

THE CORRELATION OF BIT AND IT IN A COSMIC SYSTEM

In the last few centuries, the Observer and the Cosmos have increasingly been explored in empirical terms, so that today a scientifically viable definition of the relation of *Bit* to *It* seems attainable – and indeed, imminent. But surely this relation will depend upon physics revising its foundational assumptions – especially considering the very rapid scientific development of the last 500 years, and the vast trove of new Information this progress has created.

Thus, if we are to ask: "To what extent is our Cosmos purely Information?" – we must first identify those assumptions that have entangled themselves with the Observer from the earliest stages of Cosmic and Human Evolution – particularly if it can be shown that these have imposed obstructive borders upon the field of Physics. Furthermore, we must deduce valid modern versions of these assumptions, with the goal of finally elaborating a new Paradigm that will enable the various branches of Physics to examine *It* (the physical universe and its organisms) and *Bit* (*Sensory-Cognitive* phenomena) within a single mathematical and empirical framework.

It can be considered that Physics began some 200,000 years ago, with the first stirrings of rudimentary cognition, when the Human Mind turned the process of Information manipulation upon the environment, and upon itself – and thus began to discover the borders of perceived reality. It is primarily through Physics, then, that we originally diverged from the animal world: That is to say – we came to dominate our environment, and its creatures, by manipulating *Bit* and *It*, and thus altering the essential relationship between ourselves and that environment.

But even long before this – before there was *Mind*: in the primeval darkness, when only Sense was guiding the earliest configurations of cells into simple organisms – the reciprocal interaction between Observer and environment was tracing its first genetic patterns upon the organic canvas, so that when creatures with brain cells finally appeared and bumped against the borders that separated them from their environments, they stumbled only briefly – and instantly set themselves aright.

All organisms – then and now – take it for granted that they are not the surrounding *Inorganic* entities, and that each of them is, in fact, a distinct organism within a Cosmos that is real, independent of the Observer, and yet contiguous with him; and this relationship is founded upon a *root system of Information and Assumption* that traces back to the beginning of a given Species' Evolution, and which then perpetually influences that Evolution.

Though modern Physics is striving to master dimensionality itself – to discover where space-time begins and ends, both within Particles, and in the farthest reaches of the Cosmos – the complex root system that sustains Physics also impels it to explore Information as a fundamental component of the *Cosmos*; and in order to do so, Physics must trace the coils of the *Organic*, *Inorganic*, and *Sensory-Cognitive* systems to that merging point that first bound *Bit* to *It*.

Consequently, we should assume that a *Force* exists that draws *Life* from *Atoms* – and ultimately, *Mind* from *Organisms* – and that the discovery of this Force is a real possibility, and will fundamentally define Information in the Human scientific context.

But there are three long-held (and to some degree genetically encrypted) assumptions that stand in the way of this. The first of these holds that the *Sensory-Cognitive realm* is 'separate' from space-time reality – in other words, that the process of Information, and *Bits* themselves, are ghostly phenomena, locked in a reality of their own that cannot be considered in the same terms as the physical Cosmos of Atoms and organic matter.

This concept of 'separation' or 'otherness' springs from a natural enough cause – the Mind's

objective relation to the *Organic* and *Inorganic* fields of its observation: We have always searched the Cosmos for physical Particles, and sought to understand how their interactions draw them into structures, since the physicality of the environment is the evidence of our senses; but for the same reason we have just as naturally assumed an opposite reality – an absence of physical Particles – where *Mind* and *Information* are concerned.

Yet, we concede that whatever exists must come from pure Energy, so that *Bits* of Cognition must somehow emerge from Energy, too – and therefore be subject to the same laws as *Inorganic* and *Organic* phenomena, even if we have not quite grasped these laws till now. Whatever the nature of *Bits* in the Observer, and however they are mirrored in computers, they must at all times behave as do Particles in the *Inorganic* and *Organic* worlds.

We can at the very least state, for now, that *Bits* are those elements of the Cosmos that are *not* Atoms, and *not* DNA, but are held in a distinct type of equilibrium – a very close *Correlation* – with these phenomena.

Our second ancient assumption, one that that has no justification except that it has always seemed to be what we 'see', is that the Cosmos is a *single field* – essentially, a very large 'room' that happens to offer itself to our objective examination, and into which are heaped together all Particles, entities, and organisms. These then inexplicably manage to sort themselves into an order so perfect it serves as the model for both order and perfection in all the fields of science.

