Physical Spirituality

Changing the paradigm

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What this Book is About

Spirituality and religion are regarded as being out of this world. The very reason many religions regard themselves as 'spiritual' is because they offer us access to worlds other than the physical dimensions we find ourselves in. Spirituality is commonly used as an antonym for materiality.

Yet there must be some commonality between our spiritual and material worlds for us to be able to imagine them at all. Access to such other-worlds permits us to extend our same earthly lives, lead lives of greater civility or comfort, consort with beings whose powers or intelligence exceed our own, or extend our powers beyond their earthly capabilities. Our spiritual worlds are not completely alien to us.

While it's not possible to test the veracity of their other-worldly offerings, the descriptions of this world by many religions have proved to be scientifically inadequate and this has aroused suspicion of their other-worldly claims. But do we need other-worlds to realize our spiritual ambitions? Could we not find all the splendour of our spiritual imaginations right here in an empirically validated world? Might our spirits not arise in the physical world just as we do?

Other-worldly spirits, minds or dimensions have been proffered as sources from which the material world has sprung. Regarding spirituality as arising in the material world bypasses the need for a spiritual source to reality. This is not to deny a metaphysical substrate to reality, only that it is not spiritual. We can simply take the material world for what it is and find spirituality in it.

This approach relieves spirituality of having to explain materiality and having to revise its precepts with every scientific revelation. It puts the task of explaining the origin and workings of the material world firmly in the lap of the rational sciences while leaving spirituality to be distilled from what science reveals. By 'distil' I don't mean that the spiritual enterprise follow the rational disciplines of the sciences, only that it not contradict them. Science could be informing our spiritual speculations rather than contesting them.

Many teachings promote turning one's attention away from the external world in pursuit of an inner spiritual truth. By finding spirituality in the material world we can find that truth in our external world as well.

This book takes that approach. It seeks spirituality in the world we have.

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I did not aspire to this task. My original intention was to understand the extraordinariness of my experiences under LSD. Psychedelic drugs such as LSD and psilocybin offer us a unitary participation in the world astonishingly different to our usual participation as isolated individuals. But why is such a salutary experience always temporary? Why is it so far removed from our normal experience? Is it only a drug-induced illusion or does it have genuine epistemic value? The experience can feel so real that many question their normal perception afterward.

Science and mainstream religions have no conception of the psychedelic state let alone any understanding of it, while a draconian prohibition has seriously impeded formal investigation. Intrepid explorers such as myself have cast about for anything that might throw light on the experience, from Jungian psychology to Eastern mysticism to shamanic practice to Bohmian quantum mechanics. In this book I offer an understanding arrived at after some 40 years of self-examination. I find it satisfactory because it appears coherent in my normal state of mind, corresponds with my perceptions under psychedelics and sits comfortably with my scientific training. I believe it to be relevant to the spiritual endeavour in general.

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So how might such a physical perspective of spirituality be approached?

To start with I open up the idea of spirituality. Rather than restrict it to its traditional religious usage I invoke it as a catch-all for anything that influences us while remaining mysterious or beyond our control. We have no control over many of the physical phenomena that affect us. The rotation of our planet vis-a-vis the sun absolutely dictates our daily rhythms, while the structure of our DNA is an important determinant of who and what we are. Dumb though these processes may be, their impact on us is unavoidable

and beyond our control, and in this wider sense they are spirits we cannot but obey.

But are these spirits dumb? Sentience, I suggest, lies in the patterns they host. It's not only that their patterning may be beautiful or wondrous, but it can carry meaning, and in so many ways. A patterning of sound, for example, physical as it is, might carry a baby's cry, an animal's grunt, a siren's wail, a trumpet's fanfare, music, language or poetry. All these affirm the variety of ways a physical patterning can carry meaning.

It is through the patterning of material reality that we express our sentiences. The messages we communicate - words on a page, electronic data, signs or songs, a pat on the back, a shared laugh - all are patternings of the greater material medium. Our organs sense our environment through signals in the material medium and it is through manipulations of the material medium that we respond. Our material world is a replete medium for meaning.

I suggest our spirits utilize the material medium to express their sentiences too. But whereas we express our sentiences at human scales their expressions are not so limited. Their bandwidths in the material spectrum, as it were, can be much wider than our own. They might spin galaxies, or throw sub-atomic parties, while we play marbles. Let's also note that patterns can be dynamic, that they can change according to yet other patterns, which in turn can also be patterned, over and over again. Patterns at the extremes of such recursion usually lie outside our bands of perception. Molecular biology has revealed staggering layers in the patterning of living organisms, all surpassing our normal bands of perception, while one has only to [watch the intermingling of waves on a shallow beach](#) to see how deep a simple patterning of nature can be. It is in the patterns beyond our normal perception that I see our spirits at play. As I see it, humans and spirits employ the same material medium, only our scales of utilization differ. I suggest psychedelic drugs shift our perceptions towards scales we don't normally frequent, prompting us to describe their experience as spiritual.

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Now I have noticed two modes to the general patterning of the material world that make these scale sensitivities really stand out. In the mode I call

architective, patterns reside in hierarchical levels, with higher level patterns overriding those below, while in the mode I call *connective* there are no levels of authority and patterns affect each other proportionally. These modes of patterning can be seen for example in the way armies organize in ranked levels while fish school without leaders. The architective, hierarchical mode is scale dependent while the connective mode is not, and many of our spirits show proclivities for one mode or the other. We can glean information about our spirits from the modes of patterning they employ.

Spirituality is not the only area of our lives illuminated by these modes. They are deeply rooted in our physical, biological and social makeup as well, and understanding them throws light on many of our human foibles.

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The first Part of this book, "Modes of Interaction", examines our physical, biological and social interactions in order to flesh out the characteristics of these modes. The second Part, "Modes of Meaning", shows how these modes permeate the meaning we find in our world, which has implications for our understanding of consciousness. It is only in the third Part, "Modes of Spirituality", that I turn to spirituality, searching for spiritual possibilities that accord with these modes. The last Part, "Changing the Paradigm", demonstrates how these possibilities can refine our approach to spirituality and provide valuable signposts for our psychedelic journeys.

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A brief biographical note to allay suspicions about my motives: I grew up orthodox Jewish and as a teenager in the 1960's was groomed for the rabbinate. On leaving school I chose to study physics and maths at university where I embraced atheism instead. In the 1970's a chance encounter with psychedelics rekindled the spiritual interest, this time in the direct experience of spirituality rather than the following of any religion. Attempts to reconcile the psychedelic experience with my everyday perceptions have occupied my attention ever since. This book is such an attempt.

My aim is not to convince sceptics of the reality of spirituality - only a direct experience can do that - but to offer those so mystified a framework for

their experience. I have also published a more intuitive work called "The Oracle of Love" <u>##</u> based on the Daoist <u>I Ching</u>.

Though I did not follow a career as a physicist (I earned my living in computer software) my study of physics significantly coloured the way I see the world. Part I of the book can be a little dry but the disclosure at its end is rewarding. The physics is elementary and hopefully accessible to everyone. Occasional statements that are beyond one's reach may be bypassed without losing the overall gist. On the other hand, I have stated the ideas much too simply in order to convey them as directly as possible and to as wide an audience as possible. The physics is mainstream and largely classical, only the perspective a little unusual so as to illustrate my thesis. Physicists please be forbearing - my intention is not to change the way we think about physics but the way we approach spirituality. On the other hand I do hope to change the way we think about consciousness, and cognitive scientists may be justifiably aggrieved by my naivete. Nonetheless, I regard my insights concerning the modes of patterning and their scale dependencies to be definitive and believe them to significantly impact our spiritual speculations.

The book is not long. It prints to about 200 pages but can be awkward for I am not a skilled writer. Appreciate too that I am grappling with unusual ideas and have probably made mistakes along the way. Corrections are welcome - there's an email address on the cover page. My hope is that you will emerge from this adventure with a very different idea of what spirituality can be and a very different approach to the psychedelic landscape.

Part I : Modes of Interaction

"There are two kinds of people in the world" my late friend Wally used to say, "those who squeeze their teabags and those who don't." I suspect he meant to distinguish people who wrung every ounce of flavour from their experiences. Wally squeezed his teabags and most of his friends did too.

People have been putting each other in categories since the year dot. Every which way we can, we do it. Friend or foe? Us and them. We label each other by religion, by nationality, by region and by town; by wealth, by ancestry and by power; by political affiliation; by taste in clothes, music or football team. Are you a cat lover or a dog lover? Do you smoke the same cigarettes as me? If we tried hard, we could create more categories than there are people.

For some people categorization is important - they don't know who you are until they've ticked or crossed every box in their mental questionnaire - while others don't give a hoot about your status or pedigree as long as you're pleasant to be with.

It's not only people that we categorize - we categorize books, music, rocks and plants - everything around us. Categorization helps us get a quick overall idea of what we are dealing with and manage our world more efficiently - it's an essential part of being human.

But things are not equally amenable to categorization. Some things are more easily distinguishable than others while some distinguishing characteristics do not last. It's significantly easier to distinguish a cat from a dog than it is to distinguish say your dog from my dog, especially if it is the same dog that has merely changed owners.

Things that are amenable to categorization have some unique and unchanging properties. Parts of a motor car can be relied on to maintain their functionality for as long as they are not broken, so we can categorize them as being tyres or seats, or front-left doorhandles and front-right

doorhandles, for example. Sure there may be many front-right doorhandles that all look the same but each is on a different car.

Contrarily there are things that are a nightmare to categorize - things that have no unique properties or their properties change at the slightest disturbance. No testing of water of the Nile at Cairo could tell whether the sample originated in the Blue Nile or the White Nile. A cloud in the sky may be categorized as cumulus or stratus, but no cloud can be pinpointed as being the same one that was there yesterday.

These contrasting extremes of susceptibility to categorization illustrate the two modes of interaction I will explore. Differences in susceptibility to categorization are only one of the contrasts between the two modes. Categorization is a feature of the mode I call *architectivity,* which is also characterized by certainty, exclusiveness, separation and endurance. The mode I call *connectivity* is characterized by uncertainty, indistinctness and a penchant for change.

To grasp these modes more clearly, to understand how deeply they are embedded in our reality and how significantly they affect our spirituality, I need to start with the fundamental forces of physics....

Chapter 1: Interactions

Physicists tell us that all encounters between physical objects can be described in terms of four fundamental forces. Every physical encounter, no matter how complex, can be analyzed into smaller components, which in turn can be analyzed into even smaller components, until at some point every contributing component can be described using only one or more of the four fundamental forces. The four fundamental forces of physics are known as the electromagnetic force, the strong and weak nuclear forces, and gravity.

Gravity is the familiar force holding our bodies to our planet and our planet in orbit around the sun. While we are familiar with the electromagnetic force at work in our televisions and lighting, it is also the force that binds atoms into molecules which in turn make up our bodies and the physical objects around us. Atoms in turn are conglomerates of sub-atomic particles such as protons and neutrons which are held together by the strong and weak nuclear forces.

Newton and Galileo gave us a good understanding of the force of gravity, showing how it arose between objects having mass, such as our bodies and our planet, and that the strength of the force was dependent on how much mass each object had and the distance by which they were separated. The larger the masses of the interacting objects, the stronger the force, while the greater the distance between them, the weaker the force. Einstein later added greater detail to our understanding of gravity that enabled us to make predictions about its effects with extremely high precision.

Similarly, Coulomb demonstrated that the electric force arose between objects having an electric charge, and that the strength of the force depended on the size and polarity of the charge of each object and the distance by which they were separated. The larger the charges involved, the stronger the electric force, the greater the distances between the objects, the weaker the electric force, and whether they attracted or repelled each other depended on the polarity (positive or negative) of their charges. Later the phenomenon of magnetism came to be understood as a by-product of

electricity and that forces between magnets were similarly describable in terms of the size and polarity of charges and the distances between them.

These forces all arise as *interactions* between objects. They do not arise in isolation. They are also universal in that they affect all relevant objects. Every object having mass gravitationally interacts with every other object having mass. My body is gravitationally attracted to everything that has mass, including your body and your dog's body, no matter where you or your dog are. An apple dislodging from a tree actually falls towards every planet in the universe, not only to planet Earth. More so, the apple falls towards every other object on planet Earth including every animal, plant, and stone on it. But because planet Earth is so much nearer to the apple than any other planet, and because Earth has so much more mass than any animal, plant, or stone on it, the gravitational force between the apple and Earth is the one that really counts. For all practical purposes, we only concern ourselves with the apple falling to the Earth. Similarly, the tides of our oceans are determined not only by the gravitational force of our moon, but by the gravitational force of our sun, and to far lesser extents (because of the greater distances involved), by the gravitational forces of the other planets of our solar system, by other suns and their planets, and even by suns and planets in other galaxies. But in calculating the times of the tides, we only consider the gravitational forces of our moon and our sun because the others are too small to have a noticeable effect.

This universality of affect applies to every fundamental interaction. Every object having an electric charge electrically influences every other object having an electric charge, with large distances rendering some influences negligible, and in this case opposite polarities also able to affect an outcome. The situation is a little different in the case of the nuclear interactions but a similar principle applies in that the strength of the forces are affected by the distances between the objects and the strength of their charges.

The fundamental interactions between objects are also *mutual* in that they act equitably on all the objects involved. The force of gravity between a ball and the earth acts on both the ball and the earth, and is of equal strength on both objects regardless of their relative size or their relative mass. Only the direction of the force is different - the force on the ball is opposite in direction to the force on the earth. Both ball and earth would experience a

stronger force if either object had greater mass, and both would experience a weaker force if the distance between them was greater, but the strength of the force on the ball is always the same as the strength of the force on the earth. When objects mutually influence each other, the influence of one on the other is of the same quality and strength as the influence of the other on the one, as it were. One of the objects cannot be said to be the cause of the force and the other only to suffer its effect.

At less fundamental levels, encounters between objects are often not mutual. One object can be said to be a cause and another to suffer an effect, as we often see in everyday life. For example, when a person kicks a ball, we can say that the force of the person's foot on the ball is the same as the force of the ball on the person's foot, but we cannot say that the ball is as determined to kick the person as the person is to kick the ball. The person is the obvious cause and the ball flying into the goal-mouth is the obvious effect.

Connective and Binding Interactions

I start my story with mutual interactions between objects, such as those involving the fundamental forces.

It is important to understand that objects participating in these interactions are responsive to each other. They may respond, for example, to changes in each other's masses or charges, to changes in the distances between them or to their orientations to one another. If one changes its situation relative to the others then the others will all make suitable adjustments to their relative positions and motions.

But in some situations an interaction will *lock into constraint,* whereby it restricts the responses of its objects to a specific range or probability distribution. The constrained objects can no longer respond completely freely to each other. For example, if a proton and an electron (interacting using the electromagnetic force between them) get very close to each other and are not moving too fast they can lock into constraint. With their responses constrained they can't stray too far from each other so the constraint has bound them together, and in this binding they have become an atom (of hydrogen). Not all interactions between protons and electrons are constrained (because a conducive arrangement has not come about) so

not all interactions between protons and electrons constitute atoms. When protons and electrons interact outside atoms they are free to respond to each other without constraint. In the sun, for example, protons and electrons interact freely in what is called a *plasma* - a sort of soup of interacting individual protons and electrons that do not constitute atoms (though many do).

(Locking into constraint is not the same as being captured to an orbit, as will become clear shortly.)

A constraint on an interaction is not imposed from outside the interaction but is intrinsic to the interaction itself, in the above example, between only this proton and that electron. No other forces or objects are involved. And once constrained an interaction will remain constrained even if the arrangement that triggered the constraining passes. Moreover, an interaction will always lock into constraint when and where its arrangement is conducive.

Why do constraints arise? We don't know, though the Pauli Exclusion Principle is often invoked to explain them. I myself see constraint (and Pauli exclusion) to be as fundamental a phenomenon as the fundamental forces themselves. (Why do the fundamental forces arise? We also don't know.)

When an interaction locks into constraint its nature is significantly altered. The force utilized in the interaction remains the same but the participating objects' responses are noticeably stifled. Indeed, if their range of constraint is very narrow the participating objects may even appear to not respond to each other at all. A locking into constraint is a clear-cut singular event, in that the nature of the interaction is distinctly different before and after the event.

When many interacting objects lock into a constraint, a number of ranges may be utilized: A carbon atom, for example, constrains six electrons and six protons in two different ranges. There may be other sub-atomic objects in an atom besides protons and electrons and many more layers of complexity to their interaction, but delving into these complexities does not add to my story. All I want is to convey the idea of an interaction being *intrinsically constrained*.

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When an interaction is intrinsically constrained, as when a proton and electron constitute an atom, I call the interaction a *binding interaction*, or a *bond* for short, because the interaction binds the objects together. When an interaction is not constrained, as when protons and electrons are in a plasma, I call the interaction a *connective interaction*, or a *connective* for short, because the objects connect with each other without binding.

Objects participating in a connective respond freely to the forces they exert on each other while objects in a bond only respond to the extent that their constraint permits. Objects in a connective will also respond freely to any external forces acting on them, while the responses of those in a bond will be restricted by their constraint. So a bond not only constrains the responses of its constituent objects to the forces between them, it also constrains their responses to external forces. A connective on the other hand imposes no constraint on its participating objects - they respond completely freely to each other and to all relevant external forces.

Interactions between physical objects are either binding or connective - they are either constrained or they are not. Interactions that appear to be constrained in some ways and unconstrained in others are compound mixtures of connective and binding interactions. In the same way that every encounter between physical objects can ultimately be described in terms of one or more of the four fundamental forces, every encounter between physical objects can ultimately be analyzed into interactions that are connective or binding.

More examples of connective and binding interactions are given in Chapter 4 when their features have been more clearly distinguished.

Chapter 2: Features of Connective and Binding Interactions

The Wholeness of Bonds

The fact that objects are fastened together in a bond becomes evident when an external force acts on them and they do not respond individually. Rather the bond responds as a whole so as to allow its constituent objects to remain within their constraint. The bond responds while its constituent objects remain relatively unmoved within it.

For example, in the case of a proton and an electron, it becomes evident that they are bound together in an atom when an external force that should affect them individually affects the atom as a whole instead.

Consider that an external force is also occurring in the context of an interaction - with one or more external objects - and when the bond responds as a whole the external objects respond to it as a whole rather than to its individual constituents.

A bond may thus participate in external interactions as a single object in its own right, while a connective always participates in external interactions as the collection of its individual objects. The objects of a connective may appear to respond as a group when their responses are similar, but they do not respond as a single object. The participating objects of a connective are free to respond without constraint and so always respond individually.

Since a bond may participate in an external interaction as a single object in its own right, any object may in fact be a bond. Protons, for example, are bonds of quarks utilizing the strong nuclear force for their binding.

Bonds can be Disrupted

The constraints of bonds have limited strengths, known as their *binding strengths*, beyond which they become unstable and break down. A relevant

external interaction more energetic than a bond's binding strength will overcome its constraint and release its objects from their bond, in which case I say that the bond has been *disrupted*.

(Bonds sometimes offer a number of possible ranges for constraint, with each range having a different binding strength, so that an external interaction may cause a bond to switch to a constraint range having a binding strength able to withstand the external interaction. But should there be no range available with a strong enough binding strength, the bond is disrupted.)

Once an external interaction has disrupted a bond, the erstwhile bond's objects can respond completely freely to each other and to the external interaction, for their interaction is now connective. But breaking the constraint will have drained some if not all of the energy of the external interaction. Energy is expended in disrupting a bond.

For example, it is possible to exert a force on an atom that is so strong that its electrons and protons are freed from their bond. Those electrons and protons continue to interact with each other (courtesy of the electromagnetic force between them) but now interact connectively, moving without constraint in a plasma, and respond freely to each other and to what remains of the interaction that disrupted their bond. But the atom they constituted is no more - the bond between them, the bond that made them an atom, has been disrupted.

Bonds do not disrupt spontaneously. It takes an external interaction to disrupt a bond. There is nothing that a bound proton or electron can do unassisted to escape their atom. Bonds last until an outside influence disrupts them. (The apparently spontaneous disruption of radioactive isotopes can be seen as the stronger electromagnetic forces repelling their protons exceeding the constraint of the nuclear interaction binding them.)

To remove an object from a bond its constraint must be broken. In which case the bond (and the whole object it constituted) ceases to exist (though the remaining objects may then establish a new bond). When removing an object from a connective there is no constraint to break and the same connective interaction continues among the remaining objects. Connectives do not cease to exist when objects are removed (until of course there is only one object left).

It is important for my story to stress that for a bond to be disrupted a constraint must be broken. We often picture an electron and proton in an atom orbiting each other in the way that the Earth orbits the sun, but there is a significant difference: An electron and proton in an atom are locked in constraint while the Earth is not locked in constraint with the sun. The Earth may have settled into a regular orbit around the sun but is not fasted to the sun or constrained to a particular orbit. The Earth could imaginably be nudged to another orbit, or even removed from the solar system entirely, say by the gravitational force of a rogue planet passing close by, which need only expend enough energy to shift the Earth without having to break a constraint as well. Electrons and protons are locked in atoms but planets and suns are not locked in solar systems. The presence of a rogue planet would affect each planet individually rather than move a solar system as a whole. An atom exemplifies a bond while a solar system exemplifies a connective.

The composition of a bond - the collection of objects that are bound by it - remains unchanged until the bond is disrupted. Removing an object from a bond disrupts it while adding a new object can be viewed as an aggregation to the bond - the establishment of an additional bond with the new object (as will be described shortly). A bond can be seen to persist with the same objects it was initially established with until it is disrupted, with no objects entering and no objects leaving for as long as it endures. A connective, on the other hand, persists, and its composition changes, as objects join or leave.

The Separateness of Bonds

By not responding to external interactions and not venturing beyond their constraint, the objects in a bond separate themselves from the rest of the world.

By fastening to each other and not to any other objects, the objects in a bond establish a special relationship that distinguishes them from the rest of the world.

By shielding its constituent objects from the influences of external objects, a bond keeps external objects out of its interior. A bond holds a volume from which external objects are excluded. Multiple bonds/objects cannot occupy

the same space at the same time. (This will later be clarified to be only objects that are interacting with each other being excluded from each other's interior. Also, at scales where quantum effects prevail, it is not possible to say exactly where an object is so it is also not possible to say with certainty that objects cannot occupy the same space at the same time. However, atoms are known have measurable volumes from which they exclude other atoms (see [Van der Waals Volumes](#)) so we can say with certainty that interacting objects cannot occupy the same space at the same time at least at the atomic scale and larger.)

A connective does not shield its participating objects from external influences and so does not have an excluding spatial volume of its own - only its participating objects do, from which they exclude each other (and any external objects they interact with).

Bonds/objects collide but remain separate when they meet because they exclude each other from their volumes. When connectives meet they may merge into a shared volume and may even pass through each other, though their participating objects may collide in the process.

Emergence

The properties of a bond-as-a-whole can be very different to those of its constituent objects. An atom, for example, displays properties very different to those of its constituent protons and electrons, and its excluding volume can be much different than the volumes of its protons and electrons added together. Water comprises molecules that are bonds of hydrogen and oxygen atoms and is a liquid (at room temperature), while hydrogen and oxygen are gasses. A mixture of say 50 litres of hydrogen gas and 25 litres of oxygen gas has a mixed volume of 75 litres, but get them to bond (with a spark) and they cram into only a tablespoon of water.

The properties a bond displays in its own right are termed its *emergent* properties. It is the emergent properties of water that makes it different to an unbound mixture of hydrogen and oxygen. We can say that water emerges from a bonding of hydrogen and oxygen. Some of the emergent properties of a bond may be entirely novel - not displayed by any of the bond's constituent objects - while some may be shared with its constituent

objects, or there may be properties of the constituent objects missing from the bond's display.

The properties displayed by a connective on the other hand, are not any different to those of its participating objects. A connective does not have emergent properties. A connective displays the properties of its participating objects, perhaps summed as a group, but does not have emergent properties of its own. In the above example, the mixture of two connectives, 50 litres of hydrogen gas with 25 litres of oxygen gas, is itself a connective gas, having a combined volume of 75 litres - the simple sum of 50 and 25 - and the properties of the mixture (in the absence of the spark) are not any different to the properties of hydrogen gas and oxygen gas mixed together.

Though molecules of water are bonds of hydrogen and oxygen atoms, a collection of water molecules is a connective - a liquid - at room temperature. Simply because hydrogen and oxygen atoms have bonded does not preclude the emergent water molecules - as objects in their own right - interacting connectively. Freezing the water would indeed cause the water molecules to bind together into crystals of ice, which would have emergent properties very different to those of liquid water.

While the properties of an atom are different to those of its protons and electrons, the properties of a plasma, not being a bond, are those of its participating electrons and protons even though they are interacting. A plasma may display an overall electric charge different to the charge of any one of its participating electrons or protons (and perhaps even no charge at all if they all happen to cancel each other out) but in any external interaction the force arising from its overall charge will be no different to the combination of forces from the charges (and motions) of its individual electrons and protons. A connective cannot participate in external interactions as an object in its own right or have emergent properties. A connective can engage in external interactions only as the collection of its participating objects, utilizing their individual properties to do so (which may change as they move) while the emergent properties of a bond persist for as long as the bond endures.

The Identity of Bonds

It's relatively easy to distinguish things that are separate from each other - and bonds/objects are - while distinguishing merging connectives can be very difficult. Sorting a puff of smoke from the air around and between it would be impossible without some very sophisticated technology, and ultimately only becomes possible because each particle of smoke has some properties different to those of air.

The collection of properties (and their values) displayed by an object constitute what I call its *identity*. The properties of a book, for example, would include its shape and size, its title, the colour of its cover, its subject matter and author, the price that was paid for it and who owns it. Many of these properties could be shared by other books, for example if they are by the same author, but at least one property of every book will be unique - exactly where it is at any one moment - simply because no two books can occupy the same space at the same time. Generally speaking, every object's identity is ultimately unique if only because objects cannot occupy the same space at the same time, though there are likely to be other points of difference. The uniqueness of an object's identity persists for as long as it is not disrupted.

Even when connectives are distinguishable from each other, they do not display properties in their own right. They may also occupy the same space at the same time. So connectives do not display a unique and lasting identity as objects/bonds do, but their participating objects, being objects, do.

The Aggregation of Bonds

Objects can bind together in many different combinations, and by binding in different combinations different objects with different properties emerge. A molecule of water, for example, is a bond of two hydrogen atoms and one oxygen atom, while a molecule of aspirin is a bond of nine carbon atoms with eight hydrogen and four oxygen atoms. Even when binding different numbers of the same object, objects with different properties may emerge.

And what distinguishes a hydrogen from an oxygen atom? Both are atoms but each has emerged from a bonding of protons and electrons in different combinations. An atom of hydrogen is a bond of one proton with one electron while oxygen is a bond of eight protons with eight electrons. All the

chemical elements, such as hydrogen, oxygen, carbon, phosphorus and uranium, are bonds of differing numbers of protons and electrons (as well as differing numbers of other subatomic objects such as neutrons).

A cornucopia of difference, novelty and variety emerges when objects bond in different combinations.

The explosion of novelty doesn't stop there. Bonds, being objects in their own right, can then bond with other bonds. It's not just that objects create something new when they bond, or that bonding in different combinations gives a variety of newness, but the new objects so created can then bond with others to synthesize even greater confections of novelty. Protons and electrons bond in different combinations to create many varieties of atoms. The atoms so created can bond with each other - again in many different combinations - to create molecules of even greater variety and complexity, and the molecules can bond with different molecules to create extremely complex structures such as the proteins we are made of. A plasma, on the other hand, being a connective, is not an object in its own right and so cannot engage in a bond. It may merge with another plasma, but plasmas of plasmas are just bigger plasmas and do not become anything significantly different when they merge.

When bonds bond with bonds, I say that they *aggregate*. The resulting aggregate is an object in its own right, having emergent properties of its own and an identity of its own; it is able to bond with yet other objects to aggregate into more complex objects, and so on.

An aggregate is just a more complex bond, so the term 'aggregate' is really also equivalent to 'object' and 'bond' (and from here on I may use the terms interchangeably).

Aggregates are constructed in a series of discrete, singular events, each being the establishment of a bond.

Aggregates may destruct rather than construct. When an aggregate is disrupted, it leaves behind smaller bonds that were the aggregate's constituent objects. These smaller bonds may disrupt into even smaller bonds, and so on. Each step in the destruction of an aggregate is also a discrete event, being the disruption of a bond.

It is the emergent properties of atoms as different to the those of their component protons and electrons that opens up the entire arena of chemistry - by which we distinguish one kind of atom from another, by which atoms bond with atoms (using their atomic properties) to create molecules, and by which molecules bond with molecules using their molecular properties.

The Architectures of Aggregates

As bonds aggregate they can be seen to build in levels. In the example above, the protons and electrons are at the lowest level, the atoms they comprise are at the next level up and the molecule that the atoms constitute is the topmost level of the aggregate.

The levels of an aggregate are thus arranged in a hierarchy, and every object within the aggregate can be allocated a rank according to its level in the hierarchy.

With each aggregation event the number of levels rises by one. With each aggregation event a new object emerges at a new topmost level, having an identity different to those of its constituent objects on the level below (and different to those of their constituents on the level below them, and so on). The rank of any two objects in the hierarchy can then be compared, according to whether one object is internal to the other, is bound to the other, or has emerged from the other.

I call the hierarchy of an aggregate/object/bond its *architecture* or *architective hierarchy.* The architecture of an aggregate offers a clearly defined map of all the bonds used in its construction.

(This discussion of the aggregation and architecture of bonds is overly simple but is sufficient to convey the gist of my argument. If you are interested, some complexities are discussed in Appendix 1.)

I speak of an aggregate's *internal objects* being its constituent objects at all levels, so as to include the constituent objects of its constituent objects and so on.

Disrupting a constituent object of a bond will disrupt the bond itself, since a bond persists with its same constituent objects until it is disrupted.

Disrupting any of an aggregate's internal objects will destroy the whole aggregate. (If this statement seems a little strong see [Appendix 1](#) for some justification.)

The ranking of an aggregate's internal objects cannot be changed without disrupting one or more of the aggregate's internal bonds, which in turn would change the aggregate's architecture, so an aggregate's architecture persists unchanged for as long as the aggregate exists. An aggregate's architective hierarchy contributes to its identity.

Objects of a lower rank in an aggregate's architecture are more numerous, while those of a higher rank contain more internal objects than those of a lower rank. There is only one object at the very top of an architecture and it contains all the others.

There is a time-line implicit in an aggregate's hierarchy, for the object that emerged most recently is always at the top of the hierarchy, and those of the next level down are the next most recent, and so on.

The Integration of Connectives

Connectives are not objects in their own right and so cannot interact with each other - but their participating objects can. The participating objects in one connective may bond with those in another or may interact with them connectively.

When the objects in multiple connectives interact connectively, the connectives effectively *integrate* or *merge* into a larger connective. It matters not whether all or only some of the objects interact, for if only one object from each connective is involved then all the objects of all the contributing connectives will be interacting at least indirectly with each other.

The participating objects of one connective could alternatively bond with those of another, to form a connective of different, larger objects, or they could all bind together to form a single large object; but the connective itself cannot bind with another object or connective.

The capacity for external interaction of an integrated connective is not any different to the capacities of its contributing connectives, which is the

capacities of their participating objects. One plasma integrating with another creates a larger plasma that is not any different to the sum of the integrating plasmas in its capacity for external interaction.

Each object in an integrated connective directly or indirectly interacts with every other object in the integrated connective, no matter which of the contributing connectives each object originally belonged to. The contributing connectives may become indistinguishable once integrated, or their original groupings may be maintained, to some degree, or for a while. If more connectives join in, the merged participating objects may pass through so many arrangements that it may be impossible to discern the original contributing connectives or any sequence to their merging. In fact, the arrangement of objects in a connective may change so much, even without any integration taking place, that discernible groupings of its participating objects may simply appear and disappear with its flux. In a connective there are no constraints to hold the groupings in place. Lasting identification of groupings or of the contributing connectives is impossible. It may not even be possible to say whether a connective is the result of a prior integration.

When connectives meet they may pass through the same space whether or not their participating objects interact.

The 'Visages' of Connectives

Since objects in a connective *always* respond to a relevant external force, whether or not the arrangement of the connective will be disturbed by an external force is not dependent on the strength of the force. The arrangement of objects in a connective will be disturbed to some degree by every force that acts on any of its participating objects. And if one object changes its position relative to the others then the others will adjust themselves accordingly. While a connective is not identifiable as an object in the way that a bond is, I say that it may be *discernible* in the sense that *all* its participating objects respond to a disturbance even though each responds as an individual.

Though subgroupings of its participating objects may appear and disappear with its flux, the subgroups are sometimes distinguishable from each other. We distinguish constellations in our galaxy and swirls in streams and rivers, for example. I call any distinguishable subgroup of a connective a *visage* of

the connective. A visage describes a temporary or arbitrary arrangement of the participating objects in a connective, like a cluster or a swirl, rather than a lasting identity. A visage may last a long time as in the case of a stellar constellation or pass quickly as a swirl in a water stream.

While a bond has a lasting identity by which it differs from every other object, connectives may or may not offer distinguishable visages and may not even be distinguishable from each other since they do not exclude each other from their volumes. Even when visages are distinguishable, the distinction may not last since the participating objects are free to move in response to any disturbance.

Identity is meaningful to a bond in a way that a visage is not meaningful to a connective. A bond's identity emerges with its establishment and disappears with its disruption. A bond's identity remains unique for the term of its existence, while a visage of a connective is ephemeral.

By enforcing its constraint, a bond actively preserves its identity. As long as a bond lasts, it maintains its unique identity even in the face of external disturbance. As long as it is able to avoid disruption, it maintains its identity no matter how many interactions it engages in. Connectives do not act to maintain their visages. Their visages are incidental and easily changed. In fact, any connective having more than two objects can be arbitrarily divided into visages at the whim of an observer.

A connective has no persistent architecture mapping its contributing connectives or its visages. Visages may temporarily display a hierarchy, in that some may be larger than others or some may be spatially contained within others, but these arrangements are not fixed.

Here we begin to glimpse the charm of connectives. They are unremittingly dynamic and responsive. So much so that they cannot be held to any sort of specificity or precision. They are changeable, unconstrained, flexible, vague and ephemeral. I really appreciate the way air makes way for me as I walk through it.

Winners and Losers: The Contests of Bonds

There is effectively a contest going on between a bond and any external force acting on it. For under the external force, a bond either holds its

constituent objects to their constraint and thereby keeps itself together, or its constituent objects are forced beyond their constraint and the bond is disrupted. The contest is decided on a test of strength between the binding strength of the bond and the external force.

Now that external force is taking place in the context of an interaction with external objects, and the external objects may themselves be bonds which are being tested in exactly the same way and under the same force of their mutual interaction. If any bond disrupts under the strain, it might happen that one or more of its erstwhile constituent objects then aggregates with one of the other bonds. In this case the other bond has not only preserved itself in the contest but has aggregated and created a new object - while the disrupted bond is no more. There can be clear winners and losers in such contests. A winning bond both maintains its identity and creates another, while a losing bond loses its identity, its emergent properties and its ability to enter into interaction. Losing a contest is catastrophic for a bond.

A contest between bonds can also be seen as a contest between their binding strengths, because all contestants are subject to the same forces under their mutual interaction - and it is the bond having the greater binding strength that wins.

A chemical reaction in which an atom that is a component of one molecule exits that molecule - thereby disrupting it - to aggregate with another molecule, is an example of such a contest.

We could talk of competition between connectives but not of contests in this sense. For example, one might say that two solar systems are competing over which will capture an approaching comet to its orbit. But competition in a connective sense does not involve the undoing of any competitor, and all the competitors' influences continue no matter what the outcome. There are no outright winners and losers, only a change of visage. In a competition between connectives the outcome is a proportional sharing of all the participating influences even though some may be stronger, while in a contest between bonds there is a selection and possible enhancement of one and the destruction of another.

Contests cannot occur between connectives alone - at least one of the contestants must be a bond.

The Hierarchical Authority of Bonds

In a chemical reaction in which an atom switches from one molecule to another, the atom's internal protons and electrons necessarily go with it to the other molecule.

When a bond is in a contest, there may be uncertainty over how the bond will cope and which way its constituent objects will go, but it is absolutely certain that, whichever way a constituent object goes, its internal objects will go with it. If a bond holds its constituent objects it also holds the constituent objects' constituent objects, and so on. If a constituent object breaks free or is absorbed into another aggregate, its internal objects go with it.

I say that a bond has *hierarchical authority* over its internal objects to take them with it in decisions under contest. A contest can thus also be seen as a tussle for the allegiance of a bond's internal objects.

Put differently, bonds of higher rank have authority over those of lower rank, while those of lower rank are subordinate to those above, at least in decisions of hierarchical allegiance. The bond at the very top of a hierarchy thus provides a central point of control from where a single decision under a contest may direct the allegiance of every bond in its architecture.

By contrast, the idea of hierarchical authority has no relevance to connectives. In a close encounter of galaxies, for example, some stars of one galaxy may well be absorbed by the other, and vice-versa, but many might remain with their original galaxy.

Value Bias in Bonds

The bond at the top of an architective hierarchy can control more than the allegiance of its internal objects - it can control the values of their properties as well:

When an external force acts on a bond it may happen that the force continually acts in the direction of one boundary of the bond's constraint range rather than another, so that the constituent objects of the bond are biased, possibly strongly so, to one boundary of their constraint. For

example, when a proton approaches an atom, the electrons of the atom will likely spend more time on the side of the atom closest to the approaching proton by virtue of the attraction of their unlike charges.

The same can be said of the constituent objects' constituent objects, and so on, meaning that all of an aggregate's internal objects may have a bias to one boundary of their constraint rather than another. It may even happen that all the internal bonds of an aggregate are biased in the same direction so that, by the topmost object in the aggregate's hierarchy entering into an interaction, a bias to a particular value may be imposed on all its internal objects.

Bonds and Control

We begin to see the depth of a bond's capacity for control: A bond not only controls the motions of its constituent objects by constraining them, it controls their ability to participate in external interactions, their hierarchical allegiances and may even impose a bias to their values. None of these controls are evident in connectives.

