiration in an attempt to illustrate and make sense of this new way of thinking. It was certainly appropriate that **David Lorimer** opened the conference with music, with Bach's great Toccata and Fugue in F Major which demonstrates with such emotional and intellectual power how a few simple strands of sound can be woven together and transformed into a sublime rhythmic whole, a kind of creation which wisdom traditions have often compared to the creation of order in the cosmos itself.

In his talk, David drew attention to the ways in which an increasing variety of thinkers over the past century, from Bergson and Whitehead to Prigogine and beyond, have shifted the foundations of our thinking about nature from classical determinism and materialism towards one which recognizes the transformative and creative potential of both the natural and the human world. This has meant a shift away from the comfort of certainty and absolute beliefs, and underlines the need for toleration and the acceptance that we live in a world of change, plurality and uncertainty. It is becoming ever clearer, not least in the field of economics, that we live in a world that is poised somewhere between absolute order and absolute disorder, on the edge of chaos, which is the condition of both destruction and of creation. Much needs to be changed, not least our states of mind, in order to cope with this emerging new world.

With wonderful synchronistic irony, the conference nearly lost two of its speakers because of the chaotic descent of

Dr Peter Fenwick, Dr Marie Angelo,  
Brother David Steindl-Rast,  
David Lorimer, Barnaby Brown.



the volcanic dust-cloud onto our orderly plans. The next speaker, **Stuart Kauffman**, was as a consequence grounded in Finland, but through the technical wizardry of Martin Redfern and Claudia Nielsen we were able to retrieve order from chaos and carry on by means of video recordings and two-way video links.

Stuart, who is a leading theorist in the field of emergent self-organising systems, made it clear from the start that we are engaged in a radical change of worldview, largely propelled by new developments in the sciences, but extending well beyond science's normal remit, even towards a new meaning of 'God' and the 'sacred', indeed a new meaning of 'meaning'..

The main thrust of his argument was directed towards traditional reductionism and determinism of the kind that we associate with the French cosmologist Pierre Laplace who famously boasted that we were capable in principle of precisely predicting all future events in the cosmos, and even retrodicting all past events. We need, Stuart argued, to reassess the basic premises that the world is governed by inexorable laws, and open our minds to the idea that the cosmos is essentially creative and hence radically unpredictable. He accepted that in many quarters reductionism is alive and well, and is doing service as the prevailing paradigm, but he pointed to many areas of scientific thinking, especially in biology, where the sheer complexity of factors makes reductive explanations effectively, and even in principle, inapplicable.

The spiritual implications of this are as profound as the scientific, and lead, in his mind, to a reconsideration of the basis of our values and our sense of meaning in the light of a universe which is not only self-creative as a whole but also in its many natural and human dimensions. The ceaseless creativity of the universe has implications, therefore, for the value we place on human actions and the human quest for meaning, and on the notion of the 'sacred' which needs to be 'reinvented' and brought back home into the world of nature.

If Stuart propelled us from science to spirituality, the talk by **Brother David Steindl-Rast** anchored us firmly in the

spiritual realm. For him the primary task is 'How do we find our bearings?' in a world of bewildering size, change and complexity. In the midst of all the noise that these conditions bring, the first and most important need is for a silence beyond words, a silence which has the power to speak to us, and which can transform us in ways which allow us to attune ourselves to the natural world, and puts us in touch with creative potential of every moment. This is the silence of the Buddha's 'Flower Sermon' which has the power to unite where words can divide. A further need is for a God who is not 'wholly other', but of whom we are an intimate part. And a third need is to learn the virtue of thanksgiving, for example for the gifts of science and art which are our promise and potential of self-transformation.





The creative transformation of which **Marie Angelo** spoke was that of the symbolic world of alchemy. This she elaborated in terms of three basic elements. The first was 'mythos' which gave her the opportunity to talk of James Hillman's archetypal psychology with its emphasis on the importance of image, fantasy and stories, taking us back to the pre-scientific world of Neoplatonism. The second was 'cosmos', the order of the world which arises from the chaos of primal darkness and which is the *materia prima* of all creation. This gives rise to the third element, 'transformative order', which Marie elaborated in the context of her educational initiative to enhance spiritual growth.

The conference was drawn back into the transformative order of music in the final session on Saturday when **Barnaby Brown** invited us to participate in the creative process of musical reconstruction of a partly lost Celtic and other ancient musical traditions. He showed how the imaginative recreation of rhythmic patterns by means of a new musical notation can bring order out of seeming chaos and can at the same time induce altered states of consciousness.

**Simon Conway-Morris** confronted us with the mind-opening question 'If evolution is predictable, what does that tell us about its deep structure?' In his reflections on this question Simon argued against the view, associated with Stephen Jay Gould among others, that steady progress of evolution is punctuated with unpredictable breaks and jumps which suggest that the possibility of the evolutionary process repeating itself is vanishingly small. Simon argued that recent work on convergence showed that the broad trajectory of evolution is predictable in that it demonstrates a remarkable isomorphism between parallel and unconnected strands. For example the camera eye which we have inherited has evolved in broadly similar patterns along quite distinct phylogenetic pathways. A similar kind of convergence is evident in features such as warm-bloodedness, birdsong and social play, and as far as humans are concerned the argument shows that our supposedly special cognitive capacities are deeply intertwined with the rest of the 'tree of life'.

The final talk by **Wolfgang Michalski** drew us back to the present, bringing us again to making use again of technology's creative response to the volcanic eruption, and at the same time to the volcanic eruption of the current economic crisis. He led us through a fascinating history of



economic crises in the modern world, showing how financial debt crises have occurred from the 14th century onwards, caused by such factors as war and famine. Our current crisis is in a different category, being global in scope, with only two precedents in 1857 and 1929. What we have experienced over the past two years is an unbridled speculative epidemic, especially in the housing market, the consequence of irrational exuberance and risk-taking driven by easy credit and lax surveillance. Are we on the way to recovery? Wolfgang was not sanguine. A longer term deflationary crisis was by no means impossible, and the continued poor state of the major economies, largely due to the huge rise in public debt, pointed to the possibility of a new major crisis. Certainly a greater degree of public control of the banking system was necessary, he argued.

The last laugh was on the Brits: 'You lent Iceland a lot of money', Wolfgang quipped, 'and they sent back a lot of dust', which nicely sums up the irony of the situation. The rational expectations of economists were certainly confounded, and the consequence of the crisis is that the world seems even more uncertain and unpredictable than before. It brings home painfully to us that we live on the edge of chaos, a condition which might lead entropically to greater and more painful disorder. Alternatively it might, like the dark night of the soul, lead us to deeper reflection on how we got into this situation, and thence to the possibility of creative transformation. In complexity jargon, this is the 'tipping point' which marks the moment of greatest danger and greatest opportunity.

*John Clarke is writing a book on emergence theory, tracing its development and arguing for the importance of its wider theoretical and spiritual implications.*

