



The Creative Cosmos: A Personal Journey of Discovery

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Contemplating great works of fiction I found that the important points of view to apply were (inter)relation, wholeness, process, function, system – looking at the work not as a static phenomenon but as a dynamic process. At the same time an alternative science found the same for the world we live in. With interests on both sides I was more than happy to try to develop both these two fields.

A Self-organising Universe

In my doctoral dissertation of 1958, *Landscape and Nature in (Selma Lagerlöf's) Gösta Berling's saga and Nils Holgersson* I showed how parts of a literary work always have to be looked upon as *interrelated*, in my case the interrelations of landscape and nature to human beings and events – both epic relations on the causal level and lyrical relations on the level of similarities and contrasts. Over the subsequent 50 years of professional life I have sought to reconcile the outlook of a literary humanist with the demands of modern empirical science, and this has led me to attempt to develop a new way of thinking about the world.

An important moment in this journey began with the discovery in 1985 of Erich Jantsch's great book *The Self-Organising Universe*, dedicated to Ilya Prigogine, the 'Catalyst of the self-organising paradigm'. The new way of thinking which this book provoked can be said to be 'humanistic' in that it shows us that the world of nature exists in the same way as man, and that nature, just as man (and in Christianity God), is able to *create*, though not in the same conscious and 'rational' way as man (or God). According to this view the energy that runs through nature enables matter to organise itself into ever more complex functioning systems, as in the case of the vortex and the candle flame, complicated chemical structures and phenomena of weather and climate, as well as ecological systems culminating in Gaia, and life itself and all parts and forms of life, man included. It is a question of systems that, thanks to the feed-back function, also support and regulate themselves. They are called self-organising systems or dissipative structures. (from the Latin *dis-sipare*; what is dissipated is the energy that is required for the self-organising function). We observe this all around us and are ourselves such systems, and so are all systems in our body down to the individual cell.

A key for these systems is 'far from static balance', open for the flowing-through of matter and energy in a continuous process, which through feedback organises itself. By a thrust with high gradient, fluctuations (disturbances) from outside or from inside can force the system over an instability-threshold to transcend and recreate itself. As has been made clear by Maturana and Varela, life is characterised by autopoiesis; it produces also its own components - the foetus! This kind

of system or structure is a universal *form of existence*, but nobody seems to have understood it before Prigogine.

What was wrong with materialism was not that it was a doctrine concerning matter but that it didn't understand matter. For what can be more obvious than the fact that nature organises itself. In the light of this we need to abandon the idea of God as engineer and mechanic and understand that man certainly does not arrange whirlpools in water and air and other such phenomena. Matter in conjunction with energy is creative and not merely passive, innocent material for human activities, including science.

When fluctuations or disturbances occur, systems can exceed and reorganise themselves into more and more complicated structures, as long as energy is available. In this way nature itself has created the tremendous multiplicity that we have the privilege to be born into. And we ourselves are the latest creation of this great evolution, an evolution which, in contrast to Darwin's theory, encloses everything on this earth, not only the biological sphere. Darwin was not wrong, but Darwinism is not the whole truth.

We are used to thinking of creation and organisation as rational, conscious activities, but this is only one possibility. The agency that governs the evolution of system doesn't need to arise from man's brain, nor even from God; it can just as well belong to the metabolic system (we need only think about our own body systems and intestines, which regulate themselves in this way). As a matter of fact, systems running by their own metabolism is the ordinary case in nature and evolution. And that has worked very well. Rationality, on the other hand, is a more problematic agent, as we know today all too well at a time of threatening ecological disaster. Rationality is a faculty with limited scope and capacity.

A central figure in this new paradigm, as we might call it, is the Nobel Laureate in chemistry Ilya Prigogine, (1917-2003), who was professor in Brussels and Austin, Texas. From an early interest in the humanities he went to a career in natural science, a career that made him the Newton of our time. In contrast to the first Newton, he rejects a worldview that does not embrace both nature and man (including the scientist himself).

