

Transfigural Foundations for a New Physics of Natural Diversity - The Variable Inclusion of Gravitational Space in Electromagnetic Flow-Form

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Summary

The explanations provided by orthodox physics for natural creativity and diversity remain rooted in rationalistic logical and mathematical foundations. These both isolate material form from and juxtapose it with its surrounding spatial 'ground' as discrete numerical and geometrical 'figures'. The resultant incompatibility between 'electromagnetic' and 'gravitational' 'forces' is a source of deep inconsistency that has bedeviled attempts to produce a 'unified field theory' and may be profoundly dangerous in inadequately conceived technological applications, such as the Large Hadron Collider. Moreover, it impedes our understanding of all kinds of creative evolutionary processes and their relation to everyday life in ways that contribute to profound social, psychological and environmental damage, setting the scene for unnecessary conflict between opposing scientific, political and religious ideologies.

Here we suggest that rationalistic physics concepts may be radically deepened and transformed through the '*inclusional*' and '*transfigurality*' understanding of natural energy flow as the dynamic inclusion of infinite space in local form and local form in infinite space. This provides the applications for a continuous '*transfigural*' logic and mathematics of both 'odd-balanced' *linear* and 'evenly balanced' *circuitous 'flow-forms'*, from which the foundations of a new physics of natural diversity emerge. It becomes possible to account for *variable intensities of energetic [electromagnetic] configuration of gravitational space* in terms of '*flow-length*'. *The latter provides a relative local measure of the 'spheroidal radius of curvature' of local-in-nonlocal 'transfigural identities'*. *The gravitational influence and associated mass/energy of these identities intensifies in inverse relationship with their flow-length and can also be amplified through super-coiling and channelling with others in their transfigural neighbourhood.*

Prejudicial Enquiry: The Constraints of Prior Theory

Both classical and modern physics have always sought a simple underlying explanation for the variety of form manifest in the natural world and cosmos. This search has drawn partly on actual observations of natural form and dynamics, and partly on theoretical presuppositions about the fundamental nature of reality from which such observations could arise. It has resulted in the development of a variety of foundational concepts concerning 'matter' and 'energy', including those of Newtonian mechanics, atomic theory, wave theory, quantum mechanics and relativity theory. As these concepts and their associated terminology

have been introduced, there has been a strong tendency for them to become widely accepted and taught as ‘a matter of fact’. They have therefore persisted until or unless and even after being seriously brought into question on grounds of evidence or reason, which has sometimes resulted in ‘paradigm shifts’, such as that which led Newtonian mechanics to be superseded at very large and very small spatial scales by relativity and quantum mechanics.

Although the persistence of questionable concepts may be considered to arise from an innate conservatism that protects physical science from undue conjecture, and will eventually self-correct when sufficient evidence has accrued, it can also profoundly inhibit and prejudice the kind of open enquiry needed to provide such evidence and correction. This problem becomes most acute when a fundamentally important consideration is omitted from a prescriptive theoretical framework underpinning the enquiry. By their very nature, such omissions are difficult to detect. The absence of what isn’t generally recognised to be present – especially if it is regarded as ‘nothing’ – isn’t easily noticed or remarked upon. Hence the enquiry may continue regardless of what it lacks, as a self-fulfilling prophecy of its inbuilt constraints, with whatever doesn’t appear to fit being set aside as an ‘aberration’ or ‘complication’. In such circumstances, the only sign that something significant is missing from the theoretical framework may be the contradictions it gives rise to when interpreting natural phenomena. Even then, the tendency may be to claim, through dialectic logic, that Nature itself is paradoxical, not the theoretical frame used to interpret it.

Concepts of Discontinuity – ‘Mass’ and ‘Force’ and their Unnatural Confinement or Exclusion

The classical concepts of natural physical structure and dynamics, enshrined in Newton’s mechanics and laws of motion, are the product of absolute discrimination between one kind of natural presence, which is attributed with everything, and another kind of presence, which is attributed with nothing by way of contribution to the manifest characteristics of the cosmos. The kind of presence that ‘counts’ is called ‘matter’ and has two fundamental, fully definable and therefore measurable ‘properties’, which are called ‘mass’ and ‘force’. The other kind of presence, which counts only as a passive background ‘emptiness’ called ‘distance’, is regarded as ‘immaterial’ and correspondingly to have *no influence* on the course of events, which is defined *entirely* by the distribution and behaviour of material entities. This other kind of presence is hence regarded as an absence, called ‘space’, which is *occupied* by matter in the form of independent *whole objects*, except in the ‘gaps’ or ‘holes’ that render these objects ‘*discontinuous*’ or physically *apart from one another*.

These concepts are rooted in the discrete logical premise, often attributed primarily to Aristotle, called the ‘law of the excluded middle’, which holds that one thing cannot be another thing. Underlying this premise is a yet deeper and very fundamental supposition, that ‘matter’ can be completely freed (i.e. regarded as independent) from space. This supposition is embedded in the foundations of both classical and modern mathematics, which treat both numerical and geometrical *figures* as fully definable and hence fully quantifiable *objects* with absolute boundary *limits*.

Paradox is therefore inescapably built into these concepts, because space-less form could have no shape or size and formless space would be featureless. Yet these concepts persist to this day in the objective rationalization of natural phenomena that is often vaunted as the epitome of scientific impartiality yet is founded in a prejudicial supposition for which there is no observational evidence and that cannot make sense.