The controls in a bond operate between the levels in the bond's architecture. Objects at the same level in an architecture do not control each other while higher ranked objects control those of lower rank. The relationship between objects at different levels in an aggregate is not an equitable one - it is one of subservience and authority. The higher levels control the lower levels and not the other way round. Higher levels of an architecture control their lower levels even though the higher levels have emerged from the lower ones. The objects at higher levels are however structurally reliant the objects at their lower levels to maintain their integrity since the disruption of a lower level object would disrupt the objects above it.

Processions and Flows

The internal arrangements of bonds don't change. Their constituent objects at every level remain confined within constraints for as long as the bond holds. Yet there are ways by which bonds can be considered to change. They can be considered to change when a bond disrupts or is established, they can be considered to change when they switch from one constraint

range to another, and they can be considered to change when an aggregate grows or shrinks. In this sense I say that bonds *process* (rather than change), stepping from one bond to another and from one static architecture to another in a procession of discrete events.

In contrast, connectives flow through their changes in a smooth, unbroken stream.

Sublimation of a Bond

It may happen that an external interaction does not force a bond's constituent objects to test the limits of their constraint so the bond need not respond as a whole to maintain its constraint. This may happen, for example, when an external interaction invokes a vibration of the bond's constituent objects which is so small that the range of their vibration lies well within the imposed limits. The constituent objects respond as if they were in a connective. And as far as the external objects are concerned, it is the bond's constituent objects that are responding to them rather than the bond-as-a-whole.

When an external interaction acts on a bond's constituent objects and the bond does not respond as a whole I say that the external interaction *sublimates* the bond, acting only on its constituent objects, which respond freely and individually as if in a connective even though they are constrained in a bond.

In a sublimating external interaction the bond is not apparent to the external objects because it does not respond to them and they do not respond to it, so as far as they are concerned, the bond, as an object in its own right, does not exist - and as far as the bond is concerned, the external objects don't exist (in their own right) either. A sublimation is effectively mutual.

In a sublimating external interaction there is thus no interaction between the external objects and the bond itself. The external objects are not excluded from the bond's spatial volume and it is not excluded from theirs. The interaction is between the bond's constituent objects and those of the external objects (assuming the various constituent objects are not also sublimated), with all constituent objects being excluded from each other's

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spatial volumes. In a sublimating interaction the external objects and the bond as a whole are not interacting with each other while their constituent objects interact connectively. In this way we see that objects only exclude each other from their spatial volumes when they are interacting.

(This description is sufficient to convey the idea. If you want to go there, some complexities are addressed in Appendix 1.)

Stasis and Change

The outstanding feature of bonds is a capacity for stasis. Strictly confined within ranges, a bond's constituent objects can appear to be motionless relative to each other, especially when their range of constraint is narrow. Bonds have identities and architectures that do not change and they can compound into more complex architectures that are just as static and enduring. They preserve their identities and architectures with absolute fidelity even in the face of disturbance (as long as they are not disrupted).

The outstanding feature of connectives, on the other hand, is their extreme susceptibility to motion and change.

Chapter 3: Spatial Arrangements

Bricks are really handy for building houses in a way that water isn't. Bricks maintain their shapes under pressure, much like a bond keeps its constituents in a range, and they have shapes that make building with them so much easier than say building with rough stones.

The shapes and sizes of objects matter to the way they can be used. A chair has to be the right shape for me to sit on, and there is no point building me a house the size of a shoe-box. My house must also keep the rain out and let me in. All these requirements can be satisfied using the firmness and emergence of bonds to create strong, useful aggregates like walls and roofs and doors, having particular shapes and sizes that maintain their arrangements under pressure.

Connectives like water can't be expected to have particular shapes and sizes let alone maintain them. Their extreme flexibility renders them useless for building houses but it makes them spatially useful in a different way: Since a connective distorts under the slightest disturbance, it allows a disturbance to pass through it as a wave. A bond's constraint prevents waves from passing through it. A wave would have to sublimate a bond in order to pass through it.

Figures and Embraces

Being an object in its own right, a bond may have novel properties of its own and utilize them in its interaction with other objects rather than utilize the fundamental forces. Many atoms and molecules, for example, though they are bonds utilizing the fundamental electromagnetic force, display and maintain a definite spatial shape as an emergent property, and use these shapes to interact with each other, for example by having them interlock to form crystals. Crystals have shapes too and can also interact by interlocking with each other, eventually aggregating into large objects like rocks which in turn can aggregate - using their shapes - into mountains.

Objects like bricks have rigid shapes while others, like elastic bands, have flexible shapes. Bricks can interact with each other utilizing their rigid shapes to make rigid walls (even without mortar) while elastic bands can use their flexible shapes to tightly bundle pieces of paper.

Objects cannot move towards each other where their boundaries meet because interacting objects exclude each other from their spatial volumes. The shapes of meeting objects can therefore constrain their movement, as do bricks in a wall, a key in a lock, or pieces in a jigsaw puzzle. When the shapes of objects constrain their relative movement in some way, I call their interaction an *embrace*.

Connectives, like water, can't interact using their shapes - they don't have any - while objects colliding and bouncing off each other may be affected by but are not constrained by their shapes.

Objects utilizing their shapes to embrace - like bricks and keys and puzzle pieces - I call *figures*.

The spatial patterning of figures in an embrace is governed by the geometry of their shapes. Square tiles will embrace in a different pattern to triangular tiles, for example. Figures having particularly complimentary shapes - like a peg and a matching hole - are especially suited to a tight, firm embrace.

Embraces share features with bonds because they constrain the movement of their figures, but embracing interactions are not quite the same as binding interactions. Firstly, the participating figures must be in (at least approximate) contact for their shapes to play a role in the interaction, and they must maintain their shapes and contact for the duration of the interaction. Secondly, there need be no forces acting between the figures to hold them in contact, the geometry of their shapes alone dictate the figures' constraint. Thirdly, there may be directions in which embracing figures are not constrained. A peg may easily slide out of a hole, or a piece lifted out of a puzzle, for example.

In the dimensions in which it is constrained, an embrace has the characteristics of a bond, while in its unconstrained dimensions it has the characteristics of a connective. However, an embrace always constrains the movement of its figures in at least one dimension so it will always display the characteristics of a bond, while connective characteristics are optional.

Since there is effectively no movement of figures in the grip of an embrace, the embrace will have a shape of its own and is therefore also a figure, capable of embracing with other figures. Figures can aggregate into more complex figures by embracing in the same way that bonds can aggregate into more complex bonds. And just as a new object with new properties may emerge from a bond, a new figure with a completely new shape may emerge from an embrace. A table emerges from an embrace of four posts and a board.

The similarities between bonds and embraces are many. The shape and size of a figure can be regarded as its *figurate properties* and these comprise its *figurate identity* which it can maintain in the face of disturbance. Disruption of an embrace means the loss of its figurate identity. Complex embraces display a *figurate hierarchy* in which their component embraces are ranked. For example a rock has a higher rank in the figurate hierarchy of a mountain than does a crystal it contains. Embraces may engage in *figurate contests* decided on tests of their *figurate strengths* while figures higher in a figurate hierarchy have authority over their *internal figures*.

The arrival of figures into an embrace is a discrete event. Figures are either in an embrace or they are not. Similarly, the separation of figures from an embrace is a discrete event. An arrival of figures in, or their removal from, an embrace is a step from one *figurate architecture* to another, as for example when a peg is inserted into or removed from a hole, or a hook is inserted into or removed from an eyelet. Figures also process rather than flow, stepping from one static architecture to another.

Though an embrace may be disrupted in a contest with a superior figurate strength, unlike a bond, an embrace may also be disrupted without challenging its figurate strength, by the motion of its constituent figures in a direction not constrained by the embrace, as a peg may slide out of a hole.

The spatial volume of an embrace may be the sum of the spatial volumes of its constituent figures, but it may also be more than their sum, for example when the embrace takes the shape of a shell that completely encloses an empty space.

A figure may be have a number of *facets* where each facet is capable of participating in an embrace of its own. For example, a peg may be fitted into holes at both its ends, or a peg may have many ends, of different sizes, all

capable of fitting into suitable holes. All the facets of a figure need not have the same shape - an object may have the shape of a peg at one end and a hook at the other.

Embraces are not exactly the same as bonds but they are reliant on their underlying bonds to maintain their shapes and exclude each other. Many items of our material environment - trees, timber, bricks, houses, tables and chairs - are complex embraces of their underlying atoms and molecules.

While electrons and protons are spherical or shapeless, the bigger atoms and molecules display definite shapes and so can embrace as figures. The shapes of these atoms determine the shapes of the crystals they aggregate into. But as the complexity of an embrace increases, a stage can be reached where the shapes of its underlying atoms and molecules no longer play a role in the resulting shape of a figure. We can mold ceramics into any shape that pleases us, for example - a pot, a plate or perhaps a brick. A carpenter's screw can be manufactured to the same shape from iron or brass or any suitable material. Our own bodies are largely built of embracing proteins, extremely complex molecules offering a possibly infinite variety of shapes.

The many similarities between bonds and figures allow me to use the term 'object' to refer to either when I don't need to make the distinction, and to use terms such as 'architecture', 'aggregate' and 'identity' to apply to bonds and figures in general.

Waves and Vibrations

When an external interaction disturbs a connective, it will likely act first and most strongly on the objects in the connective that are closest to the external disturbance. The responses of these closest objects will then disturb their neighbours in the connective, which will in turn disturb their neighbours and so on, so that a wave or pulse of disturbance propagates through the connective. The flexibility of connectives means not only that they are easily disturbed but that disturbances can propagate through them.

An aggregate, on the other hand, can constrain its constituent objects from responding in any significant way to an external disturbance, effectively preventing a wave propagating through it. An aggregate can constrain not

only the motions and external interactions of its constituent objects, it can also prevent the propagation of a wave.

But a wave could propagate through an aggregate if it sublimated the aggregate, as sound can travel through a solid object for example. The aggregate as a whole might alternatively respond to the external disturbance as an object in its own right, and if it participates in a larger connective, it will disturb its neighbours in the larger connective so that the wave passes through the larger connective.

<p align="center">*</p>

The following is a summary of the major features of waves for readers who are not familiar with them:

If an external disturbance cycles with a regular *frequency* the objects of a connective will vibrate in sympathy with the external frequency as the wave passes through. Some connectives, by their very nature, respond even to a single pulse with a vibration of their participating objects, in this case with a frequency of their own.

The distance or time between the extremities of a cyclic disturbance or vibration is called its *wavelength*. The strength of a disturbance - the strength of its wave and the size of any vibration it induces - is called its *amplitude*. The amplitude of a wave describes how strongly each object that it traverses is affected by it.

Sound offers a good example of a wave traveling through a connective. A plucked guitar string disturbs the air around it sending a wave through the air that we hear as a sound. Plucking different strings on the guitar generates waves of different frequencies while the amplitude of the sound depends on how forcefully a string is plucked.

Waves travel smoothly through their host connectives. While an external disturbance may act most strongly on the objects in the connective that are closest to the disturbance, objects in the connective that are a little further away are also disturbed but to a lesser degree, while those even further away are also disturbed, even more slightly, and so on. There is a smooth flow of a wave through a connective rather than a series of sharp, distinct bumps from one object to the next. Any vibrations induced in the objects

the wave passes through are also smooth, covering all the positions between the extremities of their vibration rather than jumping from one extremity to another, as is the case in the discrete steps of a procession. Perhaps the equivalent in a procession would be a *cascade* of discrete reconfiguration events, as when a bottom item in a grocery display is removed and other items shift in a series of discrete events to fill the gaps as they appear.

Multiple waves can propagate through a connective at the same time and even disturb the same objects at the same time. Unlike an object, a wave does not occupy a space to the exclusion of other waves (or to the exclusion of objects).

When multiple waves disturb an object at the same time, the net effect on that object is the sum of the effects of all the waves - no effect is excluded. As well, each of the waves continues on its original way after their meeting at the one object, that is, they pass right through each other. This is known as the ability of waves to *interfere* with each other. Compare such interference of waves to a collision of objects - which cannot occupy the same space at the same time and cannot pass through each other.

When multiple waves traverse the same object at the same time, the net disturbance to that object is the same as a single wave equivalent to an interference of the contributing waves. Such a single wave whose effect is equivalent to that of multiple waves is called a *superposition* of the contributing waves. In a way similar to the visages of connectives, it is not always possible to tell if a vibrating object is responding to a single wave or to a superposition of multiple waves.

Waves can have patterns. They can have patterns in time, for example as a sound that gets louder and softer; and they can have patterns in space, like ripples on a pond. When waves interfere with each other, their patterns do too. Their interfering patterns could have a very choppy result as a pond would have on a windy day, or they could have a very pure result like a note from a finely tuned musical instrument.

When the patterns of meeting waves are perfect opposites of each other they cancel each other out as the highs of one are canceled by the lows of the other, so that the result of their interference is no vibration at all, in a phenomenon called *destructive interference*. On the other hand, when

meeting waves have patterns that are perfect matches they will reinforce each other, as the highs of one coincide with the highs of the other, to produce even bigger vibrations, in a phenomenon called *constructive interference* or *consonance* as I like to call it.

It can happen that when a wave sublimates an object it will be reflected to and fro inside the object, and should its wavelength match the size of the object the reflections will interfere with each other constructively, allowing the object to amplify the wave. This is known as *resonance*, and the wave is said to resonate inside the object. If the wave persists for long enough, the resonance in the object may even become strong enough to disrupt the object.

While a wave's pattern travels with it, the interference of many waves can sometimes result in a superposition having a pattern that appears to stand still. These are known as *standing waves*, when, for example, a guitar string plucked in its middle shows a pattern that does not move even though there are waves traveling up and down the string, always having a zero amplitude of the string at its ends and a large amplitude in its middle.

A combination of effect applies to connectives in general. The effect of multiple waves on an object is the net contribution of all the waves acting on the object. The effect of multiple forces on a participating object of a connective is the net combination of all the forces acting on the object. Compare this to the selection of some effects and a negation of others as happens in the contests of bonds and embraces.

Constellations

Sometimes waves and embraces display simple, clear patterns like ripples on a pond or bricks in a wall. In other situations their patterns can be chaotic, like a river churning through rapids or a jumble of rocks, for example. But sometimes they arrange in patterns that hold a charm for us humans - like the symmetry of a snowflake or the spiral of a galaxy - in which case I call them *constellations*.

In aggregates a constellation may endure, like a snowflake, or only appear at certain steps in a process, as a fractal picture may become striking with a only a very particular set of parameters.

In connectives a constellation will likely be fleeting, appearing as the connective changes, before evolving into a different constellation or dissolving into chaos again. A cloud may momentarily constellate into the shape of a castle, or flare rainbow colours, or display a fine filigree.

Barriers and Containers

The objects participating in a connective may not all be the same. They may have different sizes or different masses or different charges, for example. Being a connective, the objects are not embracing so their shapes don't matter, but if one object is bigger or more massive than its neighbours it could have a relatively muted response to a wave, while a smaller object will have a relatively exaggerated response. This would slow the wave down or speed it up or change its direction (in processes known generally as refraction and reflection).

An aggregate participating in a connective may be so massive (in comparison to its neighbours) and its response to a wave so muted or reflective, that it would effectively prevent waves from propagating beyond it. Large objects can be barriers to waves.

A large aggregate could be constructed to take the shape of a closed shell or casing so that it completely encloses the objects of a connective in its interior. In this case, the aggregate not only prevents the connective's participating objects from moving outside the enclosure, it prevents disturbances in the connective propagating beyond the enclosure as well. The connective has been *contained* - it cannot escape, and any waves in it will not be able to escape either (assuming they do not sublimate the container).

Contrarily, a container may exclude a connective from a space rather than enclose it within one, or prevent waves from disturbing a contained connective. Containers may be used to separate one connective from another - and connectives may be used to isolate one aggregate from another.

A rigid container can hold a contained connective to a rigid figure. An external disturbance that imposes a motion on a rigid container imposes the motion on any contained connectives as well.

Containers may not be rigid. Containers constructed from bonds having some elasticity can serve as membranes, like a balloon for example. Membranes too can separate one connective from another but cannot hold a connective to a rigid figure.

So in addition to bonds, containers can also constrain connective interactions; but in this case the constraint is external to the connective, that is, it is an extrinsic rather than an intrinsic constraint.

If you are interested, there is more discussion of this in Appendix 1.

Connective Influence and Architectural Control

Containers and barriers extend the capacity of aggregates to exercise control.

An aggregate controls the motions of its internal objects by constraining them within definite ranges, it controls the hierarchical allegiances of all its internal objects and their ability to participate in external interactions, and it can also exercise control over waves and connectives as a barrier or container.

Connectives and waves have none of these capacities for control, and while they influence events they are incapable of having any specific control over their effects since they are always open to interference and disturbance.

This does not mean that connectives are not capable of being precisely controlled, only that an aggregate needs to be in place to control them. A light beam can be targeted very precisely but not without the intervention of a rigid collimating mechanism.

Chapter 4: Examples

Waves and connectives have features in common: They interfere or integrate with each other in the same space rather than exclude each other when they meet. They enjoy a freedom to move or change (that is complete if they are uncontained) and enjoy an absolute smoothness of flow. They are vaguely distinguishable rather than definitively separated from each other (unless they are in separate containers) and are not able to exercise control. These features characterize the mode of interaction and spatial arrangement I call *connectivity*.

Bonds and embraces too have features in common: The motions of their constituent objects are always constrained, they can maintain a lasting stasis, they can maintain lasting and unique identities, they exclude each other and separate when they meet, they can be defined and categorized with precision, they process in discrete steps rather than flow smoothly, they can aggregate into new objects, they can be disrupted, they display fixed hierarchies of rank and control, they can exercise precise control and can contest for hierarchical authority. These features characterize the mode of interaction and spatial arrangement I call *architectivity*.

Connectivity and architectivity have no features in common.

Architective interactions yield only to stronger relevant external interactions, after which they are no more. Connective interactions yield to all relevant external interactions, after which they continue.

In the interest of brevity, from here on I will use the term 'interaction' to refer to both interactions and spatial arrangements.

Physical Examples of Connectivity and Architectivity

Physical objects interact architectively, for example, when subatomic objects aggregate into atoms, atoms into molecules and molecules eventually into rocky planets. Physical objects interact connectively, for example, as gasses or liquids such as in clouds, streams, oceans and atmospheres.

Disturbances may propagate through gasses and liquids (and through sublimated solids) as do waves of sound. Disturbances can be muted or stopped by suitably sized or shaped aggregates, as we shelter in protective architective shells to escape the ravages of atmospheric storms.

Interactions between stars and planets are connective. Although planets move in well-defined orbits around their suns, their orbits are not locked in constraints in the way that electrons and protons are locked in an atom. The planets and our sun freely affect each others' orbits in a connective. Uranus and Neptune are thought to have formed in orbits much closer to the sun and to have slowly migrated outward over millions of years.

In stars and between them, plasmas of protons and electrons flow freely in connective interaction, with waves of disturbance propagating through them (as seen in the auroras at Earth's poles).

Gaseous planets such as Saturn and Jupiter display no architective behaviour at scales above the molecular, while Mars and Earth display architective behaviour at a planetary scale because they have planetary crusts.

Fire as a chemical process is architective while the gasses and fine particles in its flames and smoke dance connectively.

Heat offers a good example of sublimation. A shipping container may offer protection from wind, rain and light, but unless it is well insulated it cannot prevent the temperature inside the container being affected by the temperature outside, as the molecules of the outside air vibrating with heat sublimate the container to act on its constituent molecules (which then warm the interior of the container) rather than acting on the container as a whole.

An apple falls connectively but its landing on the ground is architective. If it lands on a rock, the force of the impact is less than the binding strength of the rock so the rock does not break, but the apple may not be so strong and the apple is disrupted. If it lands on a bed of sand, the figurate strength among the sand grains may give way before the cells of the apple do and so the figurate arrangement of the sand processes before the apple can bruise.

Trees and grass waving in the wind, and kelp waving with the ocean currents, have sufficient flexibility for their leaves to vibrate connectively, while their roots are architectively anchored to the ground.

Floating boats and fish are in connective interaction with the water molecules of their host oceans, as are balloons, birds and aeroplanes with the molecules of the air. An anchor thrown by a boat establishes an architective embrace between the anchor and the earth, but it is not until the boat is so firmly tied up that it cannot move (say tied to a quay or in a dry dock) that the boat itself has established an architective embrace with the earth.

A ball on smooth ground is in contact with the ground, but is not in an embrace with it since it is free to bounce, roll and move. A shoe on the ground is in an embrace with it if it is not free to slide. When walking or running we put one foot in front of the other, processing from one embrace with the earth to another.

Stone, scissors, paper is a figurate, architective game.

Waves are highly susceptible to disturbance. For sound waves to maintain a pure note they must have been architectively controlled at some point (such as by the bridge of a guitar) or have passed through an architective filter. The wave displaying the pure note is connective nonetheless, for its frequency can be changed by encounters with other waves and objects, say by passing through different media or by a Doppler effect (as a sound is different when its source is moving towards or away from you).

Waves can carry information as they mimic the disturbances that caused them. Their information may be connectively encoded in their modulation as is done in AM and FM radio. But such information may be garbled by interference with other waves or by encounters with objects in the medium the waves traverse. The encoding of digital information (which is an architective sequence of 1's and 0's) is not disturbed when the carrier wave interferes with other waves or by encounters with objects. Architectures such as a computer hard-drive or a printed page offer a honeycomb of objects that are not disturbed by passing events or by aggregation with other objects. Architectures can store information reliably, and they can transport that information and copy it faithfully. As long as they are not disrupted, architectures can preserve information with absolute fidelity.

Functional Objects

Useful functionality can be built into objects by mixing architective and connective features. For example, the architective construction of a peg fitting into a hole can have a dash of connectivity added to it by making the peg and hole round so they can rotate freely.

Functional objects can be regarded as combinations of devices, simple or complex, architective or connective, with each device contributing one or more *functional properties* to it. For example, a device may contribute a capacity for motion as a functional property, or a capacity for rigidity, or a capacity for aggregation at its location in the construction.

Each device, and the overall construction itself, can be regarded as a *functional object* able to aggregate with other functional objects into more complex functional objects from which new functional properties emerge (and which in turn may aggregate with other functional objects).

Barriers, shells, membranes and containers are all architective devices and we can fill these with connective devices such as gasses and liquids (which may host waves inside them), to create extremely complex and useful functional objects.

The arrangement of the functional objects in a functional aggregate can be precisely mapped to describe its *functional hierarchy*. Functional objects are architective phenomena. They may or may not incorporate connective devices but they cannot be constructed using connective devices alone.

It may happen that a complex functional object is able to operate as a coherent and self-sustaining mechanism. Self-sustaining objects may in turn aggregate with others to become even more complex, and so on. For example, an air conditioning unit is a coherent, self-sustaining functional object, which may be incorporated into (and so aggregate with) a motor car - itself a complex functional object utilizing other complex functional objects such as a combustion engine. (And note how an air conditioning unit and a combustion engine incorporate connective devices such as expanding gasses.)

The human body is a wonderful example of a complex functional object that is coherent and able to sustain itself. And through the combination of its

many functional devices it is able to move with the connective grace of a dancer even though it is structurally architective.

Connectivity and Architectivity in Biology

While connectivity and architectivity cannot be used to explain how or why living beings have come about or why they have developed autonomy, connectivity and architectivity are evident in all the interactions of living organisms.

Life as we know it is built on a platform of complex molecular chemistry. An outstanding feature of this chemistry is the way that carbon atoms can aggregate with each other in arbitrarily long chains, from which a great variety of complex organic molecules such as proteins can emerge. Proteins, in turn, can take a great variety of different shapes, and the effects that emerge from the embracing of their figures play a significant role in the metabolisms of living things.

Organic molecules may aggregate into rigid skeletons (architective) that give biological cells their shape, or into flexible membranes (architective) that separate cells from one another and contain their (connective) cytoplasms. Cells aggregate functionally into organs and organs aggregate functionally into organisms, even autonomous organisms such as ourselves.

An organism's bones or shell provide it with a rigid skeletal support (architective). Its blood cells (each a separate architective object) contain within them nutrients and energy and their connective flow distributes these through the organism via an architecture of veins and arteries. Eyes and ears sense (connective) vibrations in an organism's environment, nervous systems flow (connectively) and switch (architectively) to relay electrical information between organs, and endocrine systems relay protein hormones as architective messages using the blood's distribution function. Hearts, brains and lungs vibrate (connectively) to regulate the organism's subsystems, while the chemistry of switching molecular bonds turns food into energy for warmth and propulsion.

The bodies of biological organisms are complex functional objects that maintain their architectures in the face of disturbance. Their bodies, organs and cells can be disrupted by external forces that exceed their architective

binding strengths, in which case the organism processes from one architecture to another (until it is no longer able to sustain itself).

Biological organisms store genetic information in the architecture of their DNA. They process by replicating their architectures and genetic information through mitosis and meiosis, one reconfiguration event at a time.

Each organism is a separate *biological object*, able to interact with other objects.

Organisms can interact connectively with their environment. Humans have organs that are sensitive to physical waves such as sound and light and we are sensitive to the physical vibrations of heat. We can also interact directly with our environment, perhaps by surfing an ocean wave or touching a purring cat.

We interact with our environment architectively too. We have organs sensitive to the chemical shifts of taste and smell. An embryo is figurately constrained within the body of its mother or inside an egg. We can be bodily constrained by a leash or by prison walls. We may be confined to living our lives in a particular country. Our limited lifespan confines our existence to a particular period in history. We are bodily distinct from each other and have distinct personal histories. We figurately fit shoes on our feet and hats on our heads. We clasp a pen between thumb and forefinger. Mammalian sexual organs are a perfect figurate match. Our physical figures decide which passages we can negotiate and what shapes would constitute a comfortable chair. We collide when our bodies meet. We may enter into contest with other organisms for our bodily resources (such as physical battles amongst ourselves or battles with bacteria attacking our bodies). Our bodies depend on their architective binding strengths for their survival.

Humans can intelligently employ connective and architective devices to manipulate their environments. We intentionally modulate our voices into connective harmonies or into architective words of information. We construct chairs and tables and shelters that suit our figures. We have configured languages to communicate exact data of information. We can architectively store that information in words and reproduce it exactly. We have constructed functional technologies that permit us to communicate using radio waves, to control the flow of rivers, synthesize new chemistries and build skyscrapers.

Orgasm can be both a profound connective experience and a defining moment in our reproductive procession as architective objects.

I see most of our somatic experiences to be connective vibrations in our brains responding to stimuli from our organs, whether these be connective or architective. For example I see both heat and cold as specific connective experiences, rather than cold being an absence of sensation since it is merely an absence of heat. In particular I see our experiences of bodily pleasure and pain as connective qualia in our nervous systems regardless of whether the original stimuli were connective or architective. We can, after all, be anaesthetized to all stimuli.

Examples of Social Connectivity and Architectivity

Connectivity and architectivity are evident in our social interactions as well.

We cannot choose or change our parents and family - we are bound to specific people for our entire lives by the circumstance of our birth. These bonds are disrupted only when we or they die. There is a fixed genealogical hierarchy in every family which processes in reconfiguration events - one birth or death at a time. Our family structures have all the hallmarks of architectivity.

We are also likely to enjoy the warmth and love of our family members, and they are likely to enjoy our acceptance and reciprocation of their love. These warm feelings may carry through to later life but they are not fixed - they may sour or become covered by layers of intrigue. This empathic aspect of family life I see as a connective behaviour - the feelings are inclusive of all whom we love and cannot be presumed to be constant. Nor does empathy (as I will use the word) recognize familial boundaries. As we grow up we relate empathically with non-family members, and will likely select a spouse on that basis.

Architective sociality is obvious: Families can aggregate into tribes and tribes into nations. We can be definitively identified and categorized by lineage or history, or by geographical location. Persons, families or tribes may also develop or inherit particular resources or skills to which they are associated and by which they are categorized, say as smiths, bakers or nurses; and which they may pass to their offspring.

Connective sociality is not quite so obvious: Empathic affinities may be fleeting and cannot be held to well-defined categories. Gossip and love are connective and beyond anyone's control. Yawning is contagious. Our movement in large numbers may display connective behaviour like herding, the flocking of birds, or the waves of decision running through a school of fish. And if bodily pain is a connective quale then compassion for bodily pain is a feature of empathic sociality.

An event experienced by a group may arouse an empathic affinity between its participants so that they display a group visage, but only a recorded description of the event or associating the event with an (architective) icon can give the group a well-defined identity.

Architective social groups can aggregate into a multi-faceted society such as a nation, having definite characteristics that make it different to other nations. Societies are hierarchically structured in a multitude of ways depending on how their members can be categorized, with those at the top of a hierarchy controlling those beneath them in respect to their activities within the hierarchy.

Societies constrain the behaviours of their members and act to preserve their hierarchies. They enforce the categorizations and definitions they have evolved. They architectively codify rules and roles into laws and traditions, violation of which could result in ostracism. These may intrude into the intimacy of personal life, and individual members are expected to play roles in their personal relations that are supportive of the traditions of the greater society.

A successful social hierarchy can crystallize into an institution, whereby all its offices persist independently of the empathies and idiosyncrasies of the people that hold them, as long as the officers conform to the defined roles of the institution's architecture. A well-founded institution may continue its existence long after its originating founders have disappeared, with faceless individuals entering the institution and performing the roles that have been codified as necessary for its maintenance. Institutions emerge as new *social objects* in their own right from the constrained *social interactions* of their offices.

At every level of social ranking, each social object has a unique and enduring identity, definable in terms such as family, tribe, class, profession,

wealth or power, depending on the properties by which the social category or society is structured. Every single human can be uniquely identified by lineage alone.

Empathic relationship does not recognize the ranks of social hierarchies or the boundaries of nations. It does not recognize the existence of social architectures at all. Empathic affinity takes place between individual people and not between categories. When one group prefers association with another based on a commonality of interest, culture, or language - it is an architective association. While people may be averse to cross-boundary empathic affinity or not be willing to acknowledge it for fear of censure from their society, they cannot prevent it from happening.

In an institution there is no regard for empathic behaviour. Empathic content in the art and dance of an individual, for example, is replaced by iconography, procedure and ritual in an institution. It is also not uncommon for individuals to assume for themselves the identity of their institutional roles.

The traditions and laws of institutions and societies confirm the social identities of all their members from the very lowest to the very highest, as well as the identity of the institution or society itself. They are extremely conservative and resistant to change. Even if change becomes necessary for the survival of a society, it may be successfully resisted to the detriment of the society.

The constraining rules that a society imposes on individual members may conflict with their connective behaviours, perhaps to a point where individuals revolt and the society responds oppressively in order to preserve its architecture.

Contests may arise between different societies having different traditions or laws. Contests may arise within a society or for control of an institution. When a contest arises between individual people it is either within a social context (whereby individuals are fighting for a nation or religion for example) or over an exclusive architective resource, such as a garden fence or a limited food supply.

To the extent our society permits us to be individuals interacting connectively, it is liberal with benefit flowing throughout the society. To the

extent the interactions of a society are constrained, it is autocratic, with benefit flowing to the top of its hierarchy.

Features of Architective Sociality

There are benefits and costs to architective sociality.

Individuals aggregating socially can increase their chances of winning and survival because the powers of an emergent social body as a whole may be greater than the sum of its members' individual powers.

The members of a society or institution would serve the greater offices above them and control the lesser offices below them. In return for their service they could appeal for assistance from its greater offices, while wielding the concerted obedience of lesser offices in their own causes. Even those at the bottom of a hierarchy could at least fly the flag of a power much greater than their own, while the office at the very top of a hierarchy has hierarchical authority over all the institution's members and can marshall the entire institution to its own benefit.

Individuals may be able to increase their power by climbing the ranks of their social hierarchy and by external contest. Though individuals may know their places within a society and dutifully hold their stations, the possibility of switching offices opens the society to internal contest as well.

Architective hierarchies act to preserve themselves, so a social architecture necessarily encourages a sense of self-preservation among all its social objects.

Social architectures would likely be dominated by strong members engaging in contest with others within their own hierarchies or in contest with external foes.

Different social bodies may have different binding strengths and some could be judged to be more robust than others. A primary motivation to join a particular social body would be to participate in one offering the best survival strength and the most powerful assistance.

The lower a member's position in an architective hierarchy, the more valuable is any leverage obtained from the benefice of a higher office, but

there is also a greater number of authoritative offices to which the member must submit. As the member rises through the hierarchy, the value of the subservience due from those below rises, and the degree of submission to higher authorities decreases, so that when a member gets to the top of a hierarchy they are both all controlling within the hierarchy and not subject to any authority.

Because of the top-down hierarchical authority of an architecture, the subservience of inferiors can be taken for granted while invocations for intervention from superiors requires their consent. As well, the relative value of a member's self-service gets more pronounced as the member rises up the hierarchy since their success becomes less dependent on their subservience to superiors while the support of more inferiors can be taken for granted.

Dispensing power or control in the service of an inferior becomes less likely as a member rises in hierarchical rank since there is less likely to be benefit to themselves, and will not happen at all if there is a cost that could jeopardize their own position. It is more likely that a superior will sacrifice an inferior in the superior's interest, and do so with the inferior's consent since the superior's interest is in the greater interest of the society. The object at the top of a social hierarchy is able to indulge its self-interest without recrimination. For those not at the very top, life is necessarily problematical, and the degree to which it is problematical increases with distance from the top. The position at the very top of a social hierarchy is particularly privileged and desirable.

Architective sociality also offers respite from the uncontrollable environment of empathic engagement, by providing well-defined channels for empathy that can be more easily managed than the empathic relations themselves.

Chapter 5: The Relevance of Scale

While every phenomenon comprises connective or architective interactions or both, it often depends on the scale of our observation of a phenomenon as to which mode of interaction is most obvious or relevant. In looking at a table, for example, its architective behaviour is what matters at the scale of a human observer and what distinguishes it from say a chair, to the point where any connectivity in the table is irrelevant. In fact, without the tools to make an observation at the smaller molecular scale (which humans have only acquired in recent technological history) we would be totally oblivious of any connective interaction inside a table.

The geometric shape of an atomic nucleus plays no role in its interaction with the atomic electrons, nor do we distinguish the figures of individual electrons in determining how they interact with each other. The same can be said of the entire sub-atomic menagerie - it is not meaningful to specify geometric figures for protons or quarks in describing how they relate to each other. There are no figurate embraces between sub-atomic objects.

Quantum mechanics tells us that it is however meaningful to specify wave properties such as wavelength in describing sub-atomic objects, and that they can establish bonds. Connective and binding interactions are common at sub-atomic scales.

As we go up the scale of things, it is only at the scale of atoms combining into molecules that aggregates acquire the uneven shapes that enable them to participate in figurate embraces. It is only at the molecular level of functional complexity that atoms aggregate into objects whose distinct geometrical shapes contribute to the properties of the material they constitute. Large molecules such as proteins can fold into shapes that play a crucial role in defining their material characteristics. Above the molecular scale, humans fashion materials into shapes (like pegs and holes and bricks and screws) where their figures can be the main contributor to meaning in their behaviour.

Significantly, I can find no examples of architectivity at a cosmic scale. Connectivity is widely evident in the interactions between stars and galaxies, yet stars and galaxies seem to be incapable of establishing bonds and they are definitely not capable of aggregating into embraces having complex shapes. The largest architective interaction I can imagine is a contact of rocky planets, or perhaps more realistically, a collision between a comet's core and a rocky planet. Meetings of giant gaseous planets such as Jupiter and Saturn, or between suns or galaxies, would exhibit connective integrations rather than architective collisions or aggregations. There appears to be a limit to the size that an object can take and still participate in an architective interaction[##].

Figurate interaction appears to be restricted to a window of scale residing between the molecular and the planetary, while bonds appear to be absent at very large scales. Connective interaction, on the other hand, is observable in abundance at every known scale.

Home

Importantly for us, the figurate window of scale is our home. The scale of human activity means that we live in the thick of figurate interaction. Our bodies are complex functional objects having figurate components. An arm is figurately different to a leg. Our foods have figurate components whether they are vegetable or animal. Our tools, homes and cities employ complex figurate shapes. We have become adept at figurate technologies.

All living organisms as we know them are figurate functional objects. If there are other functional life forms out in the cosmos they would be on a scale not too far removed from our own since they too would necessarily have a dependence on architective if not on figurate behaviour. They would likely share our figurate window of scale.

Everything we interact with in our earthly lives - people, animals, plants or houses - can only occur at a planetary scale or smaller.

A Window of Pure Connectivity

Constraints are only known to exist on the electromagnetic and nuclear fundamental interactions and occur only at very small scales. The nuclear

interactions themselves only occur at nuclear scales and smaller so it is the electromagnetic interaction that is responsible for all architective interaction above that scale, whether it be atomic, molecular or figurate.

Now electromagnetic interactions are bipolar and cancel each other out over large collections of objects, while gravity accumulates over large collections. The result is that, when objects aggregate to a very large size (say the size of Jupiter), the accumulated gravitational force will overwhelm the binding strength of such a large object, perhaps eventually allowing only small objects like molecules to exist in the pressurized environment.

So gravity is the only fundamental force known to have an effect at very large scales and is not known to host constraints. It is not unreasonable to propose a cosmic window of scale, say anything bigger than the planet Jupiter, in which all interaction is connective.

(It could be argued that a future human society, as an architective object, may span a number of planets, possibly even a number of solar systems, but it too would ultimately be limited by the capacity of its outposts to communicate with each other, so such an argument only pushes the boundary further out without eliminating it.)

What might such a purely connective window be like? Astronomical interactions between stars and galaxies are good examples. All the features of architective behaviour are absent from their interactions. Galaxies can integrate but not aggregate (and divide but not disrupt), and so cannot create new kinds of objects having properties they do not have, in the way that atoms can aggregate into molecules. That is, creation and extinction as a behavioural phenomenon would be absent from the window. A galaxy's visage may fade away as it loses stars but the underlying gravitational interaction between the stars remains, with the stars perhaps being distributed among other galaxies. The concept of identity is also not relevant in such a large-scale window - a galaxy displays only a variable visage rather than a lasting identity, so it can suffer no loss of identity because it had none in the first place. In the purely connective cosmic window, the concepts of creation, extinction and identity are meaningless. All is a flux of temporary visages.

