

Interview with 'Fertile Grounds' (fertilegrounds.art) in preparation for 'Fungi Fest' on 6th October 2019)

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For someone who has never heard of it what is natural inclusion?

Natural inclusion is to my mind a fundamental evolutionary process, which differs radically from Darwin's concept of 'natural selection' as what he called 'the preservation of favoured races in the struggle for life'

We can become aware of natural inclusion when we view life as an expression of natural energy flow in open space, not a competition in a closed box.



To understand the evolution of life as an expression of natural energy flow calls us to change the way in which we in modern culture have mostly been led to think about matter, energy, space and time as if they are separately definable and measurable aspects of reality. Most especially we need to change the way we have been led to think of space and boundaries as definable sources of

separation between isolated objects, and begin to think of these instead as sources of natural continuity and dynamic distinction.

What I am recognising here is that all material bodies, including our own human bodies, are made of space and circulating energy in mutually inclusive, receptive-responsive relationship - a 'dance' of energy around and within the stillness of space. Think of how a tornado or hurricane forms as a whirl of energy around a receptive spatial centre, and you'll get the basic idea. Both receptive stillness and responsive movement are required to co-create the dynamic form.



Correspondingly, *natural inclusion is the evolutionary process through which all natural material forms come into being and diversify as **flow-forms** – mutual inclusions of space and circulating energy in receptive-responsive relationship.*

To put it another, deeper, way, all of us, from the atomic particles and cells within our human bodies to giant galaxies are made of Love, Where Love is understood both as 'Receptive Yearning' and 'Responsive Passion': Agape and Eros, Darkness and Light combining together in the bodily embrace of Philia and Cosmic Communion. Notice here how I have mentioned the Three Aspects of Love, recognised in some spiritual traditions

How may one experience it for themselves?

By becoming feelingly aware of our own body as a living, breathing, dynamically bounded, hollow vessel that is both receptive and responsive to its natural environment, not isolated from it.

For example, just by paying attention to my breathing, it becomes obvious to me that as I breathe in my chest or abdomen expands as my environment simultaneously breathes out into me, and that when I breathe out my environment simultaneously breathes in from me. My inner world and my outer world exist in reciprocally balancing relationship with one another as distinct presences, not as isolated entities or one and the same thing.

I can take this further and deeper through a meditative practice that combines opening and closing my eyes, so that I become alternately aware of both my outer and my inner worlds and how very different my perceptions are when I am focussing attention on one or the other alone. e.g:

'How Pure Eyesight Can Dislocate Your Knee'

I invite you to sit down in a chair, and to stare fixedly at your knee. Now, still staring, stroke your knee with your fingers. Now, continue stroking, but close your eyes. Now open them again. You might notice a tendency, when opening and closing your eyes, to change your perception of your knee. You may 'flip' from a detached, insensitive objectification of your knee as though it was 'out there' somehow disconnected from your body, to a feeling awareness of its presence as a subtly textured, dynamic aspect of yourself enveloped in and enveloping rather than isolated by space. Whilst our binocular vision, from eyes in the front of our heads helps us to differentiate one thing from another and so catch or grasp 'objects' and avoid obstacles, this exercise demonstrates how it also has a dislocating effect. It seems that the objectivity of pure eyesight can dislocate your knee! It makes (air) space seem like a separating distance of 'nothingness' rather than a 'pool' in which we are immersed and gathered together.

When we close our eyes meditatively, we feel space pool around and within us as a receptive 'presence of absence' rather than see (or rather, fail to see) what we take to be the absence of presence that comes between material objects.

Or I could experience the difference between encountering a brick wall and walking through an open doorway – one of which resists while the other permits my bodily movement. Then I can ask myself simple questions like 'Where would I be if my body was devoid of space or if my body had no material presence?' 'Nowhere and everywhere' I might have to answer, in which case I'd have to recognise that to be anywhere distinguishable, my material body and space would need naturally to include each other, not be separable or one and the same. And for that to be possible, my body would need to combine the stillness of space with circulatory motion.

Following this through I'd become fully aware of my body as an energetic – and hence not instantaneous – inclusion of space somewhere within space everywhere. No *real* body can exist in the absence of space or movement, as abstract thought presupposes and has enshrined within its definitive, 'either/or' logic and mathematics.

How does natural inclusion function in a micro-sense with an example?

As I've just implied, all natural material bodies, from subatomic particles to galaxies, have volume and so can only exist as manifestations of space and energy in reciprocal, receptive-responsive relationship. Living cells, for example, exist as watery bodies enveloped by an interfacing fluid

membrane that energetically distinguishes and communicates between their insides and outsides without cutting one off completely from the other. The fact that cells were ever called 'cells', as if they were isolated 'prison blocks of life' rather than centres of inner-outer communication is deeply ironic and perhaps a symptom of abstract thought.