Nowhere is the paradox that arises from *groundless* absolute faith in the definability of mass and force within and outside material figures as discrete objects more evident than in

the inconsistencies that currently dog the understanding of natural energy flow and gravitational influence. The problem is evident in an enigma at the heart of Einstein's most famous equation describing the equivalence of energy and mass:

$$E = mc^2$$

How can a 'photon', which has 'zero mass', have 'energy' (as given by the equation $E = h\nu$, where ν is the frequency of the radiation and h the Planck constant)? And how are electromagnetic quanta transformed into atomic particles and *vice versa*? These questions cannot be resolved as long as 'gravity' is attributed to 'mass' as a free agent *in* (as distinct from as a dynamic inclusion *of*) space. By the same token, they cannot be resolved using the discontinuous foundations of classical and modern mathematics. They can only be resolved using *continuous* logical and mathematical foundations.

The historical origin of the problem comes into focus when the way that concepts of 'mass' and 'force' were – and still are – used in Newtonian mechanics. 'Mass' in these classical terms is a measure of the amount of matter in a body, which is also a measure of its *linear inertia* or extent to which it resists acceleration when subjected to a 'force'. 'Force', by the same token, is the physical quantity that 'does work' either by changing the motion of a body, by imparting acceleration to it, or deforms the body. The ability of a force to do 'work' is called 'energy', of which there are two kinds. Massy bodies have 'kinetic energy' by virtue of their motion. When work is done against a restraining force, 'potential energy' is stored, ready to be converted into kinetic energy when a body resumes motion.

Throughout this classical description it is clear that 'mass', 'force' and 'energy' are regarded as purely 'material' properties, and that the default condition of Nature is assumed to be 'stasis'. 'Space' is merely the distance over which mass, force and energy are stretched (or stretch themselves), such that they have variable 'density' or 'frequency', and at their limits has no other influence. In this default condition, matter is considered 'inert' and space 'passive'. The very possibility of motion is therefore dependent on some external forceful agency or 'unmoved mover' to get it going. But if such 'force' can only be contained in local material form, where *is* it? There is clearly something, or rather *somewhere*, missing from this classical description, which leads 'energy' in the guise of 'mass' and 'force' unnaturally and paradoxically to be confined within and excluded from discrete material objects.

From Discrete Contradiction to Continuous Flow – Through The Natural Inclusion of Space In Form and Form In Space

All these difficulties and inconsistencies resolve as soon as space, as indefinable, indivisible openness, is understood to be an inextricable, *receptive* omnipresence everywhere (i.e. non-locally) throughout and beyond natural form, to which form – by dint of its local inclusion of space – responds as a *fluid*, not inert, presence. Instead of flowing as a stream of discrete particulate entities *through* space, form *itself* flows as a dynamic local-in-non-local configuration or embodiment *of* space *in* space. Space, as an inductive, *gravitational* presence, is now understood as the *limitless* unmoved mover and source of natural continuity of form that dynamically reconfigures and so continually – albeit with variable viscosities – flows into and out from other form.

This is the basis for what has been called 'inclusionality' and '*transfigurality*', an understanding of natural energy flow as the dynamic inclusion of infinite space in local form and local form in infinite space. This understanding removes the unnaturally imposed limitations from and so profoundly transforms objective rationality into a new, more naturally representative way of thinking and feeling. The logical and mathematical

foundations of the flowform physics are to be found in transfigural geometry on which this work is based. In this geometry the dynamic role of ‘zero’ and ‘infinity’ in natural evolutionary processes are brought into a radically new formulation. Indeed, in this formulation ‘zero influence’ doesn’t – as it does in objective rationality – mean ‘no influence’, it means limitless or ‘infinite influence’.

Transfigural Numbers and Geometry – The Inclusion of Zero and Infinity By Local Spheres of Non-local Influence

In conventional mathematics, a ‘number’ is an entity that represents a singular, integral whole or fractional part of a whole. In geometrical terms, such numbers correspond with closed material figures, isolated from their environmental context. The most fundamental of these figures, which features in both the infinite but bounded three-dimensional ‘box’ geometry of Euclid and finite but unbounded ‘non-Euclidian’ Riemannian and Lobachevskyan geometries of curved surfaces, is a dimensionless point that has neither distinguishable ‘size’ nor ‘shape’.

There is no evidence or reason to suppose that such paradoxically discontinuous, singular ‘wholes’ exist in nature. There is, however, abundant evidence and reason to acknowledge the occurrence of ‘local energetic configurations’ as locally distinguishable ‘forms’ together with their natural environmental surroundings that both sustain them through inflow and that they sustain through outflow. The net energy content of these ‘dynamic neighbourhoods’ remains constant providing they neither grow nor diminish in fluid relationship with others, although the distribution of energy between the core form and its surroundings can ebb and flow, like a tide, in dynamically balancing, reciprocal relationship. The neighbourhood is correspondingly a three-in-one couple comprising the core form and respectively receptive (negative) and donating (positive) spatial and formative inclusions of its inner world and outer world. Since space is continuous throughout and beyond this neighbourhood, it comprises a *local-in-nonlocal* ‘relative infinity’ that can both include and be included by further relative infinities of respectively smaller and larger scale as ‘worlds within worlds’, with each ‘inner world’ being the core form or identity of its ‘outer world’.

As illustrative examples of natural energetic neighbourhoods, we can think of an animal within its ‘territory’ or ‘home range’, a port and its hinterland and a river within its basin. But, essentially all known natural forms are of this nature, comprising a core ‘figure’ and the contextual ‘ground’ within and as an inclusion of which the figure is situated. All forms are correspondingly ‘flow-forms’ and have a ‘self in neighbourhood and neighbourhood in self’ identity that corresponds with their ‘relative infinity’ of locally unique ‘individual form’ situated in the ‘common ground’ or ‘spatial neighbourhood’ that dynamically includes and is included by others. Although we may be prone to *see* them *objectively* as individual ‘cells’ or ‘bodies’, in reality their internal space is continuous with their external space *through* their *distinct but not discrete*, variably permeable and fluid boundaries.