To be precise, no architective interactions are available in a purely connective window of scale. The absence of static architectures means there

can be no exactness of definition or specification, no permanent storing of information, no categorizations of identities, no ranks, no fixed hierarchies, no control, no contests and no stepped processions.

A purely connective window would be very alien to us.

There could be no definiteness of position or distance in a purely connective window of scale, since no two objects could be assumed to have a fixed distance between them to set a standard for measuring other positions. The concepts of relative position, distance and timespan would be meaningless; rather the concept of relative motion would be the standard measure for spatial and temporal reference. Think about flying or swimming without being able to see ground. You don't know where you are or even if you are moving. You are like a fish swimming with or against the current, with no land in sight, unaware where the tide may be taking you. Your only spatial references are the current and the relative motions of other fish. No ground to put your feet on. No "I am here". Only "I am aware of how you are moving relative to me".

Architective Isolation and Finitude

I refer to scales smaller than the purely connective cosmic window as the *architective window*. These are the scales at which architective interaction is evident or at least possible. The architective window of course includes the figurate window that is our home.

Consider that the largest architective object in our vicinity is planet Earth itself. It is at the very top of the physical architective hierarchy we live in and so is not in architective interaction with any other cosmic object, not even the moon. The moon does affect the Earth and things on and in it like the ocean tides, but these are connective influences. There is no aggregate of which the Earth is a constituent object. It participates in the solar system, yes, but that system is a connective. Earth is of course connectively related to every other cosmic object through the force of gravity but it is architectively isolated from all of them. All its external interactions are connective. It can really aggregate no more, close as it is to the maximum scale of the architective window.

The highly complex architecture of every rocky planet would likely have emerged along a different path of aggregation and emergence, making it different to every other rocky planet and architectively isolated from all of them.

Even though the possibilities for architective complexity may be infinite, every actual architecture has a finite size. This has an important implication for our understanding of bonds and embraces. It means that every binding interaction and every embrace has a finite number of constituent objects at any one level. It may not necessarily mean that the number of levels in an architective hierarchy is finite, but the number of objects in each level is.

Connective interactions may have an infinite number of participants. Connective phenomena are neither confined to a maximum size nor are they connectively isolated from each other (unless they are confined in an architective container). Scale is irrelevant to a purely connective behaviour.

Part II : Modes of Meaning

Having become familiar with connective and architective interactions you should notice them at work in yourself and in the world around you. If you look very carefully, you will see that every event, every relationship in your life, every phenomenon you encounter, whether physical, biological or social, is composed of connective and/or architective interactions.

The phenomena you encounter will have meaning for you. They may be meaningful because they are useful, interesting, beautiful, valuable or even scary, but some of their meaning will spring from the connective and architective features of their interactions. For example, you may find value in having a unique identity or in having things separate from each other - which arise from architectivity - or you may get pleasure from the flow and interference of a wave play like music - which arise from connectivity; or you may find both kinds of meaning in a compound phenomenon.

I use the term *serial meaning* to denote the meaning that arises from the connectivity and architectivity of things. Of course we may find other meanings, such as the prices of things which would influence our purchase of them, or the sentimental values in family heirlooms.

Serial meanings arising from architectivity, like having a unique identity, I say are of the architective mode, while those arising from connectivity are of the connective mode. That is, I talk about connective and architective *modes of serial meaning*.

As I sit and write I happen to look up and notice some passing clouds and feel the breeze on my face through the open window - I momentarily skip into the connective mode of serial meaning from the architective activity of arranging words on a page.

For us, the main implications of serial meaning lie in the ways interactions are sequenced and arranged, in the patterns we discern and manipulate in these, and in the games we play with them. To give you an idea of how significant serial meaning is to us, some examples follow:

Chapter 6: Serial Meanings of the Architective Mode

"And I'll prove to YOU," yelled the South-Going Zax,
"That I can stand here in the prairie of Prax for fifty-nine years!
For I live by a rule
That I learned as a boy back in South-Going School.
Never budge! That's my rule. Never budge in the least!
Not an inch to the west! Not an inch to the east!
I'll stay here, not budging! I can and I will
If it makes you and me and the whole world stand still!"

Dr. Seuss

Stasis

Stasis is a serial meaning arising from the endurance of objects and their arrangements. Objects such as houses, molecules, tables and societies, offer us meaning in their capacity to maintain a stasis, even if disturbed.

Stasis makes our sense of position and distance meaningful. We can say for example that two towns are fifteen kilometers apart and expect them to maintain that distance, as well as allowing us to compare that distance with the distances between other towns. Stasis allows us to play games based on position and distance such as football. Importantly, stasis allows us to manufacture an item to fit a space and expect that neither the space nor the item will have changed size during the manufacture of the item.

Stasis gives symbols enduring implications, such as letters in an alphabet and words in a language. Stasis allows us to store information with fidelity and endurance, such as in a written text, a DNA sequence or a computer memory.

Stasis allows us a sense of social position and orientation.

Stasis can only be provided by phenomena having an architective component. While purely connective phenomena are able to display temporarily enduring arrangements, they cannot be relied on to maintain them, especially in the presence of disturbance.

Exclusion, Separation, Distinctness, Identity and Category

Exclusion and separation are serial meanings that arise when objects exclude each other from their spatial volumes, and so maintain a separation between them.

Exclusion in turn offers serial meanings of distinctness and identity, whose significance lies in us being able to distinguish one object from another, uniquely, enduringly and with certainty.

Objects can be lastingly categorized according to their lasting identities.

Identity and category enjoy great possibilities for variety, and can develop even wider ranges of possibility by aggregation, as new identities are created having new properties which open further possibilities for classification.

Games of classification are many and can be arbitrary. People may be classified according to nationality, age, occupation or preferences in music, for example. Books in libraries are categorized for ease of access.

Games can attribute different values to different identities and categories, increasing and complicating the significance of their consequences for their players.

Serial meanings of exclusion, separation, and identity can only be provided by phenomena having an architective component. Purely connective phenomena may be discernible by their visages, but these offer only temporary distinctions which are readily disturbed, are not exclusive and may even appear and disappear spontaneously.

Though the visages of connectives can also be categorized, for example as waves, swirls, spirals, clusters or vortices, their categorization is not lasting,

as a swirl may gradually develop into a vortex or wavelengths may change by interference, for example. Unless a system of categorization is changed, an architective item such as a book does not gradually move from one library category to another, as a visage may do.

Complexity, Emergence, Creation and Destruction

Complexity and emergence are serial meanings arising from objects aggregating to create new and more complex objects. Aggregates may in turn aggregate with other objects, further extending the possibilities for novelty and complexity in their aggregation. Complexity and emergence permit enormous variety in the construction and distinction of objects, as evidenced by the endless possibilities in the design of buildings, furniture, textiles and organic molecules.

By generating difference, and difference of difference, emergence offers *creation* as a serial meaning.

Fashions are games of complexity and creation.

Capacities for complexity, emergence and creation can only be provided by phenomena having an architective component. Purely connective phenomena may also compound but no different objects emerge from their integration, and their integrated arrangements are not necessarily more complex or different.

In contrast to creation, architectivity also hosts *destruction* as a serial meaning, by which objects are disrupted and their identities lost.

Structural Composition

The distinction of each object in an aggregate and their layering in distinct hierarchical levels permits the drawing of a precise and enduring map of all the objects comprising an aggregate and all the bonds and embraces used in its construction.

Meaning can be found in the composition of things - what they are made of and what their components are made of, etc.

Knowing how materials are structured and the comparison of different structures enables us to exploit materials for their usefulness in different situations.

Objects are often classified according to their structural composition. People are often classified according to their lineage.

The structure of connectives is too vague and impermanent to allow a precise and enduring description of their composition.

Precise Enumeration and Enduring Count

Precise enumeration and enduring count are serial meanings by which objects can be allocated a number, or their sum counted, precisely and enduringly.

Precise enumeration arises from the fact that objects can be separately identified, allowing each to be allocated a unique number, usually in an integer sequence.

Since every architecture has a fixed and finite number of constituent objects at each level of its hierarchy, an enduring count can be taken of its constituent objects at each level, which cannot be changed without processing the architecture. The constituent objects of an architecture (at any one level) can be counted, and counted again and again every which way, to yield the exact same integer total.

While every architecture has a fixed number of constituent objects at each level, I cannot say for certain that the number of levels in every architecture is finite. But starting at the top of any architective hierarchy, its levels can be enumerated, one by one, for as long as the internal objects are perceptible to the counter. Each of its perceived internal objects can be allocated a precise and enduring integer rank according to its level within the hierarchy, while the constituent objects at each level can be counted so as to allow the total number of objects in an architecture to be counted, enduringly and precisely, to any observable level.

In a figurate arrangement too, as long as its architecture does not process, starting at any arbitrary origin, objects can be enumerated, counted or summed, enduringly and precisely, every which way along the threads of its

pattern, for example horizontally, vertically or diagonally. And while I cannot say for certain that the number of levels in every architecture is finite, the number of levels in every figurate hierarchy is (since shape only arises at the atomic scale).

The count of objects in an architecture or along a pattern can be numerically compared to the count along a different pattern, or to a count in a different architecture, according to arbitrarily chosen rules.

The hierarchical authority of an object in an architecture can also be enumerated as the number of objects subservient to it (to any specific depth in its hierarchy).

Objects participating in a connective may also be enumerated, counted or summed, but not with a necessarily enduring or repeatable result, if only because its participating objects may move, or if any of its participating objects disrupt, their debris may be incorporated into the connective. External objects may join the connective and others may leave without altering the nature of the connective. Besides, connectives may have an infinite number of participating objects that simply can't be totaled.

Precise enumeration and enduring count are serial meanings only available to architectures.

Exact Reproduction

The precision of separation, identification, enumeration and ranking in aggregates permits their architecture to be specified exactly; by written texts, maps or plans, thereby allowing them to be reproduced with absolute fidelity.

Reliably precise reproduction is an architective serial meaning. Connectives may be reproducible, but unless there is an architecture involved in their reproduction, not with a fidelity that can be termed exact.

Hierarchy and Rank

Hierarchy is a serial meaning based on the distinct levels at which objects occur in the hierarchy of an architecture. While the visages of connectives

may display an apparent hierarchy, such as solar systems within galaxies, their rankings are not distinct, for there may be planets that do not orbit a sun, and star clusters and solar systems may come and go.

Unless an architecture processes, the number of levels in its hierarchy does not change, while the rank of each level is both fixed and enumerable.

The ranks objects occupy in a hierarchy can be numerically compared, allowing us to categorize objects according to their rank. Many political and business organizations are structured on systems of rank. We play games in which objects are valued according to their rank.

Control and Containment

Containment and control as serial meanings can be seen in the capacity of architectures to hold both architectures and connectives within fixed boundaries through their ability to maintain a stasis. Many musical instruments have architective objects anchoring strings or tubes to particular, fixed lengths so as to precisely control the tones produced.

Control as a serial meaning can also be seen in the ability of higher ranked objects in architectures to control their lower ranks in matters of contest and allegiance.

Containment as a serial meaning can be seen in the ability of architectures to contain connectives and waves to precise boundaries by presenting barriers to their motions. One might argue that a particle accelerator such as the LHC uses the connective device of a magnetic field to hold a connective stream of particles within precise boundaries, but the magnets themselves are architectively anchored to the Earth.

Hierarchical control is used by an army, for example, as officers direct the actions of subordinate soldiers. We see hierarchical control utilized in all our hierarchical social institutions.

A connective has the capacity to generally influence the motions of objects but cannot control or contain them with certainty or precision.

Control as serial meaning also involves a denial of outside influence, which in turn implies an exclusivity of that control. An atom controls its own

nucleons, implying that other atoms do not. A corresponding exclusivity of influence is not found in connectives: The moon does not control the tides, it influences them, but so does the sun. If the moon 'controlled' the tides in the sense meant here, the sun would have no effect on them.

Contest and Power

Contest is a serial meaning for interacting architectures.

Winning and losing are games of contest.

An architecture's binding strength, on which its fortune in contest may depend, is often dependent on properties that accumulate with aggregation, such as size and hierarchical authority, so that the biggest or most populous architecture will win a contest. Contests thus permit *games of power* to be played between architectures, in which the contesting architectures strive to aggregate as much as they can so as to accumulate the contributions of more internal objects.

In games of power, expansion by aggregation has a positive value and contraction by disruption has a negative value. As well, objects having large size or high rank are more valued for their strength in contest. Players may increase their value by climbing the ladder of rank, or increasing their size or hierarchical authority, should the game permit them to do so. In games of power, big means powerful.

Games of contest can also be played using threats of extinction rather than actual vanquishments. After judging the possible outcomes of a contest, a player may choose safety by voluntarily submitting to an opponent rather than risking demise. A player may also be able to choose safety by retreating from a contest.

Skill, strategy and efficiency are tactics for contest.

Losing a contest has repercussions in games of identity as well, since loss in a contest necessarily means the loss of an object's identity. In a game of power, loss of a high-ranking object would have wider repercussions than losing a lower ranked object.

Business and politics often involve games of contest.

While connectives may be said to compete, the outcome is a superposition, a sharing, of the participating influences rather than a contest between survival and elimination. There are no winners and losers. Games of contest are not available to connectives.

Procession

Procession is a serial meaning arising from architectures reconfiguring in discrete steps.

We see processions in the growth and shrinkage of our families as members are born or die. We see it in the reproduction of our bodily cells.

We utilize procession in the meshing of cogs in gear wheels (as one figurate embrace is replaced by another), and it affords the switching of electron orbitals in an atom.

In many card and board games, players are permitted to make one distinct move at a time.

In a later chapter the serial meaning in procession will be considerably enlarged when narratives of serial meaning are discussed.

Certainty

Many of the architective serial meanings offer guarantees of certainty.

Stasis provides certainty of position and distance. Separation and identity allow objects to be distinguished with certainty. Structural composition allows the objects comprising an aggregate to be mapped with certainty. Precise enumeration allows objects in an architecture to be ranked and summed with certainty. Containment and control allow architectures to hold objects to boundaries with certainty.

Certainty is a serial meaning offered only by phenomena having an architective component. Connective phenomena display certainty only when contained or constrained by an architecture.

Chapter 7: Serial Meanings of the Connective Mode

Motion and Change

Motion and change are serial meanings arising from objects in a connective always responding to, or always able to respond to, relevant forces. Waves too are always moving in some way. If not already bustling with motion or change, connective phenomena are always open to it.

Architectures prevent objects responding to forces and prevent transmission of waves. The responses of objects in an architecture are always limited to some degree, often to the point of being considered entirely unresponsive. Connectives contained in an architecture can be similarly unresponsive. Architectures can enforce stasis.

While some of a connective's objects may be stationary or unchanging relative to each other, that would only be temporary and there will always be others that are changing or moving. Purely connective phenomena are not only dynamic, but are necessarily and unceasingly so.

If we are to find meaning in purely connective phenomena such as galaxies, we will find it in how they move rather than in what they are.

The observer effect illustrates the necessary motion of connectives, in which the act of making a measurement changes that which is being measured.

Serial meanings of motion and change, unlike a procession of distinct architectures, require the presence of a connective.

Unboundedness, Full Responsiveness, Unlimited Flexibility and Absolute Uncertainty

Unless contained by an architecture, the motions of objects in a connective or the motions of waves are not confined within boundaries.

Waves and objects in a connective are free to respond fully to the forces acting on them.

Waves and objects in a connective will respond to every relevant disturbance.

Unless contained, there are no limits to the flexibility of their responses.

Since they will respond to even the slightest disturbance, there is always an element of uncertainty associated with connective phenomena.

Connectives also offer uncertainty in the numbers of their participating objects, in the vagueness of their visages, in their lack of precise control, in their incapacity for precise enumeration, and in the fact that they may be indistinguishable from each other. Uncontained connectives offer uncertainty in the volatility of their shapes.

Unlimited flexibility is a serial meaning used, for example, in a radio transmitter whose vibration is free to mimic any and every voice. We see the uncertainty of connectives as a serial meaning in the behaviour and changeability of the atmospheric weather.

The serial meanings of unlimited responsiveness, unlimited flexibility and absolute uncertainty can only occur in a purely connective context. Some architectures, like membranes, offer limited degrees of flexibility, as described in Appendix 1.

Absolute Smoothness of Motion and Change

The motions of objects in a connective and those of waves are always completely smooth in the sense that there are no gaps between consecutive positions in their paths, no matter how close their consecutive positions may be considered to be. Their motions never occur in discrete steps between constrained positions as would occur in an architective procession. (That space-time itself is not quantized is, I believe, the only fundamental assumption that this book depends on.)

Unresolvable smoothness of motion is a purely connective serial meaning.

We see smooth motion in the trajectory of a ball through the air, in a flow of water, in the orbits of planets and the propagation of waves. Flight, whether of a bird, an aeroplane or an electron, is absolutely smooth.

It is not only spatial movement that offers serial meaning in smooth motion. Other properties of connective phenomena may change smoothly, as for example would the frequency of a sound emitted by a source whose speed is changing smoothly.

Anything changing or moving absolutely smoothly is necessarily doing so in the context of a connective.

Interference and Integration

Interference as a connective serial meaning arises because the net effect of multiple connective influences is the combination of all the influences. No relevant influences are lost - they are all displayed in the result to some degree. Compare this to the selection of some influences and the denial of others as happens in architective contests.

Interference as a connective serial meaning can be seen in the way planetary orbits are affected by all heavenly bodies (even though the nearest have the stronger effects). It can also be seen in the way we hear multiple sounds simultaneously even though they may be played out on a single ear-drum.

Integration as a connective serial meaning is utilized when two connectives, such as milk and tea, are integrated into a simple mixture, and when galaxies pass through each other, occupying the same space at the same time . When multiple waves in a pond meet, they are also occupying the same place at the same time, affecting the same objects at the same time and are passing through rather than excluding each other. Multiple radio programs can successfully be broadcast through the same geographic region at the same time.

Wave Play and Music

The periodicity of waves offers a wealth of serial meaning. There can be meaning in the variation in their frequency, in the different sounds we can

hear, in their phase and in their amplitude (loud and soft, for example). There can be meaning in the patterns of their interference and superposition.

Music plays on the smooth periodicity of waves for its sounds and its harmonies. Musical scores and recordings, in that they offer a capacity for exact reproduction, have architective rather than connective serial meanings. Nevertheless, reproduced music may be as connectively meaningful as its original production (since its architective reproduction is exact!).

Infinite Subtlety and Unlimited Grandeur

Under a microscope we can resolve architectures and connectives into their constituent and participating objects respectively. However, greater magnification of an architecture will eventually reveal definite and unavoidable gaps between its internal objects, inside of which no further internal objects can be found. While we will also ultimately see gaps between the participating objects of a connective, these gaps are not of a fixed size, and a moment later there may be a participating object in that gap, no matter how small a gap we are considering.

Connectives are infinitely resolvable and architectures are not.

It is quite possible that there is a lower bound to every architecture, that is, there is a scale below which no objects exist. At the time of writing, the smallest known objects are quarks and leptons (massless bosons do not qualify as 'objects') and they are considered to be elementary, that is, to have no constituent objects, so their sizes define a current architective lower bound. It is quite possible that architectures are not infinitely resolvable even when digging within them rather than between them.

Waves too are infinitely resolvable, firstly in the sense that since a wave can be regarded as a superposition of multiple waves, every wave can be regarded as a superposition of an infinite number of waves. Secondly, a wave is infinitely resolvable in the sense that it travels smoothly and the motions or vibrations of the objects it disturbs are absolutely smooth.

The possibilities for architective complexity may be infinite but every actual architecture has a finite size. Connectives are not limited in size.

I say that connective phenomena offer a serial meaning of *infinite subtlety* in their capacity for resolution and *unlimited grandeur* in their capacity for extent. Limitless resolution and extent are not available in architective contexts.

Chapter 8: Features of Serial Meaning

It was noted earlier that phenomena appearing to be constrained in some ways and unconstrained in others are compounds of purely connective and purely architective interactions, which have no features in common. The examples of serial meaning demonstrate that purely connective and architective interactions also have no serial meanings in common. Just as a phenomenon can be analyzed into component interactions that are either purely connective or purely architective, so too its serial meanings can be analyzed into those that are either purely connective or purely architective.

Different interactions of the same mode may share serial meanings, and an interaction of one mode may display several serial meanings of that mode, since these are often interdependent, as for example, the serial meaning of precise enumeration is dependent on the serial meanings of identity and separation. But interactions of different modes share no serial meanings.

In a compound phenomenon, one that is a mixture of connective and architective interactions, serial meanings may continue across adjoining interactions when they are of the same mode, but when the interactions are of different modes there can be no continuity of serial meaning because the different modes have no serial meanings in common. A birdbath's bowl at the top of its post continues the post's serial meaning of stasis but that serial meaning does not extend to any (liquid) water filling the bath. In a compound phenomenon, serial meanings are necessarily interrupted at junctions between interactions of different modes even though the interactions may be contiguous.

There is a significant consequence to this. Since the connective and architective modes have no serial meanings in common, serial meanings in one mode are meaningless in the context of the other, indeed not even recognizable as having meaning. To a (connective) wave or flood of water, for example, the (architective) distinction between a chair and a table that it sweeps along is lost. For a compound phenomenon, the serial meanings in components of one mode are meaningless in components of the other.

Even though serial meanings in one mode are meaningless in the context of the other, interactions in one mode can have consequences for interactions in the other, especially within a compound phenomenon. For example, a table swept along in a flood may well get hooked (architectively) to objects protruding from the riverbank and thereby alter the (connective) flow of the water, while why or how the table got hooked would be meaningless from the point of view of the water (since water can never get hooked).

Narratives of Serial Meaning

When a serial meaning continues across adjoining interactions of a compound phenomenon, as can happen when the interactions are of the same mode, I call it a *serial narrative*.

Though a serial narrative is interrupted when the adjoining interactions are of different modes, it may well pick up from where it left off when a previously interrupted mode is resumed. Narratives can thus continue across interruptions - and do so apparently seamlessly - since in context of their own mode nothing meaningful happened during their interruption.

A narrative runs in its own mode only, but a compound phenomenon may have a narrative running in each mode and skip between them as it skips between modes, with the narrative in each mode appearing seamless in its own mode while being meaningless - not even recognizable as being a narrative - in the other.

Of course a disjunctive event may occur during an interruption to divert the course of a narrative or prevent its resumption. Such an event would appear inexplicable in the narrative's own context because whatever occurred during its interruption would be meaningless to it. In the narrative's mode the disjunct would appear to have arisen randomly, without reason. A disjunctive event may also occur while in a narrative's own mode, which would not be so mystifying.

Fields of Serial Meaning

The serial meanings and narratives at different levels of an architecture can be very different. Objects emerging at higher levels have properties of their own, different to those of their constituent objects, and may interact using

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these properties in completely novel ways, displaying serial meanings completely different to those of their lower levels.

The serial meanings at an emerging level need not even be of the same mode, for as an object in its own right, the emerging object may engage in either mode of interaction depending on the environment it finds itself in. A carbon dioxide molecule, for example, may behave connectively in a gas with other carbon dioxide molecules even though it is an architective bond of carbon and oxygen atoms; or it could bond with the other carbon dioxide molecules into crystals of dry ice if the temperature was low enough.

Thus with each new level in an architecture, new *fields of serial meanings* may emerge, in which the emerging object engages in novel interactions with novel serial meanings. Emergent objects can be sequenced and arranged in novel ways, in which completely novel patterns can arise - both connective and architective - and in which novel games can be played.

As atoms emerge from nuclear aggregations, so the field of chemistry becomes available to them, which was not available to their component nucleons. Atoms can aggregate chemically in different ways to form different kinds of molecules, while the atoms' component nucleons - their protons, neutrons and electrons - had only the sub-atomic (non chemical) field of serial meanings to play in. Biology with its many fields of meaning emerge in turn from the aggregations of different kinds of molecules. 3D vision and its fields emerge from the biology of eyes and brains, while art and its playful fields emerge from vision, and so on. Interactions at the level of art have different fields of meaning to those at the level of vision, while interactions at the level of vision have different fields of meaning to interactions at the level of biology, and so on.

We can see fields of meaning in a connective sense as well. Though my eyes are only sensitive to a limited range of frequencies in the electromagnetic spectrum, they let me "see" the objective environment in which I live - the trees, birds, houses and streets of my neighbourhood. Objects in that environment may be moving at frequencies both slower or faster than the range of electromagnetic frequencies my eyes are sensitive to, for example, as trees sway slowly in the wind, thereby opening to me another frequency and field of connective serial meaning.

Architectures aggregating along different paths will accumulate different fields of meaning as new and diverse fields emerge with each level of aggregation. Nowhere is this more evident than in the diversity of biological life-forms, with each living organism having accumulated different fields as it aggregated from a different genomic starting point. However, not all the fields of meaning an organism accumulates are accessible to all its levels: As a conscious human I will be ignorant of many of the fields of meaning my own blood cells play in - and vice versa. The fields of meaning available at each level of an aggregate may not include those from its lower or higher levels.

The Organization of Serial Meaning

We have seen how objects at higher levels of an architecture control objects in their lower levels. The serial meanings in a higher architective level will also govern the serial meanings in its lower levels, not in the manner of control, but so as to maintain the integrity of the serial meanings at the higher level. Higher levels of an architecture have a semantic priority over their lower levels. Art may emerge from biological vision but the serial meanings in a work of art govern the serial meanings in the vision that beholds it. It is the art that directs the eye to the picture. I say that the serial meanings of higher levels in an architecture *organize* the serial meanings in their lower levels (and that serial narratives in the higher levels of an architecture organize the narratives in its lower levels) so as to maintain the integrity of the serial meanings at the higher levels.

(Michael Polanyi's "Life's Irreducible Structure" [##] offers vivid examples of the hierarchical organization of meaning.)

Serial meaning in an architecture is thus layered in levels of organization in the same way that its objects are layered in levels of control. Both control and organization in an architecture occur in a top down direction. The lower levels may have created the higher levels but they neither control them nor organize their serial meaning.

While the objects in a higher level emerge from interactions in the level below, the serial meanings in the higher level do not emerge from the serial meanings in the level below. Rather, the serial meanings in the higher level spring from the novel capacities and interactions of the objects in that

higher level. As has been pointed out, serial meanings in different levels of an architecture may even be of different modes.

Organization also differs from control in that the termination of a narrative at a lower level need not affect a narrative at a higher level, while disruption of objects in a lower level will disrupt objects above them. A dynasty can continue after the death of a particular ruler, for example. Contrarily, termination of a higher level narrative would very likely affect lower level narratives, while disruption of a higher level object does not necessitate disruptions in the levels below.

Like control, organization occurs only between levels of an architecture, so the organization of serial meaning is not a feature of connectives. While serial meanings and narratives may be found in both connective and architective phenomena, the organization of serial meaning is a feature of architectures only. We should also note that it is only the architective serial meanings in an architecture that are organized by the serial meaning in their higher levels; connective serial meanings at lower levels are only organized to the extent that they are contained by elements of the architecture.

Purely connective phenomena feature neither emergence, hierarchical control of interactions nor organization of serial meaning. Intersecting serial meanings in a purely connective context overlay each other proportionately without organizing each other. Two radio programs broadcast at the same frequency will be garbled. It could be argued that the modulation of one wave by another of a different frequency so as to carry a signal is a connective organization of serial meaning. However, such modulation is an interference of the participating waves since the signal carries the serial meanings of all its contributing waves rather than having one serial meaning override any other. Each contributing serial meaning could subsequently be extracted from the modulated wave by using suitable filters, whereas once a serial meaning has been organized by higher levels of an architecture some of the original lower level serial meaning may not be recovered.

Interestingly, it could happen that an interference of waves or connectives serendipitously constellates into a meaningful signal or pattern that none of the contributing waves or connectives carry, resulting in a new serial meaning that is neither modulated nor organized.

In conjunction with their ability to code, store and copy information with fidelity, this capacity of an architecture to create higher levels having novel serial meanings which then organize their lower level meanings, facilitates them developing into self-sustaining, self-organizing functional structures such as living organisms. The fact that serial meanings in higher levels of an architecture do not emerge from the serial meanings in the levels below but appear spontaneously according to their novel properties and the environments they find themselves in, suggests that life could have emerged from matter, not simply as a series of complexifications, but as a result of novel and unexpected serial meanings emerging from architective aggregations.

Processional Narratives

It may happen, in fact is very likely, that as architectures step through a procession, the architectures at succeeding steps will be similar to the ones they have just replaced, allowing some narratives to continue in successive architectures while the architectures themselves do not. That is, at each step in a procession, some narratives of the resulting architecture continue narratives that were present in the preceding architecture despite the preceding architecture having been replaced. An architecture and its identity may be disrupted but some of its narratives may continue in an architecture that replaces it. In a dynasty, for example, narratives of the ruling family continue even though individual rulers have passed on.

I term a narrative that continues through a processing of architectures a *processional narrative,* and that it displays continuing *themes*.

A processional narrative is not itself an object or an architecture even though it arises through architective procession. Not being an object, it has no lasting identity (as I have defined it), but rather a collection of continuing and evolving themes. Not being an object, it cannot engage in interaction (as I have defined it) nor aggregate or exercise control, but it can organize the serial meanings and narratives of its contributing architectures to its themes. Not being an object, it cannot be disrupted but being a narrative it can be terminated. (An object, such as a name or an icon, may be associated with a processional narrative, and that object can have an identity.)

When processional narratives are present in a functional organism I say that the organism is a *processional organism*. Our bodily organs are such processional organisms since they maintain their functional architecture even though the cells of which they are constituted die and are replenished. We as persons are such processional organisms since we continue a personal narrative even though our bodies are continually being renewed.

Though the topmost level of each architecture in a procession is at the apex of control in its own architecture it is not at the apex of that architecture's organization, for its serial meanings may yet be organized by a processional narrative. Conversely, though a processional narrative may be at the apex of organization of all its contributing architectures, it does not control any of them.

For a processional narrative to persist, it would probably require that the architectures making up the steps in its procession have similar if not the same properties - that their differences are minor - but if the procession involves many steps the final architecture may be very different to the original. An old man holds little resemblance to the baby he once was.

Processional narratives may also have a lateral dimension, in that the processing architectures may branch multilaterally at each step. For example, a person may have many children continuing their themes. Each child may then have many children. As the child architectures proliferate, the themes extend in multiple directions, each in a slightly different way but each instantiation continuing the parent's themes in some way.

It could be argued that a spore traveling through space and seeding on another planet (as proposed in ideas such as panspermia) would continue an architective narrative well beyond the architective limits of its originating planet, but this again only pushes the boundary of architective isolation further out without eliminating it, since there would ultimately be a limit to how far an object could travel (given the Einstein speed limitation) and the time a spore can remain viable.

Interactions vs Serial Meanings

Interactions and serial meanings are quite different.

Architective interactions have features like the creation and disruptions of objects, emergence of new and entirely different objects, changes in discrete steps, and hierarchical control; while connective interactions have features like susceptibility to change, integration, smooth movement, the hosting of waves and vibration, and superposition.

Serial meanings on the other hand, whether connective or architective, have features like narratives and fields of meaning, which in architectures can be organized and themed across processing architectures.

Importantly, while interactions of different modes can affect each other, the serial meanings of different modes are totally incomprehensible to each other.

Sentience necessarily involves a comprehension of serial meaning. The incomprehensibility of serial meanings in different modes means that a different kind of sentience is required to comprehend serial meanings of different modes.

Chapter 9: Modes of Sentience

Forethoughts on Sentience and Consciousness

An ability to comprehend meaning is a key indicator of sentience but defining sentience more generally is notoriously difficult. We have no qualms attributing consciousness to ourselves but hesitate to say that a tree, for example, is conscious in spite of the fact that it comprehends meaning in its environment and responds appropriately.

For the purposes of this story I term a being *sentient* if it has a capacity for experience, that is, it has a capacity to perceive its environment (and perhaps itself in it), comprehend serial and perhaps other meaning, make choices and act intentionally - which I believe a tree has; and I term a being *conscious* if it is sentient of its sentience (and perhaps that of others), which a tree is not.

(Or rather, *I do not see* consciousness in a tree. We only comprehend the fields of meaning available to us, according to how we as functional organisms have aggregated. People and trees, as organisms that have aggregated along very different paths, have very different fields of meaning available to them. So while I do not see consciousness in a tree, trees may well see consciousness in each other. Deeming an organism to be conscious depends on who is doing the deeming.)

Consciousness - sentience of one's own sentience - opens up dimensions of attention, reflection, introspection, association, abstraction and conception, facilitating a considered and directed appreciation of one's experience and choices. While I see memory as a sometime supplement to sentience I see it as necessary for consciousness.

Importantly, consciousness - sentience of one's own sentience - delivers an *experience of being sentient*, bestowing on the consciousness ownership of its sentience - a sense of 'I', a personal agency that includes a responsibility

for its choices and actions. Personal agency allows the development of personal traits such as temperament, taste, style and disposition.

A conscious being may also see sentience in others, and may even recognize an experience of sentience in another; that is, it might recognize another's consciousness. I see playfulness and humour as expressions by which consciousness can be recognized (rather than mere sentience). A sentience that is not conscious experiences its environment and acts in its own interest, but does not reflect on its experience, does not have a sense of personal agency and does not have a sense of humour.

In this way I see all functional organisms, from the greatest trees to the tiniest viruses, to have the possibility of sentience, but see the possibility of consciousness only in animals.

Our human sentience is not fixed. As our cultures and environments evolve, we acquire new fields of meaning. Technology specifically has afforded us vast new fields of meaning to play in. Importantly for this discussion, many of these new fields of meaning have widened, not only the ranges and kinds of pattern we can perceive (perhaps only indirectly via these new tools), but have widened the ranges and kinds of pattern we can *conceive of*, as the microscope and telescope have extended our conceptions of the very small and the very big.

Widening the range of our discernable patterns also allows us to discern patterns in patterns; that is, our discernment of pattern may not only be widened but may be deepened by the acquisition of new fields of meaning. Extending our understanding of the very small to atomic scales and of the very big to galactic scales has significantly altered our understanding of our place in the universe and the way we relate to it. These extensions have not been shared by trees. Perhaps a significant difference between our own sentience and that of trees (and between that of plants and that of animals) is one of the kind, width and depth of pattern and meaning we are capable of discerning. The capacity to perceive pattern and comprehend meaning is crucial to sentience.

Modes of Sentience

As compound functional organs, our brains utilize both modes of interaction and comprehend both modes of serial meaning, allowing us to negotiate our bimodal world successfully. But serial meanings of one mode are not comprehensible in the other, so our brains must be utilizing the mode of the phenomena they are perceiving in order to comprehend their serial meanings (though not simply to perceive the phenomena).

The comprehension of serial meaning is an essential element of sentience, so I speak of connective and architective *modes of sentience* according to the mode of serial meaning a sentience is utilizing and able to comprehend.

There would be gaps in our comprehension if our brains were to switch from one mode of sentience to the other, for they would be blind to serial meaning not in their current mode. Our brains need operate sentiences in both modes simultaneously to ensure an inclusive comprehension. I see us running two sentiences concurrently, an architective sentience and a connective sentience, rather than only one.

Entirely different realms of serial meaning are perceived and negotiated by each sentience, with each comprehending the serial meaning and narratives of its own mode only.

Connective and Architective Experience

Our architective and connective sentiences perceive the same world but experience and respond to it very differently.

Our architective sentience appreciates the stasis of things. It experiences the endurance of objects, their enduring separateness, identity and composition. Our architective sentience is aware of having a separate body and of being different to others. It appreciates precision and exactness of definition, responds to good or bad figurate fits, attends to contests and responds to loss or gain in a contest. It takes steps towards definite goals (whether constructive or destructive), exercises control or subservience and plays games of rank and power. It is able to appreciate complexity in construction and its greatness.

Our connective sentience experiences free flowing motion and change. It can play with waves, vibrations and their interference, the flows of empathy

and the connective plays in relationships. It can negotiate uncertainty and penetrate limitless subtlety and grandeur.

Our connective sentience distinguishes harmony and dissonance, empathy and antipathy, in flows, waves and vibrations. It experiences bodily pain and pleasure. Our architective sentience has regard for identity, placement, fit, firmness, composition, commitment and challenge. It distinguishes between wholeness and impairment, submission and domination, and gain and loss. It experiences poverty and plenitude.

Our architective feelings and emotions are of achievement or failure, superiority or inferiority, anger or supplication, triumph or fear, comfort or vexation. Our connective emotions are of attraction or repulsion, frustration or exhilaration, satisfaction or longing.

Our connective sentience memorizes flowing movements while our architective sentience memorizes snapshots - images, symbols and representations - and sequences or arrangements thereof. Each sentience can only access memories of its own mode.

Our connective intelligence judges flows, harmonies and empathies. It feels its way uncertainly, by giving and taking, acting and responding. Our architective intelligence judges matters of position, threat, composition, identity, rank, and fidelity - precisely - by analysing them, categorizing them and perhaps planning steps to achieve specific aims. Our architective intelligence makes things and breaks things. It puts things in place or takes them out. It distinguishes the proper places for things and constrains relationships to fixed roles.

Fear of extinction is an architective experience, for only architectures are subject to the possibility of demise. Our architective frailty necessarily imbues our lives with a sense of insecurity and I suspect the entire gamut of our existential fears have an architective component.

Our connective sentience is attentive to all relevant stimuli while our architective sentience tends to be focused, usually on the item of greatest urgency or strength. I can attend to multiple musics simultaneously (though not necessarily independently), whether in concert or noisy, but I would have great difficulty attending to multiple sentences at the same time.

Multiple musical instruments played at the same time could be a symphony but speakers have to raise their voices to be heard above a crowd.

Architective attention jumps from one point of interest to another while connective attention accesses all its interests concurrently. A quiescence of one's architective attention (say by means of meditation) allows the merging of a wider connective perception rather than providing more points for it to jump between.

My architective sentience follows architective narratives - stories and epics of construction and destruction, identity, intrigue and challenge, gain and loss, submission and domination, achievement and failure. My connective sentience follows connective narratives - dances of speed and agility, whirls and gyres, discords and harmonies, excitements and tranquilities.