Physics, however, has denoted 'quirky folds' in this *single-field* fabric of reality – un-bridgeable *gaps* that conceal the mechanisms that allow *Atoms* to assemble themselves from pure *Energy*, *DNA* to continuously and instantly spin itself from these *Atoms* – and *Information-Assumption* (or *Mind*) to arise without a trail, and hover independently over all particulate reality. The concealment of these key mechanisms persists, however much Information is obtained from the 'quirky folds'.

And it is because we have misunderstood these 'folds' – between *Energy*, *Atoms*, *Life* and *Information* – that all foundational questions have till now remained beyond the reach of mainstream inquiry.

These 'folds', or *gaps*, have troubled and motivated Physics more than any other science – for clearly, there can be no *gaps* in a *single-field* Cosmos. In seeking to smooth them over, Physics keeps searching for ever-smaller Particles that might link all things together; and it has extended itself into the domains of Biology and Neurology (Bio- and Neuro-physics), seeking everywhere for hidden mechanisms.

But for all these efforts, the *gaps* persist to this day; and so the time has come to admit that our empirical evidence is truly overwhelming – and that it makes clear these *gaps* actually *do* exist, and really *do* violate the integrity of the *single-field*.

It follows that we must consider the reality of a *multi-field* Cosmos.

Before determining exactly what that is, we need to examine our third assumption. Because we conceived the Cosmos as including all things in a single dimensional system, we necessarily also accepted that no independent *Force* could be acting upon that system: That nothing could be rippling the Cosmos into distinct fields, from without.

It is for this reason that, throughout history, we also assumed that the Cosmos *exists alone*.

But in the last few decades, Physics has come to accept that the *unique* Cosmos is most likely nothing more than a useful construct – much as the flat earth used to be. It can be appreciated that this modern acceptance of a *General Field of Cosmae* frees us at last from our bond to the

single field Cosmos as well – for there is no reason to assume that whatever Force sub-divides the *General Field* into *Cosmae*, does not also act in a similar way upon each *Cosmos*.

Indeed, a *Cosmos* seems very likely to consist of *several* distinct fields in such a *General Field* system; and we must assume that the distinct fields of our *Cosmos* are the *Inorganic*, *Organic*, and *Sensory-Cognitive* realms – since it is between these that Physics has denoted (and beyond any reasonable doubt) the ineluctable 'quirky folds'.

Therefore, if we dismiss our unjustifiable assumptions – the 'otherness' of Mind and Information, the *single-field* of observation, and the unique *Cosmos* – a *three-field Cosmos* appears to replace the present system: That is, one that manifests *Inorganic*, *Organic*, and *Sensory-Cognitive* sub-divisions, allowing for corresponding Particle-types that exist in their respective dimensional fields, *interacting directly* with the *General Field* of *Cosmae* – *and distinctly from the other Particle-types*.

Particles are no longer grouped together in the same 'room' where they are left to sort themselves out by happenstance.

We will now see if these three *distinct* fields might not be the foundation of a Paradigm that would enable us to describe the *Correlation* between *Inorganic* Atoms, and the equally fundamental *Organic* and *Sensory-Cognitive Particle-types* – that is, between *Bit* and *It*.

But first we must ask – "What is the nature of dimensionality in a three-field system? And what does this dimensionality tell us about the physical nature of Information?"

Crystallizing the subject to fit these few pages, let's simply state that the *General Field of Cosmae* must be *Omni-dimensional* in nature – that is, of no fixed dimensionality itself, but perpetually *expanding* and *sub-dividing* into an infinite number of distinct dimensional systems, each representing a unique type of *Cosmos* – which is, in turn, sub-divided into its own internal fields.

It is the very similar, direct – yet *distinct* – interactions of the *Inorganic*, *Organic*, and *Sensory-Cognitive* fields with the *General Field* that gives them their *Correlation*, and prevents them from *interacting directly with each other* – or 'blurring together' to create a shapeless *Cosmos*.

Next, and still keeping to general terms, it follows from the curvature of the *Cosmos* – a system that folds upon itself – that it is a *Vortex*, and that the orbital nature of *Vortices* is intrinsic to it; we can only assume that all other *Cosmae*, and their sub-fields, must also be *Vortices* if they display any stability at all.