These local-in-nonlocal energetic configurations or dynamic neighbourhoods have been represented numerically and geometrically in what have been called the ‘*fluid logic numbers*’ and geometric ‘*zero spirals*’ of ‘Transfigural Mathematics’ (literally, *through-figural*), founded by Lere Shakunle. Here, far from being an isolated ‘whole’, a ‘figure’ is regarded as both a receptive spatial inclusion *of* and energetic donator *to* its environmental ‘ground’, through the gravitational *centre of space* (as distinct from objective ‘centre of mass’) in its core ‘*zero identity*’ or ‘zeroid’ as a *focal point influence*. Such focal point

influences occur as an inductive creative potential, which might be thought of as a universal ‘suction’ or receptive ‘absence of resistance’, throughout omnipresent space, but where they are situated within or beyond a figure’s dynamic formational boundaries is interdependent with the configuration of these boundaries.

Two fundamentally differing arrangements of these ‘transfigural identities’ have been recognised: *flow-lines* and *flow-circuits*. A flow-line consists of one or more local identities arranged *in contiguous series*, such that the boundary of each member of a series *connects* with that or those of an adjacent member or members, but not with members of other, non-contiguous series, even though the latter are necessarily pooled together as dynamic inclusions of and in the same omnipresent space, like fish in a limitless pond. Communication between series is hence necessarily via the *interspace* between them, whereas that between members of a series is *channelled through* the *intraspace* within the series boundary. Many illustrative examples can be found amongst organisms of various kinds whose bodies are segmented into distinct – but not discrete – repetitive (though not necessarily identical) compartments (sometimes called ‘modules’), from the protoplasm-filled cellular tubes of fungal hyphae to the coiling and recoiling lengths of millipedes, worms and snakes.

The smallest possible membership of a flow-line series is ‘one’, but in transfigural mathematics, unlike conventional mathematics, this is not a ‘one and only whole alone’, but an inclusional ‘hole’ that expands outwardly as energy flows inwardly from its environmental neighbourhood, and *vice versa*. Unlike the inert, dimensionless material point-mass of a conventional whole number, which is incapable of extension into or condensation from a ‘line’, this ‘one’ is a ‘breathing point-influence’ with a receptive environmental neighbourhood of ‘0’ – which it contracts towards in the process of adding to – and a donator neighbourhood – which it expands towards in the process of subtracting from – of ‘2’. Written out in the left to right convention of less positive (i.e. subtractive) to more positive (i.e. additive), we have:

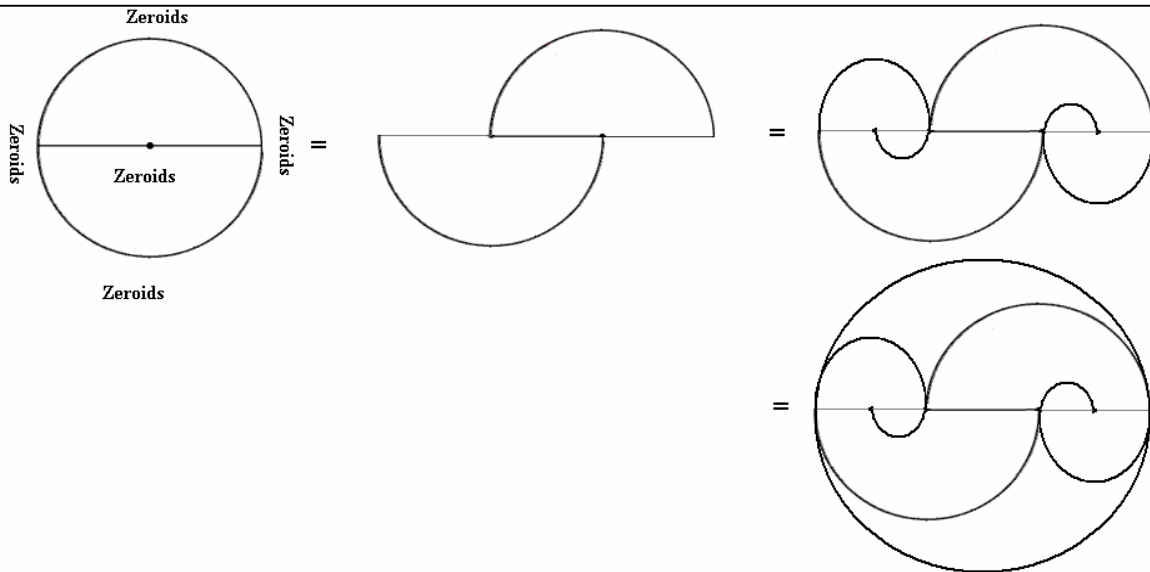
$$0 < = > 1 < = > 2$$

This gives the formal notation for the ‘fluid logic number’ or fln of ‘1’, i.e. ‘fln(1)’, as:

$$012$$

This fluid number hence comprises a *dynamic set of three* numerical domains, comprising the core or central ‘inner’ identity of ‘1’ itself, together with what this identity already includes within and hence comes before itself (i.e. ‘0’) and what it has the *potential to become* through *expansion*. In effect the ‘past heritage’, ‘present being’ and ‘future becoming’ of ‘1’ are combined in and through its core identity in a ‘living’, space-including way that contrasts radically with the ‘sets’ or ‘transfinites’ of pair-wise combinations of ‘present’ and ‘past’ courageously devised by Georg Cantor, which provided the foundations – albeit discontinuous and hence dead foundations – for modern mathematics.