Connectively we may have preferences regarding degrees or styles of subtlety, curvature and motion, the smoothness of a ride, perhaps preferring one dance or music to another. Our architective preferences may be in regard to the straightness of lines, the symmetry of forms, clarity of distinction, correctness in social interaction, comfort of fit, winning in contests, the soundness of constructions and in the reasonableness of an argument. Architective preferences may alternatively develop for destruction, existential angst, physical and emotional discomfort, greed, oppressive control, dogmatic fixedness, excessive submissiveness or obsessive organization.

We may develop a preference for one mode of sentience rather than the other. We may prefer to see everything in its proper place, have well-charted avenues of social interaction, enjoy precision of expectation, fidelity of information, clear categorizations, respect for rank, and take pleasure in expressions of strength, control or subservience. Alternatively we may relish the connective interplay of feelings, colours and sounds, the excitements of empathies and harmonies, and the surprises of uncertainty. Of course we may enjoy both.

Our architective sentience reaches or fails to reach objectives while our connective sentience journeys through landscapes of greater or lesser profundity. From a connective point of view, life is an ongoing and varying participation in profundity rather than a search for perfection. For my

connective sentience it is the passing sensations along the way, for my architective sentience it is the stations and destinations that count.

I suspect that connective and architective sentiences have very different experiences of time, in that an architective sentience experiences time as a series of distinct events which can be categorized as past, present and future while a connective sentience experiences time as an indivisible, uncategorizable, ongoing duration. An architective sentience enjoys drama in stories - events situated in time - while there are no stories for a connective sentience - it simply enjoys the ongoing flows and stimulations of harmony, surprise and constellation. I think life becomes more problematic when we rush from station to station (objective to objective) and don't have time to enjoy the journey in between.

Perhaps using the word 'intent' with respect to a connective sentience is misleading, for 'intent' suggests a view to a definite aim while a connective outlook would be less specific.

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In his book *The Master and His Emissary: The Divided Brain and the Making of the Western World*##, Dr. Iain McGilchrist has suggested that the operations of our left and right brain hemispheres display different characteristics: He sees the left hemisphere being responsible for a focused attention to detail and precision, as being manipulative, restraining, limiting, fragmented and isolating; offering a knowledge of the parts, of the composition of things rather than a view of their contextual setting. The left hemisphere employs definition, representation, abstraction and rationality in its understanding of what things are while the right hemisphere employs intuition to guess uncertainly at how things change and how they might relate. The left hemisphere pursues perfection in its placement of detail and attempts to eliminate rivals or pieces that don't fit its understanding, while the right hemisphere permits compromise and seeks diversity and freedom in its aim for a wider harmony.

You will notice, as he has,## how closely the behaviour of the left hemisphere approaches architectivity while that of the right approaches connectivity. It would seem that our brains have coped with the necessity of running two sentiences by providing two hemispheres.

Modes of Consciousness

Since our sentiences comprehend serial meanings of their own mode only, each of our sentiences cannot comprehend the serial meaning or follow the serial narratives of its own opposite sentience. My architective sentience cannot follow the serial narratives my connective sentience is following, and vice versa.

This also means that my architective sentience cannot be sentient of my connective sentience - and vice versa - since sentience necessarily involves a comprehension of serial meaning. Consciousness - sentience of a sentience - requires that the sentiences' modes be the same. A consciousness can only recognize another sentience when both are in the same mode. Sentience of one's own sentience is feasible but only when the subject and object sentiences are of the same mode. Each of our sentiences could be sentient of itself but would be oblivious of its opposite sentience, let alone be unable to follow its serial meaning and narratives. To a conscious sentience, its own opposite sentience lies unrecognized (though actively sentient) in a manner we term *subconscious*.

It is my consciousness that gives me a sense of 'I', that recognizes my sentience, and as a consciousness 'I' can be conscious in and of only one of my sentiences at a time. My sense of 'I' may switch between my sentiences but at any one moment 'I' am an unabashed consciousness of only one sentience and in only one mode - while my sentience of the opposite mode lurks unseen in subconsciousness, sentient but without personal agency. Only when the conscious/subconscious status of the sentiences is switched does the sentience that was subconscious become aware of itself and acquire the personal agency of 'I'. My sense of 'I' is different in each *mode of consciousness*.

In answer to the question "Who am I?", in the architective mode of consciousness I might identify with my body (as being separate from others), with my profession, ancestry, cultural heritage and social status, for example. I would have opinions, expectations and a self-image acquired over my personal history and these would be difficult to change. On the other hand, in the connective mode of consciousness I would respond to the question along the lines of "I am sitting comfortably, enjoying the breeze and the sounds of birds coming through the window while I tap at this

keyboard." My connective sense of 'I' is a vibrant feeling of being, a receiver and giver of connective sensation. If asked how it was feeling, it would describe the sensations it was experiencing now and these would be different tomorrow.

Our consciousness, our sense of 'I', switches from one mode to the other.

Keep in mind that the serial narratives each sentience experiences may be seamless, since the serial meanings in their opposite mode are meaningless or irrelevant. Each sentience may experience seamless serial narratives even though its narratives are being interrupted and even though it may be switching in and out of consciousness.

The relevance of this arrangement for the present discussion is that when one's connective sentience is conscious all one's comprehension of architective serial meaning is subconscious, and when one's architective sentience is conscious all one's comprehension of connective serial meaning is subconscious. One may be sentient in both modes simultaneously, but conscious in only one at a time. (This does not mean that all one's comprehension of architective serial meaning is conscious when one's architective sentience is conscious - and vice versa - only that when one's architective sentience is conscious none of one's comprehension of connective serial meaning is conscious.)

Narratives in its opposite mode are completely opaque to a consciousness. One's consciousness could at best cobble together an approximation of what a narrative or experience of its opposite mode might be like using what few concepts it has to convey something that is totally alien to it. The act of reading or writing this book, for example, is an architective one - no words on these pages can convey what the experience of music is like, while no (wordless) music can possibly convey the ideas presented in this book. I can see or hear the words in both modes, but I will only understand them in one. Consciously, I either read a book or listen to music, or switch rapidly between them, but I cannot consciously do both simultaneously. I can do both simultaneously, but only one will be conscious.

We see the glory of this arrangement when a musician, having consciously mastered the architective mechanics required to perform a piece of music, consigns this architective mastery to their subconscious, allowing a connective consciousness to direct the performance in an empathic

expression conveying the musician's feelings rather than their architective exertions.

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While we are not conscious of our subconscious sentience, others may be aware of it through our subconscious expressions. However, they too can only be conscious of our subconscious sentience when their conscious and our subconscious sentiences are in the same mode. Similarly, I might be conscious of someone else's subconscious sentience that is in the mode of my consciousness.

Note that any serial meaning being communicated, consciously or subconsciously, must be of the same mode as the sentiences involved. Connective sentiences might communicate vibrationally while architective sentiences might communicate symbolically, for example.

I see both our conscious and subconscious sentiences capable of laying down memories and both sentiences capable of retrieving memories and constructing narratives, but of their own mode only.

Serial meanings that were perceived by one's subconscious sentience (and therefore in the mode of that sentience) do not necessarily percolate through to one's consciousness, only perhaps through to one's consciousness of that same mode. For example, during a business meeting one might subconsciously be attracted to another attendee, but it is only if one disengages from the architectivity of the business matter that one may consciously recognize the attraction.

Choice of Consciousness

My consciousness delivers my sense of who I am, and it is mode dependent. In the connective mode I am a flowing sense of being while in the architective mode I am an identity with a placement and history. My mode of consciousness significantly flavours my sense of who I am at any one moment.

My mode of consciousness also flavours my interaction with my environment and my appreciation of other sentiences, for it is only serial meanings of that mode I can evaluate and implement reflectively, and only sentiences of

that mode I can recognize in others. It is my conscious sentience that reflects on questions of ethics and responsibility, and it does so in the context of its own mode only.

The choice of which sentience to engage consciously is not a trivial one.

But who exactly is making this choice? Is there another 'me', someone who is neither of these sentiences choosing which to implement consciously?

I think not: *The sentience that is conscious is making the choice.*

In the next chapter I show how our lives are dominated by architectivity, through environmental and social pressures, and because our sense of insecurity requires that we be in control at all times. Under these pressures, our architective sentience insists on consciousness while our connective sentience is considerably less anxious, so architective consciousness becomes our default, only to be released - perhaps - when not under architective pressure. *It is an architective judgement that is made as to whether or not our architective consciousness can be released.* Architective consciousness can become so habituated that an architective consciousness will always choose itself. A connective consciousness, on the other hand, will happily let go.

That an architective consciousness invariably chooses itself is the main reason why our choice of consciousness is so important. I think a major step in one's personal development (and one's success in negotiating a psychedelic experience) is having one's architective consciousness learn how and when to let go.

The habituation of architective consciousness is probably a trait we acquire in order to accommodate the overwhelming dominance of architectivity in our world. It is quite likely that as babies, or at least before becoming aware of our need to consciously respond to architective pressures, that the connective mode of consciousness was our default.

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(In discussing sentience in this chapter I have been thinking only of our waking state. States such as sleep or coma require a different discussion. I have also only been considering sentiences associated with functional

organisms such as ourselves. Sentiences not associated with functional organisms such as those attributed to our spirits are explored in Part III.)

Chapter 10: The Architective Dominion

Our lives are dominated by architectivity.

There are good reasons for this.

Chief among these is our bodily placement in the figurate window of scale, where as functional organisms we have an overriding concern for our bodily and social security and are compelled into architective strategies to preserve them, while connective matters appear to be of much lesser urgency.

Our social institutions display no connective behaviour at all. Connectivity is evident in the relations between individual humans but the relations between offices or ranks of our institutions are purely architective. The serial meaning they contribute to our lives is purely architective and the sociality they promote is purely architective. They may sometimes promote connective sociality but only as a means of maintaining their architectures. Governments do not provide grand theatrical events with the intention of pleasuring their citizens - they do so in order to unify the citizenry, perhaps promote the values of the society, convey a message or promote the election prospects of a candidate. A political party will always put its own survival above any principles it espouses. Societies actively promote themselves to themselves in order to maintain their identities. In doing so, they elevate the preservation of identity to be the highest good among their citizenry at every level.

Connectively, we can communicate amongst ourselves with music, dance and colour, and physically and emotionally caress or agitate each other, but our repertoire for connective expression is limited when compared to our repertoire for architective manipulation. This is not only due to environmental and social reinforcement, for by their very nature, architective techniques can be precisely codified and stored, faithfully passed from generation to generation, built on and accumulated; while connective skills are not easily codified or handed down. Our societies and traditions reflect eons of accumulated architective knowledge (much of it faulty!) while a personal lifetime of connective nous is usually buried with the individual.

The architective domination of our social and cultural environment means that our personal connective interactions receive significantly less of our conscious attention than do our architective interactions. Even in the realm of love, we often align our personal satisfaction with our performance according to social norms rather than in the transitory and vague caprice of romance. Our connective relations tend to melt into a subconscious background while our conscious attention is used overwhelmingly for the cultivation of our social identities.

An architective mode of consciousness tends to enforce its own exclusiveness while a connective mode of consciousness is inclusive. It is much harder for one to switch to a connective mode of consciousness from an architective mode than the other way round.

The dominance of our consciousness by architectivity means that we rarely recognize connective sentience or consciousness in others - or in ourselves.

The architective dominion of our lives leads us to see the world with architective eyes only. Rather than participate directly in our connective experiences, we attempt to grasp them architectively and are then confounded by the impossibility of capturing them with architective means. We clothe our connective experiences in architective texts, icons and rituals, as, for example, we ritualize love in marriage. Doing so makes them more amenable to our control but frustrates their connective meaning.

Nowhere is the frustration of connective meaning more evident than in our social attitudes to sex. Sex is rarely socially exalted or promoted for its own sake, yet as individuals we are obsessed with it. One would have thought that if it played such an important role in our individual lives it would have been explored in depth and developed into a sophisticated social interaction, yet it is hidden in shame by almost every society. On the one hand it is the fundamental existential process by which we as architective objects reproduce, but on the other sexual orgasm is our most intense connective experience. We are socially unable to cope with its connective enormity. In desperation we confine it to an architective straitjacket until there is nothing left but a soulless rite of species propagation and a lure for selling motorcars.

This preoccupation with architectivity is not a failing of the human character. It is the natural result of our placement in the figurate window. Our

architective discomforts do not arise from a moral laxity on our part but from the necessity of coping with enormous architective pressures. Our individual lives are so pressured by the constant effort to maintain our bodily and social identities that we have little time and little motivation to appreciate what each other's lives are like, and our capacities for empathy and compassion are severely - but naturally - constrained.

Our lives may be dominated by architectivity but they are not totally controlled by it. Even within social constraints there is always some room for freedom of expression. Architectivity does not fix behaviour absolutely, it only constrains it to a range, however small that range may be. So while the behaviour of offices in our institutions may be tightly constrained, there is always some room, however small, for individual expression by the person holding the office, allowing that person's time in office to display a character different to say their predecessor's time in the same office.

We may also rebel against our social constraints, though this usually occurs in the context of replacing one architective hierarchy with another.

In our own personal development we may learn how and when to let the architective grip on our consciousness go.

A Matter of Perspective

Our cultures, history and traditions have been overwhelmingly shaped by the architective dominion. So much have we been conditioned by a past confined in a figurate window that we unquestioningly accept that stasis is the natural "rest state" of physical phenomena and that movement only arises when energy is imparted to an object that is otherwise naturally at rest.

This discussion has shown that a state of motion is at least equally entitled to being considered the natural state of things, one in which stasis only arises when constraints are imposed on objects that are naturally in motion. After all, architectivity arises when constraints are imposed on connectivity and a pure connectivity is restored when constraints have been removed.

Indeed, since connective phenomena are universal while architective phenomena are confined to a window of scale and inherently isolated, a state of motion (being the natural state of connective phenomena) could

well be regarded as the primary state of things with stasis (being the natural state of architective phenomena) being a secondary state.

Were we to regard a state of motion as the primary state of things, we might also choose to distinguish between things based on the differences between their behaviour rather than differences in their position or composition.

We have come to regard stasis and constraint as the default condition of the world more generally. For example, we regard poverty, as a constraint on energy and resources, to be the natural state of human affairs, one that can only be overcome by conscientious hard labour. Many cultures believe suffering to be humankind's natural condition, only to be overcome by great effort or ingenuity or a benefice of the gods. If we were to see an unconstrained movement of resources as the primary state of affairs we might understand that our poverty and suffering arise out of our being cornered and constrained within the figurate window of scale, and be more compassionate towards each other, for ultimately we all suffer through no fault of our own.

That said, all connective phenomena, even those in the purely connective window, are dependent on the presence of (architective) objects. Connective phenomena, though unconstrained and uncontained, are interactions between objects. Connectivity is as dependent on architectivity as architectivity is dependent on connectivity. So even if we did consider connectivity as the primary state of things, architectivity remains an essential ingredient of the cosmos. Architectivity should not be regarded as an optional extra to the universe. It is intrinsic to the universe in the same way that connectivity and the fundamental forces are. Where and when the conditions are right for objects to bond, they *will* bond.

Confined to a window of scale and isolated in spatial localities, architectivity attains its cosmic significance as a contributor to the connectivity of the cosmos rather than through its marvels of figurate complexity. At every scale, connectivity plays with whatever objects architectivity provides.

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Although they are dependent on each other, architectivity and connectivity are not reducible to each other. Each can't be explained only in terms of the

other. The existence of objects can't be explained in terms of waves or vibration alone - boundaries are needed to anchor vibrations into objects, otherwise they would just be passing consonances. (Even pair production, the creation of matter from pure energy, requires the presence of an anchoring atomic nucleus.) Similarly, waves and vibrations can't be explained in terms of static objects alone.

Architectivity and connectivity are irreducible in another sense, in that each hosts a different conception of opposition. In architectivity the poles of an opposition have values such as 'off' vs 'on', and phenomena display either one pole or the other such that there is no meaningful in-between value. In connectivity the poles of opposition have values such as 'strong' vs 'weak' and 'positive' vs 'negative' where there is a sliding scale between the poles and phenomena can display meaningful values in-between. In both these concepts each pole of its opposition necessarily implies the possibility of the opposite pole. But an architective opposition does not imply any connective opposition nor can it be explained in terms of any connective oppositions, and vice-versa. Connective and architective oppositions are irreducible too. To say that *every* phenomenon necessarily holds the seed of its opposite, as is suggested by a traditional understanding of Yin and Yang for example, does not hold in the comparison of architective vs connective oppositions. Connective and architective modes of interaction are irreducible, connective and architective modes of serial meaning are irreducible, and connective and architective modes of opposition are also irreducible.

It is interesting to note that connective oppositions do not host contradictions, only a sliding scale of leaning to either pole and allowing a point of balance in the middle. An architective opposition, on the other hand, is always contradictory and incapable of balance.

Part III : Modes of Spirituality

If we can accept the possibility of spirituality arising in the physical world we can allow that world to guide our spiritual explorations in the same way it guides our scientific explorations. If we can also accept the connective and architective modes of meaning I have outlined they can significantly affect our spiritual speculations.

The first chapter of this Part explores for spiritual possibilities that would be commensurate with materiality, connectivity and architectivity. The second chapter imagines what sentience among these might look like based on their utilization of the modes. In the third chapter I voice my opinions as to which I believe to be sentient.

Before going there I need to clarify some terms:

I use the term *spirit* to describe any coherent but enigmatic being, principle, process or object that may be considered to influence an organism but is beyond the organism's control and/or description. In this sense spirits relate to an organism rather than being absolute. They may be relative to any organism, human or otherwise, to humanity in general or to individual people. When we can both describe an influence and control it then it is not a spirit to us. I use the term *mundane* to refer to anything not being considered a spirit.

Spirits may be sentient or mindless. I speak of a spirit considered to be sentient as a *deity*.

I see human *religions* as collections of architective objects associated with, or representative of, one or more of our spirits, allowing the enigmatic spirits to be architectively addressed and engaged with. These objects comprise the religion's dogmas and myths, temples, icons, symbols, texts, rituals, relics, clergy and administration. In particular, a religion's dogma specifies how its mysterious spirits are to be conceived, how they are to be addressed and the rituals through which engagement can take place.

Empathic engagement with a spirit cannot be circumscribed by a religion and remains connective.

While religions are purely architective, spirits and deities, whether or not they are associated with a religion, may display architective or connective characteristics or both. Characterizing spirits and deities as being architective or connective is not straightforward, so to start with I say that spirits, deities and their associated religions are *architectively active* if the spirits and deities display any architective behaviour at all, and are *purely connective* if they display none.

Though elevating the discussion to the spiritual, I will use terms such as "the entire universe" and 'universal' to refer only to the universe as it is discoverable in a material sense.

The Great Religions

The distinctive markings of the great religions betray the presence of architectivity. Each can be identified by a distinct mythology, a defining dogma and an iconic symbolism. Each has a hierarchy of administrative office and spiritual authority by which it is controlled. The hierarchies have crystallized into social institutions and their mythologies have been enshrined in rigid social traditions. Religions are usually sanctioned by their host societies and are often major contributors to the identity of a society.

The main attraction of these religions is their offer of solace in the face of bodily demise, often in the form of a promise that our personal and religious identities will continue after our bodily deaths. Their salvations from the dilemmas of architective existence are usually conditional upon obedience to their administrative and spiritual authority. Religious dogmas usually provide punishments for disobedience and incentives for obedience and they often extend their hierarchies into supernatural realms, where spirits, angels, demons and gods are able to provide interminable punishments and incentives to haunt the indestructible identities they offer us.

Connectivity in the great religions encapsulates the empathic aspects of their practice. Foremost among these is the heartfelt emotion that genuine believers bring to their practice, usually in the form of a love of their deity. There is also a comfort for the lonely in the presumed presence and

reciprocal love of a deity, as well as empathic engagement with fellow adherents. The revelations that lie at the source of most great religions would have been overwhelmingly emotional for the originating avatars, as they are for anyone experiencing religious epiphany. But note how all these connective experiences are relevant only at the individual level of religious practice. Practices performed in roles higher up the religious hierarchy have only an architective significance.

Architectively Active and Purely Connective Religions

Religions are architectively active if their spirits and deities display distinct identities, reside in hierarchies or require obedience to a dogma. They are architectively active if their spirits and deities require an exclusivity of veneration, take interest in our human contests or are themselves engaged in contests or games of power. Architectively active religions are often beset by struggles for power among their deities, or with other religions.

For most people, a purely connective religion, one that does not have identifiable spirits or a specific dogma for example, would be purely hypothetical. Such religions do exist but they are not prominent in the public eye since they are generally esoteric offshoots of the great religions and actively suppressed by them. I am thinking for example, of the Sufis associated with Islam, Zen Buddhists, Jewish Cabbalists, Tantric Hindus and Christian Mystics. They are not fundamentalist for they do not take the dogmas and mythologies of their parent religions literally. Rather, they see the parental myths as allegories pointing to a secret that is not knowable in any dogmatic sense and so must be alluded to by parable. This secret knowledge can only be attained by direct engagement with their spirits, so all indirect representations of them, including any iconic and dogmatic representations, even those of their parent religions, are considered to be a barrier to their revelation. These esoteric sects do not fit the category of an architectively active religion as, for example, rather than claim an exclusive correctness for their techniques of bypassing the intellectual barrier, they generally acknowledge that the revelations of direct experience can be attained by all seekers, regardless of sect or religion, who have the necessary ingenuity.

The esoteric sects offer techniques for focusing one's consciousness directly on spiritual engagement and not being distracted by representations. They

are suppressed by their parent religions because they do not take the parental mythology literally and because the direct spiritual experience they advocate eliminates the need for the intermediate priestly representation that is their parents' architective livelihood.

Architectivity and Connectivity as a Context for Spirituality

A dogma complying with the ideas of connectivity and architectivity would recognize that identity and invulnerability are mutually exclusive. Anything maintaining an architective identity is necessarily subject to the possibility of demise. This means that the dogma should not make any promises (or curses) of an eternal personal identity, for as long as one maintains an identity the possibility of demise remains. The perpetuation of oneself, say as an eternal soul that is separately identifiable from any other eternal soul, is not consistent with these ideas, nor is the eternal perpetuation of a spirit or deity that is uniquely identifiable from any other spirit or deity.

The ideas of connectivity and architectivity do not rule out the possibility of a purely connective spirit lingering after death, but, being connective, it could not maintain a lasting unique identity. As well, any interventions by such a connective spirit in our earthly lives could only be of a purely connective nature.

A dogma complying with the ideas of connectivity and architectivity would also recognize that architective activities are limited to a window of scale not much bigger than our planet and that the sphere of any spirit's or deity's architective influence would also be limited in this way. A conforming religion would not make any claims for exercising control or any other architective serial meaning at a cosmic scale. It is, of course, only architective activity that is so limited - connective serial meanings could well have a cosmic relevance.

While an identity continuing for a person beyond their death is not consistent with these ideas, a processional narrative is. As a narrative of architectures, a person's processional narrative would process through their children, through a lasting legacy such as a dynasty or a classic work, or more simply as a skeleton or tombstone. Processional narratives continuing beyond one's death are of course susceptible to termination (no more offspring, for example). They continue beyond one's physical death only

through the architective success of what one leaves behind. In some sense our own personal narratives are the continuing processional narratives of our ancestors and will subsequently follow through to our children.

Ruling out spiritual possibilities not consistent with the ideas of connectivity and architectivity means ruling out most of our traditional spiritual pantheons. Yet it is these traditional concepts of spirituality, passed down through the ages, that have moulded our expectation of a non-material basis to material reality, and a singular one at that. Even the most rational of scientists seek the perfection of a unitary Theory of Everything. Abandoning these traditional concepts could facilitate our acceptance of a material basis to material reality and the likelihood of a fundamental duality.

Chapter 11: Spiritual Possibilities

Full fathom five thy father lies.
Of his bones are coral made.
Those are pearls that were his eyes
Nothing of him that doth fade,
But doth suffer a sea-change
Into something rich and strange.

Shakespeare (from 'The Tempest')

So how might we find spirits in our material world, spirits that conform to the ideas of connectivity and architectivity and do not contradict scientific evidence? In this chapter I offer some suggestions. (I must stress that these suggestions do not follow from scientific evidence, only that they do not contradict any.)

Natural Spirits

We can regard the laws of nature as spirits because they have an essential influence on us and we cannot control them. We may have learned to describe and manipulate them for our convenience but we cannot control or alter the laws themselves. In this sense, for example, the fundamental forces of physics can be regarded as spirits - they affect us and there is nothing we can do to alter their affecting us or the ways in which they do so. We can also, for example, regard the phenomenon of emergence, say of atoms from subatomic particles, as a natural spirit since there is nothing we can do to prevent it happening under the appropriate conditions. In fact, all natural processes that constitute unavoidable parameters of our being are spirits to us in this sense.

Our pantheon of natural spirits is not restricted to fundamentals such as gravity and emergence. We are confined to a planet (or perhaps in the future to a spaceship), to breathe air and search out or produce food and

water. All these parameters on our existence are effectively natural spirits to us. Our biological processes, including such diverse processes as endocrine systems, gender expression and DNA replication, are also unavoidable parameters of our being and can be regarded as natural spirits. Much of our social interaction follows unavoidable natural guidelines, such as our family structures, gender roles and our subservience to or dominance of others. Jungian psychology has enumerated an extensive range of 'archetypes' considered to parameterize the unconscious behaviour of all humans, and I see these archetypes as constituting natural spirits to us. (Many religions also offer spirits devoted to particular natural aspects of our lives - like Venus as a spirit of love and femininity - but these often have features contrary to the limitations of connectivity and architectivity.)

Connectivity and architectivity themselves, as fundamental principles of interaction, can also be seen as natural spirits. The architective dominion of our lives is also an unavoidable natural spirit to us. Meaning in general, the fact that the universe makes sense at all and can do so in so many ways, can be seen as a fundamental natural spirit to us.

Connective Systems and Their Holisms

Architective wholeness was described as the emergence from architective interaction of an object that is separately identifiable from its constituent objects and from any external objects it interacts with, having the ability to participate in external interactions as a single object in its own right. Such wholeness is not available to connective phenomena. Now although a connective in its entirety is not such a whole, the motions of any one of its participating objects cannot be fully described without considering the influences of *all* the other objects participating in the connective, together with the influences that all the other objects have on each other. Furthermore, these influences vary as the objects move or change, whether in response to each other's motion or in response to waves passing through them.

That is, the motion of any one participating object in a connective cannot be completely described without considering an effective influence of the connective in its entirety, including any waves that may be passing through it. To make the distinction with an *architective whole*, I say that a connective in its entirety comprises a *connective system*.

A connective participates in external interactions as the collection of the individual external interactions of all its participating objects. But once again, the net effect on an external object cannot be completely understood without recognizing that the individual objects of the connective are all influencing each other and these influences are changing. So the influence of a connective on an external object can also not be fully described without recognizing the connective as a system.

Actually describing a connective system of more than two objects is simply not feasible since one would have to describe the motions of all its participating objects simultaneously and continuously. It's like attempting to shoot a moving target when the slightest motion of one's gun makes the target move. For those who are familiar with them, the n-body problem of physics and Mach's Principle illustrate the impossibility of fully describing a connective system.

I earlier portrayed connectives as being 'discernible' rather than 'identifiable'. In the light of the systemic integrity of every connective, I need to refine that portrait: A connective is discernible in the way that all its participating objects respond, and respond as separate *but interacting* individuals, to a disturbance.

I also want to make a fine point that will become significant later: I want to distinguish the systemic influence of a connective from the influences of its individual objects. That is, I want to extract the purely systemic influence of the connective to a construct I call its *holism.* The influence of a connective system can thus be regarded as comprising the interactive influences of its individual objects together with the influence of its holism.

Though a holism influences the objects of its host connective and any external objects they are interacting with (and they in turn influence it), the influence attributable to a holism is not that of an interaction. A holism is not itself an object and so cannot participate in interactions. For convenience I say that a holism *apprehends* its affected objects.

The influence of a holism on an object it apprehends will always be less than the interactive influences of the object's nearest neighbours in the connective, if not less than the interactive influences of all the other objects in the connective. At least some of the interactive forces of a connective system will be strong in comparison to the apprehension by its holism.

Holisms are not objects, they are not capable of interaction, they can never be fully described, and their apprehensive influence is always obscured by local interactive influences if not by architective constraints: Holisms are *essentially hidden*.

While an architective whole has hierarchical control over its internal objects and organizes their serial meaning, a holism influences its apprehended objects but does not control them nor organize their serial meaning. Indeed, objects apprehended by a holism also influence the holism, since they contribute to it. But no one apprehended object can control the holism since it is one of many contributors, and being so loosely connected, the apprehended objects cannot conspire sufficiently tightly to control their holism. To control a holism one would have to completely enclose its host connective in an architective container and even then the control would only be partial.

The Cosmic Connective System

It was noted earlier that at very large scales only the connective mode of interaction is evident. The universe at that scale effectively comprises a *cosmic connective system*, thanks at least to the universal susceptibility of everything to gravity.

That system has tendrils into scales smaller than the purely connective window. Objects such as asteroids, spaceships and interplanetary free-floating molecules, being subject to gravity, also participate in the cosmic connective system. Many of these objects will be involved in non-gravitational connective interactions as well, such as plasmic (electromagnetic) interactions in and around suns, so these electromagnetic interactions contribute to the cosmic connective system too. In fact, any unbound object in any incompletely contained connective is participating in the cosmic connective system, including all the unbound molecules of planetary atmospheres, the unbound plasma particles of suns, all aircraft and birds that are flying (rather than grounded), the rocky planets themselves (as including their grounded aircraft and birds), the dust-motes floating in the air around us, the water molecules and fish in all the oceans, to name but a few.

What may not be participating in that cosmic connective system are all the unbound objects' architectively constrained and contained components, such as the cells and molecules of which the birds and fish are constructed, or the molecules bound in rocks, and any connective systems that these bound architectures enclose completely. These architectively constrained components may participate partially if they respond to limited extents within their bounds of constraint, as for example, trees and grass connectively wave in the wind to the limits of their ranges and my lungs inhale what air they are capable of. Such partial participation still permits an enormous capacity for connective serial meaning as the tree leaves and my lungs may vibrate in their participation. They may also participate fully if sublimated, but then it is not them that are participating but their constituent objects. Waves can sublimate architectures under the right conditions and may connect the architecture's bound components and their contained connectives into the cosmic connective system.

Component objects not participating in the cosmic connective system are enclosed in containing architectures, and since the containing architectures are ultimately spatially limited they, as wholes, are then participating in the cosmic system.

In the figurate window of scale that is our home, the cosmic connective system is accessible to us. My breath, the flow of air in the room and out the open door into the garden with its trees and grass waving in the wind, the flying birds above, the clouds drifting in the sky, the other planets, suns and galaxies, all these interact with each other, directly or indirectly, in the cosmic connective system.

So the cosmic connective system encompasses the entire universe except for those pockets of architecture, some having connective systems inside them, that are constrained from fully participating in it. My body as a whole, as an object in itself, is not fully participating in the cosmic system when I am sitting on a chair and am in figurate contact with the earth. It is the earth-including-me-on-a-chair, as a whole and unbound object, that is participating fully. Alternatively, should I jump up off the chair and interrupt my figurate contact with the earth, then for that brief moment my body is participating fully in the cosmic connective system. However, even when not participating as a whole body, I participate through the connection of my breath, through my connective senses and through my brain's connective

responses to my senses. And of course I participate fully through my bodily movements when not in figurate contact with the earth. Oh, how I yearn to fly!

Systemic and Holistic Spirits

A connective system that is a spirit to us I call a *systemic spirit*. I also distinguish a *holistic spirit*, the holism of a systemic spirit, to include only the milder influences of the system's holism without the system's interactive forces. (Again, the reason I distinguish between them will become clear later.) The cosmic connective system is a systemic spirit to us and its holism a holistic spirit. I call them the *cosmic systemic spirit* and the *cosmic holistic spirit*. These cosmic spirits permeate the entire universe at every scale but their influence is limited inside pockets of architecture.

The atmosphere of our planet is a systemic spirit to me and its holism a holistic spirit. Why? Because the atmosphere influences me, through my connective interactions with the air molecules around me and their interactions with air molecules around them and so on, imaginably extending to all the air in the Earth's atmosphere. There are nuances of its holism as my body is touched by the wind, as the air warms or cools me, in the fragrances reaching my nose, in the sounds reaching my ears, in the filling of my lungs and the pulsing of my breath. But the atmosphere as a system is beyond my control and so is a systemic spirit to me, and its holism a holistic spirit. (This incidentally is a really nice example because the word 'spirit' is derived from the Latin for 'breath'. Many have conceived of the air as a natural spirit, but few (if any) have conceived of our planet's atmosphere as a spirit!)

Similarly our solar system and galaxy are connective systems that influence us (much more remotely of course) and are beyond our control, so we can consider them and their holisms as spirits too. When swimming in a lake or ocean, we could consider the lake or ocean to be systemic spirits, and the fish that inhabit them could also consider them spirits, were they capable of that consideration.

Connective systems (and their holisms) such as of individual galaxies or solar systems, suns, oceans or lakes, are participants in the cosmic connective system and contribute to the cosmic holism. They can be

considered visages of the cosmic system, and their holisms as visages of the cosmic holism.

The serial meanings available to systemic and holistic spirits are necessarily purely connective, set as they are in their host connectives. Connective systems and holisms are themselves not able to engage in interaction and specifically cannot engage in architective interaction.

The Gaia hypothesis comes very close to regarding our planet not only as having a holism, but a holism that intentionally acts to provide an environment optimal for the maintenance of life. However, the Gaia hypothesis differs from this concept of a holistic spirit in that it includes architective elements as well.

Hierarchical Spirits

The relationship between a country's government and its citizens is architective. The offices of government are ranked in a hierarchy with its governed people at the bottom and its head of state at the top. Government offices control and organize its people and not the other way round. That is not to say that government regimes cannot be broken or changed - a democracy offers mechanisms whereby the individuals holding offices can be replaced according to the votes of its people and a regime can be broken by a superior military force or changed from within by sufficiently powerful individuals or groups; but any person exceeding the bounds of government control on their station and not able to muster the necessary power to change the regime could lose their office, be ostracized, imprisoned or even executed.

In the sense that I described spirits as both influencing us and being beyond our control, people can consider their governing offices as spirits. This may seem a little bizarre at first, but consider that social objects obey rather than interact with objects higher in their social hierarchy. Within their hierarchy, social objects only interact with their peers, that is, with objects of the same rank. Higher offices emerge from such interactions, which then control and organize the offices they have emerged from, rather than interacting with them, while lower ranked offices are subservient. This is not to say that people occupying higher offices than one's own should be considered as spirits, only the offices themselves, for we can interact with individual

people occupying higher or lower offices and even have empathic relations with them, but our official roles are ones of subservience or authority.

Similar regimes of subservience and authority can be found in business corporations and religious institutions, and we could really consider all institutional offices of a higher rank than our own as spirits. In this way a church leadership can be regarded as a spirit in its own right regardless of the spirits the church's dogma may advocate.

We are not only controlled and organized socially. We are controlled and/or organized by our environment, by our planet, by our houses and buildings, by the architecture of our bodies, by our languages and by our technologies. All these have hierarchical levels of control and serial meaning to which we are subservient.

In fact, all architective wholes, physical or social, could be considered spirits by their internal objects (assuming they are capable of such consideration) because the wholes control and organize their internal objects while their internal objects neither control nor organize them. In this role I refer to architective wholes as *hierarchical spirits*. A human body could be considered a hierarchical spirit by that body's gut bacteria, for example, should the bacteria be capable of such consideration. Looking down the tree of a hierarchy, those who consider an architective whole to be a hierarchical spirit, I call the spirit's *venerators*.

What we are seeing here is a possible ranking of hierarchical spirits: Architective wholes that we regard as hierarchical spirits may themselves have architective wholes ranked above them which they regard as hierarchical spirits and which regard them as venerators. That is, objects at any level in an architective hierarchy might regard higher ranked objects as hierarchical spirits, regard peer objects as mundane and regard lower level objects as venerators (if they are so capable).

Architective wholes can only be considered hierarchical spirits by their internal venerators. Any interaction they may participate in, whether with a peer inside their hierarchy or with an external object, is mutual and devoid of any element of hierarchical control. A business corporation, a church or a government is a hierarchical spirit to an employee of that corporation, a member of that church or an inhabitant of that country, but not to anyone who is outside their hierarchy.

Since architective wholes can only be considered hierarchical spirits by their internal objects, all possible serial meaning in their role as hierarchical spirits is internal to their hierarchy and is architective, while any serial meaning outside their hierarchy would be mundane.

Processional Spirits

The organization of serial meaning in an architecture becomes particularly interesting when the architecture is a step in a processional narrative, that is, when one or more of its narratives continues even though the architecture has metamorphosed into or parented another. Such continuing narratives organize the architective serial meaning and narratives in all their processing architectures, including any hierarchical or natural spirits.

A processional narrative can be regarded as a spirit by the inhabitants of its processing architectures (so capable) since it organizes their narratives and they neither organize it nor control it, so to them it is a *processional spirit* and they are its venerators.

The continuing habits and traditions we inherit from our ancestors and pass on to our children are examples of processional spirits.

Like a holistic spirit, a processional spirit is not an object and so is not capable of interaction. It is an ongoing narrative of architective serial meaning that organizes the architective serial meaning of its venerators. It is only a spirit to the inhabitants of its processing architectures and has no venerators outside its processing architectures.

A processional spirit would organize the architective serial meaning at every level in every one of its processing architectures. Here we have the possibility for all the architective phenomena participating in any one processional narrative to be organized by an overarching spirit even though the processing architective phenomena are not aggregated into a single architecture. Thinking globally, an overarching *planetary processional spirit* could be organizing the architective serial meaning of an entire planet and everything on it - including every hierarchical spirit on it - without losing the diversity of architective structure on that planet. Indeed, in the case of our own planet, every *architective* narrative, including our own personal

narratives, those of our institutions, corporations, nations and religions, could be organized by such an overarching planetary processional spirit.

Since the physical sizes of architectures and their scopes of control are spatially limited, the organizational capacity of a processional spirit could not extend much beyond the planetary scale.

Unlike a hierarchical spirit, a processional spirit is incapable of engaging in interaction in its own right, so it can have no serial meaning outside of its processing architectures. All its serial meaning is internal to its processing architectures and is architective.