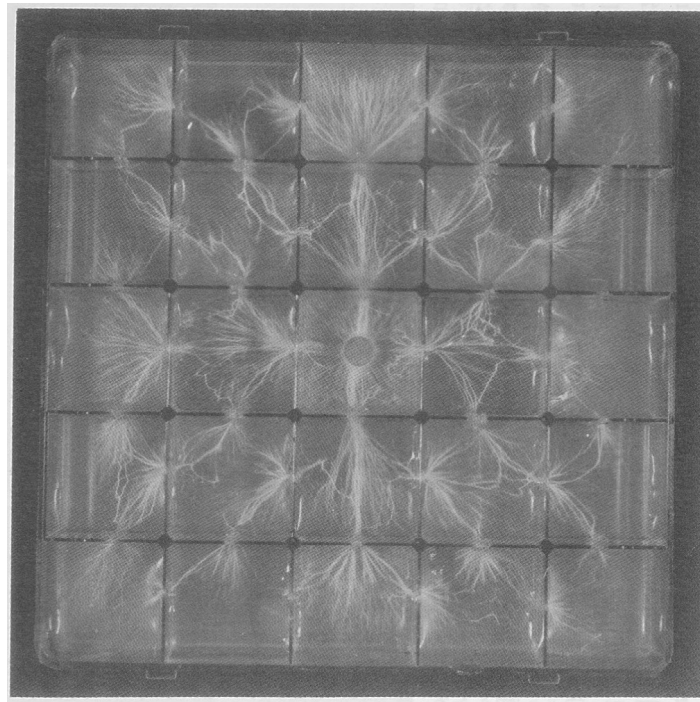
How does a mycelial network function? Can that help explain natural inclusion?

A mycelial network exists and functions as a collective communication system of cellular tubes, enveloped by both a membrane and a cell wall. These tubes, called 'hyphae', grow at their tips and can branch, fuse, degenerate and partition themselves internally as their circumstances change. Mycelial networks are hence FLOW-NETWORKS, often originating by growth from a single spore or propagule, whose role in life is to gather in, explore for, conserve and redistribute the sources of energy the organism needs in order to thrive and reproduce. They are very different from STRUCTURAL NETWORKS, such as spiders' webs and building frames, formed by connecting lengths of material together in order to provide supportive strength, resilience and a means of entrapment of sources of energy.

Mycelial networks are hence illustrative examples of receptive-responsive relationship in action as a way of life. Their form and function is *explained* by rather than itself a means of *explaining* natural inclusion, but they do beautifully illustrate the significance of natural inclusion as a basis for understanding life.

What can fungi teach us about how to live better as humans?

Primarily, I think they teach us what SUSTAINABILITY really means and how it is achieved through enabling LIFE TO CONTINUE IN A BALANCED WAY rather than OVER-REACH itself and in the process destroy and compromise what it needs to exist.



Sustainability means living receptively and responsively *in tune* with environmental circumstances as they fluctuate and change, not seeking *independence* from them. Above all it means relating to energy supply, not money supply, as natural currency. There is no doubt that economic and social systems that run into deficit by borrowing from an anticipated future instead of attuning with what's currently available promote an unsustainable and ultimately unloving way of life. I could go on....

What can fungi teach us about natural neighborhood?

They exemplify the reality that self-identity naturally includes and expresses neighbourhood rather than being independent from it. By 'neighbourhood', I am referring to the spatial and energetic 'ground' or 'context' from which a material 'figure' or 'form' comes into being. It is the very SOURCE of the figure's existence and to cut one's self off from it is ultimately suicidal.

How were you first attracted to mycology? If there was one thing about fungi you could share with people what would it be?

My father introduced me to mycology by taking me on a fungus foray when I was 8 years old. I was fascinated especially by colourful Fly Agarics and Brittle Caps as mysterious 'eruptions from the ground' that literally 'Flowed into diverse Forms'. I quickly became intuitively adept – so I was encouraged by parental approval to think – at recognising 'the essence of' the identity of these forms beneath their disguises and camouflages – just as we can recognise someone we know despite their changes of hairstyle and clothing. For a young mind this was simply thrilling. In later life I became equally enthralled to realise that behind the scenes of these diverse 'film star appearances' were unnoticed 'underworld production teams' - mycelial networks – responsible for gathering up and distributing the necessary supplies of energy from equally diverse living, dying and dead sources. These mycelial networks, so often taken for granted as a kind of 'animated cotton wool' themselves exhibit extraordinary variability and versatility as they attune themselves to different circumstances in their natural neighbourhood.