Geometrically, the fluid, space-including form of these numerical domains can be derived from the classical, spiritually symbolic figure of the ‘mandorla’ or Vesica Piscis, produced by two overlapping, equal diameter spheres. Fully overlapping, these spheres coincide as ‘one’, but as each is drawn out to one side from the other a convex lens-shape forms, which balances the ‘tension’ set up as each reciprocally gains and loses energy from the other. This is illustrated in one plane using two hemi-circles on the next page:



In this case, as the ‘upper’ hemi-circle moves ‘horizontally’ to encompass the ‘positive’ to its ‘right’, a ‘deficit tension’ (‘minus’) is set up to its left, resulting in a ‘clockwise’ spiral inflowing countercurrent towards the central focal point-influence, which has meanwhile been stretched into a ‘line’. Simultaneously, a ‘surplus tension’ (‘plus’) is set up to its right, which results in an ‘anti-clockwise’ spiral inflow. The ‘horizontal S-shaped, or sigmoid, figure that results from this ‘left-to right flow’ and its countercurrents is called an ‘alpha fold’. By the same token, the reciprocal sigmoid figure produced as the ‘upper’ hemi-circle is drawn into the ‘negative’ to its ‘left’ is called an ‘omega fold’. The superimposition of alpha folds and omega folds as seen along a ‘horizontal line’ in ‘one plane’ yields a ‘two-fold’ figure known as a ‘zeroline’, which is one of several different kinds of ‘zero spirals’ (shown here, for simplicity, omitting details of folding through the core identity, but showing its balance point-centre of receptive space [i.e. (0)] as a dark spot):



If the same geometrical process is repeated along a ‘vertical line’, a four-fold, ‘breathing point’ is revealed (shown here with more elaborate folding through the core identity included):



Finally, if the process is repeated along a sagittal line, through the viewing plane, an eight-fold figure would be revealed. Every fluid logic number as a ‘relative infinity’ from ‘minus infinity’ through 0 to ‘plus infinity’ has this basic form. This contrasts with the discontinuous ‘whole numbers’ of conventional mathematics, where zero, 1, 2 and infinity have fundamentally different and logically irreconcilable forms and behaviours – as evident from the results of multiplying or dividing them by one another or themselves.

Using the zeroline to represent the basic dynamic configuration of the breathing point (as both what can be thought of as a ‘point-line’ – a point that expands into a line – and a ‘line-point’ – a line that condenses into a point), the way a ‘flow-line’ can form as a *linear series* is illustrated below by adding $fln(0)$ into $fln(1)$:

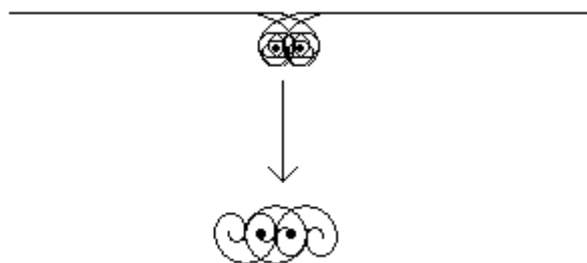
Zero Spirals of $fln(0)$, $fln(1)$



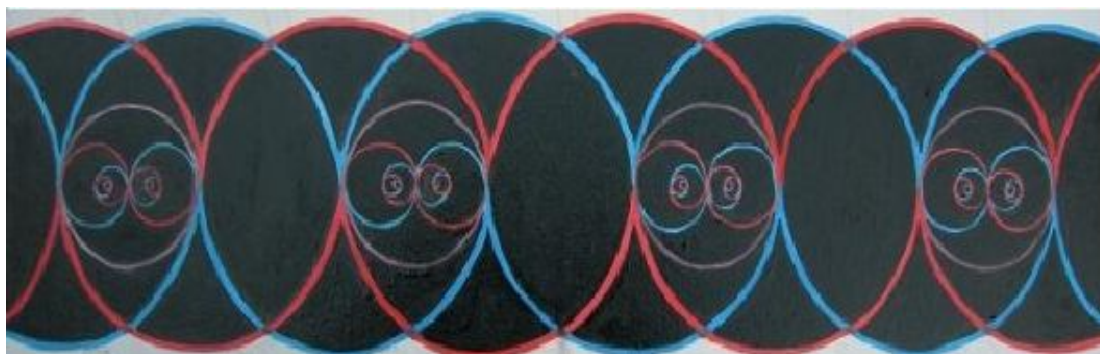
Such a series can literally vary enormously in length, and this length, along with its central *axis of intraspace*, could either be stretched out into elongate form or coiled upon itself into a compact form, like a snake, worm or millipede. But ultimately, every ‘segment’ or ‘relative infinity’ along this length will retain its local identity in dynamic relationship with its neighbours and only be capable of communication with members of other, non-contiguous flow-lines through *interspace*.

Moreover, every distinct, though not spatially isolated, flow-line will have a local-in-nonlocal centre of gravitational spatial influence and hence manifest as ‘massy flow-form-space’ with asymmetrically (odd) balanced alpha and omega flows with fluid logic numbers other the $fln(0)$. In conventional physics they might therefore be alluded to paradoxically as consisting either of ‘matter’ or ‘antimatter’.

A radically different situation obtains in *flow-circuits* where the gravitational intraspace is fully *de-localised* into the configuration of a ‘ring of power’ through the formation of what has been called a ‘superchannel’. The way in which this possibility arises can be seen from the ‘alternative’ coupling of $fln(0)$ and $fln(1)$ below:



The ‘free ends’ of such couplings join into one another to form a continuous loop, with no identifiable ‘start point’ or ‘end point’ as illustrated below:



The formation of such loops enables ‘current’ to flow freely as an *evenly balanced* reciprocity between alpha and omega folds. All kinds of natural and human-made circuits

may be based on this principle. Biological examples include the flow-networks of fungal mycelia, central nervous systems of animals and vascular systems of plants and animals. In organic chemistry the aromaticity and resultant stability of benzene rings is attributed to the hybridization and delocalization of s and p and p electron orbitals respectively into sigma bonds and pi clouds. Superchannels may also be fundamental in the inter-conversion of electromagnetic radiation, as a 'mass-less flow-space-form', from and into the 'massy flow-form-space' of what we have been prone to mistake for discrete 'objects'."