Thus, we can state that the *Inorganic*, *Organic*, and *Sensory-Cognitive* realms represent the *Principal Vortices* of our *Cosmos*.

It follows that the Particles of the *Cosmos* must originate in the *Omni-Dimensional General Field* as pure Energy, and then manifest in one of the *Principal Vortices with hardly any dimensionality at all* – as is seen with the Higgs Boson.

As more Energy from beyond the *Cosmos* bombards the *Vortices* (a phenomenon that must occur without contradicting the Law of Conservation of Energy) the *Omni-Dimensional* Particles progress to their more stable *States* of greater dimensionality – evolving from Higgs Bosons to quanta and Atoms, for instance – and manifesting a similar increase in complexity in the *Organic* and *Sensory-Cognitive Vortices*.

We will return to this, but briefly considering the Law of Conservation: Since it only states that the Energy of the system must be constant, if the Energy that leaves the system is counterbalanced by incoming Energy, the Law is not contradicted. Furthermore, it is this equilibrium that

establishes the stability of a Cosmos.

We cannot digress into the exact mechanics of the phenomenon of Energy exchange between the *Principal Vortices* and the *General Field*, except to say that it occurs in the form of *Energy Pulses*: Pure, or nearly pure, Energy Particles, of which the Higgs Boson is but one type.

The most fundamental *Inorganic*, *Organic* and *Sensory-Cognitive* Particles enter and exit the Cosmos in essentially the same way – that is, through the Omni-Dimensional Field (either the Higgs Field, or one more fundamental still) – so that the three distinct Particle-types must therefore be as difficult to reconcile to space-time parameters as is the Higgs Boson.

Thus, very importantly, we cannot expect to 'see' fundamental *Organic* or *Sensory-Cognitive* Particles, or deal with them empirically, any more easily than is the case with the Higgs Boson.

Furthermore, the *Force* exerted by the *General Field* must have a *Gravitational-Magnetic* nature (the term is meant to include all four of the fundamental forces detected in our system); this *Force* must also be simultaneously acting upon the Cosmos *at every point* (thus creating Particles) – while also acting *upon the system as a whole*.

That is to say, relative to the Force of the General Field, every entity – even the Cosmos – is a Particle.

It emerges, then, that the Cosmos was originally created when a single, initial *Vortex* absorbed more *Pulses* than it deflected; the increasing entanglement of the aggregating force-fields of this initial *Vortex* eventually formed a *Force Barrier* around it – a threshold of expansion – after which incoming *Pulses* were either deflected back into the *General Field*, or were entangled into a *second Vortex*.

Cosmologically speaking, once the system reached that degree of complexity that resulted in primordial planets orbiting suns, and solar systems aggregating into galaxies, *Gravitational-Magnetic Force* (acting simultaneously upon Particles and upon the system as a whole) caused a *similar complexity* to appear among Atoms – drawing them into the patterns that created the earliest cellular systems of Life.

Pulses, transitioning between cells and the *General Field*, then further refined these patterns – as evidenced by DNA and the eventual emergence of complex organisms. Since the *Inorganic Vortex* was meanwhile interacting with the *General Field* in a very similar way, both Vortices continued in *Correlation* as they expanded.

A *third Vortex* emerged once the second was sealed by its own *Force Barrier*, each Vortex thereafter remaining *distinct* from, and *Correlated* with, the others so that Pulses were configured into their unique Particle-types – what we will call *Primal Particles*.

As was mentioned, a *Primal Particle* interacts directly only with the Particles of its own Vortex, and aggregates into more complex Particles that also remain distinct from the other Vortices.

And because, in a *Correlated Energy Vortex System*, Particles do not all belong to the same dimensional field, it follows that neither do observable phenomena: This means that the creation of dimensional parameters – of space-time, and of those dimensional systems that diverge from it – within Atoms and living cells – necessarily involves all three Vortices, each of which is therefore a 'slice' of the Observer's overall dimensionality.

Thus, the Observer *participates* in the Cosmos – and integrates all Particles (*Inorganic*, *Organic*, and *Sensory-Cognitive*) into the *Information-Assumption System* (Mind or computer) that defines his evolutionary relationship to the Cosmos.