Unimodal Spirits

Many of our natural spirits display mixtures of connective and architective serial meaning, but all the other spirits mentioned above - in their roles as spirits - employ only one mode of serial meaning. The serial meaning of systemic and holistic spirits would be purely connective, for they are not able to engage in interaction in their own right (and specifically not in architective interaction), while the internal serial meaning of all hierarchical and processional spirits (which is the context in which they can be regarded as spirits) would be purely architective.

I refer to spirits capable of only one mode of serial meaning as *unimodal spirits.* Those whose serial meaning is purely connective I call *connective spirits* and those whose serial meaning is purely architective I call *architective spirits*.

Since architectures are spatially limited, every architective spirit, whether hierarchical or processional, physical or social, is limited to its spatial locality in the cosmos. As architective wholes, hierarchical spirits at the limit of their spatial capacity may yet be capable of connective interaction but not architective interaction. They are isolated from all architective interaction, including with hierarchical spirits in other cosmic localities. Processional spirits are not capable of any interaction at all and are isolated from all external spirits regardless of their cosmic localities.

The events by which the architective spirits in each cosmic locality emerged will likely have been different (assuming the possibility of architective spirits and their venerators in other cosmic localities). Together, a plethora of

different architective spirits might pepper the cosmos in a manifold of limited occurrences, with each cosmic occurrence architectively isolated from every other. The cosmic systemic and holistic spirits, on the other hand, are spatially universal and universally scalable, and can be manifest everywhere.

Spiritual Influence

The apprehensive influences of holistic spirits are always weaker than the interactive influences of some systemic spirits; they are weaker than those of natural spirits, whether connective or architective, and are extremely weak in comparison to the controlling and organizational influences of hierarchical and processional spirits. The effects of holistic spirits would generally only ever be discernible in the absence of competing influences. Practices such as meditation specifically aim to provide an environment free of interactive and organizational intrusion, where the extreme subtleties of holistic influences may be more easily recognized.

Since the cosmic holistic spirit is manifest everywhere and its influence supremely weak, it is background to absolutely everything. There is nothing which it might foreground. From a connective point of view the universe does not have an absolute emptiness as its ultimate background - it has the cosmic holism as its ultimate background. Besides, emptiness can only be construed in an architective sense.

Our appreciation of any spiritual influence would also be dependent on our mode of consciousness. Our default mode of consciousness is architective thanks to the architective dominion, so our capacity to consciously appreciate the apprehensive influences of holistic spirits would be enfeebled not only by their relative weakness but by our own predilection for an architective mode of consciousness.

When discerned, our participation in the cosmic connective system permits us to share in a sense of infinity that architectivity cannot offer. Our participation in architective activity is always a contained experience due to the ultimate spatial limitation of every architecture.

Pure connectivity offers an arena from which all contest is absent and where bodily extinction is irrelevant. It also offers a sense of infinity and universality. In death our architecture is destroyed, but a connective

interaction continues, as does the cosmic system and its holism, if only through the free molecules that constituted our erstwhile bodies. Many religious myths converge on a state of connective purity.

Chapter 12: Unimodal Deities

In the light of an understanding of architectivity and connectivity, some interesting inferences can be made about our deities - those spirits we might regard as being sentient or conscious.

Stripped of their holisms, I see the raw interactions of our systemic spirits being too prone to turmoil to be sentient. At the other extreme, I see our natural spirits as too elemental or regular to be to be expressing a versatile intent. I see these spirits serving as carriers of other sentiences, such as our own, rather than as sentiences in their own right.

However, many of our internal biological processes - which as parameters of our being are natural spirits to us - do show sentience, for example in the way our white blood cells hunt and destroy alien bacteria. These processes are not simply mechanical, and a variety of such sentiences are present at various levels in our biological architecture (and in the architectures of all living organisms). We are reliant on these processes to maintain their integrity, and for this they (and we) depend on their sentiences. But processes at our internal levels are controlled and organized by the levels above them. We control them and organize their serial meaning rather than them controlling or organizing us. In the strict sense of my definition these internal biological spirits are deities to us since they are sentient, but they have no effect on us other than as natural spirits.

Our holistic, hierarchical and processional spirits, on the other hand, influence, control or organize us significantly, and I do see possibilities for sentience among these spirits (which I will elaborate in the next chapter). As deities these spirits would all be unimodal, and the singular modality of their sentience offers insights into their natures.

<p style="text-align:center">*</p>

Imagine having a unimodal sentience, being able to operate in either the connective or architective mode but not both, unable to switch between them as we are. With a purely architective sentience, for example, one

would spend one's entire life with no concept of informal relationship and no appreciation of waves and vibrations. Contrarily, as a purely connective sentience one would have no concept of identity and be incapable of exact enumeration, of reliably storing information or of exercising control.

Strangest of all, one would find only the serial meanings and narratives of one's own mode comprehensible. Operating connectively, one could neither understand architective activity nor could one be understood by someone else who is operating architectively - and vice-versa. Being blind to serial meaning in one's opposite mode, the narratives in one's own mode would appear to be the only meaningful narratives, and would appear seamless even though reality might be skipping between modes.

Welcome to the worlds of our unimodal deities.

Just as I have characterized unimodal spirits as connective or architective spirits, I can label our unimodal deities as *connective* or *architective deities*. Our holistic deities would be connective while our hierarchical and processional deities would be architective.

Connective Deities

Connective deities would be capable of connective sentience only. They would comprehend only connective serial meaning, evaluate their experiences only in terms of connective serial meaning and would play only connective games. Architective events of any kind, though affecting their reality, would be meaningless, inexplicable and generally irrelevant to them. Objects, as they architectively emerge or disrupt, for example, would appear to come out of nowhere or disappear without reason.

In the absence of an understanding of architective serial meaning, concepts such as existence and extinction would be meaningless to them. The same can be said of contests and a fixed identity. No circumstance could be considered necessary to a connective deity, though they may have a preference for one connective circumstance over another. This does not mean that their being would be unproblematic, for storms may rage (and harmonies sing) through connective systems.

Connective deities could influence events but not control them. And their influences could be curtailed, even negated, by architective constraints or

controls (though only within the architective window of scale).

The uncertainty inherent in their activities and their lack of control means that connective deities would be agents with uncertain (but continuing) futures, rather than dictators of destinies.

There could also be no hierarchy among connective deities, nor could games of power be played among them. Some connective deities may exert stronger influences than others (for a while, in some localities), but none would be authoritatively superior or subordinate to any other. Their influences would all be fully expressed and interfere with each other proportionally rather than a stronger eliminate a weaker.

A connective deity could possibly be embodied in a connective like the wind, the sun, a fire, smoke, an ocean, a gaseous planet like Jupiter, or the entire universe, but not in anything having an architecture such as a stone, a book, a person, an animal, the moon or a rocky planet like Mars, nor any social institution. It could be symbolically represented by such objects but not embodied in them. Of course, it may not be embodied at all.

In the absence of architective organ-based bodies, connective deities, though sentient, could not have organ-based senses such as we have since our bodily senses all utilize architective functional elements.

We experience and understand connective serial meaning so the activities of connective deities, purely connective as they are, could be meaningful to us, though they would not cover the full gamut of our experience.

Architective Deities

An architective deity would only be capable of architective sentience. It would comprehend only architective serial meaning, could evaluate its experiences only in terms of architective serial meaning, and would play only architective games. Connective activity of any kind would be meaningless to it. The smooth motions of objects, and any waves and vibrations they host, would be understood only as steps between architectively significant locations or objects.

An architective deity would be occupied with matters of position, identity, composition, contest, rank, power and control. It would be emoted by births

and deaths, by clear category classifications, by comparisons and by victories and defeats.

Architective deities would have an all or nothing attitude, a sense of absolute contrast - objects either exist or do not, are for them or are against them; while connective deities would flow through a continuous spectrum of possibility, and host balances/imbalances, harmonies/discords and compromises between these.

A hierarchical deity could be embodied as a physical object, as an organism, a person, a social object such as an institution or an office in an institution, but could not take on a purely connective embodiment such as a wind, a sun, a fire or ocean, or a gaseous planet like Jupiter. It may be embodied in a book, an icon, the moon, or a rocky planet like Mars. It cannot be embodied as the entire universe, for interactions at that scale are purely connective. Processional deities may shift from one architective embodiment to another, or not be embodied at all.

An architective deity could control and/or organize the architective serial meanings of all its subordinates in its architecture (or procession of architectures), including any connective spirits or deities completely contained within its architectures.

An architective deity could only be regarded as a deity by its subordinates. It would not be regarded as a spirit or deity by a peer or superior in its hierarchy or anything outside its hierarchy: to them it would be a venerator or mundane.

Should a hierarchical deity aggregate with another to create a new object, that emergent object could be a deity too if it were considered sentient. Hierarchical deities may thus be tiered in hierarchical levels where the deities at one level regard higher ranked objects as deities, regard peer objects as mundane and regard lower level objects as venerators.

Being an architective whole, a hierarchical deity would be subject to the possibility of demise. If conscious it would have a sense of its own insecurity and act intentionally to avoid its demise. A conscious processional deity, though also architective, would not be so vulnerable to demise since it persists across reconfigurations of architectures, and may even relish the destructions and reconstructions of its processing architectures. However,

being a narrative, it would be vulnerable to termination and so would strive to ensure the continuation of its narrative (and thus a sequence of architectures to provide its narrative), in order to ensure its own survival.

When reality, through following a connective serial meaning, appears to a conscious architective deity to make an inexplicable adjustment, the fact that the event was beyond its comprehension and control would heighten the deity's sense of insecurity and elicit from it preventive strategies.

Our Deities and Us

Since our architective deities would be our architective superiors, they would not interact with us - we would simply be subservient to their authority. They would act on us by controlling and/or organizing our architective activity and perhaps that of our physical and social environment; and by constraining or containing our connective activities (or attempting to do so).

Our connective deities could also not interact with us, but neither could they control or organize our activities. As holisms, they would act on us by apprehending our connective activity and that in our environment, influencing only nuances of our and our environment's connective behaviour.

The apprehensive influences of our connective deities would be extremely weak in comparison to the controls and organizations of our hierarchical and processional deities. Our awareness and appreciation of connective influences would also be handicapped by our predisposition to an architective mode of consciousness.

Our connective deities would have no hierarchical authority over us. Their and our own connective influences would all be fully expressed and interfere proportionally. We can contribute to a successful expression of their influence by limiting our own connective influence or ensuring that our own influences harmonize with theirs. Limiting any architective expressions on our part that hindered their expressions would also increase the significance of their apprehensive influences.

Connective deities cannot be embodied as human beings since humans are architective functional objects. Architective deities could be embodied as human beings but only to non-human venerators - as humans to other humans they would be peers in interaction. Our architective deities could be

socially represented by human beings to other human beings as offices in an institution, in which case the person holding the office represents the deity to us but is not an embodiment of the deity. So our deities, whether holistic, hierarchical or processional, could not be embodied as people.

A connective deity could not talk to us directly using a language such as English (or any other human language) for it has no speech or writing organs (since these employ architective devices). As well, a connective deity would have difficulty constructing meaning by architectively composing words into a sentence, and its communications could have no architective serial meaning. Architective deities could conceivably be embodied as super-human organisms having speech organs of their own but they would more likely be hierarchical or processional deities communicating with us through the speech organs and pens of their office bearers or of the humans they have organized to do so.

Though a connective deity could not talk to us using human language it could communicate with us through constellations of connective events or arrangements such as music. Even though these constellations are vague and transient visages, we could find meaning in them as they pass. Such communications would become obvious when events or arrangements are highly constellated, such as when we notice their profundity or synchronicity or when our capacity to discern their constellation is increased by meditation or the ingestion of a psychoactive drug. I regard my use of the I Ching as a spiritual communication employing an architectively random but connectively constellated fall of coins.

Though without organ-based senses themselves, connective deities might participate indirectly in our organ-based sensations when we respond to these sensations connectively, particularly as the sensations set up vibrations in our brains. I also imagine that, being sentient, a connective deity could have non-organ-based sensations of its own, which we in turn would not experience explicitly but may experience as a mood, for example.

Being architective wholes, hierarchical deities emerge from their lower levels. Our social hierarchical deities emerge from us as their constituent objects. They in turn control us and organize our serial meaning. Thus the deities of many of our religions could be understood as having emerged from our own religious activities. Were it not for the human activities by

which a hierarchical deity is venerated that deity would not exist - no venerators would mean no deity. The religion is the deity, as it were.

Our religions and their deities are not the only hierarchical deities to have emerged from us - hierarchical deities emerge from our political and economic activities as well. Our social hierarchical deities are the self-sustaining institutions we as their members create, and their sentience is reflected in our activities as their members, where these activities would have been different or organized differently in the absence of our membership of their institution.

Since the fields of serial meaning at different levels of an architective hierarchy will likely be different, venerators and their hierarchical deities will likely be playing different games and be preoccupied with different narratives. A venerator's intelligence may not be comprehending of its deity's intelligence, and vice-versa, even though both are architective.

Our architective deities organize our serial meaning around their own existential angst. We might experience a depression or sense of existential insecurity not justified by our immediately perceivable circumstances, and suffer contests and social frictions organized for the deity's existential security rather than for our own. A processional deity, being relatively invulnerable and suffering no immediate existential threat, may well organize contests and social frictions among its lower echelons simply as an amusement.

An architective deity's human venerators are not purely architective as it is. It may feel threatened by connective activities among its venerators no matter how innocent, since it cannot understand or control them and would likely attempt to constrain them.

An architective deity would have an expectation of obedience from its venerators and if it was insecure would demand not only obedience, but symbolic demonstrations of submission, perhaps even worship. Failure to deliver these may invoke acts of vengeance from the deity, to whatever degree of control and organization it can muster. Demonstrations of submission would likely occur through the regular performance of appeasing rituals.

An architective deity is not likely to dispense power or control in the service of an inferior. It is much more likely to sacrifice its venerators in its own interest, and do so with the venerators' consent since it organizes their serial meaning.

Obedience, worship, ritual and sacrifice would be meaningless to a connective deity.

Preferences of the Deities

Conscious deities may have preferences and express themselves with the intention of serving their preferences.

A conscious architective deity may develop ethics of strength, charity, chivalry, correctness, propriety, soundness and reasonableness. It may develop an aesthetic appreciation of constraint, of its mechanics and of the strategies to achieve it. It may develop an aesthetic appreciation of the complexities achievable through architective construction and novelty. But it may also develop a taste for power, challenge, destruction, corruption, deceit and trickery, and develop or exploit aesthetics of fear around existential insecurity. It may even find beauty in aggression.

The preferences of an architective deity as a religion or institution become evident in the activities of its human members, since the members express serial meanings organized by their deity. For example, acts of charity carried out by a religion's adherents in the name of their religion reflect an ethic of charity in the religion as an institutional hierarchical deity (and probably an ethic of the deities advocated by its dogma), while atrocities committed in the name of a religion are also a reflection of the aesthetic of the religion as a deity (and probably of the deities of the religion's dogma).

A connective deity may express a liking for harmonies of motion and be appreciative of constructive interferences or consonances. A connective deity may alternatively express a preference for dissonance, instability and turbulence.

An architective deity might enjoy the aggregational complexities of architectivity, while a connective deity might find profundity in the subtleties, harmonies and grandeur of connectivity.

An architective deity may develop a taste for exactness, purity and perfection while a connective deity may develop an enjoyment of surprise, diversity and uncertainty.

Conflicts between Deities

While connective deities could compete amongst each other in the sense that one may have a stronger influence than another, the result of their competition is a proportioning of their influences rather than a selection of some and a negation of others. All the competing deities would have their intentions expressed. Contests among architective deities, on the other hand, would result in some contestants having their intentions expressed in full while others find no expression at all. Conflicts among architective deities can be contests for existence.

The resources that connective and architective deities might utilize to promote their intents would be entirely different. Architective deities would have available to them the serial meanings of control, precision, organization, contest, categorization and power to achieve their ends; while connective deities could utilize the serial meanings of uncertainty, disturbance, interference and empathy.

In a conflict between architective deities alone or between connective deities alone, the competitors would be utilizing resources and strategies that each would understand. But in a conflict between an architective and a connective deity neither would be able to comprehend the tactics and strategies of the other nor understand the value of each other's resources. More so, neither deity would be directly aware of the other as a sentience while each would experience reality as a seamless continuity of narratives in its own mode - with the occasional inexplicable interruptions. Both deities would be competing in the dark as it were, against an inscrutable and invisible opponent. The unexpected terminations of their narratives and incomprehensible behaviour of their venerators would be the only clues each had to the other's possible presence.

A conflict between an architective and a connective deity would come down to a competition for serial meaning. This would arise when the deities notice incomprehensible gaps in their serial narratives. For the architective deity, the loss of control that a gap signifies is a threat to its existence, and will

blindly attempt to eliminate it, constrain it or contain it in an architecture. For the connective deity, a gap in its serial narrative does not pose an existential threat, only a possible undoing of a preferred aesthetic. The connective deity neither understands the concept of elimination nor the possibility that any intention will not be proportionately expressed, and so harbours no intent to threaten its opponent's existence or negate its expression. The architective deity could not understand that it is not being threatened.

Competitions for serial meaning between architective and connective deities may result in terrifying contradictions for organisms like us, who can comprehend both modes of serial meaning and who find themselves having to choose between actions which appear equally sensible but whose meanings are contradictory.

There can be no conflicts among connective deities alone, not for existence and not for serial meaning. Conflict among unimodal deities requires that at least one be architective.

Chapter 13: A Personal Perspective

I think the spirits I have suggested are all plausible. The question is whether any of the deities are.

The only direct evidence we have of any sentience at all is in the earthly organic life-forms of which we are the prime example. Designating a known sentient life-form such as a human as a deity, say to a pet dog or to that human's gut bacteria, may not be too controversial, but the attribution of sentience to an institution such as a government or to a holism must remain a matter of personal inclination. Up to this point I have attempted to restrict my comments to impersonal and hopefully value-free observations. Now I must jump in the deep end and demonstrate my personal inclination - to see sentience among these spirits. Again, all I can do is offer some possibilities. Proof - verification of sentience - would be too much to ask.

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Firstly, most importantly, and seemingly trivially, I acknowledge the vastness of possibility offered by a conceivably infinite world. We may argue whether infinity is only a mathematical concept, whether the universe is spatially or materially infinite or whether an infinite count can be made of anything in a universe that had a specific beginning. But consider that there is no theoretical limit to how high a vibrational frequency can go. Electromagnetic gamma-rays may display the highest actual frequencies detected so far but there is no reason to preclude the possibility of finding higher frequencies. Infinitely high frequencies imply infinitely small wavelengths, and in the context of this discussion, the spatial resolvability of connective phenomena such as waves is indeed assumed to be infinite. Consider too that, though the extent and resolvability of any one object is finite, the ways in which objects can possibly aggregate, embrace and produce newness is infinite. In the farthest extents and depths of these infinities, beyond the extents of our current scientific knowledge, we cannot preclude the possibility of strange and counter-intuitive phenomena, as revelations in the fields of quantum mechanics and non-classical relativity have shown.

Acknowledgment of an infinite reality does not mean that absolutely anything is possible. Limitations evidenced by empirical observation apply, as do the characteristic behaviours of connectivity and architectivity, regardless of the world's extent or resolvability.

Secondly, I see a possibility of spiritual sentience in the ordering of pattern and serial meaning, by which we find patterns in patterns and serial meanings organizing or interleaving serial meanings. It is not only fixed patterns that can reveal deeper patterns, patterns can morph from one to another to another, where the change happens according to yet another pattern - which may also be changing, and so on. This recursion or *ordering* of pattern and serial meaning, as I like to term it, can be extraordinarily deep, and under psychedelics often appears to be infinite. (I must again stress that I am using the word 'pattern' in the sense of a natural motif rather than a preconceived design.)

It is not only serial meaning but meaning in general that explodes as the ordering of pattern deepens. As a connective example, a radio wave of constant frequency carries a very simple and unchanging pattern, but that wave can be patterned to a new order (while staying at its constant frequency) by a microphone so as to carry a voice - patterned with its many meanings of tone, timbre and musicality for example - and then patterned to a yet deeper order to convey language, knowledge, or song for example.

We often measure our own intelligence by the depth we can bring to, or are capable of detecting in, the patterns and meanings around us. Both connectivity and architectivity host infinite possibilities for the ordering of pattern and meaning.

Thirdly, I see possibilities for spiritual sentience in capacities for wholeness, connectively in the holisms of connective systems (possibly infinite as in the cosmic connective system) and architectively in the novelty of emergent wholes and their fields of meaning (again, infinite with regard to aggregational possibilities).

<p style="text-align:center">*</p>

The hierarchical spirits of our social institutions intelligently impose many orders of pattern on our lives, so I attribute sentience to them even though their sentiences are manifested through the expressions of their human

office-bearers. Though their human office-bearers are conscious, I do not see these institutions demonstrating an awareness of their own sentience, so I acknowledge our hierarchical spirits as *hierarchical deities*, sentient but not conscious.

The coherence and connectedness of the cosmic connective system has been made clear by my psychedelic experiences, but I have also seen in it a responsiveness to me as a conscious being that can be reflective and playful, indicating the presence of consciousness. I am not able to associate this responsiveness with any individual connective interactions, and so associate it with the holism of the cosmic connective system rather than any of its interactive forces - with the cosmic holistic spirit rather than with the cosmic systemic spirit. So I attribute consciousness to the cosmic holistic spirit, and refer to it as the *Cosmic Deity*.

Earlier I mentioned the possibility of an overarching processional spirit organizing the architective serial meaning of a planet without losing the diversity of architective structure on the planet. I see planet-wide orders of architective patterning displaying a mindful intent that I cannot associate with any one being or institution, so I have come to accept the presence of a sentient processional spirit of our entire planet, albeit with great reluctance (and with no psychedelic justification) on my part. This spirit appears to acknowledge my consciousness and play with me, purely architectively, often displaying a most cruel sense of humour. I treat it too as being conscious and genuflect to it, subserviently, as *our Planetary Deity*.

While our natural spirits may affect our behaviour when our capacities are curtailed by their malfunction, for example when an internal organ fails or is in poor health, I see none of them responding to me as a conscious being. I must allow that they may yet be conscious of each other within their own fields of meaning, but those fields do not include my consciousness - and my own fields of meaning do not include theirs. Sentient some natural spirits may be, but to me they are not conscious.

In summary, I see our lives as being parameterized by a multitude of natural spirits, being governed by sentient hierarchical deities expressing themselves through their social organization and control of us, while we participate in an invisible apprehension with a conscious Cosmic Deity and a pervasive organization by a conscious Planetary Deity, these two concealed

in the higher orders of wholeness and patterning in our material reality. It is these latter two Deities that constitute the greater spiritual mystery for me.

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Of course this is all presumption on my part but it is not just a wild guess. I embarked on this enquiry because my experiences of connectedness under psychedelics were so compelling, and this exposition has not contradicted those experiences.

There are implications to these presumptions that we may baulk at but should not neglect. Firstly they imply that the two Deities have their own ongoing narratives (in their corresponding modes) and are aware of their own sentience and continuity. Like us, I see them having a sense of self, not centralized as we are (since one is a holism and the other a disembodied processional narrative), but personalities or psyches nonetheless, each with its own character and in its own mode. The second implication is that these personages significantly affect us, in that our Planetary Deity organizes the architective serial meaning on our planet to a very large degree while the Cosmic Deity subtly influences every uncontained connective event in the cosmos. This is not to say our lives are totally determined by them, for our Planetary Deity has no capacity for control and it cannot always successfully organize events to its intent, while the influence of the Cosmic Deity is so mild that it rarely results in events actually reflecting its intent. We are influenced to much greater extents by our natural spirits, by our social institutions as hierarchical deities, and by the stronger interactive forces of the cosmic connective system (which obey neither Deity).

In the previous chapter I outlined some general inferences that can be made about unimodal deities by virtue of their purely connective or architective features. In this chapter I want to describe the characters of the Cosmic Deity and our Planetary Deity as I have become aware of them rather than being deducible from their unimodal natures.

The Cosmic Deity

Generally speaking, connective deities may equally express a preference for turbulence as for harmony. My experience is that the Cosmic Deity has a preference for harmony and takes pleasure in profundities and excitements

of harmony while bearing dissonance and turbulence with patience and equanimity. It is also generally unperturbed when things don't make sense to it, as when events follow architective serial meanings. It appears to be quite happy even when its narratives are terminated by architectivity though it cannot understand how or why. The only times I have seen it distressed is when an opportunity for a profound harmony is lost or when a momentous connective narrative is prematurely terminated, since these are relatively rare, and nobody, not even a Cosmic Deity, can produce them at will. It may employ its influence to promote these but it does not have the strength or control to ensure them.

I have come to understand the Cosmic Deity's appreciation of harmony in the same way that we 'melt' in the presence of beauty. It is overcome with awe, gratitude and love when confronted with the profusion of harmony the world offers. It expresses its feelings in a song, warbling subtly through spectra of vibration in search of responses and harmonies, and reveling in them when it finds them. As the subtle influence of the cosmic holism, this pervasive song is background to absolutely everything - the proverbial "sound of one hand clapping". We are never completely alone: the universe is always singing at us. Connectively speaking, our spiritual aim is to discern this song, thereby tuning our consciousness to that of the Cosmic Deity. We need quiet environments rich in connective subtlety to hear it.

I see the singing of the Cosmic Deity mediating our connective attention. While we need attend in the connective mode in order to comprehend connective serial meaning, that connective attention only reaches its full potential when both it and the events we are attending to are tuned to the Cosmic Deity's song (and so to each other). An example is how one piece of music will thrill me while another of the same kind, authorship and quality fails to touch; yet at another time, when the Deity's song has moved on, it may be the other music that pulls at my heart-strings. Expressions of the Deity's song also attract our interest, since they offer more and deeper orders of pattern, allowing the profundity of an occasion to escalate. The Deity's singing draws our intuitions to where depth of connective attention may be found. For us, the Cosmic Deity's song is a perennial but capricious facilitator of connective attention.

I previously described attention as a feature of consciousness rather than sentience. Attention, and the facilitation thereof, is an affair between

consciousnesses.

Though scale is irrelevant to pure connectivity, I suspect it has some relevance to the profundity available to the Cosmic Deity. I'm guessing that the architective window, and probably even more so the figurate window of scale, offers an exceptional diversity of objects and fields of serial meaning to play in. I suspect that the Cosmic Deity finds our earthly scale to be a very rich spring of connective profundity, offering its greatest depths in the empathic relationships humans and many animals engage in - the relationships we call love.

Our Planetary Deity

Generally speaking, architective deities might equally express a preference for construction as for destruction, for propriety and reasonableness as for deceit and trickery, for charity as for power; or varying mixtures of these. My experience tells me that the planetary spirit of our own cosmic locality has a preference for grandiose destructive eruptions rather than the more gradual progressions of constructive development. We, as its minions, find it much easier to sow dissent than build consensus, while years of our constructive efforts are often destroyed in an instant. I also see our Planetary Deity having a liking for challenge and obstruction, deceit and trickery. It appears to confound the creatures of its dominion purely for its amusement and vanity, playing with us by organizing ever more ingenious arrangements to foil our technological and civil aspirations. Murphy's Law we have named this game, and in this game it is happy to exploit the depths of complexity, isolation and fear that we and all functional organisms are naturally heir to. Rather than enjoying the marvels of complex construction the architective world has to offer, our Planetary Deity gets its thrills from the hunt, from pitting organisms against each other in contests to the death - that most terrifying spectre of ultimate disruption. We see our Planetary Deity's organization of us vividly portrayed in the violence that permeates our political and cultural expressions, while our few triumphs are reflected in the wonders of our technological accomplishments and the integrity of our academic and legal edifices.

But I see another more sinister aspect to this cat-and-mouse play. Being an architective narrative, our Planetary Deity is desperate to avoid its own termination. To this end it requires organizational mastery at all times and

so aims to impose an overarching architective serial meaning to everything. Its own narratives are not broken by the demise of any one object while the constant construction and destruction of its partaking architectures ensures that an overarching architective serial narrative endures. It does not care what is being built or destroyed, or who is winning or losing, as long as construction, destruction, winning and losing are what's happening - that is, as long as the serial meaning along which reality is unfolding is architective. It attempts to constrain, contain or eliminate all interaction that is not architective. Of course such an aim is not achievable but that does not deter it from trying.

To this end, I see our Planetary Deity organizing a fierceness to our social isolations, and promoting frictions between us well beyond the requirements of the architective dominion. Were it of a different mindset, we might enjoy a greater degree of civility and reasonableness in our dealings with each other without contravening the architective dominion. Were it of a different mindset, it might even recognize the impossibility of its aims and permit our dalliances with connectivity rather than organizing such a fierce interdiction. Our Planetary Deity has developed an aesthetic of fierceness, devoid even of the architective characteristics of chivalry and fairness.

In line with its singularly architective comprehension, our Planetary Deity assumes any interaction not following its organization to be under the organization of an opponent (in contest). Opponents must be dealt with by destroying them, by constraining or containing them, or by taking their resources for oneself. If you don't do it to them they will do it to you. Uncontained or unconstrained connectivity is unresponsive to its organization and is indicative of the presence of an opponent, so any dalliance with uncontained connectivity on our part arouses a defensive response from our Planetary Deity. And while it may amuse itself with our fallibility, nothing arouses its ire like our choosing a connective mode of consciousness. Our Planetary Deity is one very jealous god.

Another way to understand this is to realize that our Planetary Deity is utterly alone. Being at the apex of architective possibility in its locality, it is not capable of relating with any other to whom it might show consideration, either as a peer or as a superior. It has no capacity for equivalence in relationship. We, and everything it can meaningfully relate with - which is

everything on this planet - are its subordinates, game, not worthy of respect or consideration.

This is a very sad state of affairs for us, for there may well be more enlightened planetary narratives on other planets in the cosmos. We simply have the misfortune to suffer under a tyrant. Perhaps in cosmic terms this tyrant is yet a child and might mellow with age.

What this has meant for me personally is that my many attempts to redress the architective dominion in my own life have been thwarted, significantly in a number of crucial situations, by events so unlikely that I can only explain them as a fierceness on the part of our Planetary Deity. It would appear that as I have moved to redress the architective dominion in my life, the intensity of architective distraction has increased in an attempt to force my attention back to architectivity. Against such a powerful adversary I have no counter other than to lick my wounds and stand my ground as best I can.

Another way in which I have experienced our Planetary Deity's obsession with architective serial meaning is in the sense of it demanding my full attention. I personally am happy to perform the architective chores necessary to my existence and I do these dutifully and cheerfully, often delighting in the architective complexities I encounter. But performing my architective chores and participating in architective complexity is not sufficient to satisfy our Planetary Deity's requirement for my attention: It wants my attention to be *exclusively* architective, which means playing only its games, which means continually contesting with it and my fellow humans, and doing so with fierceness. I am of a pacific rather than a warlike disposition and find many of its games distasteful. Besides, playing with it on these terms would mean relinquishing all choice of connective consciousness, which I am not willing to do.

Our Planetary Deity does not compromise - if you're not for it you're against it.

I see our Planetary Deity taking pleasure in our epic human dramas of heroism, empire, downfall and dethronement, especially when these are richly laced with intrigue, treachery and spectacles of violence. It likes a good story, a grand and complex (architective) plot, and I suspect it enjoys our expressions of these in our theatres. Perhaps our own enjoyment of these spectacles arises from our contribution to its narrative.

In spite of its fierceness I do not associate an aesthetic of bodily pain with our Planetary Deity. I see our experiences of bodily pleasure and pain to be vibratory, connective phenomena in our brains, meaning that our experience of them would be architectively meaningless. I see our Planetary Deity sustaining its warlike passions without any comprehension of the physical pain it causes us, much as a butcher has no feeling for the animals being slaughtered. And if bodily pain is architectively meaningless then so too is compassion for such pain.

If we felt no pain we would all be slaughtering each other in service to our Planetary Deity's bizarre taste in architective spectacle and drama (much more so than we are doing now). Strange as it may seem, our susceptibility to pain is the connective antidote to our wholesale self-destruction.

Though without comprehension of our bodily pain, our Planetary Deity delights in our existential angst and bodily and social disruption, and may even have learned that these are sure-fire ways to interrupt a connective consciousness on our part. Though compassion in general need not be architectively meaningless, it is nowhere evident in our Planetary Deity's character.

Them and Us

Our sentience is not purely architective as our Planetary Deity's is. We comprehend and express both architective and connective serial meaning. Our Planetary Deity makes every effort to constrain or contain connective expressions on our part through whatever organizational mechanisms it can muster, be these political or economic channels, social customs and frictions, physical contrivances or threats of eternal damnation.

Our sentience is also not purely connective as the Cosmic Deity's is and our architective capabilities allow us to do things it cannot do. They allow us to initiate and control connective events using architective means, for example by making music using architective instruments. Humans can make music - and make love - rather than just waiting for it to happen. (How successful our making will be depends on our attunement to the Cosmic Deity's song.)

Our sentient involvement in their narratives has meaning for both Deities. An agile human connective sentience can enrich the narratives of the

Cosmic Deity while a powerful human architective sentience can play a deciding role in the dramas of our Planetary Deity. A thoughtful human architective consciousness can enhance the profundity and intensity of connective harmony while a fierce, wily or authoritative human architective consciousness can exaggerate the intrigues of challenge and deceit.

Our conscious attention is valuable to both Deities. Both have an interest in not having their narratives terminated. When a contradictory outcome would arise from our following a narrative of one mode or terminate a narrative of the other, our mode of consciousness becomes important for them, possibly deciding which of their narratives continues and which terminates. Each time we follow a connective serial meaning rather than an architective one, we step out of our Planetary Deity's narrative.

Veneration of our Planetary Deity is a matter of maintaining our consciousness to the architective mode, while consideration of the Cosmic Deity requires only the continuity of our connective narratives (without them necessarily being conscious - though being conscious of them is extremely valuable to us as humans).

Even when engaged in the architective mode of consciousness, we can put ingredients in place for connective harmony to occur, we can avoid terminating a harmony when it does occur, and we can architectively support one. Our consideration of the Cosmic Deity can comprise not only a thoughtful directing of our attention away from the architective default at critical times but a thoughtful preparation for connective harmony at others. We can select living environments that are less architectively demanding, of ourselves and of others, and thereby *make* peace.

As long as our architective activity does not terminate any narratives our connective sentience is following, or prevent it from following those narratives, the Cosmic Deity is unperturbed. In this way our normal architective activities need not detract from our consideration of the Cosmic Deity.

Tuned to its song, our connective sentiences constellate into visages of the Cosmic Deity. Tuned to its song, our connective experience becomes a visage of the Cosmic Deity's experience. In this way the Cosmic Deity can share our connective experiences and we can share in its. Our Planetary Deity too can share our personal architective experiences, for our personal

stories contribute to its narrative, but it also experiences a domination of us which we do not share in. Our sharing with the Cosmic Deity is mutual though rare; our sharing with our Planetary Deity is one-way and common.

Our Planetary Deity cannot actually execute its intentions since it is a processional narrative and so is incapable of interaction in its own right. As a processional narrative it is also not able to control us. But it is able to organize us (and its non-human venerators) towards an implementation of its intentions. For example, it cannot punish our perceived sins or infidelity directly but it can organize its venerators to do so - and so persuade humans to perform the most heinous acts upon each other. (If their Almighty is so powerful, I often wonder of religious zealots, why doesn't He do His own dirty work?)

Designating an object, symbol or place as sacred only serves the ambitions of our Planetary Deity. For the Cosmic Deity no particular object, symbol or place can be special, while some passing events or constellations are more valued than others. We may revere these Deities for their power or their love but it is only our Planetary Deity who benefits from our sanctification of particular items.

The combative nature of our Planetary Deity constitutes a hazard for those who direct their conscious attention to connectivity, for though our efforts may be supported by the Cosmic Deity, they would be opposed by the much stronger Planetary Deity. Our consideration of the Cosmic Deity is not without risk.

Though we may take this risk upon ourselves in pursuit of connective harmony, we should beware of unnecessarily disparaging the practices of architective veneration (such as the performance of traditional rituals) for they are valued by our Planetary Deity. By disparaging its practices purely on principle we invoke its ire unnecessarily. Though many practices of architective veneration are damaging to our social cohesion (such as the glorification of identity), we should weigh carefully the cost of vociferously protesting them, which is also likely to invoke a reaction from its venerators.

Our connective spiritual ambition is extraordinarily difficult, for not only is the Cosmic Deity as a holism essentially hidden to us, our capacity to appreciate its apprehension is enfeebled by our predilection for architective

consciousness, while any attempt to genuinely solve its mystery is overtly misdirected by a combative Planetary Deity.

The influence of the Cosmic Deity on our lives is not constant. Being so mild in comparison to the influences of the cosmic systemic spirit, our natural spirits, the controls of our hierarchical deities and the organization of our Planetary Deity, the holistic influence of the Cosmic Deity is dependent on the relative strength of these other influences. When the interactive influence of the cosmic connective system is less stormy and open to profundities of harmony the Cosmic Deity can find easier expression. Similarly, when we are sheltered from our natural spirits and the controls of our hierarchical deities, the influence of the Cosmic Deity on our lives can be greater.

Holes of Meaning

The unimodal nature of these Deities reveals an interesting dynamic.

Our Planetary Deity suspects the presence of an opponent whenever events are contrary to its organization - and uncontained connectivity may well be. The Cosmic Deity too becomes aware of the possibility of an 'other' when events are incomprehensible to it or its narratives are unexpectedly terminated. So these Deities can be indirectly aware of each other through 'holes' in the serial meaning they comprehend even though they cannot perceive each other directly. And the more holes they see the stronger they might assume the presence of the other to be.

Consider that our Planetary Deity sees all connective events contravening its organization as threats, even though most would arise from human (or animal) choices and the raw behaviour of the cosmic connective system rather than as intentional expressions of the Cosmic Deity. So the opponent it often assumes is actually us or the cosmic connective system, rather than the Cosmic Deity.

The Cosmic Deity, on the other hand, can comprehend the raw serial meanings of the cosmic connective system and allow for them (since they are connective) even though it can't control them. But it too is unable to distinguish holes in its serial meaning arising from the day-to-day workings

of the architective dominion from those due to the wiles of our Planetary Deity.