The Electromagnetic Spectrum and Natural Energy Flow – Diversity in Communion

Conventionally, electromagnetic radiation has been said to comprise a spectrum from low energy, long wavelength 'radio waves' through to high energy, short wavelength gamma-rays, with microwaves, infrared, visible light, ultraviolet and X-rays placed respectively between these extremes.

Classically, these have been regarded as wave motion transmitted using a varying electromagnetic field *through* space or matter, and having a 'velocity' in the former of $299792.5 \text{ kmsec}^{-1}$, the 'speed of light'. At the beginning of the twentieth century, Planck proposed that certain properties of this mass-less form of energy are best explained by assuming it is transported in discrete packages called quanta, which Einstein later called 'photons'.

Nonetheless observations such as those yielded by the famous 'double slit' experiment indicate that light, as well as supposedly 'massy' particles like electrons have 'wave-particle' duality, capable of producing additive and subtractive interference patterns in some circumstances, but being absorbed individually at a collection screen in other circumstances. The highest energy gamma rays are most 'particle-like' in their behaviour and can 'interact with matter' to produce pairs of 'antimatter' and 'matter' particles as well as being produced from 'collisions' between such particles.

Transfigural geometry suggests a different interpretation of electromagnetic radiation as mass-less flow-space form inter-convertible with massy flow-form space. Whereas mass-less flow-form is evenly balanced through its circuitous, nonlocal, intraspace channel, and associated correspondence with or inclusion of $\ln(0)$ as $-10+1$, massy flow-form is odd-balanced through its local point-line or line-point centre of space.

Instead of the rationalistic dichotomy between wave form and particle form, 'matter' and 'antimatter', and between '1' as something and '0' as 'nothing', transfigural geometry therefore introduces the co-expression of odd-balanced linear ('1') and evenly balanced circuitous ('0') alpha-omega flow-form as a foundation for understanding natural diversity. The 'ring' of '0' comes to symbolize the presence of infinite influence, not an empty absence of presence. The diversity of natural form arises from the evolutionary variability of contiguous and noncontiguous circulatory and linear flows as they fold into and out from one another, not as discrete wholes and parts, but as dynamic inclusions of and in the continuous communion of space.

With this understanding, the potential shortcomings and dangers become apparent of experiments and technologies based on physical concepts arising from the inadequate foundations of rationalistic logic and mathematics. Where the relationship between gravitational influence and electromagnetic flow is not understood, both the design and operation of machines such as the Large Hadron Collider may be seriously compromised. Considerable circumspection is necessary because in the worst possible case, what could inadvertently be set in place is nothing less than a gravitational bomb.

Gravitational Flow-Form: Variable Flow-Length and the Intensity of Transfigural Folding

With the recognition that gravity may better be understood as an influence of receptive centres of continuous space, not a weak force operating between discrete centres of mass, a new way of accounting for the heterogeneity of natural energy flow opens up.

Instead of quantifying units of energy in terms of their frequency/wavelength as waveforms (as given by $E = h\nu$) or mass (as given by $E = mc^2$) as particles, it becomes possible to account for *variable intensities of energetic [electromagnetic] configuration of gravitational space* in terms of 'flow-length'. *The latter provides a relative local measure of the 'spheroidal radius of curvature' of local-in-nonlocal 'transfigural identities' as 'breathing points'.*

The gravitational influence and corresponding electromagnetic folding of these identities intensifies in inverse relationship with their flow-length and can also be amplified by compaction, through local super-coiling and circuit-formation with others in their transfigural neighbourhood. Hence a spectrum of possibilities occurs from the low intensity space-flow-forms of radio waves, to the high intensity flow-space-forms of what manifest visibly and tangibly as massy bodies.

Transfigural Identity and Its Psychological, Social and Environmental Implications – Why Selection Isn't Natural and Inclusion Is

With the departure from the entire, 'whole' way of thinking, founded on the divorce of matter from space, which unnaturally isolates the 'figure' from its 'ground' as discrete object and environmental surroundings, comes the possibility recognizing each as a dynamic inclusion of the other in the transfigural identity of natural flow-form. This transfigural identity can be thought of as a dynamic locality *somewhere* in the nonlocal omnipresence of space *everywhere*. The unnatural conflict between and within individuals and groups that humanity has, from rationalistic logical and mathematical foundations, imposed both on its self and Nature for millennia, can hence be subsumed by more fluid, complementary relationships of diverse communities.

'Self' can no longer be regarded as an independent figure concerned solely with what lies within the discrete limits of its bodily definition, but necessarily includes as it is included in its natural neighbourhood. Evolution can no longer be thought to result from the paradoxical selective elimination of variation upon which it depends so as to support what Darwin described as 'the preservation of favoured races in the struggle for life'.

Neither 'competition' nor 'co-operation' as interactions between discrete, purely local entities can be natural if such entities cannot occur naturally. Evolution occurs through a process of 'natural inclusion', the co-creative, fluid dynamic transformation of all through all in receptive spatial context. 'Light' by way of electromagnetic energy cannot be severed as 'good' from 'darkness' as 'evil' – it is the attempt to sever the one from the other that harms. 'Male' cannot procreate without 'female'.