It is obvious, however, that the Observer cannot be the determinant factor of any reality other than his own, so that a greater reality must therefore exist – and our *Species' Cosmos* must, then, be *Correlated* with a foundational 'greater Cosmos'.

This means that the location of the Cosmos in the *General Field* – that is, the location upon which the *Gravitational-Magnetic Force* is acting to create the *Principal Vortices* – must be a *Fulcrum* of Energy Interactions that we share with this 'greater Cosmos'. The general shape, nature, and borders of our Cosmos are consequently determined by this greater system – for the specific reason that it is involved in Energy transactions with the *General Field* so similar to our own that we perpetually *Correlate* with it.

One might well wonder how *objective* Information is possible in a *Correlated Vortex System*, where every Vortex and every Cosmos is Correlated with several others? This would seem to promote perfect *subjectivity*, and the impossibility of ever manipulating Information at all.

But *Evolution*, in the context of a three-field Cosmos, solves the problem.

Since the Cosmos is perpetually affected by the *Gravitational-Magnetic Force* bearing upon it, the *Force* effectively causes our divergence from the animal kingdom – and as it does so, it acts upon our three *Principal Vortices* individually, and not only as a group; this causes the Vortices to continually diverge from, and resolve to, one another – within certain parameters – so that the *Sensory-Cognitive Vortex (Bit)* alters its Correlation with the other Vortices, allowing it to 'see' biological and physical phenomena (*It*), and to affect outcomes.

It follows that Information is the *Diverging and Resolving Correlation of Bit and It*, within those parameters that define the Species. This flexibility of the Vortices' Correlation is clearly more pronounced in the Human Species.

Implicitly, the three-field system also reveals that *Gravitational-Magnetic Force* exerts an *Evolutionary Impulse* upon all organisms, contributing to the *Organic* and *Sensory-Cognitive Vortices* in the same way that it contributes to the *Inorganic Vortex*, while flexibly correlating all three.

(No *purpose* is involved – only a direction, or current, from which organisms and all entities diverge according to their complexity – and to which all inevitably resolve).

Thus, the *Correlated Energy Vortex System* establishes Evolution upon a far broader platform than was the case when only natural selection appeared to be involved: Every Species evolves its distinctive *Bit* and *It* interactions, gathering and manipulating information, weaving the fabric of its own reality – and effectively spinning a Cosmos from itself over very great spans of time, as a result of the *Evolutionary Impulse*.

Before we can countenance this, we must first explain how a 13 billion year-old Cosmos can be founded on a Vortex System that includes Life and Cognition. One might also object that we should not be able to measure a 13 billion year span at all, because if space-time was created by the gradual *Correlation* of the evolving *three Principal Vortices*, it can only have assumed its present configuration long after its point of origin.

With regards to the first point – it is true that Life and Mind did not exist 13 billion years ago; but there is no reason to assume that the *General Field* disruptions at the *Fulcrum* – that is, the first Energy ripples that were eventually to lead to *Life* and *Mind* – were not already manifesting.

As for the second point: No time-measurement of the whole system is, in fact, possible. Indeed, the 13 billion year figure – and the very concept of a point of origin – must instead represent nothing more than *the ultimate limit of our field of observation*. This is crucial to our theme: The

system from which we presently gather Information is affected by our Vortices – in the immediate time frame, and over the course of Evolution; and we must now determine exactly how, in order to further clarify our relationship to Information, and (all things being impelled by *Force*) whether we are tending together.

In a three-field System, the hot plasma that created the Cosmos did not suddenly appear out of nowhere 13 billion years ago: It is the *General Field* itself, a perpetual phenomenon – ever-present in the far reaches of the Cosmos, and within all Particles.

Why does this raw energy not destroy us?

To answer this, we must consider that the *gaps* between the three *Principal Vortices*, that keep them *distinct* in their individual *direct* interactions with the hot plasma of creation, are replicated *within* the Vortices – where similar *gaps* separate Particles into their distinct *States* of complexity. (This replication is intrinsic to the dual effect of the *Gravitational-Magnetic Force* – that causes it to affect the Cosmos as a whole, and its Particles individually: Since every distinct entity is a Particle relative to this *Force*, each Vortex is individually acted upon by it, as is the Vortex System itself).

