

# Steps To The Threshold Of The Social

## Part 4: Conjunction and Contradiction

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**ABSTRACT:** This paper develops a non-dualistic philosophical position which has implications for the deep structure of the dialectic and for the foundations of the social.

### **1. Introduction to the problem of conjunction and contradiction**

An important question that is still not resolved with respect to the relation between magician meta-systems and special systems theories is the connection between conjunction and contradiction. In special systems theories there are the mathematical analogies between the dissipative, autopoietic and reflexive special systems and the complex, quaternion, and octave algebras. Each of these algebras use conjunction expressed by the “+” sign to represent how different kinds of numbers are held together yet apart as they are transformed by operations of the algebra. What is interesting is that these different kinds of numbers are never actually added, but always remain separate, yet glued together, by the sign of conjunction (+). Outside conjunction the different kinds of numbers cannot be told apart from normal real numbers. Only as a set in conjunction do they have the special properties described by their associated algebras. In magician meta-systems we have posited that there are annihilation cascades with side effects and that the minimal annihilation mosaic that composes these cascades is based on the Greimas square in which two contradictions are kept from canceling for some period of time, but when they eventually do cancel, then the side effects produce further particles

that will cancel later in the cascade. We have noted that in the Greimas square cancellations are self-blocking, so that the annihilation mosaic does not immediately vanish. So, we can see that conjunction in the special systems is related in some way to sustained contradiction in the annihilation mosaic represented by the Greimas square. In this paper we will attempt to explore this peculiar connection between the special systems and the magician meta-system that ties them together.

Our exploration will begin by postulating that what appears as a conjunction in the special system is, in fact, a self-blocking contradiction in the meta-system. The result of this postulation is to say that the magician meta-system based on annihilation mosaics is not something added onto the special systems from the outside, but instead something inherent within the special systems. It is an unfolding of a potential out of what appears as the unitary relations of conjunction at the special system level. This is an important point because it shows that each level arises out of the possibilities of the proceeding level with an emergent production of unique properties that were implicit in the lower level. So, for instance, building up GST through the adding of methodological distinctions allows us to create the illusory continuity of real numbers to describe dynamical systems. But when we take these illusory continuities and hold them into conjunction then the special systems levels are created. What is significant about these levels is that they have the strange property that each level is BOTH a whole greater than the sum of its parts and also just a sum of its parts. These special systems may be seen as merely a collection of parts or as wholes with emergent properties. It is a matter of the point of view of the observer whether collected parts or wholes with emergent properties are seen. This “neat trick” that allows reductionism and holism to intersect perfectly is brought about through the role of conjunction in the special systems that hold the illusory continuities together-yet-apart. If the conjunctions are broken, then the different kinds of numbers can no longer be distinguished so that the effect vanishes. Notice that this is a property of all autopoietic systems which appear and disintegrate instantaneously. There is no partially living systems. One is living completely or not at all. Being born and dying are instantaneous transitions for the autopoietic system. The same kind of snap transitions occur in the dissipative and reflexive systems above and below that level as well. This instantaneous constitution or destruction is based on the property of conjunction which allows differences to be seen between different streams of illusory continuity as long as the conjunction holds, but these crucial differences vanish completely when the conjunction is withdrawn (annihilated). Further, an autopoietic system is

seen as a closed whole by those who accept the autopoietic paradigm, but is seen as a reducible set of parts by those who do not accept the autopoietic paradigm. The fact that conjunction allows separate but equal different continuities to be combined so that the emergent properties only exist if the observer wishes to notice them is very important. This same characteristic of observer dependence of the properties of some phenomena have been seen with respect to the particle/wave nature of light in physical experiments. It applies to other kinds of more complex phenomena as well. The whole question revolves around whether the observer is separate from or part of the system being observed. If the observer is separate from it then he/she sees the reducible parts (particles) without the “extra” contribution of the whole. If the observer is part of the system being observed then the observer sees the wholeness of that system and its emergent properties (like the interference patterns of light waves) and does not see its reducibility. What is amazing is that conjunction gives us exactly this split in the role of the observer so that objective views of the system are exactly overlapping with holistic or what might be called subjective views of the system. The difference between these two views is undecidable because they exactly overlap. The observer decides whether he will see the whole or the parts and there is no real difference between seeing one or the other for these special kinds of systems.

Light has this property because the medium of observation is inherently bound to the characteristics of the special systems. From our point of view light moves at 186000 miles per second. But from its own point of view light does not move and transitions from origin to destination instantaneously. we can think of ourselves as “decelerated” from the constant of the speed of light. Thus we are warped away from the instantaneous origin and destination of light such that the illusion of distance and movement across that distance within spacetime is produced. We see the order of the universe through the perception of light and its articulations that occur based on its interaction with the properties of matter. Matter absorbs certain wavelengths of light so that we see what bounces off the objects within the world. The light itself has a specific spectral structure imprinted upon it by the absorption of wavelengths by minerals within the sun. Light allows us to observe order within the system by bouncing off of it and we receive and sense whatever has not been absorbed along the way from the origin of the photon to its interception by our eyes as a natural sensing apparatus. What is absorbed by the system acts as a perturbation and what is reflected relates to that systems closure. So we use the medium of light to see what the closed system has rejected and as we do that we infer the properties that system has on the basis of its closure. What the system

accepts may perturb it and thus change its operation. Light shows us the closure of the observed system from the relation between what is reflected and what is absorbed we deduce the nature of the object under investigation. All objects act as filters splitting rejected light that is reflected from accepted and absorbed light that may perturb the system and thus change its internal dynamism. Of course, reflected light may bounce off several surfaces on it's route so that it sets up distorting reverberating reflections. Those reflections may mix the properties of all the closed systems it has encountered along the way. These reflections may produce complex illusions. So in the phenomena of light (the primary observation medium) we see clearly the different aspects of the special systems interacting to provide our visual experience. The emanation of the light into the darkness is dissipative. The absorption verses reflection of the light from bodies writes the characteristics of the bodies into the light medium. This tells us about the closure of the bodies and this is the autopoietic aspect of the systems encountered. The possibility of multiple reflections of the light off many surfaces shows us the reflexive aspect of light which is bound up with its possibility of indefinitely many reflections.