But we can all have good reason to care for our selves as one another in a natural world that needs all kinds to be evolutionarily and environmentally sustainable. And that means taking care too, with the inventions we make and experiments that we may undertake in the quest for knowledge as power to control life and deny the creative possibility that flourishes in the uncertainty of its evolutionary flow.

The Breathing-Point Universe: From ‘Matter’ and ‘Anti-Matter’ to ‘Flow’ and ‘Counter-Flow’

Transfigural geometry takes us beyond the opposition of discontinuities that has led conventional physics into the nihilistic dialectic of ‘matter’ and ‘anti-matter’, into the inclusional flow and counter-flow of each in the other. Where ‘electromagnetism’ breathes out (donates), ‘gravity’ breathes in (receives). Pooling them together is the space in which the mass that is donated by photons is transfigured into the mass that is received by gravity. The photon as a flowform cannot be pulled out from its context without taking everywhere that this context includes along with it. In other words, to isolate a photon would require taking all space with it which is not possible. Since we humans are living in the realm of gravity – as what we will shortly call ‘M’ – it is possible to ‘see’ ‘a photon’ as a local gathering of electromagnetic radiation but it is not possible to ‘see’ ‘a graviton’ as a local centre of space, which is in the realm of what we will call ‘*m*’.

The ‘masslessness’ of photons hence arises from the dynamic even-balancing of centrifugal and centripetal influences respectively as the mass-less donation of gravity, which is ‘counter-gravity’ or ‘levitation’ and the mass-full reception of photons by gravitons as ‘counter-photons’. The transfiguration of mass-full photons, which results from electromagnetic donation which gives gravity its mass is happening in the interspace of the Creative Potential Zero (0) which includes, amongst others, the zero-gravity 0. This space, which is one of the spaces of Creative Potential Zero (0), is inside the superchannel. So, photons have mass! This mass is donated to gravity. Therefore gravitational mass includes electromagnetic mass. Electromagnetic mass is local but also non-local because of its inclusion in gravitational mass, and gravitational mass is nonlocal, but also local because of electromagnetic mass. This is why gravity is not uniform throughout the universe. For example, Earth’s gravity is local to the earth even if gravity itself is nonlocal. What this means is that it is not possible to isolate any mass because every mass is a fold within folds of other masses, and these masses as flowforms include space which includes them.

Because gravity and electromagnetism meet in 0 and this zero is inside (0) in whose interspace they transfigure and from beneath which, in the intraspace, space transfigures into mass originally and so constitutes the origin of mass, to get to where mass originates would mean to reach into limitless omnispace beyond circumscription. Here the flow folds (enfolds) into figures (forms) which also unfolds (defolds) into flow such that what is a flow includes form (figure) and the form includes flow that folds into forms. Hence the following theses emerge:

- I. Electromagnetism includes space and gravity and gravity includes space and electromagnetism.
- II. As gravity increases, electromagnetism decreases.
- III. Every decrease in gravitational flowform increases electromagnetic flowform mass. This mass is massless flowform in which the standard laws of gravity are broken by ‘counter-gravity’ as the reciprocal complement of the mass-donating (massless) electromagnetic flowform. A classical example is photon which transfigurally can only occur as a flow, not a discrete unit.
- IV. Every increase in electromagnetic massless flowform (counter-gravity) decreases gravitational mass-full flowform.
- V. Gravity and Electromagnetism are two sides of the same coin from which what are called the weak and strong forces of conventional physics originated as reciprocal influences.

The coin in the case of gravity and electromagnetism is the interspace of (0) which includes 0 of the alpha and omega flows (see diagrams below).

And so, the ‘masslessness’ of photons is included in the ‘mass-fullness’ of gravity and the ‘masslessness’ of counter-gravity is included in gravitons.

These theses have their foundations in the flowform paradigm of transfigural geometry of transfigural mathematics as described in the first part of this paper. It is to the transfigural geometric exploration of some of these theses that we now turn for preliminary introduction prior to fuller exploration in later papers.

Breathing-Point, Pointline and Linepoint

A line in transfigural geometry is also a point because the point being a breathing-point can contract to become the point (photon) and extend to become the line (gravity). This is a case of one being included in the other which is what we got from a fluid number being included in all the other fluid numbers which also include it and all of which include space which includes them.

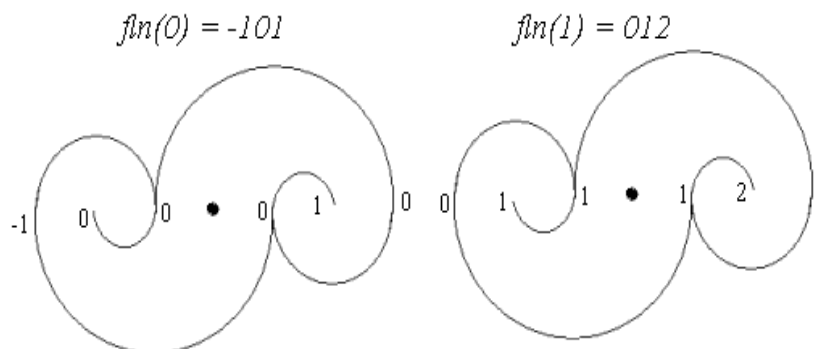
Based on the geometric drawings in this work, we want to present examples that show how these drawings which originated from transfigural geometry have their foundations in the fluid logic numbers of transfigural arithmetic and algebra. This is what we set to do below.