From what we have said, it can be appreciated that no possible force can cause the Vortices to interact *directly*, rather than *distinctly*; and it follows that the same applies to the *States* of Particles as well.

As Particles gain in complexity, passing from nearly pure Energy to their more defined *States*, the Energy passing between their *States* decreases because of the intensifying *Force Barriers* building up between them. Therefore, though *Primal Particles* interact directly with the hot plasma of creation, their *Intermediary* and *Composite* counterparts are preserved from its potentially cataclysmic effects.

And since the Cosmos is the sum total of its Particles, it is the dimensionality of Particles (their distinct *States* of complexity) that determine the dimensionality of the system as a whole: That is to say, the aggregation of Particles creates a system of *dimensional Zones* that Correlate with the *States* of Particles, and projects their *Force Barriers* on to the Cosmos itself.

Thus, the Cosmos is also preserved from the hot plasma of creation.

In order to describe the *Zones* of the Cosmos, we must first describe the Particles that aggregate to create them. We've briefly mentioned that the *States* of Particles are created as the *Primal Particles* of each Vortex develop into their vastly more complex counterparts, and that this occurs as *Pulses* aggregate in each Vortex.

If we sub-divide each Vortex into *Primal*, *Intermediary*, and *Composite States* – each *State* denoting the increasing complexity of the Particles of that Vortex – then the Higgs Boson is the *Primal* Particle of the *Inorganic Vortex*: It is partly (though very peripherally) measurable in space-time parameters – though it mostly manifests as pure Energy.

Still in the *Inorganic Vortex*, quanta are *Intermediary* – or somewhat more definable in space-time terms – while Atoms are *Composite*, and are the most measurable Particles in the *Inorganic Vortex*.

Briefly – the same three *States* are to be found in the *Organic Vortex*: The *Primal Organic Particle* must also be *Omni-dimensional* (since it results from a direct interaction with the *General Field*) and must therefore be as far beyond the reach of observation as is the Higgs Boson; it is subsequently entangled into Micro-organisms (*Intermediary*), and DNA (*Composite*).

(These sub-divisions cannot be detailed in these few pages, but should at least be accepted as an illustration that the *States* of the *Organic Vortex* correspond to those of the other Vortices).

The *Sensory-Cognitive Vortex*, being the most recent formation, is also the most volatile in its *Pulse* exchanges with the *General Field*. Its Particles – regardless of *State* – are to a great degree defined by the *immediate moment* of the Species' interaction with the Cosmos, with the 'greater Cosmos', and with the *General Field*.

In this light, *Primal Particles* of Information – or *Magnetic Particles* as we will call them, because of their volatility – are the crackling 'live wire' of Evolution.

At the *Intermediary* level, their more perceptible (but still volatile) *States* manifest as immediate perception, or initial Information processing, that can be termed *Magnetic Particle Imprints*.

The *Composite* level of the third Vortex is, manifestly, *Nerve* and *Brain* tissue.

This *Sensory-Cognitive Vortex* clearly exhibits a measure of self-reflection in most Species – so that every organism creates *Imprints* of its own processes simultaneously with the *Imprints* it produces of its Atomic and genetic reality. Not only does this lead to every organism's sense of *self*, and to its concept of being a distinct element in the Cosmos, but it also allows the organism to participate in creating its *Species Cosmos* in the immediate and evolutionary time planes.

We'll return to this – but to conclude on the subject of *Cosmic Zones*, we can appreciate that the aggregated *Force Barriers* of all involved Particles sub-divide the Cosmos into *Primal*, *Intermediary*, and *Composite Zones* of increasing dimensionality, and decreasing intensity of Energy.

All we need to recognize here is that the Higgs Field, and variant sub-fields, constitute the *Primal* and *Intermediary Zones* – while the *Composite Zone* is represented by the space-time continuum.

Furthermore, we can appreciate that an unraveling of parameters occurs as our Vortices resolve to the 'greater Cosmos'. That is to say, as distance from any Observer anywhere in the *Composite Zone* increases, dimensionality dissipates into the *Intermediary* and *Primal Zones* from which Pulses are perpetually emerging into Particles.

And since, conversely, it is because dimensionality defines itself as these emerging Particles subsequently aggregate, that the resulting Observer-centric Cosmos is a Vortex. That is to say, as the *Zones* of the Cosmos curve away from the Observer, into deep space, the three Vortices that define the Observer – including *Information* – simultaneously coil into the *Composite Zone*.