Prigogine was the author of *Order out of Chaos* as well as

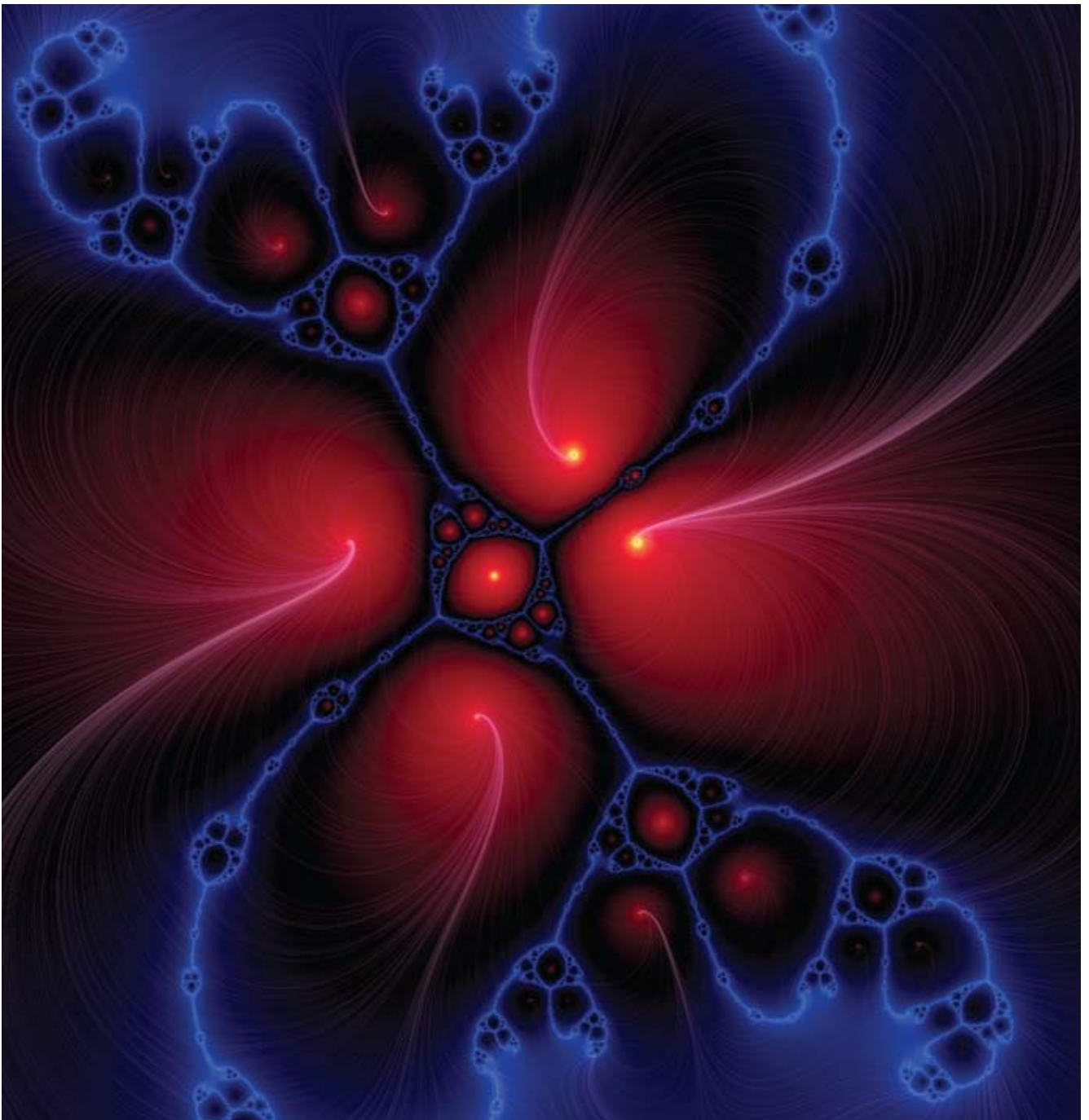
many other books. Concerning 'modern' analytical-reductionist science from the 17th century, he comments that: 'Nature's humiliation is parallel to the glorification of whatever escapes it, God and man' (p. 53 in the Swedish translation from 1984). The depreciation of nature unites science and religion. But life is 'the outermost consequence of the occurrence of self-organising processes, instead of being something outside nature's order' (172). We are the last creation of the nature we learnt to despise. 'The classical science (is a) mythical science about a simple, passive world, belonging to the past, killed not by philosophical criticism or empirical resignation but by the internal development of science itself' (57).

With the help of Prigogine's theory, covering both matter and life, we can overcome the split between natural science and humanities. For natural science deals with a world without man, the humanities - and still more 'humanism' - deals with Man without world. The former - world without

man - impoverished and pointless; the latter - man without world - seems narrow-minded and anthropocentric. This results from the fact that in both cases it is a question of abstraction and construction. For the world is *one* only, it is only we who persist in dividing it into two: man and nature, soul and body, mind and matter. So it becomes urgent to contemplate the relationships between both sides.

Emergentism: The World as Process

This new paradigm is necessary, if 'modern' science (dating from the 17th century), and its subsequent technology and economic system, are not to devastate the Earth, our splendid home in the universe. An important contribution to this lies in the work of Ken Wilber, especially to his *magnum opus: Sex, Ecology, Spirituality*. Wilber takes the new science created by Prigogine and others as his starting point. But according to Wilber, not only Newton's but also



Prigogine's science deals only with the *external* aspects of reality, and thus omits the other half of reality.