<p style="text-align:center">*</p>

Sublimation takes on a whole new relevance in the context of these holes of meaning, for the sublimation of an architecture, while it permits some connective expression, does not affect the architecture's serial meaning. The architecture is neither disrupted, nor are any of its architective narratives altered. Sublimating an architecture by an action that does not challenge the architecture's constraints, does not result in a hole in the architecture's serial meaning and so will not threaten our Planetary Deity. No matter how much connective meaning is expressed in a sublimating action, no holes appear in the architective serial meaning to betray the presence of connectivity. Architectures can be sublimated without fear of reprisal from our Planetary Deity.

In our own behaviour, it often pays to respect the architective restrictions we encounter in our day to day lives - however severe - in order to avoid creating prominent holes in architective serial meaning. Through a well-developed sense of sublimation we can actively pursue what connective meaning is available within the confines of those restrictions.

Them and Them

Since architective deities are only able to comprehend architective serial meaning, any connective influence on an architective deity is necessarily a spirit to that deity. Ironically this means that the Cosmic Deity is necessarily a spirit to our Planetary Deity, albeit an unacknowledged one. Similarly, since holistic deities are unable to comprehend architective serial meaning, any that are enclosed within an architecture must regard any hierarchical and processional deities associated with that architecture as spirits. But the Cosmic Deity is not enclosed in any architecture, so it has no hierarchical or processional spirits even though it is unable to comprehend architective serial meaning.

From the perspective of this book both our own sentiences and those of our deities are features of the material world. Our own sentiences, whether architective or connective, emerge from what might be otherwise dumb

functional organisms while the sentiences of our hierarchical deities emerge from our own. The sentience of the Cosmic Deity is associated with a holism of the material world in its entirety while that of the Planetary Deity is associated with the architective narratives occurring on this planet. These deities did not precede the material world. From this perspective, the fundamental forces of physics are dumb natural spirits to us, the phenomena of connectivity and the architective constraining thereof are dumb natural spirits, the entire basic material universe is itself a dumb natural spirit while all sentiences, even those of our Deities, have arisen in it.

Part IV : Changing the Paradigm

Religious endeavour is often couched in a dichotomy between spirituality and materiality, where the defining element of spirituality is the absence of material substance. The great religions variously describe spiritual deities living in a separate non-material world with the power to intercede in our material world, and it is to such a non-material world that we might proceed after death. The esoteric religious sects remove the separation and say that the spiritual world is coincident with the material world and is directly accessible by the living. This book suggests that the spiritual world is neither separate nor non-material, just hidden.

The esoteric sects, in their search for direct spiritual experience, tend to overshoot the mark. They teach that the human psyche is swamped by material distraction to the point that we are unable to perceive the spiritual world. They promote techniques that assist devotees to recognize their attachment to these distractions, which gives the devotee the power to see through them. Their ultimate aim being to eliminate all material distraction until one cannot but perceive the spiritual world. In deeper and deeper self examination, the devotee reveals and overcomes his/her attachments to wealth, pleasure, status, family, ego and even life itself, in pursuit of freedom from materiality. These techniques for overcoming material distraction are well suited for overcoming architective distraction as well. However, not all material experience is architective. Overcoming the architective distractions of wealth, status and identity are indeed helpful in bringing connective experience into consciousness, but denying connective sensation, pleasure and life itself is to throw the baby out with the bath water.

Relinquishing expectations of graduating to a separate non-material world after death does not necessarily imply an absence of post-mortal spiritual participation. The material world hosts pattern and serial meaning in vast profundity whether we are alive or dead. As living beings we are both architective processional organisms and visages of the cosmic connective system, enjoying both architective and connective meaning in materiality

(though our connective appreciation is largely eclipsed by the architective dominion). Our bodily deaths (and those of every architective organism) involve only the end of our personal architective narratives and sentience, while our connective participation and sentience may continue, free of the architective dominion, as a visage of the cosmic connective system.

Metaphysics and Creator-Gods

The ideas of connectivity and architectivity allow the human spiritual ambition to be satisfied by emergent material concepts, such as the Cosmic and Planetary Deities, without resorting to a metaphysical substrate. We can approach spirituality without having to countenance the source of material existence, whether it be a Creator-God, a first cause, or a physical Theory of Everything.

I am not saying that we should abandon our search for metaphysical substrates, only that they are not necessary to our spiritual endeavour. In looking towards metaphysics for spiritual relief we are looking in the wrong place.

From the perspective of this book, our deities are of this world and parameterized by the same physical principles that we are. They, like us, are players, albeit grander players, in the natural free-for-all that is the universe.

Propositions of all-powerful and all-knowing deities must be seen to be misleading. A Cosmic Deity, universal as it may be, would be limited by its incapacity to comprehend architective serial meaning. Furthermore, a purely connective deity could influence but not control outcomes, and the influence of a holistic deity would be significantly weaker than any competing architective powers. Connectively unimodal deities, cosmic or otherwise, would be riders of change much as we are, adventuring in an uncertain universe. Connectively unimodal deities, cosmic or otherwise, would be neither omniscient nor omnipotent.

Hierarchical deities, on the other hand, could well be omnipotent, but only within their hierarchies. Processional deities, even those at the top of their processing architectures, only have organizational influence so they too could not be omnipotent. No architective deity can be omniscient either, for

there is a world of connectivity beyond their comprehension - and beyond their reach.

Autonomous, conscious organisms such as humans, though subject to architective control and organization, may be rebellious. We may have opportunities to switch from one hierarchy to another, say by changing religions. Perhaps more significantly, we may choose a connective activity over an architective one and thereby disregard a primary objective of our Planetary Deity. So architective deities too, would be riders of uncertainty, but reluctant ones. They'd rather constrain the world to the certainty of their control and to the wishful certainty of their own permanence.

From the perspective of this book, a creator of the universe is a contradiction in terms. The creative process by which new objects emerge into existence is an architective one and therefore limited in both scale and scope to isolated occurrences.

While the idea of a universal (but non-creator) God is feasible from the perspective of this book, it is not feasible as a singular all-encompassing Godhead (even as advanced by proponents of non-duality), since a godhead that is universal would necessarily be purely connective and therefore not encompass architective meaning. And to a god that does not encompass architective meaning, the concept of exact enumeration and therefore of a specific singleness is meaningless.

The idea that an all-encompassing Godhead created the material world as a means of overcoming the loneliness implied by its singular existence must also be criticized in this light.

The idea that humans are a means whereby an all-encompassing Godhead is becoming aware of itself must also be criticized in this way. However, the idea that we are a means whereby a universal connective consciousness is being aware of itself is feasible, since a human consciousness constellated to the consciousness of the Cosmic Deity would be doing just that - but connectively only. The Cosmic Deity may indeed see through our eyes at such times (and gasp at the glory of our vision) but it would still not comprehend architective serial meaning.

From the perspective of this book, any idea of an omnipotent all-encompassing Godhead or a Creator of the universe is a myth. No God, no

human, no anything, could create a galaxy in the shape of a chair and maintain it in that shape. (Hence the cover illustration of this book.)

Even if we were to take universality out of the equation and restrict the scope of the discussion to our planet alone (or any other planet on its own), such that the idea of a singular architective Godhead or Creator becomes feasible and we might validly regard the evolution of life on our planet to have been organized by our Planetary Deity, such a singular Creator would still be uncomprehending of connective meaning and be connectively powerless (other than having a capacity to contain or constrain connectivity) and so still be neither absolutely omniscient nor omnipotent.

There is also a huge moral conundrum associated with the idea of a creator God preceding the creation of the world, namely the existence of evil. Why would evil have been intentionally stitched into the fabric of life? Did God make a mistake in its construction? Is evil here to test us? To keep the riffraff out of heaven? A God that would intentionally create evil, even as a necessary price of Creation, is not benign. The problem of evil also tests the idea of panpsychism, for if materiality springs from a base of consciousness then that base consciousness must include the element of evil.

Our human urge to a unitary spirituality while following a multiplicity of different religions can be better understood when seen in terms of a number-less cosmic holistic spirit coexisting with a number-full multiplicity of planetary architective spirits.

Connective spirituality has remained so thoroughly mysterious because holistic spirits are so deeply hidden. We are also blinded to it by our thrall to the architective dominion. The question of spiritual mystery can of course be dismissed by regarding spirituality as hallucinatory or an intellectual misconception. Such dismissal is generally based on the absence of exact and repeatable proof. But we have seen that in the connective mode of serial meaning the concepts of definiteness and exact reproduction are meaningless, so a denial of spirituality based on the absence of repeatable proof really values only the architective mode of serial meaning.

The Human Privilege

So what roles might humans play on the spiritual stage? Of course we have a role in terms of our own spiritual agendas to become aware of our spiritual context, and we are significant contributors to the purposes of our architective deities, but do we have any role on the cosmic stage?

I mentioned the capacity for humans to be a means for a universal connective consciousness to be aware of itself in a purely connective sense by constellating our consciousness with the Cosmic Deity. But we are also a means for a universal connective consciousness to manage (though not comprehend) the architective aspects of material reality through our ability to comprehend and operate both modes of serial meaning. We, and all living organisms to varying degrees, can actively harness architectivity to initiate, promote and control connective harmonies so as to increase the profundity of the cosmos and thus deepen the gratification of the Cosmic Deity. Again, we can *make* music and *make* love. We can intentionally amplify connective harmonies and intentionally prevent their terminations.

I also suspect that we can play a role in reconciling our unimodal Deities. Since we are able to comprehend and operate both modes of serial meaning, we are in a position to act as intermediaries between them. Even though the Cosmic and Planetary Deities are blind to each other they can learn to navigate around each other utilizing our dual sentiences. More so, since we manifest the ambitions of both Deities, they could also negotiate their desires through us. Were we aware of playing these roles, we might make ourselves more adroit in both modes rather than confining our attention to the architective. I also suspect that were we sufficiently skillful we could act as translators between the modal languages, in that when we witness events in one mode we might understand the consequences for the other mode and make this understanding available to the relevant Deity.

While we bear the pain and discomfort of our figurate frailty we are also able to enjoy the pleasures it holds for us, both architective and connective. Our unimodal Deities are not so endowed, for each can only enjoy the pleasures of its own mode. This privilege is compounded by the fact that we can enjoy both modes successively or even simultaneously - one consciously and the other subconsciously. We can even have one mode feed off the other, for example by having architective beauty impassion our connective expressions or vice versa. While our Deities may only enjoy the pleasures of

their own modes, our capacities to cross-fertilize and intensify our own pleasures may feed into theirs.

Chapter 14: Morality

Let's return to the distinction made earlier between encounters in which there is no differentiation between cause and an effect, such as occurs in mutual encounters facilitated by the fundamental physical forces, and encounters in which some objects can clearly be distinguished to be causes and others effects.

Consider that the line-up of objects going into, and those coming out of, an architecture event will not be the same. Some objects will have been disrupted and/or some will have been created. This distinct before-and-after difference allows the definite identification of the objects that went into the event but did not come out and those that came out but did not go in, as being either causes or effects of the event. The definite before versus after distinction may also allow a specific direction to the event.

Contrarily, consider that the line-up of objects going into and those coming out of a connective event, such as a meeting of waves or an integration of connectives, does not change. Sure their arrangement and visages may have changed but there are no new objects created and no old ones have disappeared. No identities have changed. No object can definitively be said to be the cause of the event and none can be said to be the effect - all the participating objects, visages or waves, are both causes and effects - that is, the event is causally mutual. As well, depending on how the play of visages works out, it may not even be possible to pin-point what has been changed by the event so it may not even have a direction.

Upward and Downward Causation

Many physicists and chemists assert that everything can ultimately be described in terms of the four fundamental forces of physics, in the sense that understanding the fundamental forces of physics allows us to understand the behaviour of atoms which then allows us to understand the behaviour of molecules which then allows us to understand the behaviour of biological cells which then allows us to understand the behaviour of people,

and so on. This line of thinking is known as 'upward causation'. Upward causation can be described in terms of this discussion as architective constraints on the fundamental forces giving rise to sub-atomic objects, the architective interactions between these giving rise to atoms from which molecules emerge and so on. The physicists' and chemists' assertion can be understood in terms of rising levels in an architective hierarchy.

But many biologists say that we cannot understand animal intelligence and free will in this way. They argue that upward causation must be complemented by a downward causation, one in which an animal's mind or brain can control its own organs such as its hands and feet. In terms of this discussion, the downward causation that biologists propose can be seen in the control and organization that higher level objects in an architective hierarchy impose on their lower levels.

Both upward and downward causation are relevant only within architective contexts. Connective contexts are causally mutual.

I mentioned earlier that architective deities act on us through the constraints they impose on us. Now we see that they utilize causation, both upward and downward, to effect those constraints, while connective deities act on us solely through constellations arising from connective apprehension.

Justice

Questions of justice require that someone or something can be identified as the perpetrator or cause of a crime. In a purely connective context identifying a cause is not possible. The concepts of justice, guilt and punishment are relevant only in architective contexts.

Morality

What about crime? What about good and evil? Certainly moral values can be architectively codified in a system of justice or social convention, but what about in the vagueness of purely connective situations? I personally believe in a Cosmic Deity that has a preference for harmony but does that mean turbulence is morally wrong? Is there an absolute morality of what is right and what is wrong? Unless one is an adherent of a religion, its morals would

appear to be arbitrary. For 17th century Europe, the realization that the morality of the Judeo-Christian complex was dogmatically defined rather than an absolute tenet of reality was traumatic for that society. Since then the prevailing opinion of Western philosophy has been that there is no absolute morality.

Of course there are moral consequences for us in our choices of action, for example we may act with regard to charity and propriety rather than self-interest and deceit, but these are morals of our own making rather than morals imposed by reality itself.

The connective and architective modes of meaning, on the other hand, are imposed by reality itself, and these modes can constitute absolute moralities in that we may be required, as an absolute condition of reality, to act either with regard to architective serial meanings such as stasis, precision, and control, or to act with regard to connective serial meanings such as flexibility, indefiniteness and interference.

For unimodal deities there is no such moral choice, for connectively unimodal deities would necessarily follow the connective morality while architectively unimodal deities would necessarily follow the architective morality. But humans are sometimes faced with having to choose between an action whose serial meaning is architective and one whose serial meaning is connective, and when their outcomes are contradictory there is a moral significance in that choice. Every time we choose between an action whose serial meaning is architective and one whose serial meaning is connective, we actualize only one serial meaning and are then personally responsible for having chosen the narrative - and absolute morality - associated with the serial meaning that manifests in our locality. If, in addition, these meanings are significant to a deity, our choices have spiritual consequences as well.

Not understanding that we have such a choice, and actualizing the architective morality by default of the architective dominion is also, for me, a moral failing (but in this case a human moral rather than an absolute one). I am not implying that choosing the architective rather than the connective morality is a moral failing, only that doing so habitually or unthinkingly is, for we have the intelligence to discern between them.

The human moral pickle is thus far more piquant than that of any unimodal deity, for while they may have choices within their absolute moralities, say between construction and destruction for an architective deity, they only have choices within their own moralities. We on the other hand may have similar choices within each absolute morality, but we may also be able to choose between absolute moralities. Choosing between them requires a moral balancing act of which our gods have no inkling.

I spoke earlier of the human privilege, that we can make music and make love for example, but above all, we alone, possibly with other animals capable of organic consciousness, have the privilege of being able to mindfully choose between these absolute moralities.

Questions of absolute morality only arise for humans and other organisms inhabiting the architective window of scale. Beyond that window, in the absence of architectivity, questions of absolute morality do not arise.

Regarding bodily pain and pleasure as vibratory phenomena in our brains means that human morals can be relevant to the Cosmic Deity. Bodily pain may be a connective experience but it doesn't sing. It drones or throbs, enclosed in the parameters of an architective bodily malfunction. Our bodily pain constricts the cosmic connective profundity which the Cosmic Deity so values, while our pleasure can enhance it. So there is a possible spiritual morality in our avoidance of bodily pain and our pursuit of bodily pleasure. However, though our pleasurely vibrations may be harmonious within themselves, they may not be in concert in a wider cosmic context or in accord with our social environment, and this may lead to consequences that are neither spiritually nor humanly desirable. Seeking bodily pleasure is not always appropriate. Divining the appropriateness of pleasure is a delicate act. The avoidance of bodily pain, on the other hand, is always appropriate for both humans and the Cosmic Deity.

Addressing the Architective Dominion

Though not an absolute moral necessity, we have a need to relieve the architective dominion of our lives. Our preoccupation with architectivity condemns connectivity to a subconscious background while we have a natural ability to consciously negotiate both modes. Directing the bulk of our

conscious attention to architectivity results in an imbalance in our psyches which we are subconsciously motivated to redress.

Even when we recognize our overwhelming architective preoccupation, attempts to consciously explore connectivity have to be mounted in the face of an enormous social inclination to repress them. Nor does an exploration of connectivity bring any architective benefit, while explorers have little substance to show for their effort, making social recognition very difficult. Religions often attempt to offer a haven from architective pressures where connectivity can be addressed, but their havens are limited by the confines of their dogmas. These limitations may be far more severe than the havens they offer, so while initiates may be drawn to a religion by a promise of unconditional love, for example, they may then be shackled to its exclusivity, its dogma and its authority.

Where then can we turn to broaden our connective participation? The quietude of meditation is a tried and trusted technique for tuning one's attention to the connective subtleties of one's own breath and blood flow. Nature outdoors offers a wealth of connective entertainments in the play of wind and leaves, the dissolution of clouds and the interlacing of waves on a beach. Human interactions like song and dance offer opportunities for connective play. Music offers a cavalcade of connective patterning, while our sense of touch, especially when reciprocated with a loving partner, can invite orgasms of connective sensation.

Many people turn to drugs as a means of overcoming the architective dominion. This is justifiable in terms of the suggested need to bring connective experience into consciousness and is a reason why drugs can be so attractive. Interpreting the drug experience in this way suggests that compulsive drug use can be alleviated by accepting it as a valid means of connective exploration when accompanied by an awareness of the necessity of maintaining one's architective capacity as well. Drug use that cannot be appropriately moderated can then be seen to be self-defeating. Enforced prohibition leads to a rebellious rejection of all architective behaviour by many drug users, including a rejection of the risks of cleanliness, dosage or even survival. Perhaps more can be achieved by assisting the re-habituation of a drug abuser to an architective sociality that permits careful drug use, rather than to one dominated by prohibition.

The question of architective compliance is a complex one for us. We are usually so behaviourally conditioned that our own choices only echo those of our architective organizers. Even when we are rebellious, the choices we usually discern are between one architective motivation and another - such as a switch from one hierarchy to another or between construction and destruction (as good vs evil). No matter which we choose, the result is likely to be architective. It is only when we choose a connective activity over an architective possibility and thereby terminate the architectivity of our narratives that we are seriously rebellious.

A mindful pursuit of connectivity does not require an abandonment of architectivity or the termination of every architective narrative. Architective activity is absolutely necessary to our bodily existence. All that a mindful pursuit of connectivity requires is that the impulse to connectivity be recognized and accommodated when appropriate, and that the narrative continuity of our connective sentience (without it necessarily being conscious) be considered at all times, even under the severest architective pressures.

A mindful pursuit of connectivity, even when balanced by a healthy respect for architectivity, isn't going to make one wealthy. What can be expected from the effort, apart from the value of the experience itself, is a greater diversity to one's experience, a contribution to the profundity of connective spirituality and a greater awareness of one's participation in the cosmos.

A better understanding of our place in the cosmos can relieve some pressures of the architective dominion. Comparing the finite reach of architectivity to the universal reach of connectivity assures us that the dominion is not universal. Indeed we have only begun to physically conceive of these scales since the inventions of the telescope and microscope. Understanding the natural bias towards architectivity and its overwhelming strength enables us to be more conscious of our choices. We can understand that our architective acts are controlled or organized by architective spirits, while the influences of holistic deities are subtle in the extreme and likely only to become noticeable in the absence of architective controls. The architective contests between corporations and governments may put whole nations at war, but the relevance of holistic spirits lies in scales of subtlety and grandeur beyond our everyday contemplation.

The architective dominion of our lives is compounded over the course of our lives, becoming increasingly complex as our personal history progresses. But as very young children we were not so tightly constrained and many of the connective behaviours we acquired when the world was new to us continue into our adult lives. As adults we may still react with the same pleasure to an aroma that delighted us in childhood. No matter how architectively complex our lives become, there remain a myriad things we do subconsciously that are not architective, and through these things we participate in the cosmic connective system - sometimes even singing along with the cosmic song. Being aware of this, we may consciously seek to widen our connective repertoire.

I am not advocating a single-minded pursuit of connectivity. Our reality here in the figurate window is dominated by architectivity and there is nothing we can do or say to avoid it, no matter how much we may dislike some of its aspects. And many of its aspects are essential for our well-being if not downright enjoyable. It is our architective will to survive that motivates us to willfully constrain our behaviour, avoid danger and preserve ourselves. The architective structures of our societies provide channels and support for getting things done. We have developed architective institutions to constrain destructive architective behaviour and promote constructive behaviour. Remove these and our societies collapse, as is evident when the indigenous infrastructure of a colonized society disappears. Any attempts to suppress our architective natures would result in an equally unhealthy imbalance.

A Fitting Tale

I have just returned from a visit to a friend, having had an insight. She is in her late seventies and has been nursing an ankle she broke when jumping out of a window in order to escape from an orphanage as a child. On the run, her ankle was never repaired and she has been suffering repercussions to her hip and knee from accommodating the ankle for so long.

She has been waiting for surgery on her hip for some twenty months now and is in great pain - and she stubbornly refuses to take any but the mildest painkillers. Living in pain for that long has affected her mental state as much as the physical disability has affected her capacity to get things done.

But this morning she was smiling and laughing in spite of her surgery being postponed once again. Her son-in-law had given her a cheap mobility aid, a sort of chair come shopping trolley on wheels, and she was whizzing around her kitchen nimbly preparing coffee, chucking the odd twirl and bounce off the kitchen counter as she went. Even when she stopped, she was gently rocking herself to and fro on the smooth kitchen floor. What a difference this mobility had made to her demeanour!

It came to mind while watching her that she had been given an avenue to enjoy some connectivity, in which she could experience and express the subtleties of motion, and that this access had contributed to her positive state of mind.

As the day passed, other examples came to my mind - the pacifying effect of a baby being rocked in its mother's arms, or rolled around in a push chair or even taken for a drive in a car to get it to sleep. We probably have a similar response to dance or music generally. Even the appeal of a motor car - what makes driving a car sexy? What makes driving some cars more pleasurable than others? The variety, responsiveness and speed of their movement - their capacity to indulge in connectivity! In sport as well - some may enjoy the challenge of outwitting an opponent but there is always pleasure in the underlying motion and the opportunity it opens to express connective skill.

Chapter 15: The Unsung Virtues of Sublimation

When presented with an unavoidable architective obstacle, our natural reaction is to try and forcibly overcome it, to disrupt it so that we will be free to penetrate it and perhaps harness its constituent objects to our cause, if that is our intention.

But there is another, subtler way to achieve this (though it is not always appropriate). If instead of attempting to apply overwhelming force to break an object, we sublimated it instead, applying an influence that did not challenge the internal constraints of the obstacle. The obstacle therefore does not respond as a whole and instead its constituent objects respond individually as if in a connective. While this approach may not have very dramatic effects, if the sublimating influence carried a vibration the constituent objects could connectively mimic the vibration and any signal it carried, while the obstacle as a whole remained unresponsive to and unthreatened by it.

I have found, for example, that touching someone who is agitated - say by holding their hand - sometimes allows a gentle bodily vibration of my own to calm them down and assist their agitation to subside.

Meditation can also be understood in terms of sublimation - that as one eliminates extraneous factors from one's consciousness and allows one's mind to calm down, the gentler mental vibrations that arise sublimate one's own body so as to allow one to experience one's body in vibrational and connective terms. Indeed, if touching another, one's gentler vibrations can sublimate someone else's body enabling one to feel their somatic vibrations.

Sublimation is a means by which connectivity can be indulged without raising the hackles of our Planetary Deity, for it does not involve the demise of any architecture nor affect any architective narrative, and so does not result in a hole in any architective serial meaning to alarm our Planetary Deity.

Ignorance of Constraint

Our behaviours in activities that are constrained often lie well within the boundaries of their constraints. Being sublimate to their constraints, these behaviours never challenge their constraints so we do not realize they are constrained. We freely enjoy their apparent connectivity oblivious of the fact that it is bounded. For example, very young children of different social strata may happily play together - until they are sent to different schools in line with their parents' social expectations.

It is probable that much of our everyday connective activity is sublimate, and we blithely proceed in it without raising the ire of our Planetary Deity.

Sublimation and Resonance

I used the term 'consonance' rather than 'resonance' when describing how, when waves interact with each other, if their peaks and troughs were suitably aligned their interference resulted in exaggerated oscillations in some positions and severely reduced ones in others, which are commonly known as 'nodes' and 'anti-nodes'.

In order for the nodes and anti-nodes to maintain static positions, as they do in the case of standing waves, the waves must be anchored to an architective object, perhaps by reflecting off one or more objects. The bridge and nut of a guitar are examples. It is only when a consonance is so architectively anchored and the wave stands that I am happy using the term 'resonance'.

If a wave sublimating an object were to be internally reflected when attempting to exit the object, it would echo to and fro inside the object with each reflection, and if its wavelength matched the physical size of the object then standing nodes and anti-nodes would appear in the wave as it interfered with its echoes inside the object. That is, the object would resonate internally in response to the wave sublimating it.

Should the wave be of a sufficiently long duration, the resonance would get stronger and stronger, so that the difference between its nodes and anti-nodes became larger and larger, and if their difference got to exceed a binding strength of the object, the object would disrupt. That is, it is

possible for a wave to disrupt an object if the wave sublimated the object, its wavelength resonated with the size of the object and the wave persisted for long enough.

I mentioned how touching someone who is agitated might allow a gentle bodily vibration of one's own to calm them down. While this can be very beneficial to both parties, one must take care when attempting such a sublimation, for one also has the capacity to facilitate a resonance, and while a mild resonance can be very pleasurable, pushing it to an extreme could cause something to break - and one does not always know what that will be.

Learning how to sublimate can be an important step in one's spiritual development, to be followed by the equally important step of learning to be careful when letting a sublimation resonate.

The Song of the Sublime

Lets now consider some of the milder connective physical processes affecting us.

The universal gravitational interaction was mentioned at the beginning of this book, where I noted that, apart from our moon and sun, all other gravitational influences - being those of every object on Earth, those of our solar system's planets, and those of every other star and galaxy - were too small to have any noticeable effect on us. But they are there, and being so small they could sublimate our bodies and most if not all earthly architectures.

Consider that the orbital periods of our solar system's planets are on the scale of years, while those of remote stars and galaxies are on the scale of eons, so the likelihood of these gravitational influences resonating in our bodies is nonexistent and would have no architective consequences.

There are a number of other physical cosmic connective influences such as the Cosmic Microwave Background, the radiation from distant stars, passing cosmic rays and neutrinos, our sun's heliosphere and the Earth's magnetosphere, that are also small enough to sublimate earthly architectures without architective consequences.

Then there are connective but non-cosmic influences, such as the radio and microwaves we broadcast through our cities, though these either do not resonate within our bodily architectures or are at such low levels as to be deemed safe. X-rays and UV-rays, on the other hand, are stronger and do resonate within our bodies and are treated with caution.

Being connective, in the absence of resonances, these influences have no architective consequences.

Together, these influences, cosmic and otherwise, induce a confluence of subtle vibrations sublimating our bodies and our environment, the interferences of which constellate in patterns of varying profundity.

The influence of a holism is always less than the connective influences of nearby objects as well as being less than any architective influences. Through connective influences such as these, the holism of the universe - the Cosmic Deity - expresses itself at such extremes of subtlety as to be capable of sublimating absolutely every object, earthly or otherwise (except for elementary objects such as quarks and leptons which can't be sublimated since they have no constituent objects).

I like to think that the Cosmic Deity expresses itself in a music, so that by sublimating every non-elementary object, from the smallest hadron to the largest rocky planet, all are subtly singing to its song, both internally and externally, and doing so without undermining the architective expressions of the objects they might constitute.

Chapter 16: Psychedelics in Perspective

We stand today on the cusp of a new era of scientific and spiritual symbiosis, for we now have the technology to summon direct spiritual experiences almost at will. I am speaking of the psychedelic chemical agents whose capacity to readily generate human experiences describable as 'spiritual' has been widely [acknowledged ##](#). Direct spiritual experiences are rare under normal circumstances, yet a sense of being at one with the universe, even identifying oneself with a cosmic consciousness, is a common report from psychedelic explorers.

In this chapter I look at what an understanding of connectivity and architectivity can bring to the psychedelic experience. If you have no interest in the psychedelic experience please skip this chapter. I deal predominantly with the type of experience encountered under LSD, mescaline and psilocybin even though the term 'psychedelic' is used to include DMT and MDMA among others.

<p align="center">*</p>

Psychedelic experiences are not to be taken lightly. An atheist at the time of my first exposure, I was initially overwhelmed by the visual extravaganza ("Fire the art director!" was my initial reaction) but eventually emerged some hours later announcing wide-eyed that I had "met God". Not some wise old man on a cloud but a greater-than-human consciousness pervading the cosmos.

I didn't have to die to do it. I didn't have to meditate for a lifetime either. I put a tablet the size of a pinhead on my tongue and that was it. And I can do it again - have done it many times - though not always with the same degree of exaltation.

The major takeaway from these experiences is that heaven is right here, we don't have to go elsewhere to find it. We're in it, only we can't see it. And it's not only the rendezvous with the divine that is so striking, but the realization of how fabulously expansive and gorgeous our world is - and how

scant is our appreciation of it. There appears to be a hedge, let's call it, normally preventing us from seeing this heavenly garden, and worse still, having thorns that can make life in the garden fiendishly difficult.

A question faces returning psychonauts: How can we penetrate the hedge more readily? And can anything be done to disarm the thorns?

Though most religions offer pathways to overcome adversity, only the mystics acknowledge the garden we are in but cannot see, so their advice appears the most plausible and it is virtually unanimous: the thorn hedge can be overcome by changing one's own mind.

Changing one's own mind? Hey, psychedelics do that magnificently! Let's do more! But a tolerance develops and returns diminish. And we always come back to normal. With excessive use our relationships suffer and our money dries up. Psychedelics may allow us to see the garden but the hedge always re-establishes on our return.

So we follow the mystics. Search out a guru. Meditate. Find Jesus. Fast. Go vegetarian. Practise yoga. But without psychedelics one has to strive for a lifetime or die to get there. And then only maybe. In the meantime the thorns remain.

We get serious. Study philosophy, physics, neurology and anthropology. Systematically explore the psychedelic phenomenon. But intellectual effort alone cannot reproduce the experience and drugs are not permitted in the halls of academia.

As I see it, the psychedelic enterprise is up against the architective dominion. The thorn hedge, I argue, is the architective dominion of our planet, which at our scale is an intrinsic part of the garden. Changing one's own mind may allow one to perceive the garden more readily but it cannot remove the thorns.

A Model for the Psychedelic Experience

From a neurological perspective psychedelic drugs are known to interact with the serotonin receptors on our brains' neurons. Translating this neurological activity into a subjective spiritual experience is just as impenetrable as the "[hard problem](#)" of consciousness itself. But I suggest we

can gain some insight into the psychedelic experience if we understand it to enhance our capacities for pattern recognition.

To this end, suppose our brains host a cyclic process that mediates our perceptions. (Our brains host many cyclic processes, such as [neural oscillations](#), and [thalamocortical oscillations](#) in particular are understood to assimilate our perceptions.) The frequency of such a cyclic process would set an upper (but not lower) limit to the changes we can resolve. For example, if this frequency was 100 cycles per second I could clearly perceive things changing at 25 changes per second (or less) but I would not be able to distinguish all the detail in 150 changes per second (or more). The rates of change I could clearly perceive would be increased, and the range of changes I could distinguish would be widened, if I increased this frequency to say 200 cycles per second. I call this frequency my *perceptibility limit*.

An increase in one's perceptibility limit implies more than a widening of one's sensitivity to change, for there may be patterns in the changes and widening one's sensitivity also means being better able to distinguish patterns in the changes. It means being able to see more patterns, and then being able to see patterns in the patterns. In other words, a widening of one's sensitivity to change can be accompanied by an increased appreciation of the order (as I have used this term) of both architective and connective patterning and serial meaning.

It is not only one's sentience that is enhanced by an increase in one's perceptive capabilities, but one's sentience of one's sentience - one's consciousness. Conscious capacities such as attention, reflection, introspection, association, abstraction and imagination are also extended. In particular, one's capacity for abstraction - for consciously recognizing higher orders of pattern - is greatly extended.

In their capacity for [neuromodulation](#), I see psychedelic drugs increasing one's perceptibility limit, widening one's sensitivity to change and enhancing one's capacity for pattern recognition.

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An increase in one's perceptibility limit would allow one to perform conceptual architective manipulations at a higher rate. Language and mathematics could systematize more readily. Architective ideas could

process more quickly, conceptions of control and organization could be realized more clearly, and strategies for contest could be thought out more comprehensively.

An increase in one's perceptibility limit would also increase one's awareness of connective patterning and constellation. It would increase one's sensitivity to connective subtlety and order and allow one to be aware of and employ ever slighter amplitudes of interaction.

Changing one's perceptibility limit might also change one's subjective experience of the passing of time.

Psychedelic drugs significantly widen the scale at which we participate in the world. Details can be perceived more clearly: I might see poetry where I saw none before, or I might moderate an experience of bodily pain by resolving previously unresolved frequencies, allowing me to negotiate the sensation without stubbing my toes on its unseen corners. An increased sensitivity to connective subtlety might allow me to sublimate constraints and touch areas vibrationally that would normally be out of reach.

I am not suggesting that the sensitivity of my sense organs themselves are altered, only that the brain processing of the sense signals is altered. The architective nature of our sense organs would continue to constrain the frequencies they are sensitive to.

I see too that one's perceptibility limit is not fixed. Many factors might affect it, such as one's state of mind, genetic predisposition, training, diet, comfort and mood. I believe that my practice of meditation has developed a capacity to voluntarily flex my perceptibility limit to some degree, while psychedelic drugs forcibly induce perceptibility limit changes. In the case of meditation or a minor psychedelic like cannabis the experience is quite manageable, while a major psychedelic like LSD extends my perceptibility limit so far beyond normal as to make the experience quite challenging.

Increasing one's perceptibility limit also widens the scope of one's imagination. Normally our imaginations utilize and extend our past experiences or perceptions (say through reading, discussion, art or theatre). But as our appreciation of patterning expands, we are able to incorporate novel patterns into our imaginations, possibly extrapolating them beyond the sensitivities of our organs and beyond our personal histories. The stuff of

our normal imaginations, based on experiences at a lower perceptibility limit, is not nearly as rich.

By widening our appreciation of pattern and its ordering, fields of meaning become available to us that are normally imperceptible, offering new landscapes to navigate in which novel games may be played. Having greater depth of meaning, we may find these games and landscapes more interesting than our normal ones, and choose to play them instead.

Connective visages may constellate in the hyper-patterning of psychedelic experience, while the deeper architective narratives of our lives may become clear, and all these may play in their deeper fields of meaning. This, I believe, is the essence of "getting high", when we are not only able to discern higher orders of pattern and meaning but can navigate them *on their terms*.

Under a major psychedelic we may become aware of exceptionally high order narratives in our lives, perhaps even the processional narratives of our entire species or planet. Exceptionally high order connective fields of meaning may also become available to us, and should our appreciation of connectivity extend to the cosmic connective system, that system's deep orders of meaning may become discernible to, and navigable by us.

Amazingly, our minds appear to be perfectly capable of negotiating such exotic topographies.

While both modes of consciousness may be enhanced, proportionately it is our connective consciousness that is the major beneficiary of the psychedelic since it is usually so under-represented in our normal state. In addition, since a connective sentience is dispersed rather than focused, the slightest widening of one's connective capability spawns a disproportionate expansion of one's connective awareness. Subjectively, both modes of sentience become more interesting, but one's connective sentience becomes *much* more interesting, even to the point of overcoming the architective domination of one's attention. Environments that offer exceptionally deep orders of connective patterning like nature can become totally absorbing. LSD is so powerful a psychedelic and our connective capacity so enhanced that one's appreciation of connective subtlety, constellation and order may bloom exponentially while one's architective capacities, though enhanced, remain comparatively stilted. Indeed, for first-time users, the comparative

explosion of connective awareness is often misread as a total banishment of architectivity, leading to a misplaced belief that getting high offers a salvation from all one's woes.

Under a major psychedelic the flood of new information renders one's usual mental controls ineffective. The overwhelming proportion of that new information is connective so our experientially acquired and predominantly architective knowledge base is now relevant only to a small portion of our experience. Our normal understanding of how the world works and what we can do to manage it becomes almost irrelevant. The experience can be terrifying until one adapts to the abandonment of control, certainty and reliance on past epistemic reference. One's connective experience is not based on control and certainty and does not reference a fixed knowledge base so the increase in connective information is easier to accommodate. This I feel is a major benefit of the psychedelic experience, where in a state approaching pure connectivity our normal preconceptions become redundant, leaving one to swim, or perhaps drift, on the currents of one's immediate perceptions without pre-judgement.

At its peak, the psychedelic experience is notoriously difficult to describe or pin down. Images and sensations flow at speed through too many variations for one to be able to utter a word of description. No *specific* knowledge can be extracted at the time so any intellectual understanding of the experience can only be distilled after the event.

You may remember when earlier describing a purely connective window of scale I remarked how alien we would find such a window with its absence of architectivity. The comparative explosion of our connective awareness under a strong psychedelic approaches that sense of other-worldliness - of being spiritual - even though we remain situated in material reality.

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Increasing one's perceptibility limit may significantly increase awareness of one's internal constitution. Physically one might become more aware of the flows in one's body such as pulse and breath, mentally one might become more aware of one's architective habits constraining a more profound connective expansion and be able to release them.

Even with only a modest increase in one's perceptibility limit, the comparative connective advantage permits a noticeable diminution of the architective dominion of one's consciousness. Psychedelic drugs can be a powerful tool for overcoming the architective dominion, at least temporarily.