The same coiling occurs when the *inner space* of Particles are examined by the Observer, and this establishes the limits of space-time observation, within Particles and cosmologically, and defines the most useful parameters of the Human *participatory* Cosmos at any given stage of Evolution.

The Cosmos therefore emerges as a coiling 'gear-mesh system' – in which the *States* of Particles, the Vortices themselves, and the *Cosmic Zones*, are perpetually and flexibly Correlated.

In the case of Humans, this Correlation is displaying an increasing complexity. Like most creatures, we are spun from threads of nerve tissue that are knotted into *Bits* of cognition; but with us, the weave is far more complex. Indeed, Human Evolution is a 'shifting' of the coiling gear system – with the result that the Species is expanding into dimensionality, allowing our *Species Cosmos* to maintain a closer Correlation with the 'greater Cosmos' than any other organism.

This in turn allows us to create our highly ordered *Magnetic Particle Imprints*, and to benefit more than other creatures from the element of *predictability* that is introduced into these ordered

Imprints by the orbital nature of Vortices in general.

And since Human Evolution seems to be increasing its already remarkable speed – we can infer that all the branches of Physics (Inorganic, Organic, and Sensory-Cognitive) will in time Correlate more closely still, and that Information will not only increase in volume, but will even alter its nature – a point we will return to in a moment.

In short, the Correlation of *Bit* and *It* must eventually become as intricate and optimal as is the Correlation of Energy and matter over the course of infinity.

Where will this lead?

Most of our progress over the centuries has inevitably involved us in a repetitive treading of the same ground: We have cyclically re-configured the same concepts, extracting the minutest Particles possible – while projecting the broadest measurements the *single field* would allow. The advances were beneficial; the countless failures irrelevant.

In the last five hundred years, science has been able to broaden its horizons and – predominantly through the contributions of Copernicus, Newton, and Einstein – we have obtained our first empirically significant insights into the underlying Correlation of Energy, quanta, Atoms, and dimensional systems. These great advances were paralleled in the Organic sphere by Darwin, and others.

But throughout this modern surge, our three fundamental assumptions still barred the way to any broader exploration of reality: Most particularly, we clung to the *single-field*, and misinterpreted the 'quirky folds' – or simply ignored them.

We are now ready to tread new ground: Our great and sudden upswing in knowledge cannot only be occurring by chance – it must also be founded upon the *Evolutionary Impulse*. This means that our Evolution is lifting us up to a new platform – one that will Correlate *Information* more intricately, and will inevitably bestow upon us an ever-greater range of self-directed action.

There is no reason to imagine that the *Correlated Energy Vortex System* has closed, or that it is 'cooling down': It is far more likely that our *Sensory-Cognitive Vortex*, having reached the *Composite State* of complex brain tissue, is sealing itself off – and that a distinct *Fourth Vortex* is quite naturally forming.

All we can say about this incipient *Fourth Vortex* is that it will involve us, and that it will surely mirror the other Vortices. We should also be able, from its vantage point, to alter the relation between the *Sensory-Cognitive Vortex* and its field of observation, and thus perceive *Magnetic Particles* at least as clearly as we now perceive the Higgs' Boson – or even quanta.

Whatever Force from the Omni-Dimensional Field is eventually detected as affecting the creation of sub-Atomic and Atomic Particles will also be seen to similarly affect their subsequent arrangement into Organic configurations – and thus the *Magnetic Particle Imprints* of Information itself.

Clearly, this means that we will participate ever more intricately in the creation of Information: And indeed, that we will manipulate *Bits* and alter their nature – transforming them into tools of dimensional exploration that will enable us to peer into those *gaps* that were our impassable borders till now.

Further into the future, it can be expected that we will be able to predict the dissolution and recurrence of facts themselves – given the orbital nature of Vortices – and if so, we might well sub-divide humanity into groups that will perceive different facts, and variant systems of reality –

so that there might one day be more than just one Species on Earth displaying higher intelligence.

Strange as such predictions might seem, they arise readily enough from the evolutionary path we have travelled so far: After all, is it truly possible *not* to imagine this path leading to future generations that will be as divergent from us as we are from animals?