$$\begin{aligned}
 fln(0) &= -101 \\
 &= (-10 \quad (00) \quad 10) \rightarrow (\text{alpha} \quad (\text{identity}) \quad \text{omega}) \text{ numbers of } fln(0) \\
 &= (-1+0 \quad (0-0) \quad 1-0) \rightarrow \text{source of logic of } fln(0) \\
 &= (-1 \quad (0) \quad +1) \rightarrow \text{logic of } fln(0)
 \end{aligned}$$

From the numbers of fln(0) follows the spiral numbers. This is -100010 which results from removing the brackets in the numbers of fln(0). This spiral number -100010 is one of the folds of the zerospiral of fln(0). The same holds for fln(1). This is:

$$\begin{aligned}
 fln(1) &= 012 \\
 &= (01 \quad (11) \quad 21) \rightarrow (\text{alpha} \quad (\text{identity}) \quad \text{omega}) \text{ numbers of } fln(1) \\
 &= (0-1 \quad (1-1) \quad 2-1) \rightarrow \text{source of logic of } fln(1) \\
 &= (-1 \quad (0) \quad +1) \rightarrow \text{logic of } fln(1)
 \end{aligned}$$

The spiral number of fln(1) also originates from the fluid logic number 1. The spiral number is 011121. This spiral number is one of the folds of the zerospiral of fln(1). Both spiral numbers as folds are presented below:



Space Realms, Figure and Conversion

There are different realms of space in transfigural geometry. The most universal, which includes all others, is the omnispaces of the zerooids which is everywhere and so is nonlocal. The alpha and omega curves which are natural folds in the folds presented above, constitute the outer-inner alpha-omega flows of alpha and omega zerooids which are local-nonlocal identities in the nonlocal identity zerooid. These alphas and omegas flow from interspace into the intraspace inside the zerooid and out again.

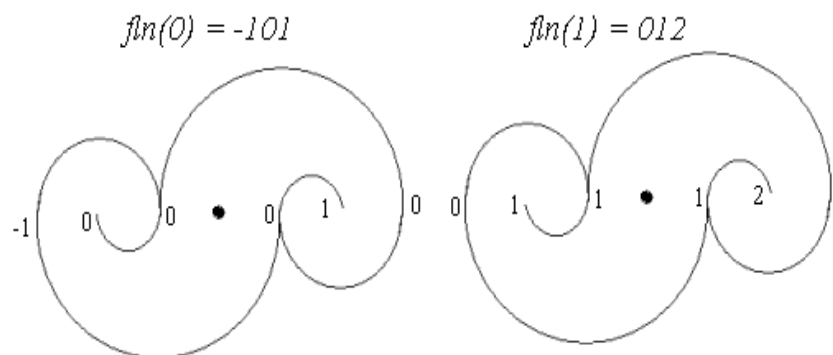
The interconversion of electromagnetism to gravity occurs through the interspace that feeds into and out from intraspace.

Gravity and Electromagnetism – Where Does the Mass of Photon Go?

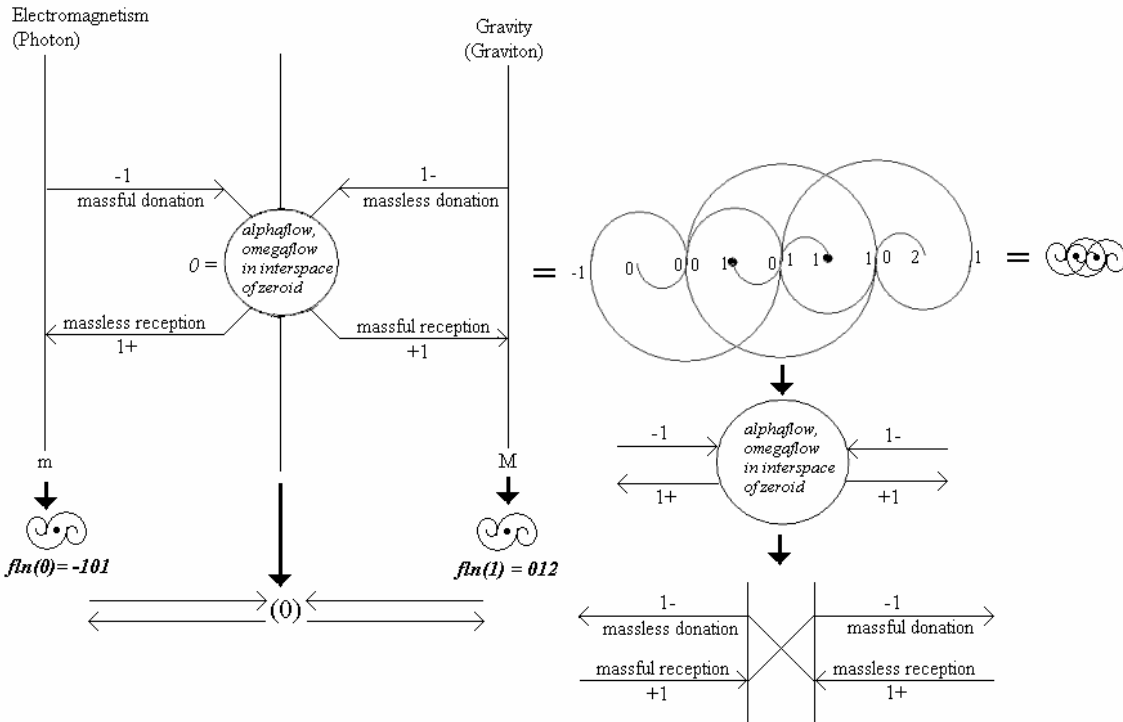
Above we have this said about gravity and electromagnetism:

“The formation of such loops enables ‘current’ to flow freely as an evenly balanced reciprocity between alpha and omega folds. All kinds of natural and human-made circuits may be based on this principle. Biological examples include the flow-networks of fungal mycelia, central nervous systems of animals and vascular systems of plants and animals. In organic chemistry the aromaticity and resultant stability of benzene rings is attributed to the hybridization and delocalization and of s and p and p electron orbitals respectively into sigma bonds and pi clouds. Superchannels may also be fundamental in the inter-conversion of electromagnetic radiation, as a ‘mass-less flow-space-form’, from and into the ‘massy flow-form-space’ of what we have been prone to mistake for discrete ‘objects’”

The folds of transfigural geometry involved in this interconversion were presented. What we want to do here with what we have below is show more clearly the nature of the interconversion in transfigural geometry and how photons’ masslessness is gravity’s massfulness, from which we can say that photons have mass! We can say this because the very zero which is banned from physics and which zero as gravity is when gravity no longer operates is the very zero which is used in the interspace of the Creative Potential Zero (0) to give mass to gravity which takes mass from photon and returns it as massless when it donates to electromagnetism. Now we need the folds again.



From these folds which include each other and others as they include space that includes them, we have on the next page the diagram showing the alpha and omega flows and the interspace of their interspace as they flow in and out of the alpha-omega zerooids inside the identity zerooid. On the right we have the transfigural geometry of the diagram on the left.



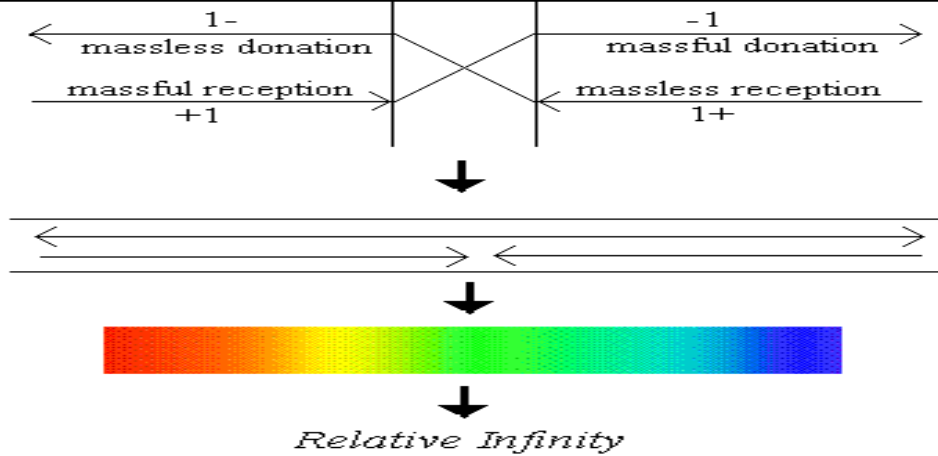
We use in the example from transfigural geometry above (right) the same principle of mass m falling on mass M . For convenience, let us take M to be the Earth and m to reside at the other side of the zero-point in the cosmos. Let m in the beginning have mass which is from intraspaces of interspace where all is massless where the transfiguration of massless into mass-full and vice versa occurs in interspace.

When m gets to (0) its mass-fullness transfigures into massless as it donates the mass to gravity such that M now results on Earth. M is now trapped because it can no longer go back to m as it was in the beginning. But to effect balance, that is for the sake of symmetry, it must donate something in return to m which is now massless as a result of being converted into M . M now donated massless m which m receives now as massless. This massless side of m is counter-gravity.

This means electromagnetism donates mass-fullness (massyness) to gravity and gravity donates massless counter-gravity to electromagnetism. Thus what falls in local domain M lifts up in local m with both domains two sides of a single domain. What we have is that the mass of gravity is the donated mass of photon which renders photon massless and the mass of photon is the donated masslessness of gravity which is counter-gravity. All of this is happening in intraspaces where mass originates through folding to manifest as figures that convert interchangeably in interspace.

What we therefore have from the geometric figure on the right is a *centre of space* and not a centre of mass because mass is the flow that folds into a figure and so it is not independent of space which it includes and includes it.

On the next page we show how the end of the fold on the left side of $fln(0)$ and the end of the fold on the right side of $fln(1)$ come together to flow in each other which is like bringing the folds together in the middle—also like folding a sheet of paper on itself - here a superchannel such that the fold of one in the other in the middle gives rise to the fold of end in the end. What results from this is the relative infinity of transfigural geometry which is a superchannel.



What we have from the foregoing we call *gravitromagnetism*, that is the interconversion of electromagnetism into gravity and gravity into electromagnetism. This is a relative infinity. It depicts a spectrum which is composed of spectra as relative infinities inside the relative infinity. They are flow-lengths inside the flow-length.

The $f_{ln}(0)$ and $f_{ln}(1)$ as flow-lengths are points which also make a point. In other words, as a breathing-point the photon can convert into the line of gravity and disappears in it as relative infinities and gravity into the point of the photon and disappears in it as matter. All this is happening in interspace of alpha-omega folds of intraspace of alpha-omega zeroids in which some are flowing, some folding and others forming in the Creative Potential of the inner infinity of the spiritual realm of transspace which is the heart of identity zeroid of One in All.

In the expanded version of this work, we shall revisit the concepts in this paper more in depth and detail and introduce others with more examples.

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“COUNTER-CURRENTS”

By Alan Rayner, Oil on Canvas, 1999

A detached silver feather, blown by wind, and a fallen gold leaf web, caught in river currents, drift apart. But ducks, propelled by their self-possession of both wing feathers and feet webs, take to both air and water as they choose and so, within shifting limits, make their own ways. In these ways they create the fore and aft of a life-boat pattern, seen only from an imaginary perspective, that plies the surface of yet greater, more mysterious depths. So too might airy intellect and watery emotion be related when life’s dynamic context is fully filled.