

Counterspace and Organisms

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A possible way of applying counterspace, discovered by Rudolf Steiner and geometrically characterised by George Adams (Ref. 1), has been described in Refs. 2 and 3. The essential idea is that an object existing in both spaces at once may suffer strain and stress as it cannot always obey the laws of both spaces simultaneously. Many ideas familiar to us in ordinary space do not apply in the same way to counterspace, for example there are parallel planes in space but not in counterspace. One finds parallel points there instead. Perhaps the most radical difference concerns our notions of 'inside' and 'outside'. If we have a sphere then in ordinary Euclidean space we refer to the inside as that region enclosed by its surface. Enclosure here implies a point-wise way of thinking for we can imagine points that cannot be moved to infinity without crossing its surface: they are 'enclosed'. Planes that do not intersect the surface lie 'outside' the sphere, and cannot be 'enclosed'. Thus for counterspace the situation is quite different, and we use the idea of infinity to guide us.

As explained in Refs. 2 and 3, a point plays the role of infinity for counterspace, and is like an infinite inwardness, an unreachable location inwardly. We look inwards from the cosmic periphery with a different kind of consciousness and watch a plane turning about a line, for example, and getting ever 'further away' as it does so until it vanishes into infinity when it lies on the infinite point. If our sphere now has that infinite point (say 0) at its centre then we see that planes which do not intersect its surface cannot contain 0, and such planes are 'enclosed' by the sphere in counterspace. Enclosed planes cannot 'go to infinity' (move until they lie in 0) without intersecting the surface. The counterspace volume of the sphere, which we call *polar volume*, consists of the ordered assemblage of all such 'enclosed' planes. This notion, although somewhat simplified, leads to an interesting way of thinking about organisms as we shall see.

When we think about life in relation to counterspace we have a fully metric linkage (c.f. Ref. 3), which at first is difficult to reconcile with the rigid quality of fully metric transformations. If, however, we note the importance of surfaces for etheric forces we are reminded of the importance of membranes in living organisms. Organs are surrounded by and often contain many membranes, the skin itself is a membrane, important membranes in the brain protect it from poisons unless damaged by drugs, and every cell is contained in its plasma membrane. Such membranes are semi-permeable and selectively transport substances into or out of a cell in the case of the plasma membrane. Inside the cell we find further membranes such as those surrounding the mitochondria, the nucleus (for eukariotic cells) and organelles like chloroplasts. Membranes are not rigid yet they certainly relate to metric processes such as rates of diffusion, so we see that if aspects of the life ether

manifest through their surface form and action we solve the 'rigidity' problem.

If we regard the plasma membrane as a surface linking space and counterspace then the counterspace *inside* (as we shall write it, in contrast to the spatial inside) is what from a spatial perspective is outside. Thus we find the 'machinery' of a cell is *outside* for counterspace while all the other cells of the organism are *inside* it. This is what makes the assemblage an *organism*, for every cell contains all the others. There must be a remarkable synergy for all the cells to co-exist and co-operate in this way. Any damage or illness upsets this synergy and since all cells are involved in the resulting imbalance we begin to see why and on what basis the organism heals again.

We may capture the notion of synergy mathematically with the aid of fractals. In Ref. 3 the idea of a population of counterspace infinitudes (CSIs) is postulated such that each infinitude is an image in ordinary space of a single *primal* counterspace. Each chemical element may be regarded as such a population, and at a higher level each cell of an organism likewise. Then a primal counterspace for an organism will have a complex structure which unfolds into its cellular structure as it grows. The whole is then inwardly contained in every cell, reminiscent of Goethe's ideas. That every cell *contains* all the others is an expression of this. The fractal idea comes in because each cell or CSI is an 'eye' of the primal counterspace, its particular 'viewpoint' depending upon its specialisation and position in the organism. Just as a fractal is scale-invariant so in a sense is an organism, which is most clearly illustrated by its capacity to grow. A mathematical result called the Collage Theorem enables forms such as those of fern leaves, and various kinds of "sieve" to arise which are self-similar at (in principle) all magnifications (Figure 1).