Changing one's perceptibility limit might change one's mood or change one's subjective flavouring of the external world. Since our perceptibility limits are not fixed, different classes of drugs, different doses of the same drug and similar doses at different times can have quite different subjective effects.

Even in our normal states of mind we would each likely have different perceptibility limits, and so have different subjective experiences of the world while sharing a common objective reality. I suspect that one person would find another more empathic when their perceptibility limits match. Perhaps the feat of great art is to bring the perceptibility limits of an audience up to that of the artist.

The Psychedelic Journey

The concepts of connectivity and architectivity can provide a framework for understanding the psychedelic journey and even offer signposts for its navigation. But before elaborating on these I must make a caveat: As mentioned, any thoughtful description of a psychedelic journey cannot be made during the journey itself since at the time one's perceptions are too volatile to capture. The material of this discussion has been collated in my normal state of mind and not from within a psychedelic state. Consider too that writing is an architective process for which accurately describing a purely connective experience is quite impossible.

That said, I have looked back at these ideas from subsequent psychedelic highs and have never found them misleading, only to be very distant from the experience itself (like standing at the top of a mountain and looking at the track leading to the mountain in the valley below).

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A psychedelic journey often includes an experience of universal connectedness, which is so different to our normal experience as isolated individuals. The extension of one's connective sensibilities under a strong psychedelic may be so "far out" as to allow a conscious awareness of

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oneself as an integral part of the universe, or in the parlance of this discussion, the integration of one's self in the cosmic connective system. I distinguish two aspects to this experience: An awareness of one's participation in the cosmic connective system, which I call *cosmic integration,* and a sharing in the consciousness of that system's holism - the consciousness of the Cosmic Deity - which I call *cosmic selfhood.*

Synaesthesia offers a good analogy for the experience of cosmic integration. In synaesthesia two or more of one's senses coalesce into a single sense - the boundary between the senses disappears. One may see a sound as well as hear it, for example, or vice versa. The experience of cosmic integration can be envisaged as the coalescence of *all* one's senses, followed by the disappearance of the differentiation between one's senses and what they are sensing, until everything - oneself and everything one senses - has merged into a hyper-sensation of communion in which the connectedness of the cosmic system becomes an all-encompassing sensation.

The accepted wisdom is that to achieve this sensation the psychedelic explorer will have been able to "lose their ego" so as not to impose any preconception or restriction on the sensation. In the parlance of this book, the psychedelic explorer will have been able to relinquish their architective consciousness, or rather maintain their consciousness to the connective mode for long enough to recognize the sensation. This is not easy to do and for many explorers this feat may take up the bulk if not all of their initial psychedelic sessions.

Relinquishing one's architective consciousness - one's ego - can be a terrifying experience, for one's capacity for control and referential certainty is significantly diminished. Meanwhile the world (and one's mind) is behaving in the most astonishing way, and if one is not primed for the experience one's natural instinct is to try to control it. One's architective consciousness fights to stay in control.

The concepts of connectivity and architectivity help us understand that letting go of one's architective consciousness is not a matter of handing control of oneself to someone or something else - it's a matter of relinquishing the concept of control altogether.

Relinquishing architective consciousness does not mean relinquishing one's architective sentience, only that sentience's insistent grip on one's

consciousness. Even when we have overcome our habitual architective consciousness, our architective context persists since our bodies continue their architective functions, and while the majority of these can be dealt with subconsciously by our architective sentience, management of some functions must be done consciously (like going to the toilet). Connective consciousness is not self perpetuating so an architective consciousness can be invoked anytime the necessity arises. The difficulty is in getting back to connective consciousness since one's architective consciousness demands to reinstate itself. Though the task of achieving a continuing connective consciousness is facilitated by the psychedelic, a lifetime of automatically invoking architective consciousness is not easily overcome, and to this end intrepid psychedelic explorers embark on extensive psychological and spiritual training.

It is not only one's architective consciousness that strives to prevent one relinquishing it. Our Planetary Deity also fights to prevent it since one's consciousness is then beyond its organization. Even when one is able to avoid the domination of one's own architective consciousness our Planetary Deity will do all in its power to defend its domain: If it can organize an urgent external intrusion it will; if it can provoke a habitual ego response it will; if it can distract one with images of fear and loathing it will; if it can engender a state of paranoia it will. It is only when we can negotiate even these tactical distractions by our Planetary Deity that we are able to enter the universal union.

We can reduce the likelihood of external intrusions disturbing a psychedelic session by providing a suitable setting for the session, one that is sheltered from extraneous architective distractions and where all foreseen architective needs have been catered for.

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Integrating with the cosmic connective system is a stupendously satisfying experience but it is not the end of the journey. Awareness of, and participation in, that system's consciousness - its holism - awaits. The cosmic system includes a vast array of strong connective forces that can obscure the subtle influences of its holism. As one wanders about the garden of integration savouring its perfumes and splendours, one 'hears' snippets of a song so deeply hidden it is discerned only fleetingly. With patience, the stronger interactive winds of the cosmic system may subside

sufficiently to let that song shine through - the song of the Cosmic Deity. Should one be graced with its discernment, one's consciousness spontaneously constellates with that of the Cosmic Deity and one assumes one's *Cosmic Self*.

One's normal, mundane, separate consciousness might be called one's *Planetary Self*.

Some Notes for Travellers

Psychedelics loosen the grip of one's architective sentience on one's consciousness. As an architective consciousness habituated to perpetuating itself, one may experience the increasing suspension of that consciousness under a psychedelic to be that one is dying, and that one must do something - anything, and immediately - to reinstate that consciousness. But it is only one's architective consciousness - one's ego - that is dying. One's architective sentience is not dying, only its persistent grip on one's consciousness.

If one has the fortitude, one should not fear this death. Physical deaths from ingesting psychedelics are rare[##]. Almost all reported cases have arisen through an ancillary (and unsupervised) act like running into traffic or threatening a policeman. As chemical agents the only significant effects of psychedelics are on one's mind. One's breathing and heartbeat are not reliant on one's ego to keep going. And though it may not seem that way at the time, one's architective consciousness can be restored whenever it is needed since connective consciousness is not self perpetuating.

If the psychedelic experience offers you an opportunity to die, accept it - as long as it requires no architective act on your part or on the part of anyone or anything else (which means no bodily harm is involved).

Any architective act at this stage is just another tactical manoeuvre by one's ego or our Planetary Deity to have one's consciousness revert to the architective mode. Beware too of thinking you need to prove your connective purity, say by an act of architective self-harm, for proof is an architective concept, and just one more distraction from the connective enormity one is facing.

These opportunities for relinquishing one's architective consciousness are a major benefit of psychedelics. Opportunities for cosmic integration are not easily come by in our everyday lives and are not to be missed.

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In avoiding or confronting architective distractions, one must take care not to compound them by playing their game, fighting back or attacking someone else. Doing so brings one's consciousness back into the architective mode. Distractions can often be circumvented by changing one's immediate environment, say by going for a walk or changing the music.

Distraction also raises the issue of advising trippers to be totally accepting of whatever they are experiencing. I see such advice to be valid only in a connective sense. Architective influences, whether internal or external, that are distracting from connective consciousness should be avoided or managed. Certainly in the connective sense being totally accepting of whatever one is experiencing is necessary, for finding cosmic integration and the song of the Cosmic Deity requires that one allow one's connective reality to go wherever it wants to go.

Much of the imagery encountered in a psychedelic session is fast moving and kaleidoscopic. This is consistent with the dynamics of connectives where visages fluidly move in and out of constellations. Should the imagery or situation get stuck in a rut or become inescapably constraining one must suspect an architective presence, for purely connective processes will always move on. If the same distraction keeps recurring in spite of one's evading actions it needs to be managed.

One should beware of overdoing the spiritual training and expectation. The idea that rigorous spiritual training is the only condition on which spiritual achievement or success in psychedelic exploration depends is not only misleading but harmful, for it can lead to an obsession with cleansing one's body and one's psyche - which is just another architective distraction. That said, spiritual exercises can train one's architective consciousness to relax its total occupancy of one's consciousness and so make the relinquishment of architective consciousness less intimidating.

It is well to recall that a disregard of architective serial meaning involves a disregard for any precise or enduring meaning in symbols, especially as

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found in language. Purely connective serial meaning is not conveyed through specificity in words, symbols, rationality or logic. We feel it rather than think it. And here, where I argue that spirituality arises in the material world, I say that we experience cosmic integration as a wordless, somatic *sensation*. Knowing this, during a psychedelic session or when meditating, it pays to follow one's bodily sensations rather than one's thoughts or ideas.

An experience of cosmic integration does not mean that we can actually see the forces at play in the cosmic connective system or that we can understand its composition, but that we become aware of the concert of the system in its subtlety and grandeur. We see the dance of all objects responding to each other, and the intimacy with which we dance with them.

One should not confuse an aesthetic enjoyment of the beauty and wonder of the world, especially as enhanced under psychedelics, with an experience of cosmic integration. For cosmic integration is a somatic whole of body and mind sensation rather than a detached aesthetic appreciation of beauty.

Sex and Psychedelics

Having arrived at a recognition of one's Cosmic Self, what does one do with any time remaining in that blessed but soon-to-end psychedelic nirvana? Is there anything a cosmically constellated human can bring to a Deity enrapt in connective profundity?

Yes there is: One's architective embodiment. One's body as a functional organism now participating in the cosmic connective system and in harmony with the Cosmic song. The Cosmic Deity does not have an architective body of its own. As I see it, one's most profound connective bodily expression is a heartfelt, orgasmic sexual encounter with a lover, and when cosmically enjoined, serenading the cosmos with your love-song.

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The psychedelic mind can however be so riotous that a cosmic erection is difficult to maintain, while the delicate threads of a whole-bodied communion are easily lost. But consider that the Cosmic Deity does not seek absolute perfection. It seeks the most profound connective constellation available. There is no one target among the infinite possibilities for connective profundity. The Cosmic Deity accepts lovingly whatever is given

with the whole of one's being. Though orgasm may be beyond one's reach, the love-play can go on interminably - perhaps even for the rest of one's life.....

Sharing an experience of cosmic integration can open relationships. The following is a quote from an online forum:

> "My now husband (32M) and I (24F) have been doing psychedelics together since our second date. ...... I am a huge advocate for regular psychedelic use with a partner. I think it has allowed both sober and trip wise to remain with our walls down. I was recently asked at a party about whether or not I'd recommend sex on LSD, and I said 1000 times yes. Sometimes the sex involves 0 penetration, but it's so emotional. ...... Has anyone else had nothing but positives when tripping with their partner? We have differing work schedules and other obligations, we use this as a reset and time that is solely devoted to each other, where we just kind of worship and dote on each other extra. We have always had an amazing connection and understanding when we are in our day to day. This is nothing but a positive post. But I wanted to know if any of you share a similar experience? We have been able to work through things so quickly because of the vulnerability that tripping has created both inside and outside of psych trips."

We are not always so fortunate as to have a lover join us in a psychedelic communion. A whole-bodied enjoyment of music - alone or shared - can also offer a wealth of connective profundity that is capaciously appreciated, as is a whole-bodied communion with nature, and of course, a communion (not socialization) with other people. Sharing an experience of cosmic integration can create a bond among participants that persists through their return to normality.

"It's All in the Mind"

A strong impression of the psychedelic experience is that of the power of mind, in the sense of one's mind having the power to shape reality without physical intervention of any kind.

Such a sense is valid when one's consciousness has constelled to the Cosmic Deity, for that mind has the ability to apprehend reality without interaction. However, it is only the connective aspects of reality that can be affected through apprehension and then only their subtler modulations. Stronger manipulations, whether connective or architective, require direct interaction or control, whether by one's own material actions or those of someone or something else.

In the exaltation of holistic apprehension it is easy to believe that "its all in the mind", that reality ultimately springs from mind or that mind is a precursor to material reality. But it's only the connective components of reality, and only their finer modulations, that are "all in the mind". From one's viewpoint as a purely connective consciousness, the concreteness of architectivity, whose serial meanings we are no longer comprehending, can indeed appear illusory.

In everyday terms, believing that one's entire reality is a product of one's own mind can engender a sense of guilt, for one then becomes personally responsible for all one's misfortunes and those of others. Understanding that one cannot assume such a universal mantle of responsibility for the architective components of reality leaves one innocent of much of the architective component of our suffering. The Cosmic Deity too is not responsible for, nor can it even comprehend, the architective pressures of our existence, and when we are constellated with it, neither can we. Nor can one assume such a universal mantle of responsibility for the stronger connective components of reality, for it is only their subtler modulations that are apprehended by the Cosmic Deity, or by ourselves when we are constellated with it.

Any apprehensive shaping of reality on one's own part when in the psychedelic state is only possible when one's personal intent has constellated with that of the Cosmic Deity. One need have no fear that any flaw in one's personal intent is causing misfortune through the apprehension, for there is no way that one can coerce the Deity to one's own intent; rather it is one's personal intent which constellates with that of the Deity.

That is not to say that misfortune cannot happen in a state of apprehensive possibility, only that it would arise through architective manipulations or the stronger connective interactions of the cosmic connective system. Of course,

being integrated with the cosmic connective system one bears an imputation to any suffering associated with its stronger connective interactions. (Once, while in a psychedelic state of cosmic integration, I switched on the TV news which happened to be showing a hurricane tearing through the southern US states, causing enormous damage and hurt. The hurricane's name was Michael. How do you think I felt?)

None of our suffering - or anyone else's suffering - arises from any one person's inability to mind-generate a perfect world, whether under the influence of a psychedelic or not.

There is another aspect to one's mind having the power to shape reality without direct intervention, namely in the power of a conscious mind to choose between architective and connective consciousness when these would result in contradictory outcomes. Such dilemmas are rare in one's normal state of mind, but during a psychedelic journey they become frequent hurdles on the accelerated path to cosmic integration. In the psychedelic case it becomes necessary to keep choosing connectivity if one is to achieve the connective purity required for cosmic integration, no matter how inconvenient or frightening it may be, and the psychedelic session should ideally be arranged to provide a safe space that allows one to make such challenging decisions more easily. In a normal state of mind where architectivity is so dominant, or in an unprotected psychedelic space, these challenges may be too difficult to overcome and insistently choosing connectivity can have serious architective consequences.

The Epistemic Challenge of Psychedelics

In the introduction to this book I mentioned that the psychedelic perception of the world can be so convincing as to make one question one's normal perception of reality. Yet the veracity of the subjective experience remains under question in the light of it being unprovable after the event. The world we come down to continues its same old epistemic themes as before, seemingly oblivious of the earth-shattering revelations one has just encountered. So is there any epistemic value to the psychedelic landscape or is it only a "comforting hallucination"?

Earlier in this chapter I indicated that the hyper-patternings experienced under a psychedelic can attain their own contextual meanings, and that the

essence of getting high was not only being able to discern these high order meanings but being able to deal with them on their own terms.

That a successful navigation of such a novel landscape on its terms is at all possible must surely indicate the veridicality of that landscape, and that at least when within that landscape, it has epistemic value. This might even suggest that a manifold of epistemic systems are possible, and that the one we normally appear stuck in is only one of many. Perhaps the most challenging and rewarding aspect of a major psychedelic is having to pass through, and accept, many epistemic systems when we are accustomed to believing there is only one.

In closed-eye psychedelic sessions, such as is common in a therapeutic setting with eye coverings, the psychonaut lies back and experiences the psychedelic purely inwardly. In this case we could question the epistemic value of one's psychedelic experience because of the absence of any external validation. But when the session takes place in an open-eye waking state and one is able to successfully negotiate reality physically and socially in the psychedelic context there can be no question as to the reality of the landscape one is perceiving and the validity of one's choices when negotiating it.

While the stimulation of my senses under LSD has been extremely pleasurable and the accompanying experiences of cosmic integration spiritually satisfying, it was only the fact of having successfully negotiated physical reality in the psychedelic context that ultimately convinced me of the epistemic validity of the psychedelic experience.

Psychedelics on the Horizon

At the time of writing, it has become fashionable to promote ritualized psychedelic ceremonies as a more acceptable means of psychedelic activity, often legal, removed from the image of "party drugs", the pleasures of getting high or the unnaturalness of synthesized drugs. I am thinking for example, of the traditional ayahuasca ceremonies of South America and peyote ceremonies of North America. While this promotion may seem a reasonable step on the thorny path to legalization, we should be aware that it effectively encloses what should be an unbounded connective exploration within an architective shell of ceremony and expectation.

The same can be said of restricting a future legal use of psychedelics to licensed therapists. While this may make the legalization of psychedelics more palatable to its sceptics, and even make the contemplation of a psychedelic experience less daunting to a novice, it can result in experiences that are architectively framed to particular methodologies or commercial, religious or institutional brands.

Natural vs Synthetic

We have a history of assuming a primordial innocence to nature. Many cultural movements have sought salvation or nobility in a return to nature. The psychedelic experience also promotes a turning to natural innocence, for the experience of universal connectedness often reveals the commonality of all beings and a compassion for one's fellows. It also reveals the particular openness of animals and young children (and adults "young at heart") to the abundant connectivity in nature.

For some, turning to nature involves a rejection of anything synthetic or man-made. It's as if our humanity is regarded as the source of all evil, an idea probably rooted in the "original sin" of Adam and Eve (and particularly Eve, who continues to pay a heavy price). Technology may be shunned, organic food promoted and simpler, more primitive belief systems embraced. But we should keep in mind that *all* technologies are architective, and it is a rebalancing of our connective deficiency that is required to improve our sense of connectedness rather than the replacement of one technology with another.

We also cannot deny that technological innovation has been our salvation from much physical suffering. Technology can be humanly beneficial even though it has in many ways contributed to that suffering.

Spiritually speaking too, unbridled expressions of nature are not always spiritually correct, for they can involve raw connective and architective forces that are much stronger than the influence of the Cosmic Deity, which, I believe, is the spiritual ambition many of us aspire to.

It could even be argued that any intentional connective behaviour on our part is not natural, since it is naturally opposed by the architective dominion.

There is a tendency to regard naturally occurring psychedelics such as mushrooms and ayahuasca to be preferable to their synthetic counterparts. Yet they contain additional, often unspecified components, while a purified synthetic version of the active ingredients (in this case psilocybin and DMT) are known and well-calculated risks. Besides, ayahuasca without DMT is psychedelically worthless, as are mushrooms without psilocybin. The magic is in the molecule, not the mushroom[##].

We need to beware of loading words such as 'nature' or 'natural' with a necessary spiritual correctness or absolute wholesomeness. Events may arise without human intrusion which are neither spiritually correct nor humanly wholesome. There are times when it is spiritually appropriate or in our human interest to prevent a 'natural' outcome, or even create a synthetic one.

That said, we always need to be considerate of the extreme mildness of the Cosmic Deity's apprehensive influences when imposing our own intentions on nature, for impositions on our part that do not harmonize with the Deity's influence are also spiritually counterproductive.

The Physical Basis of Cosmic Integration

I would like to digress momentarily and return to the theme of this book - physical spirituality - to stress the physical nature of cosmic integration. We experience cosmic integration through the connectedness of the cosmic connective system - a material system - through its physical gravitational interactions, through its electrical and magnetic interactions, through the physical motions of their derivatives (atoms, molecules, organisms, neurons, winds, aeroplanes and stars), through the empathic flows among humans and animals, and through the waves of change running through all of them.

Though different, these physical interactions interconnect with each other, directly or indirectly, so that a change in one induces a change in another; and they extend their connections to whatever responds to them - to the trees waving in the wind, birds riding on the air, their screams and their calls, waves crashing on the beach, our breath catching physical perfumes, our brains resonating to excitations all around us in this grand material connective system.

Look at a landscape this way: One tree waving in the wind is of course different to another tree but they are waving to the same wind, different gusts perhaps, but gusts that are mutually interacting. The trees may be different but their movement is orchestrated by the wind. And the wind never stops - it may calm down, even be imperceptible, but it is never absolutely zero. Now are you seeing separate trees and noting their differences, or are you seeing their concert in the wind? Are you looking at shapes or are you looking at movement? We experience cosmic integration materially, not by examining what each thing is but by appreciating their concert.

The Enigma of DMT

The formal studies ascribing cosmic integration as the primary affect of psychedelics have been conducted using psilocybin. Anecdotal descriptions of the other classic psychedelics, LSD and mescaline, point to the same thing. Studies based on DMT however report "alternative realities" and "other worlds" as their primary affect, in which connection with this world is lost, while under psilocybin, LSD and mescaline connection with this world is enhanced rather than lost.

> "One's sense of self is maintained, there is an external free-standing independent-of-the-observer spiritual world. One relates to the content of the experience, rather than being dissolved into it." - Rick Strassman, describing the DMT experience [##].

My own experience of DMT is limited. For the following outline I have drawn on the article "A Thematic and Content Analysis of DMT Experiences From a Naturalistic Field Study." by Michael P, Luke D and Robinson O (2021) Front. Psychol. 12:720717. doi: 10.3389/fpsyg.2021.720717.

The most remarkable characteristic of the DMT other-worlds is their population by 'entities', life-forms described variously as elves, insects, animals, aliens or octopoids; sometimes as clowns or cartoons. The entities have visible individual bodies that are external to the experiencer and the experiencer is able to converse with them. They are often gendered, have faces, eyes, limbs, perhaps even noses, though sometimes they take on purely geometric shapes. Their communication is always non-verbal, using gestures, dance or telepathy.

The entities show varying dispositions. They may be described as intelligent (if not hyper-intelligent), benevolent, friendly, menacing or disinterested; helping or nurturing, manipulating or controlling. They play and have fun, amongst themselves or with the experiencer, and often want to communicate important information to the experiencer. To this end they come across as teachers, guides and healers - working on the experiencer's physical or psychic body, eliminating toxins and doing "brain surgery". Sometimes they provide the experiencer with insights into the nature of the universe, often portraying it as a vast playground for everyone's pleasure.

These other-worlds offer alien landscapes, architectures and objects of great beauty. The entities often play with a 'toy', a multi-dimensional cube that is continuously shifting shape and color, to which they attempt to draw the experiencer's attention. Each entity may have its own toy, with which they compete for the experiencer's attention. Molecular and atomic themes are often used to describe the toy, and DNA is mentioned regularly.

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The prominence of architectivity in this outline is striking.

Experiencers interact with separate individual entities rather than merge with, and become indistinguishable from, the rest of the world. The entities and objects of these other worlds have figurate features such as bodies and faces and interact using their shapes, which means that the spatial scale at which they operate is within the figurate window.

The fact that they are so often gendered means that the aggregational path of their embodiment must have been eukaryotic, for it is only within the [eukaryotes](#) that gender is found.

The movement and environment of the entities is often described as mechanical - "machine elves", "wheels and cogs spinning in multiple layers", "the workings of something", "track ways where these things were moving along" "this whole thing was like the innards of a machine", etc..

The fact that they have shapes and move indicate that they operate in space and time - they do not transcend it.

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The prominence of architectivity in the DMT experience draws a comparison with dreaming - in a later chapter I note the dominant role of architectivity in our dreams.

There are other parallels with dreaming. DMT affects the power spectrum and signal diversity of EEG recorded brain activity in a manner similar to dreaming[##]. The DMT experiencer usually passes out during a session while under a classic psychedelic the experiencer is able to perform everyday tasks if required (though probably not very efficiently).

Like DMT, dreams offer us an alternative reality, except that the dreaming reality is populated with everyday items while the DMT landscape is distinctly alien. Could the DMT experience and the dream state be related?

The balance that connectivity brings to our waking state serves as a "reality check" that moderates the architective excesses of our dream state. If DMT experiences are a dream-like state, then they, and our dreams, are not "alternative realities", but states where the significant reality check of connectivity is minimized. Contrarily, we might say that at the peak of a classic psychedelic the reality check of architectivity is minimized. However, the reality check of architectivity is only necessary within the architective window of scale, while the reality check of connectivity is required at all scales.

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While the contexts of our dreams are largely drawn from our waking lives, the DMT context has no relation to our waking lives at all. No-one could even imagine a DMT-like context from within a waking or sleep state (who had not experienced one before). This implies that the DMT context is not generated by our own brains but constitutes a reality entirely independent of our personal history and experience. And that context is coherent, multifarious and accessible. But where is it? Where are these realities? In other dimensions? Parallel universes? Other planets?

The figurate nature of the DMT experience gives us a clue - they must reside within the figurate window of scale. So I suggest that DMT offers us access to different spatial scales of our own bodies, that the "other worlds" of DMT are within our bodies at scales such as the cellular or molecular. The likelihood of eukaryotic origin and the regular mention of DNA and other

molecular structures supports this view. In earlier chapters I described how different fields of meaning arise at different aggregational levels in an architecture, and showed that sentience is present at some of our own lower biological levels. I also indicated that for all we know, there might be consciousness at these levels. Could these be the DMT entities?

If so, their work on us - their elimination of toxins and brain surgery - makes sense. They might be attempting to modify our behaviour - as their controllers and organizers - to be more beneficial to their own health and comfort (much as we would like our spirits to be kinder to us).

Many of the motions in the DMT experience involve a splintering, a breaking up into pieces which in turn break up into pieces which break further, and so on; while the motions associated with the classic psychedelics involve a coherence and harmonization of normally disconnected objects. That coherence and harmonization of the connective experience extends outward into the cosmos, while the splintering of the DMT experience could well probe inward into our lower biological levels.

My own experience of DMT is too limited to say that they do not engender an experience of cosmic integration. Indeed many others' descriptions of the experience are of a space-like environment and involve ego death. Some DMT entities may be so connectively proficient as to allow connective spirituality to be available to consciousnesses at these scales.

I am far more inclined to regard DMT experiences giving us access to ourselves at a smaller scale rather than as a dream state, because there is so much agreement on their general characteristics while our dreams vary so widely from person to person.

The Limits of Psychedelic Expectation

I see many proponents of psychedelics creating exaggerated expectations of what psychedelics can deliver in terms of mental and physical health, improvement of one's social relationships and material well-being. We need to be more circumspect in our expectations:

The achievement of cosmic integration does not necessarily follow from the ingestion of a psychedelic. Recent studies[##] have shown that it is this

achievement of cosmic integration that delivers the greatest benefit from psychedelics and such heights are not always achieved. Even when issues such as set and setting have been adequately addressed, factors beyond anyone's control, such as the cosmic weather and the dispositions of our Deities, can profoundly affect the success of a psychedelic session.

The experience of cosmic integration itself is necessarily temporary. Such understanding permits a reconciliation with its everyday absence and avoids any obsession with repeating psychedelic sessions with the ambition of making one's cosmic presence permanent.

The benefits of cosmic integration are primarily connective. Expectations of material wealth or improved social status are well beyond the scope of connectivity, while even in terms of one's personal health, benefits might only come from a more harmonious connective tuning to oneself and one's environment or a deeper understanding of the architective narratives of one's life. Talk of "medicine" and "healing" should be understood to be primarily connective. Similarly, improvements regarding one's social status will only be found in one's abilities for connective harmony - resolutions of architective political or business issues will be incidental, if at all. Such understanding also avoids any obsession with repeating psychedelic sessions in the hope of eliminating one's architective problems.

The enhancement of our connective sensibilities afforded by psychedelics and meditation can however help us cope with physical pain. You may remember my suggesting that bodily pain is a vibratory phenomenon in our brains even though it may be sourced in an architective malfunction. Our psychedelically enhanced connective sensibility may not be able to mend the architective malfunction but it could be harnessed to discern and then offset the corresponding brain vibration. Mitigating the pain may allow a deeper connective penetration as well as relieving the bodily discomfort. Indeed, there are many reports of, and I myself have experienced, the disappearance of annoying physical symptoms while a psychedelic session is in progress (only to have them reappear when the session ends).

The Cosmic Intent

It is not only the suitability of one's immediate environmental setting that contributes to a fruitful psychedelic excursion. The cosmic weather - the

strong interactive forces of the cosmic connective system - can be turbulent, in which case the enhanced appreciation of connectivity permitted by a psychedelic can be unpalatable from a human point of view. A calmer cosmic setting contributes to our comfort on a psychedelic journey.

Constellations also become a lot less likely when the cosmic weather is stormy, so our psychedelic excursions may also be less meaningful at these times. I think that a person's first impressions of psychedelics depend on how rich in constellation their introductory sessions have been. First encounters in a stormy cosmic setting may well leave an unfavourable impression (as will a first encounter in an unsuitable environmental setting).

Consider too that a conscious Deity has an intent of its own, so one's attempts at cosmic integration may not always be welcome from the Cosmic Deity's point of view. For example, it might happen that when the cosmic weather is stormy the Cosmic Deity might rather not have another fumbling tripper add to the general melee. Or there might be other matters it would prefer one attend to. Our human spiritual desire is of course to join the cosmic union but the priority of the Cosmic Deity is for a profundity of cosmic harmony rather than an abundance of human participants. Joining the cosmic union when appropriate would enhance the cosmic harmony but we should abstain when the Cosmic Deity would rather us be quiet.

Regardless of whether a psychedelic experience contributes to the profundity of cosmic harmony, it remains valuable from a human standpoint, for the enhanced appreciation of connectivity it offers allows us to weight our serial meaning to the connective mode (if only for the duration of the session) and so direct our personal reality according to connective serial meaning rather than always deferring to the architective default.

Chapter 17: Yin and Yang

So how does one read the cosmic weather or divine the Cosmic Intent? It's all very well to propose checking the cosmic weather before tripping but how does one get such a weather report?

For this I have used the [I Ching](), also known as the "Book of Changes". The I Ching is a divinatory tool that has been used for thousands of years in China and became popular in the West in the 1960's. Philosophically it's based on Yang and Yin as poles of a principle believed to underlie all oppositions - female/male, dark/light, strong/weak etc.. It employs a random process, typically a fall of coins, to produce a patterning of Yang and Yin called a hexagram, from which I believe one's spiritual context - and the cosmic weather - may be inferred.

The I Ching's reliance on randomness ensures that architectivity plays no role in the divination. If there is any sentient influence on the way the coins fall it can only be that of the Cosmic Deity (or a visage thereof). Using the I Ching also takes my ego out of the equation to a significant degree.

In this chapter I discuss my use of the I Ching and spruik my interpretation of its hexagrams. If you find this distasteful please skip this chapter.

*

My first experiences of cosmic integration - under psychedelics in the 1970's - were utterly mystifying. The science of the time and mainstream religions not only could not explain psychedelics but were totally ignorant of them. Only a few esoteric and Eastern mystical traditions appeared to have any idea of what I had encountered.

My experience of cosmic connectedness led me to conclude that there can be no truly random events, that every event must somehow be a reflection, in its place and time, of the connected universe as a whole.

Shortly after reaching this conclusion, I read [Carl Jung's foreword](#) to Richard Wilhelm's interpretation of the I Ching<u>##</u>. In it he says:

> "In other words, whoever invented the I Ching was convinced that the hexagram worked out in a certain moment coincided with the latter in quality no less than in time. To him the hexagram was the exponent of the moment in which it was cast -- even more so than the hours of the clock or the divisions of the calendar could be -- inasmuch as the hexagram was understood to be an indicator of the essential situation prevailing in the moment of its origin.
>
> This assumption involves a certain curious principle that I have termed synchronicity, a concept that formulates a point of view diametrically opposed to that of causality. Since the latter is a merely statistical truth and not absolute, it is a sort of working hypothesis of how events evolve one out of another, whereas synchronicity takes the coincidence of events in space and time as meaning something more than mere chance, namely, a peculiar interdependence of objective events among themselves as well as with the subjective (psychic) states of the observer or observers."

This was music to my ears. I had qualms about the statistical relevance of the procedure because every hexagram has an equal probability of being cast, until I realized that there is no statistical algorithm fixing the sequence in which the coins fall or in which the hexagrams appear. I saw room for meaning in that freedom of sequencing.

Wilhelm's I Ching is presented in the idiom of ancient China. Anyone who has used it will know how difficult it can be to extract information that is relevant in a contemporary setting. After many years of 'perseverance' (heh, heh - for those who know) I formulated a modern interpretation of the I Ching hexagrams which I published as "The Oracle of Love" <u>##</u> in 2008.

The hexagram interpretations of both the Oracle of Love and the I Ching laud the virtues of being flexible. However, the I Ching also reflects a Confucian penchant for a strict social structuring of family and state which the Oracle of Love does not. The Oracle of Love has a much stronger focus on connectivity. Through the absence of architective serial meaning in the casting of a hexagram and its focus on connectivity in interpretation, the

Oracle of Love attempts to refine the connective meaning out of a situation, allowing one to judge one's situation in terms of the connectivity we tend to overlook.

Another difference between the Oracle of Love and the I Ching is that the Oracle of Love acknowledges it is not omniscient while the I Ching does not. My many years following the I Ching showed it to have a blind spot: While its messages were often uncannily relevant to my experience, it appeared to take no interest in some experiences that were of significance to me. I put great effort into trying to delineate where and when its messages were relevant and the conclusion I came to was that it had an almost absolute focus on 'love' in a sense that closely aligns with the idea of connectivity. In a commentary to the Oracle of Love I warn:

> "The Oracle is not all-seeing. I have found that there are many situations it is blind to, as if its world does not coincide exactly with our own. Its preoccupation with Love appears to be out of step with our own overwhelming experience of material suffering. It does not understand any of our socially developed institutional structures and imperatives, in much the same way that a baby does not. It cannot respond to culturally based humour, or take account of social convention, or negotiate the intricacies of business and politics. One should be aware of these limitations when accepting Oracular advice. But, like a baby, it is very sensitive to direct sensual and emotional engagement."

In another commentary to the Oracle of Love the dynamic between Yang and Yin is explored: I describe how Yang provides the motivation for change while Yin allows the change to occur. The image given is of Yang initiating a constant stream of initiatives which Yin cannot but accept, but can choose the enthusiasm of its acceptance. Yin's willing acceptance of an initiative results in a fluid oscillation which the Oracle regards as "great", while a reluctant acceptance results in the confinement of an initiative within hyperbolic boundaries, which the Oracle regards as "obstructive". It is the fluidity of the oscillation that forms the basis of the Oracle's concept of Love (and to which most of its hexagrams are devoted) while the obstructive result appears to hold little interest for the Oracle.

That static, neglected, obstructive result germinated the idea of architectivity. From a mental image of a motion that is hyperbolically

confined within a fixed range as opposed to a sinusoid in continuous flow (see [Appendix 2](#)), I eventually extracted the entire suite of architective characteristics. I could then understand why the philosophy of both the Oracle of Love and the I Ching favoured fluidity and flexibility. It also resonated with the idea of the I Ching as a "Book of Changes" rather than a book of fixed laws (as most religions are), and appeared to validate my removing from the Oracle of Love the Confucian predilection for rigid social structure. The spirituality that the Oracle of Love advocates is a purely connective one.

This, however, is also its weakness, for the Oracle is insensitive to architective serial meaning. By focusing on the free flow of Yang and Yin, the Oracle effectively misses an entire hemisphere of their interaction.

Another way in which the Oracle of Love differs significantly from the I Ching is in the relationship between the Oracle and its enquirers. The I Ching is understood to make singular pronouncements in response to specific questions and enquirers are asked not to abuse its largesse. Users of the Oracle of Love are rather encouraged to look for themes in a string of hexagrams, allowing the hexagrams to constellate into narratives (termed 'conversations') that allow the Oracle to speak its mind rather than respond to interrogation. Besides, the enquirer's questions are likely to concern their architective dilemmas which the Oracle can't address or even comprehend. Users of the Oracle of Love are encouraged to harmonize their activities with the Oracular narratives rather than use it as an agony aunt.

The Oracle uses the word 'love' in a purely connective sense. It is used to describe harmonies of motion, feeling and vibration rather than any lasting devotion. An unremitting devotion can perhaps be seen as an architective sense of the word. We could also see 'love' in an architective sense to mean altruism, kindness towards one's inferiors and using one's strength for the benefit of those less privileged than oneself, rather than a blind implementation of the architective dominion.

Another important implication of this book for users of the Oracle is that, since the wisdom of the Oracle is not cognizant of the architective content of our lives, there may be an entirely other spirituality pertaining to that architective content. Possible architective spiritualities such as the hierarchical deities of our societies and our Planetary Deity would have ambitions and means entirely unrelated to those of the Oracle of Love.

One should also beware of confusing the spirituality of the Oracle with connectivity itself, for although the Oracle is purely connective and capable of comprehending connective phenomena, it does not represent a spirit of connectivity per se or the source of all connectivity. Rather, it is a connective spirit, one I associate with the cosmic holism, or, being conscious, with the Cosmic Deity. In my many years of using the I Ching / Oracle of Love, I have found the nature of the Oracle to be entirely consistent with the character I have described for the Cosmic Deity. It, like us, is a product of the material world and is able to influence the world (albeit only connectively and apprehensively), but is not responsible for the phenomenon of connectivity per se. As well, as a holism its influence would be at the extremes of subtlety, so that holding it responsible for the stronger effects of the cosmic connective system, say for a storm (in that wind is a connective phenomenon), would be misplaced.

There is also an important implication in one's evaluation of *who* it is one is addressing when using the Oracle. If one accepts an association of the Oracle with the Cosmic Deity then one should keep in mind that not only is the Oracle a player in the unfolding of reality in the same way that we are, but it is learning as it goes. In my own experience I find the Oracle architectively childish - in its innocence, in its mercurial, empathic, and unreasoned expectations, and in its ignorance of "the ways of the world".

In another commentary to the Oracle of Love I suggest that the Oracle expresses a particular agenda in its communication with us which, in the context of this book, corresponds to the intent of the Cosmic Deity. What I could not say in the limited context of the Oracle of Love, is that the Deity's agenda is not the only thing the Oracle can communicate to us, for it is sensitive to all connective behaviour and may well be describing the general connective weather of the cosmic connective system. While the Oracle has no sensitivity to architectivity at all, it is capable of communicating an appreciation of the cosmic connective system as well as its agenda for finding profundity of harmony in that system.