Furthermore, according to Wilber the world should not be viewed as a 'flatland', but vertically structured in accordance with the old idea of 'The Great Chain of Being'. Following Arthur Koestler, he calls this a 'holarchy' (from the Greek *holon* = a whole that at the same time is part of another, higher whole). In this way, Wilber wants to achieve what he calls 'a world philosophy', an 'integral philosophy', meaning a system of thoughts covering 'all quadrants/all levels', and doing so in form of 'orienting generalisations' about a world which thus is *not* disjointed and reduced to its lowest level. A philosophy which furthermore unites this new science with classical philosophy and religion in West and East into a great, all-embracing worldview.

In developing these ideas I was also drawn to Richard Tarnas's book, *The Passion of the Western Mind*. In an admirable survey, he argues that man has become a stranger in his own world. This, however, has generated a longing for a lost communion with nature. The deepest passion of the Western mind, Tarnas argues, is to transcend this worldview by a means of a reunion with Nature, from which man once emerged. 'The *telos*, the inner direction and goal of the Western mind has been to reconnect with the cosmos in a mature *participation mystique*, to surrender itself freely and consciously in the embrace of a larger unity that preserves human autonomy while also transcending human alienation' (p. 443 ff.).

More and more I have realised that modern science from the 17th century is an *ideology*, ruled by the belief that evolution is governed by chance acting on chemical and physical processes. Biology is the last science to have joined this ideology – and succeeded! But is chance and DNA really everything? In the thought-provoking book *How the Leopard Changed Its Spots*, Brian Goodwin shows that the most important processes in nature take place 'beyond Darwin and DNA'.

These ideas led me to ponder what concept was the most appropriate to convey their fundamental significance, and decided upon the term '*emergence*', which led in turn to my book: *Världen underbarare än vi tror. (The World More Wonderful than We Think. Emergence, Self-Organisation, Synchronisation, Non-reducibility)*. In this book I attempted to elaborate examples of emergence including the Big Bang, and the transitions from matter to life, and from life to mind. But the world processes are full of examples of emergence, e.g. hydrogen and oxygen transformed into water, and sodium and chlorine into common salt

In an essay entitled 'Den klassiska naturvetenskapens blinda fläck' ('The Blind Spot of Science'), I attempted to solve the riddle why the ideas of emergence and self-organisation are so alien to established science. The fundamental reason seems to be that the analytic-reductionistic method almost by itself leads to an atomistic-mechanistic-deterministic world view; the view lies, so to say, implicit in the method. As the component parts – the atoms, the molecules, the genes – come to the fore in our thinking, the great connections, processes and systems are lost sight of. There is no room in this way of thinking for nature's own creative power, for emergence and self-organisation. It is something like the relation between doctor and patient: the patient is not supposed to have the ability to act on his own initiative.

Similarly in the case of the relationship between colonisers and colonised.

A useful phrase here is what Ken Wilber calls 'the self-transcending drive of the Kosmos'. This is evident in the continued emergence of complex systems from the Big bang to galaxies, stars, planets and life; from cells to plants, animals, man and consciousness. Wilber continues: 'Creativity, not chance, builds a Kosmos. But it does not follow that you can then equate creativity with your favourite and particular God. (...) But the fundamentalists, 'creationists', seize upon these vacancies in the scientific hotel to pack the conference with their delegates. (...) There is a spiritual opening in the Kosmos. Let us be careful how we fill it.'

The scientific method that brought about so many blessings to mankind also generated a sterile world view, out of touch with reality, preventing us from seeing that this world was able to create us. This is one of the great tragedies of human reflection. The idea of emergence as an alternative paradigm to divine creation on the one hand and reductive materialism on the other seems to be a good way forward. The ideas of Jantsch, Prigogine and Wilber, as well as biological thinking beyond Darwin and DNA have led me to the phenomenon of emergence. These and a long life of thinking about these matters have made it possible for me to find a way between reductive materialism and one-sided spiritualism, and to realise that *we don't live in a mechanical world but in a creative universe*.

Inevitably this leaves us with questions. From guru Krishnananda in Rishikesh in India I learnt that even a world that creates itself must once have been created. But that is a circumstance that never worried me, because I do not have instruments to understand how it happened and because I love this world as it is. But I am aware that others think they have such instruments and so they see me as one who turns his back on 'mystery's gate'.

A fuller account of my intellectual journey can be found in my website www.lagerroth.com

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