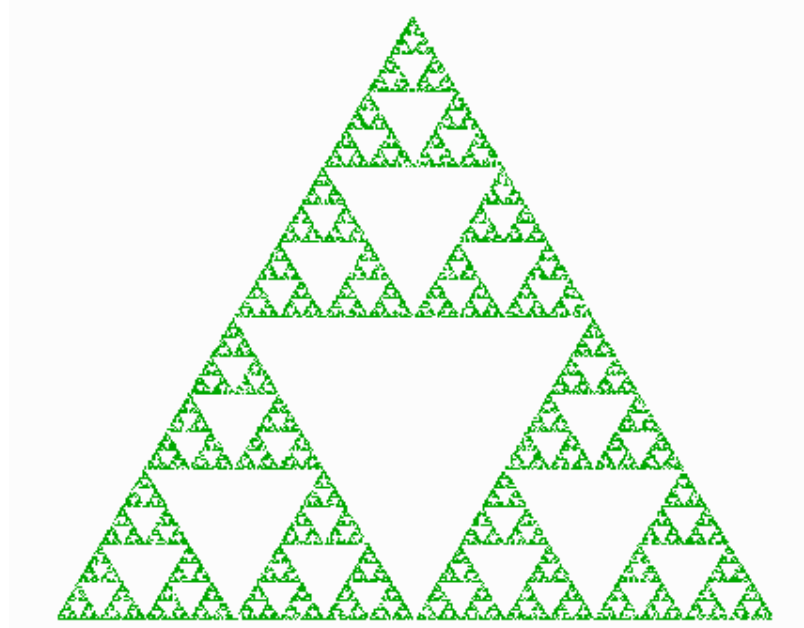


Figure 1

No point can lie in the largest inverted triangle, nor in any of its smaller images. In this example three similar transformations (translations and contractions) co-operate in the process such that only those points exist in the fractal which belong to an image of it at all magnifications. Such points are in synergy with the whole assemblage. This only needs developing to allow distinct but related transformations to interwork in a similar manner. Then we can pass from the rigidly self-similar quality of a fractal to one which is more organic. This kind of idea lies behind our concept of how distinct CSIs relate to one another, but we imagine the synergy imposed by a species or specimen to be more complex than that of simple fractals.

The essential idea that strain may arise leading to stress here manifests at the edges, or when the form is disrupted in some way. In three dimensions we may have similar structures e.g. a fractal tetrahedron, or more complex forms when rotations are included. The strain will then appear at the outer surfaces, decreasing inwards. This kind of synergy readily gives rise to plant-like forms as is well known. Polarity and inversion can then be included (going beyond the Collage Theorem) to arrive at other kinds of synergy. The polar process in two dimensions (working with fractally related lines instead of points) gives rise to the following kinds of form:

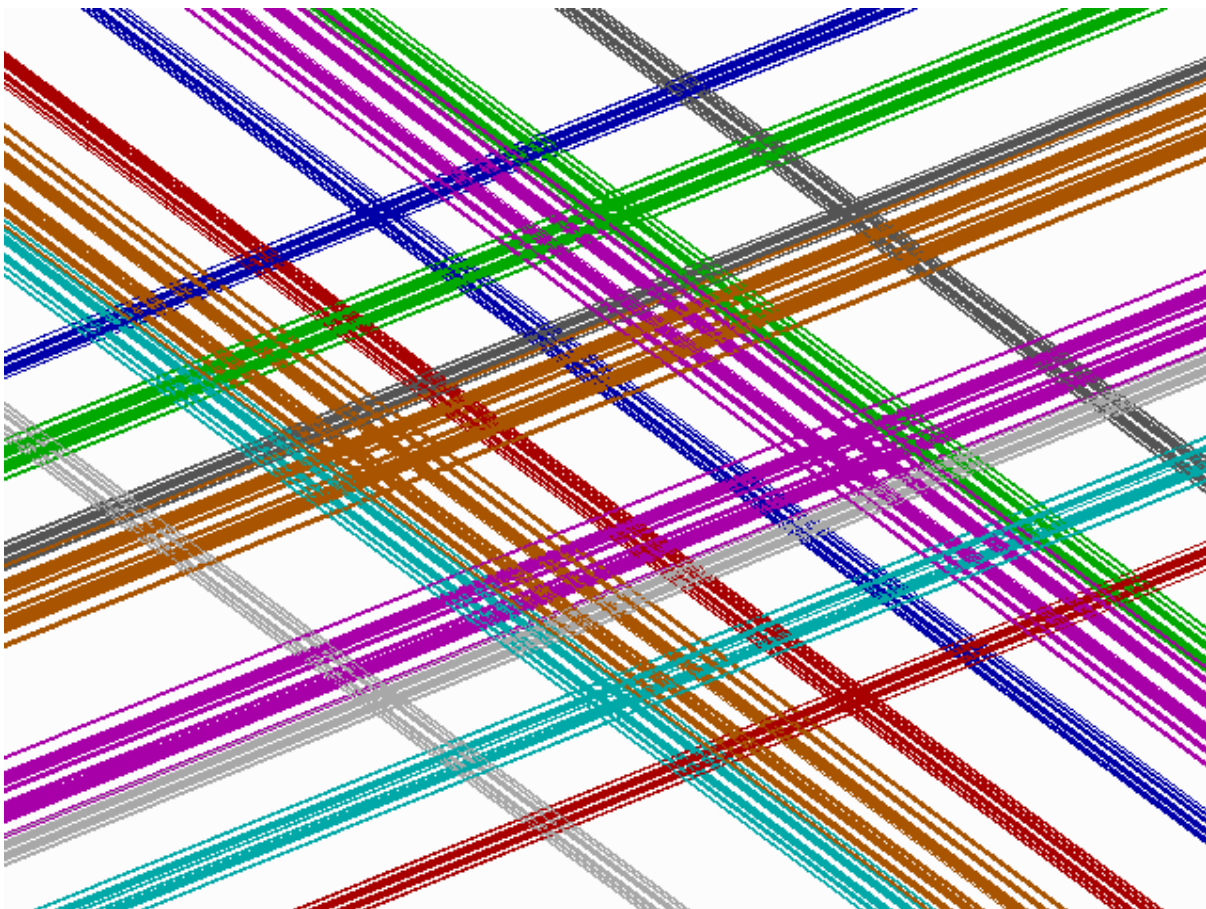


Figure 2

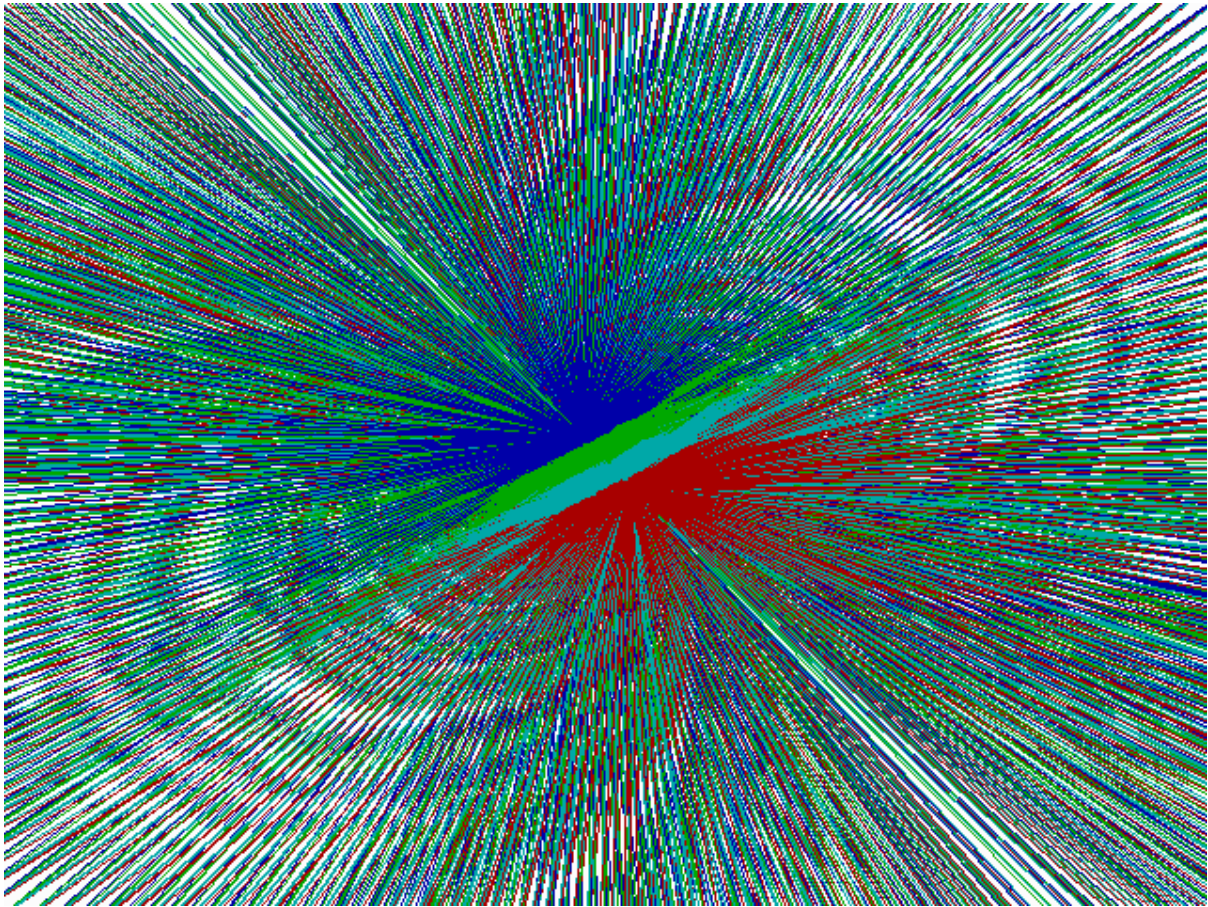


Figure 3

To show three-dimensional versions of these is scarcely possible, certainly not here.

For a living organism we envisage a fractally distributed metric linkage, but as remarked before it will involve more subtle transformations. An important feature of the relation between space and counterspace developed in Ref. 3 is that radial displacements in counterspace are related to time, whereas tangential ones concern frequency and rhythm. Thus the unfolding of the primal counterspace structure into space will involve radial growth and tangential spatial rhythms. That, however, is only a first approach to what needs much more development to encompass the enormous variety of flora and fauna.

Recent work indicates that cosmic forms invert into what is usually thought of as atomic structure, although the material concept of atoms is not thereby postulated. In line with Rudolf Steiner's research, where we normally think there are atoms actually the cosmos works in towards infinitudes in a structured manner, so that the structures that have been discovered through much patient research (e.g. polymers) are valid but their materialistic underpinning is not essential. That is not to say there is no matter but rather that whatever it is (does

anyone know?) it does not have to be regarded as "made of material atoms". It seems that where atoms are postulated holes in the ether are to be found instead, turning Democritos on his head. The life ether controls these structures so that they are exactly suitable for the genesis of living forms. This also seems to be in line with Brian Goodwin's work on the role of chemistry in the genesis of organic forms (Ref. 4).

References:

1. "The Plant Between Sun and Earth", Adams and Whicher, Rudolf Steiner Press, London 1980.
2. "Rethinking Physics", Nick Thomas, Articles Supplement to the Science Group Newsletter, September 1996.
3. "Science Between Space and Counterspace", N.C. Thomas, New Science Books, London 1999.
4. "Tip and Whorl Morphogenesis in *Acetabularia* by Calcium-Regulated strain Fields", B.C. Goodwin and L.E.H. Trainor, Journal of Theoretical Biology (1985) 117, 79-106, Academic Press Inc. (London) Ltd.