So perhaps the one thing I would like to share is that 'there is far more to the life of fungi than immediately meets the eye'. And that is true too, for all forms of life.

In your opinion, what is the problem with the current way science operates/views organisms?

In a nutshell, as a product of abstract thought, current science predominantly regards and treats organisms as if they are 'performing objects struggling to survive in competition with one another and at odds with their natural neighbourhood'.

Do you think the idea of flow clashes with the current nationalistically-focussed and individualistic worldview

Undoubtedly. Our current nationalistically focussed and individualistic world view is a direct product of abstract thought, which definitively isolates organisms from their natural neighbourhood instead of understanding them as fluid expressions of their neighbourhood.

Moreover, this individualistic worldview is prone to misunderstand true democracy as governance for all, by all, through all, and put in its place social and political systems that set different factions in opposition to one another instead of bringing diverse views into confluence.

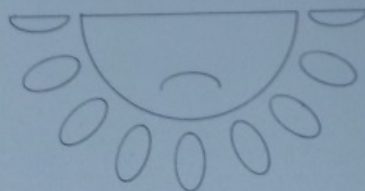
True democracy, to my mind, is 'for all, not part'...and in that sense true democracy and natural inclusion are synonymous.



DEMOCRACY
IS FOR ALL



NOT PART



What is it that excites you about recurring shapes in nature? Can you tell us about fungal shapes? Other organisms that are similar to fungus forms?

What excites me is the fact that all these shapes can readily be understood as expressions of natural flow-geometry – the mutually inclusive, receptive-responsive relationship between space and energy. The most fundamental of these shapes is circular or spherical – not square or cubical – and all other recurring shapes can readily be generated from this shape through processes of elongation, branching, fusion and close-packing. Fungal spores typically germinate first by swelling spherically and then producing one or more elongating tubes – hyphae – that can branch, spiral, fuse and gather together into fruit bodies. The fruit bodies can assume all sorts of shapes – crusts, clubs, corals, umbrellas, brackets, cups, saucers, lumps etc - and sizes, depending on how much energy they have available to them and how they produce and liberate their spores.



The recurrent shapes we find in fungi – circles, spheres, stripes, stars, spirals, trees, networks and ‘crazy paving’ - are also found throughout the natural world in various guises and various sizes, across all scales of organization from atomic to galactic.

Since mushrooms have such an ephemeral nature, did they teach you anything about time?

Of course, while mushrooms themselves may be ephemeral, the mycelial production teams from which they emerge can be very persistent and continue to enlarge indefinitely as potentially immortal, INDETERMINATE systems. Only relatively recently has it been recognised that some fungal colonies exist that inhabit square kilometres of ground and are probably thousands of years old. Interestingly, though, the capacity to expand indefinitely actually depends on an ability to redistribute energy from dying to regenerating parts of a colony. A very good example of this can be found in fairy rings, in which new growth spreads as a ring from a degenerating centre, like a 'travelling wave'.

In fact this combination of degenerative and regenerative processes in fungal colonies is illustrative of a very fundamental fact of real life: death feeds life, it does not feed upon life.

More generally, we can recognise that even a mushroom cannot emerge and exist in 'no time' - it can only do so dynamically. And this is true for all material form

How did your art practice help your scientific practice?

Principally by allowing me to 'play with my imagination' and enabling me to recognise how all form arises from a process of responsive flow in and around receptive space: 'Energy paints the variety of the natural world on an intangible canvas of receptive space'.

What other practices or philosophies influence natural inclusion?

Strange as it may seem, I arrived at my understanding of natural inclusion simply by working it out from first principles and without any in depth knowledge of precedent or related philosophies. In fact I was probably more influenced by my discomfort with reductionist and holistic philosophies antithetical in one way or another to natural inclusion, by my basic values of compassion and honesty and by an ability to see both sides of an argument, which found resolution in the middle ground between them. As a naturalist, I was especially disconcerted by neo-Darwinism and what became popularized as 'selfish gene' theory, even though the reality of biological evolution as a process of cumulative transformation and diversification is inescapable and clearly evidence-based. This discomfort led me to seek what is to my mind a much more realistic way of understanding evolutionary process.

Having arrived at my understanding of natural inclusion, however, I was better placed to recognise those philosophies and ways of life that from ancient times have borne at least a strong resemblance or relationship to what I call 'natural inclusionality', as the philosophy of what I have come to regard as the reality of natural inclusion. Here I would include some aspects of Paganism, Gnostic Christianity, Buddhism, Taoism, Indigenous Spirituality and the Flow Logos of Heraclitus – all of which in one way or another recognise what I call 'The Vitality of the Intangible' and receptive-responsive relationship between Spatial Stillness and Energetic Motion.