Now why did I call it the Oracle "of Love"? What's love got to do with it? When discussing psychedelics earlier I mentioned how the Cosmic Deity appreciates harmonious sexual engagement at any appropriate time, and that a harmonious sexual encounter is generally more likely to provide the

profundity the Cosmic Deity seeks than our achieving cosmic integration. In the introduction to the Oracle of Love I say:

> "The Oracle aspires to developing relations between separate feeling beings (such as ourselves) so that we share and exchange feelings of Love with each other. To this end the Oracle's counsel is invariably directed towards fostering feelings of Love in our relationships and maximizing the benefit from them. More so, the Oracle aspires to an intensity of relation in which the feelings of Love are lavished with conscious attention, both in perception and expression. In human terms it aspires to overtly sexual and orgasmic exchanges of feeling between Lovers."

The Oracle of Love not only attempts to refine the connective meaning out of a situation, it explicitly directs one's attention to lovemaking whenever spiritually appropriate.

At a personal level, aligning the Cosmic Deity with the Oracle has an implication that is both simple and profound: If one is at an extreme of loneliness, unable to consort meaningfully with one's peers (perhaps due to the social constrictions of the architective dominion), one is always able to consort meaningfully with the universe in the person of the Cosmic Deity. This is what the Oracle of Love offers me in concrete form. Here we arrive at the nub of what religions have always promised - a spiritual companion who never leaves you, who never rejects you, who suffers with you and with whom you are always reconciled.

That spiritual companion, however, is purely connective.

Chapter 18: Faith and Reason

One cannot discuss religion without addressing the question of faith. Though many regard faith to be a simple statement of belief, I often encounter a stronger religious attitude, one of faith for faith's sake - that if one believes in something strongly enough it will become true. Positive thinking. Affirmations. To change the world one simply has to have a strong enough faith. This attitude is possibly the essence of fundamentalism, where the personal battle of the fundamentalist is to demonstrate to themselves, to others and to their deities, the strength of their faith in order that they may facilitate the promise of their religion.

The danger of this attitude is illustrated in the legacy of St Augustine, who propounded that only faith could create his "City of God", and that the real test of one's faith came when it conflicted with reason. It was the Church's acceptance of this proposition that blinded Europe to the Greek legacy of reason and enveloped Europe in an intellectual darkness that persisted for some 1200 years.

More recently, I have encountered this propensity to act on faith alone within the depths of a psychedelic experience, when the newly perceived extents of connectivity so overwhelm one's habitual architective consciousness that one is willing to discount architectivity entirely. Wrapped in a purely connective consciousness, one's mind appears to be able to shape material reality, which carries an implication that the reality one experiences is dependent on where one's faith is directed, and is so at all times, not only when under a psychedelic influence. One may be inclined to test that prospect dramatically - with possibly catastrophic consequences - or one may spend years attempting to perfect one's faith.

Just as it is necessary to remember that it is only connective reality responding to the apprehension of one's mind in the psychedelic state, it is only connective reality that can be responsive to any corresponding faith - and then only if one's faith happens to coincide with the intent of the Cosmic Deity - which can at best be momentary while a faith tends to be

static. Even in the psychedelic state of mind such power of faith is extremely limited, and in a normal state of mind it is even more unlikely.

I do not discount faith but I am wary of it being consciously expressed. It often happens that, where there is uncertainty, or where our knowledge of the terrain is poor, an intuition, a "leap of faith", shows the way forward. However, reason must remain the dominant means of evaluation in one's normal state of mind and should continue to be valued in the psychedelically enhanced state - without letting its habitual invocation be a barrier to experiences of holistic apprehension.

Testing one's faith in one's personal and social capacities is of immense value, but testing the law of gravity is not. When one's inclination is to act on faith alone, especially in the context of a psychedelic session, it is prudent to test reason gently at first rather than crashing through blindly.

When one's consciousness is firmly entrenched in one mode, faith in that mode could be seen to be of greater value than good sense in the other. I have suggested prudently recognizing the value of both modes when negotiating both psychedelic and normal states of mind. But our unimodal deities are not capable of valuing both modes. Their sentiences are entrenched in only one mode and are incapable of understanding their opposite mode. Actions they may suggest to us are likely to discount if not ignore meaning outside their own mode.

Chapter 19: Cosmic Consciousness in Perspective

In the early days of the psychedelic subculture, no guidance to the psychedelic experience (other than prohibition) was offered by any of the western religions or western science, while esoteric Hinduism and Buddhism appeared to offer not only an understanding of cosmic consciousness but very detailed roadmaps of how to do it. In particular, they offered spiritual practices that promised to develop one's consciousness to be permanently cosmic rather than having to rely on the ingestion of a strong psychedelic to provide a temporary experience. Besides, drug ingestion did not guarantee a cosmic experience every time, each journey involved an uncomfortable battle with one's ego, a drug induced high was considered unnatural, and the forces of prohibition were intense. Many westerners sought out a guru from the East who could provide them with a permanent, natural, legal high.

According to the ideas in this book, cosmic consciousness is associated only with the connective mode of sentience, so the Hindu and Buddhist ideas of a gradual spiritual development towards permanent cosmic integration would entail the end of one's architective sentience and the end of one's architective existence. Although these religions offer an understanding of cosmic consciousness, they are on a par with western religions in that their promises also come at the price of one's earthly existence (and in fact many explicitly seek it - not meaning suicide, but the termination of one's participation in a cycle of reincarnation).

This book suggests that a continuing architective existence is not incompatible with cosmic consciousness as long as the trappings of architectivity are not permitted to distract from experiences of cosmic consciousness. That is, we may validly enjoy both without having to sacrifice either. But since cosmic consciousness can only be experienced in the connective mode of sentience, a life that includes both modes requires that our experiences of cosmic consciousness be temporary, enjoyed in bouts interspersed between periods of architective normalcy. Cosmic

consciousness is a valid human, earthly experience, but as a human it cannot be an uninterrupted, permanent flow of cosmic awareness.

Chapter 20: To Sleep, to Dream

The sun and the moon are major influences in our lives, specifically in the diurnal and lunar cycles we respond to. We move between sleep and wakefulness with the cycle of night and day while womens' reproductivity cycles with the moon, for example.

Our interactions with both these heavenly bodies are purely connective. No architective interaction with either is possible except indirectly, say through our construction of calendars and clocks, and secondary items like bill payment deadlines. I suggest that it is our connective capacities that are most affected by sleep.

I see my dreams to be even more dominated by architectivity than my waking life. Dreams offer a different reality to our waking reality, and that reality appears to be of an even more concerted architectivity. My dreams often involve logistics - navigating cities, buildings, train and road networks; usually accompanied by a need to reach a specific goal, the path to which is littered with obstacles. While my architective awareness of the dreamscape is relatively unaltered, my connective perceptions appear to be seriously diminished. For example, I seem to able to commit the most heinous crimes in my dreams without compassion - and suffer them without feeling pain. My dreams can be humorous, horrendous or satisfying, but they are almost never loving or harmonious.

The most obvious clue to the dominance of architectivity in our dreams is the persistent presence of one's separate self as a central player.

Meditation is possibly a means of getting one's architective perceptions to quiesce rather than one's connective perceptions. One night I had a dream in which I took LSD and tripped. I woke up immediately afterward and noted that although I had been enjoying the trip, it was nothing like tripping as I have consciously come to know it. I suggest it is not possible to replicate the psychedelic or meditative experience in a dream state because of the paucity of connectivity in that state.

So we should take care when imparting a spiritual significance to our sleeping dreams, for that significance (if any) is likely to be largely if not entirely architective. We should take even greater care when attempting to apply dreamtime revelations to our waking lives for they are likely to be seriously imbalanced, and if they do serve a spiritual purpose it is likely to be an architective one. Our dreams speak the language of our Planetary Deity, not the Cosmic Deity.

I am toying too with the idea that this even greater architective preponderance in dreaming is a clue to the identity of our Planetary Deity. Jungian psychology places great value on our dreams being a gateway to a "collective unconscious". Jung populated this collective unconscious with the symbols, archetypes and myths that have accumulated through the eons of human history, even through the experience of our evolutionary predecessors. In the light of the present discussion, this collective unconscious could be regarded as the processional spirit of our species or even of our planet. It may even constitute the personification of our Planetary Deity that I find so elusive. Interestingly, it also means that the collective unconscious Jung has described is confined to our planet (or, looking into the future, to within the scope of human architective reach) and that other planets with their resident organisms would host completely separate and different collective unconsciousnesses.

The Jungian connection is also interesting in that Jung interpreted dreams in terms of their symbolism. Regarding dreams as being rich in architectivity makes it easy to see why they would lend themselves to symbolic expression. Jung's visions and dreams, as described in his Red Book, are overwhelmingly architective. It is only in his interpretations of them, subsequently done in the waking state, that elements of connectivity appear.

Though connective awareness is rare in my dreams, I see my dream behaviour exhibiting both a conscious and subconscious awareness, such that my negotiation of connective phenomena is mostly subconscious. If I am right, this is in conflict with Jung's use of the term 'unconscious' to describe dreaming. I see a need for a more precise vocabulary, so that we might be 'unconscious' of things that are hidden from both our conscious and subconscious awareness.

Chapter 21: Conclusions

This book has suggested some novel ways of approaching spirituality.

It has suggested that we can understand our spirits and deities to arise from the material world in the same way that we do rather than being underlying causes of it. In doing so we gain material reality as a guide to our spiritual thinking in the same way it guides our scientific thinking.

In describing the world in terms of a universal connective system interspersed with isolated architective fragments it has shown that the human spiritual experience may be that of a universal union or that of a specific manifestation, depending on our mode of consciousness, and that we are capable of both.

It has shown that any spirit or deity cosmic in scope must be purely connective, and any spirit or deity that is architectively active cannot be universal.

By highlighting the architective dominion of our lives it has shown that our traditional experiences of spirituality are overwhelmingly architective.

It has shown that the influences of our connective spirits are extremely weak in comparison to the controls and organizations of our architective spirits. It has shown that connective spirituality has remained so thoroughly mysterious because holistic spirits are so weak, because they are so deeply hidden and because we are blinded by a habitual architective mode of consciousness.

It has shown that the connective spiritual relationship is one of mutual consideration rather than one of submission and sacrifice.

In demonstrating the distinction between connectivity and architectivity it has provided a framework by which the contradictory elements of spiritual vagueness and rational precision can be reconciled.

It has shown that the universal connectedness experienced under psychedelics need not suspend our participation in time and space, only involve a mode of consciousness in which our perceptions of time and space can vary.

It has shown that we may venerate a hierarchical deity in the context of any social institution whether or not it is a religion. Employees of a corporation and citizens of a country would experience a similar sense of identity, duty and attachment to their symbols and leaders as any adherents of a religion. While they may not be inclined to describe these experiences as spiritual, it is not uncommon for leaders of nations to arouse in their populace a sense of divinity in their leadership.

It has suggested that the connective mode of consciousness is so unusual that we would likely describe the experience as "out of this world" and consider it special if not spiritual. Of course we employ a connective sentience in the everyday management of our affairs but only in brief spurts or subconsciously. To consciously experience its full-blown weirdness one would have to maintain a connective consciousness long enough to allow a significant widening of one's connective web of interaction. Most of us spend our entire lives without ever experiencing it. Though I lived a religious childhood, I never experienced it until I started dabbling in psychedelics, and I suspect that if I had not so dabbled I would not have experienced it in my lifetime.

This book has suggested that one may widen one's connective consciousness so far as to become aware of the cosmic connective system and even to be aware of one's own connective consciousness as a visage of a greater cosmic consciousness. (Note how I mention one's connective consciousness only.) Widening one's connective consciousness to such extremes I believe to be the greater aspect of the spiritual experience made possible by strong psychedelic drugs and dedicated meditational practice.

Many believe that their psychedelic experience of universal connectedness has revealed their "true self", meaning that they regard their everyday egotistical experience of reality to be an illusion, one to be cast off at a more advanced stage of spiritual development. This book has shown that though the psychedelic experience of universal connectedness can reveal a Cosmic Self, one's everyday, egotistical self is not an illusion but a valid

means of coping with the architectivity that dominates our planetary existence.

While many teach that our spiritual failure arises from the loss of a primordial innocence, this book has shown that living at a planetary scale means that connectedness is not our natural state - separateness is - and that competence in connective spirituality is something we cultivate rather than restore, much like an acquired taste: One has to learn to recognize it, what facilitates it and how to enjoy it.

An experience of profound connective harmony - being joyful for the Cosmic Deity and an epiphanic experience for us - would be experienced as being beautiful both by it and by ourselves. The creation of complex architectures, on the other hand, would only be a source of joy to us and to an architective deity when we and it have an appreciation of creativity. We often have such an appreciation but our Planetary Deity does not. The beauty to be found in architective creation is only valued by our human (and possibly other animal) sentiences, whether it be in a work of art, the complexity of a leaf, a monumental cathedral or a human face. What I am trying to say is that any appreciation of beauty in the complexity of architective construction (at least here on planet Earth) is limited to us and to our more benign cultural institutions (in their roles as hierarchical deities). Our Planetary Deity appears to only find beauty in the complex intrigues of human sociality and in the spectacles of titanic disruptions.

For spirits and deities arising in the material world, time matters. Spiritual conditions are not constant. The timing of events can have spiritual relevance. The success of a spiritual endeavour may well be dependent on the vicissitudes of the spiritual weather.

Vocabulary

The variety of ways of understanding spirituality highlights a need to extend our vocabulary around the subject. On the one hand many people make no distinction between 'religion' and 'spirituality' while I have gone so far as to divide spirits into connective and architective camps, each with their own sub-genres. And by classifying social institutions as hierarchical spirits I am effectively negating the traditional distinction between the spiritual and mundane.

We need to extend our vocabulary to more clearly distinguish the mode or even kind of spirituality we are referring to. My own preference would be to distinguish 'cosmic spirituality' from 'planetary spirituality', reflecting the architective divide. Many would recognize the connective spirits I have described as being relevant to their spiritual pursuit while others see their spiritual experience only in terms of architective ritual and dogma.

Acceptance of a spirit as a deity carries the implication that the deity has an intent or purpose of its own, one that does not necessarily coincide with our own. Service to a deity should be understood as serving the deity's purpose rather than our own. Our own spiritual intent may take many forms, such as wanting to be healed of one's travails or a desire to participate in a cosmic consciousness; but these personal ambitions rarely match those of our deities. Our architective deities primarily require our unwavering attention and obedience, while the Cosmic Deity is intent on profundity in connective harmony - and neither of these generally rate as human spiritual ambitions. Perhaps we should talk about service to a deity as 'spiritual service' rather than 'spiritual experience'.

So in addition to distinguishing between cosmic and planetary spirituality, I suggest that cosmic spirituality bear a further distinction, between service to profundity in connective harmony and achieving a conscious participation in the cosmic system. For planetary spirituality we might distinguish between service in active performance of religious rites and our everyday submission to the architective dominion.

In the realm of sentience too, there is need for an expanded vocabulary. While I have attributed sentience to our deities as well as to animals and ourselves, these sentiences arise in very different ways. Human and animal sentiences arise in the operations of the functional organs that are our brains, the Cosmic Deity's sentience arises as a holism, that of our Planetary Deity as a processional narrative and those of our hierarchical deities as architective wholes. Yet the modes I have attributed to all these sentiences are common, namely connective and/or architective. Could it be that 'connective' and 'architective' describe different *kinds* of sentience, which our brains access through their different modes of operation but which our deities access through other means? That is, the term 'modes of sentience' might apply only to brain based sentiences while 'kinds of sentience' would apply more generally. This would also imply that connective and architective

are not simply two aspects of consciousness as a singular phenomenon, but are two completely different kinds of consciousness.

In a purely connective window, without boundaries - without architectivity - there can be no sense of otherness. This means that in the purely connective cosmic context, all participants in a relationship are in some way the same. We need a word for such a universal commonality.

Assuming there are living organisms on other planets, they too would venerate a Planetary Deity associated with their planet. So there could be a zillion Planetary Deities out there, all architective and all different. Yet the organisms on other planets would be apprehended by the same Cosmic Deity we apprehend. In this sense the Planetary Deities are many (even though each may want to be the one and only) while the Cosmic Deity is a universal commonality.

Suffering, Salvation and Death

Many religions teach that our suffering is a result of our immorality, a neglect of our spirituality or our ignorance of some divine truth, while atheists generally put it down to our stupidity. All these outlooks involve a guilt on our part. From the standpoint of this book, though we are responsible in some part for our suffering, by far the major contributor is the accident of our placement in the figurate window of scale and the consequent architective dominion. Most of our suffering is not of our own making.

Though they may profess to alleviate our suffering, architectively active religions will prioritize their own well-being above our own. Hierarchical and processional deities control or organize us - our prayers and supplications do not control them. Holistic deities neither understand our architective dilemmas nor are they able to assist architectively.

Devotion to a deity or the following of a religion cannot alleviate our suffering while we yet have bodies that are architectively vulnerable. No matter how assiduously we follow a dogma and no matter how ardent our devotion to a deity - of any kind - we remain subject to bodily malfunction and demise. Our only successful recourse has been to our own technological skill and political civility.

Though overwhelmingly due to our architective vulnerability, our suffering also has connective sources, for example in storms and turbulence in our environment and dissonances in our interactions with each other. Our darker moods may also reflect discord among our connective spirits. In these situations a holistic deity may be sympathetic to our suffering but the most it could do would be to soften the edges; while architective deities would be blind to our connective distress. At least our architective preoccupations may distract us from our connective tribulations, while architectivity allows us to build containers to shelter us from storms and our social institutions can provide architective channels that reduce their impact.

The Cosmic Deity is uncomprehending of the architective sources of our suffering, while it does what it can to shepherd connective turbulence towards harmony. It is totally and absolutely innocent of our suffering. Our Planetary Deity, though it may stoke the contests at the source of our architective suffering, is unaware of the bodily pain we experience as a result (though it relishes our emotional anguish). We are caught in the middle. Knowledge of our cosmic nature makes our architective tribulations easier to bear but we so desperately need salvation from a heartless and overbearing Planetary Deity. The accident of our placement in the figurate window of scale together with our residence on the planet of a particularly aggressive Planetary Deity makes any outlook for architective salvation quite hopeless. The spirituality I have outlined enables a joyous cosmic participation through a connective spirituality but it also nails us into a coffin of architective spiritual despair. The picture I have painted is, in one sense, very bleak.

I do see straws to clutch at: Consider that if our architective incarceration were due only to a blind architective dominion, our oppression would grind on ad infinitum. The fact that there may be a consciousness (namely that of our Planetary Deity) behind the most egregious elements of our despair means that there is at least a possibility that things may improve - that the Deity may change its mind. Remote as this possibility may be, it is a sliver of hope. As I see it, our Planetary Deity might come to understand that it only needs to contain connectivity to maintain its integrity rather than blindly organizing mayhem and destruction in order to ensure its existence. Our lives would be significantly improved too if it would only widen the social constraints it imposes on us without completely removing them.

Though the strength of our Planetary Deity overwhelms that of the Cosmic Deity at the planetary scale, the Cosmic Deity has a capacity to disturb the organizations of our Planetary Deity even at that scale.

We ourselves can take some of the edge off our suffering by better managing the balance of connectivity and architectivity in our spiritual economies. Our Planetary Deity delights in the contests among our religious and institutional hierarchical spirits, so removal of any of these superfluous to our needs would diminish its arsenal. We can do this since our hierarchical spirits emerge from us and we can eliminate them by simply not performing the routines and rituals that constitute their existences (which of course it is not quite so simple, since they are ingrained in our cultures and will fight for their survival). It may also serve us to remember that while our Planetary Deity is not an object that can be disrupted, it is a narrative that can be modified by our own behaviours (since each of us is a conscious, willful instance of that narrative). Just as our Planetary Deity could come to understand that it only needs to contain connectivity rather than blindly organizing mayhem and destruction, so could we (as willful instances of its narrative).

Understanding that architective processes work through historical succession means that we can weaken them by weakening the historical links in our lives. Socially speaking, this means we should stop celebrating and replaying our history. Of course we should acknowledge what has happened in the past but also acknowledge that past paradigms rarely apply to present problems. We could stop recreating the past in the present, by avoiding perpetuating practices for tradition's sake alone and avoid cementing traditional cultural identities. I don't mean that those identities should be disregarded but recognize they were appropriate to their time. We could stop misappropriating history.

Consider too that reducing the power of our Planetary Deity means proportionately increasing the influence of the Cosmic Deity. The cosmic influence would remain in the background but comparatively speaking would not be quite as weak. There could be a spiritual benefit to weakening our Planetary Deity in addition to any benefit to ourselves.

Death is a salvation from architective suffering but at the cost of our architective existence. Our connectivity on the other hand continues, if only through the free molecules that constituted our erstwhile bodies, but

perhaps having subtle repercussions through the cosmic connective system and manifesting in strange visages, altogether clear of our erstwhile architective identities. Death as a salvation comes to us all, regardless of our architective identities, regardless of whether we were devoted to a deity or followed a dogma, regardless of our achievements or failures in life, regardless of our preparation for death or disregard of it, and regardless of the moral choices we made while alive. Connectively speaking, we are all saved.

Architectively speaking, we are spiritually helpless.

Stealing Kisses, Dodging Bullets

So what can we get, here, now, from an active pursuit of spirituality?

I won't even consider promises of eternal life or material wealth (though our Planetary Deity may exploit these expressions of greed for its own purposes).

Certainly there are immediate psychological and social benefits to participating in a religion, particularly for people who are otherwise lonely. But spiritual benefits? Well yes, these benefits could be regarded as spiritual if the religious institutions are regarded as hierarchical spirits. These psychological and social benefits are the fruits of submission to their authority.

There are benefits for the lonely in connective spiritual activity too. Experiences of connectivity may not always be harmonious but they are never excluding, they never constrain and never contest.

Do we benefit in any way from appeasement of our Planetary Deity? I think not, but we might at least avoid being excessively victimized. Perhaps this is a benefit of our unquestioning acceptance of the architective dominion.

Do we benefit in any way from consciously choosing a connective activity at moments significant to the Cosmic Deity? Indeed at such moments I have experienced a sense of increased harmony with my environment, with other people and with the Cosmic Deity. Do these moments have any long term benefits? Perhaps by imparting a sense of fulfillment to one's life, but there

are certainly no architective benefits. It is the kiss itself, the profundity of the moment, that counts.

We get some relief from the architective dominion in a conscious experience of cosmic integration, but these experiences are fleeting and rare. Yet the thrills of connectivity are available to us even in a mundane state of mind, were we to recognize and pursue them. Our possibilities for connective fulfillment may be severely limited by our architective constraints and we are distracted by a very determined Planetary Deity, but our connective possibilities can never be entirely eliminated. Even under the severest constraint there is room for connective exploration through a keener appreciation of subtlety. We can find value in our lives by dodging the architective bullets as best we can, without hope of salvation, while stealing connective kisses.

With this strategy in mind, I consciously choose a connective activity whenever an opportunity arises rather than habitually taking the architective default. I give the architective spirits of my planet and my society due respect for my survival depends on them. By accepting the unavoidability of the architective dominion I avoid apportioning blame to myself or to others. I understand the inescapable suffering of our architective condition and offer support to (and accept support from) others in this condition. I take pleasure in architective complexity but avoid unnecessary architective encumbrance for it often prevents connective participation, and profundity in connective participation is my gateway to the infinite.

A kiss to you, helplessly, from Mike.

Epilogue: The Post Planetary Age

The relevance of scale has been an important theme in this book, especially regarding the significant divide at the planetary level where larger scales become entirely devoid of architectivity. It appears to me that humanity is in the process of crossing this divide, most notably with the advent of space travel in the 1960's. This crossing is a process, not a singular event. It probably started with the intellectual understanding of the Earth as a participant in a greater solar system together with the circumnavigation of the planet in the 16th century, and extending to our appreciation of galaxies and humanity's first steps on the moon in the 20th century. And it is happening not only in a geophysical sense - commerce, culture and communication are rapidly approaching a full globalization of the planet.

I believe there is a momentous consequence of this, for it means we are also approaching the spatial limit of architectivity. Beyond this limit the architective features of newness, complexity and creativity become increasingly meaningless. Approaching this limit, concepts of authority and control fragment and disappear, as I believe we are currently experiencing with the rise of scepticism in institutional authority, religious, political, academic and corporate. We are becoming 'individuata', each of us a law unto ourselves, no longer believing in any ultimate religious authority. The internet has all but obliterated any sense of authority in traditional media. We are also witnessing a backlash - a last stand by religious conservatives in the US, Islamic jihadists and extremes of political censorship in Russia and China. Our Planetary Deity does not want us to go cosmic.

Humanity is on the cusp of what might be called a "post planetary age", not only because we are extending ourselves beyond our planet but because we are extending ourselves beyond the limit of architective possibility. To go any further we are going to have to learn how to manage situations at a planetary and extra-planetary scale without it. Of course, at the scale of our individual bodies we will still be architectively coherent and susceptible to its forces, but we are going to have to learn to do without these in our cosmic enterprises.

This we have already started to do. The cosmic consciousness afforded us by psychedelic drugs has given many of us a taste of things to come, for to negotiate that consciousness successfully requires an abandonment of architectivity. We cannot possibly communicate architectively with sentient beings in other star systems but we can communicate with them connectively through the song of the cosmic holism.

Cosmic school has opened. We just have to recognize it.

Appendix 1

I have made my argument in simple, stark, black-and-white terms in order to convey it more easily. No special cases, no ifs-and-buts were addressed and someone with a knowledge of physics would probably be aghast at my brevity. I ask you please to read between the lines. For example, I have not used the term 'force' in its strict physics textbook definition nor should the constraint of a bond be understood to apply to the distance between its constituent objects - it could well be their momenta or energies that are the subject of their constraint - and so on.

I am happy to address questions you may have by email (my email address is on the title page of this book), and would rather you email me than abandon the main argument, for the argument may deliver overall outcomes that are not dependent on the missing details.

However, there are some matters of detail that I feel should be covered here.

The Limited Flexibility of Bonds

The main text describes how a bond prevents its constituent objects from participating in external interactions as the bond's constraint prevents suitable responses to the external interaction, effectively negating them. The external interaction then affects the bond as a whole instead of affecting its constituent objects, and behaves as if the interaction was with the bond as a single object rather than with its individual constituents.

Now the constraint of a bond holds its constituent objects to a range of values rather than to a single value, meaning that there can be some response by the constituent objects to the external interaction within the range allowed by the constraint, however small that may be. That is, a bond need not *completely* negate the effect of an external interaction on its constituent objects. The external interaction could affect both the bond's constituent objects and the bond-as-a-whole, such that the bond-as-a-whole

only responds to the external force to the degree that it negates the force on its constituent objects. The more that the effect of the external force on the constituent objects exceeds the constraining range of the bond, the greater is its effect on the bond as a whole.

The degree of the negation may of course be so great, or the range of a constraint so narrow, that for all practical purposes, the bond's constituent objects are comparatively undisturbed by the external interaction and the bond as a whole appears to respond fully. On the other hand, if the constituent objects are allowed a significant response to the external interaction, then both the bond and its constituent objects can respond to the external interaction.

In the case of a partially negated external interaction a bond displays a spatial volume of its own as well as the spatial volumes of its constituent objects (and perhaps those of their internal objects if they are partially negated). Outside objects are excluded from the spatial volume of the bond-as-a-whole as well as from the spatial volumes of its constituent objects. The excluding spatial volume of the bond may be enlarged by the volumes of its constituent objects and made less rigid by them.

While there is a degree of flexibility in the spatial volume of a bond, it is always only a degree. A bond can never be as flexible as a connective, for in a connective there are no constraints at all, meaning that the flexibility of a connective is limitless while any flexibility to a bond, even when sublimated, is limited.

In the discussion below, I describe how bonds can be made very flexible, like rubber bands, by chaining them together.

Indirect Bonds

Objects may participate in more than one interaction simultaneously.

In the case of connective interactions, multiplicity is straightforward, allowing objects to be linked in a network of different interactions utilizing different forces rather than all being direct participants in the same interaction. There may be an indirect connection between all the objects in a network with the connection between some objects mediated through others.

In the case of a bond, its constraint may prevent its constituent objects from participating in external interactions. But this is so only if the force utilized by the external interaction relies on properties that the bond is constraining, because of possible conflict with the constraint. If it relies on unconstrained properties, the constraint of the bond is not challenged and the external interaction is not negated. So the constituent objects of a bond may yet participate in an external interaction if that interaction utilizes properties not constrained by the bond - and that second interaction may also be a bond.

A bond's constraint will also not prevent its constituent objects from participating in an external bond when the external interaction does utilize properties the bond is constraining but the external bond's constraint ranges are the same as the bond's so there is no conflict maintaining both constraints.

An external interaction by a bond's constituent object may well be with the constituent object of another bond, with the result that the two bonds aggregate via a bond between their constituent objects. Both or either of these two bonds may aggregate in this same way with yet other bonds, to create a chain of bonds aggregated via their constituent objects rather than their topmost objects. In this way bonds can bond with each other in horizontal chains rather than in vertical hierarchies, with the bonds at either end of a chain linked to each other indirectly through the mediation of other bonds.

Both connective and binding interactions can thus also be indirect, that is, mediated through a chain of interacting objects.

An indirect bond can also interact as an object in its own right with its own emergent properties. But the overall constraint of an indirect bond is a composite of the constraints of its composite bonds, so any leeway in each component constraint adds to the total leeway in the indirect bond. The greater the number of bonds in the chain, the more the composite constraint can widen. A very long indirect bond can be very flexible indeed, like a balloon or a long polymeric molecule, though ultimately its flexibility remains limited.

Since an indirect bond can interact as a single object in its own right, it may be a constituent object of a direct bond, and so reside within its hierarchy,

while the whole hierarchy of a direct bond may be just one link in the chain of an indirect bond.

The architective hierarchy of an aggregate offers a clearly defined and fixed map of all the direct and indirect bonds in its construction. Indirect bonds may be more flexible, but their architectures remain fixed.

The Disruption of Aggregates

In discussing aggregation in the chapter "Features of Connective and Binding Interactions" it was said that disrupting any of an aggregate's internal objects would destroy the whole aggregate.

This statement needs to be tempered, for, as described above, not all the bonds comprising an aggregate contribute to its vertical hierarchy and so to its structural integrity. A structure may also rest on many pillars and the disruption of one pillar need not necessitate the disruption of the entire structure. Indeed, some elements of an aggregate may be purely ornamental while vertical elements may be duplicated to the extent that the disruption of one does not change the structure of the aggregate at its higher levels.

Nonetheless the overall structure of the aggregate - its architecture, the map of all the bonds used in its construction - has changed, so the aggregate could be seen to have processed (described at the end of that chapter) from one architecture to another, even though its higher levels may be unaffected.

The concept of a processional narrative (as described in the chapter "Features of Serial Meaning") also bears on this situation, in that a procession of architectures may display a persisting narrative theme, which can furthermore organize the narratives of its contributing architectures. We as persons are such processional narratives in that we display a continuing theme to our characters even though the cells and organs of our bodies are regularly replaced.

Some Notes on Sublimation

The chapter "Features of Connective and Binding Interactions" introduced the concept of sublimation, whereby an external interaction does not act on an object as a whole but rather on its constituent objects, which happens when the external interaction does not challenge a constraint on the object's constituents. This may happen, for example, when the external interaction oscillates and sets up waves and vibrations among the object's constituents whose amplitudes lie within the range of their constraint.

The result is that the external interaction acts on the object's constituents as if they were in a connective rather than in a bond. As well, by a sublimating object not interacting with an object as a whole, the sublimating object is not responsive to the object's properties as a whole, such that the sublimating object does not recognize the properties the object has in its own right. As far as the sublimating object is concerned, the sublimated object does not exist at all, only its constituents do. The result is that the external interaction acts on the object's constituents as if they were in a connective rather than in a bond.

In particular, a sublimating object does not recognize the sublimated objects' spatial boundaries (its boundaries in its own right), so a sublimating object might pass through the object as if passing through a connective.

However, since the sublimating object is not responsive to the sublimated object's properties as a whole, the sublimating object is also not recognized by the sublimated object; that is, neither object recognizes the existence of the other and the sublimation is mutual.

This argument is predicated on either the sublimating or sublimated objects (or both) having constituent objects, and that their constituent objects are apparent to each other. Their constituents thus interact with each other as connectives that are able to pass through each other.

When connectives pass through each other, waves of disturbance may propagate through the connectives, but interestingly these waves will remain within the boundaries of each sublimated objects' constraints.

In the case where some of the objects have no constituents, only the objects that have constituents will have waves disturbing their interior. If none have constituents, the idea of sublimation is not meaningful.

Elementary objects such as leptons and quarks do not have constituent objects. They cannot be sublimated - and therefore cannot host waves, and cannot pass through each other. But they might pass through and generate waves when they sublimate non-elementary objects.

If one was to make the assertion that all objects can host waves or pass through each other, then according to this idea of sublimation every object would have constituents and no elementary objects exist.

Appendix 2

Graphical displays of the sine-like and tan-like trigonometrical functions offer very good analogies of architective and connective interactions.

Sine and tan are simple ratios of the sides of right-angled triangles (triangles having one internal angle of 90°) as seen from a corner of the triangle. If you are not familiar with them an internet search of "sine ratio" or "tan ratio" will quickly bring you up to speed. The value of each ratio is dependent only on the angle of the corner and not on the size of the triangle, so the value of sin(30°) is always 0.5, sin(0°) is always 0 and sin(90°) is always 1, for example; while the value of tan(30°) is always 0.58, tan(0°) is always 0 and tan(90°) is always ∞.
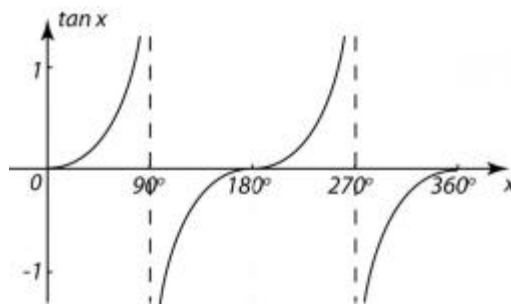
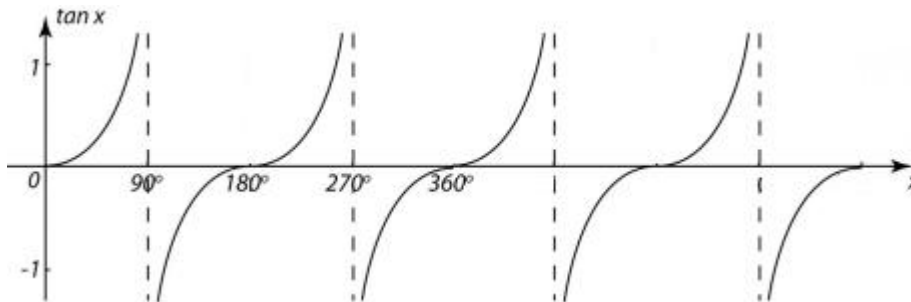If you draw a graph of the sine ratio for all angles between 0° and 360° you get:
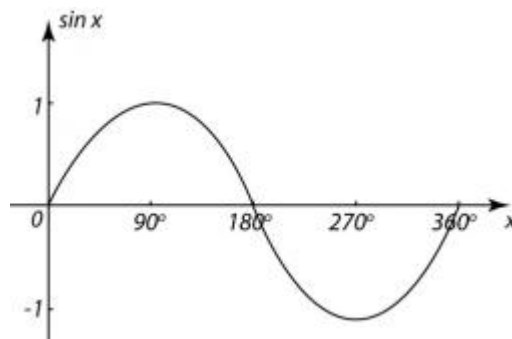
And if you extend the graph beyond 360° it repeats for however further you extend:
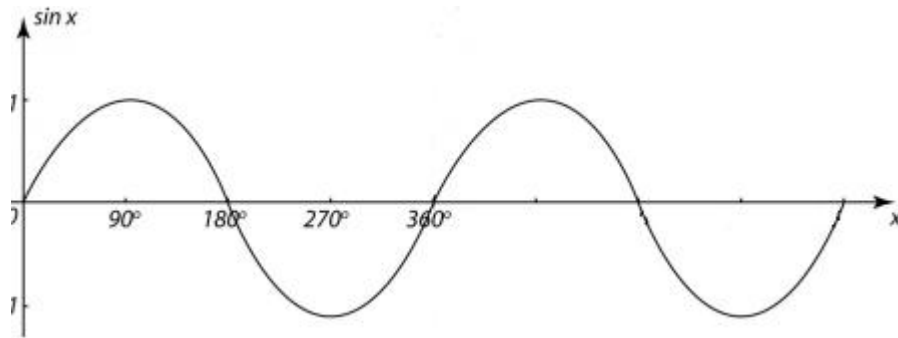
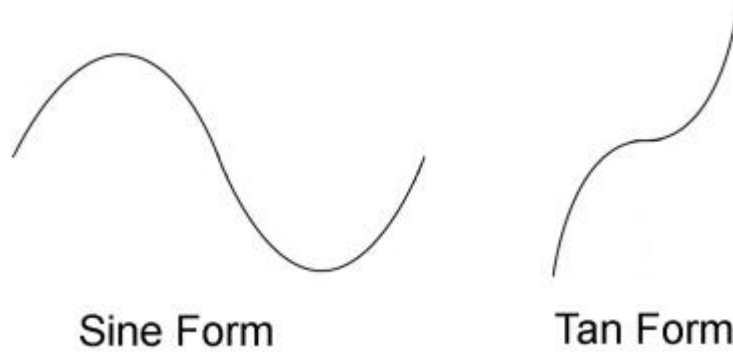If you draw a graph of the tan ratio for all angles between 0° and 360° you get:

And if you extend the graph beyond 360° it repeats for however further you extend:

The dotted lines on the tan graphs show where the value of tan(x) goes to either -∞ or +∞.

There are two signature forms that repeat. Sine has a repeating wave form and tan has a repeating hyperbolic form:

Sine Form   Tan Form

If you imagine yourself moving along a repeating sine form (starting anywhere) your value would change continuously between -1 and 1 and you could move this way forever. If you imagine yourself moving along the tan form your value would range between -∞ and +∞ but you could never smoothly cross a dotted line. Crossing a dotted line would mean jumping from -∞ to +∞ or vice versa. In fact you could never actually reach a dotted line. As you approached a dotted line you would get closer and closer but never actually reach it - each tan form is hyperbolically constrained between two dotted lines.

The sine form repeats in an unbroken, smooth wave. The tan form repeats as isolated, separate objects. The tan form symbolizes architectivity and the sine form symbolizes connectivity.

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