This result of conjunction is highly surprising and explains why it is difficult to convince reductionists about the existence of autopoietic systems. We might call this the theoretical transparency of autopoietic systems. It expresses a chiasm of views that the observer can take of the autopoietic system which is undecidable. In other words dissipative, autopoietic and reflexive systems are only there if you decide to look at them as wholes that are greater than the sum of their parts and thus see their emergent properties. Otherwise they are invisible to the theoretician who is bent on reducing them. It is conjunction that gives us this strange epistemological property which is completely unexpected but explains succinctly why special systems are so hard to define and see within the auspices of a reductionist scientific paradigm. What this is telling us is that dissipative systems may be seen as two independent illusory continuities that are merely held together but function independently, OR they can be seen as two illusory continuities that twist around into each other like an Escher waterfall to produce a dissipative system. Similarly autopoietic systems can be seen as four illusory continuities held separate and remaining independent, or two dissipative systems held separate and remaining independent, or on autopoietic system with its own unique emergent properties. Finally the reflexive system may be seen as eight illusory continuities held separate and remaining independent, or four dissipative systems held separately and remaining independent, or two autopoietic systems held separately and remaining independent, or one reflexive system with its own unique emergent properties.

Normally a system is either seen as reducible or bound up in a whole. Special systems are an anomaly where reduction and wholeness are identical except for the viewpoint of the observer. They are in fact anomalous perfect systems that represent the equivalent of perpetual motion machines intruding into spacetime. They are like the perfect numbers of Greek antiquity whose devisers add up to the number itself. Examples of these numbers are 6 and 28, 496(?), 8128(?). Notice that in these perfect numbers adding and dividing come into a perfect congruence. The division into parts ADDS up to the whole. Similarly the special systems are thresholds of algebraic complexity with a very similar property of perfection in which the whole and the parts are perfectly congruent. The emergent properties appear to come from nowhere. But in effect they appear when the observer looks at all the parts together in a particular subjective way without separating him/her self from them. We can understand these two modes of observation by relating them to dualistic and non-dualistic approaches toward the apprehension of the natural complex under scrutiny.

There is no doubt that this is a strange state of affairs which appears in these anomalous “perfect special systems” and does not appear in any other kinds of systems covered by General Systems Theory. What is interesting is that it is exactly these special systems as thresholds of complexity that form the nucleus for the advent of dissipative, autopoietic, and reflexive systems in creation. We are not claiming that living things exemplify only forms that revolve around these levels of complexity. Instead we are saying that the universe of the mind and nature are unified (have a single *nomos*) so that what we see as a mathematical threshold for different kinds of minimal algebras (in *logos*) is in nature (*physis*) the possibility of ultra efficient modes of organization which form the basis for living things as a possible phenomenon within the spacetime universe. We take the view of traditional Chinese science that does not split *Logos* from *Physis* as does the Western tradition following the Greeks. Thus there is only the chiasm of mindbody or mindnature with a single *nomos* which exemplifies certain very specific mathematical properties which we abstract in mathematics, but actually exist equally in nature. These mathematical thresholds of complexity form nexes in spacetime that can facilitate certain organizations of things. We normally miss observing these special organizations because the observing medium itself (light) has these peculiar properties and special organization and it only occurs rarely in other phenomena. As it happens there are three ultra-efficient nexes represented by the special systems. We call phenomena organized around the simplest ultra-efficient nexus dissipative systems. We call phenomena organized around the next

more complicated ultra-efficient nexus autopoietic systems. And we call phenomena organized around the most complex ultra-efficient nexus the reflexive system. Each one has inherent properties that flow from their algebraic expression that make possible the intrusion of the perpetual motion that is possible in four dimensional rotations to appear or intrude into three dimensional spacetime which effect the things organized around that nexus conferring special properties on those organized things that violate normal thermodynamic laws. The fact that a phenomena is organized around one of the nexes does not mean that it is simple or that is all there is to the phenomena. Here we merely see eventities taking advantage of this mathematical possibility of ultra-efficiency built into mindnature. They use that ultra-efficiency to give them a boost in the energy usage for self-organization. Here we are interested in the minimal thresholds themselves and the simplest possible organizations that can take place around them. We do not expect to be able to explain all aspects of systems that are based on these thresholds but only there minimal or essential aspects motivated by an understanding of the mathematical analogies and how they map into the expression in special systems.

Since the mathematically expressed complexity threshold that holds the promise of ultra-efficiency is an inherent part of the mindnature chiasm we can see that the reversibility of the views of the observer between dual and non-dual modes is an expression of that chiasm. In other words if the observer thinks he/she can separate him/her self from “nature” then the whole fragments and all that can be seen are reduced parts. But, if the observer things he/she is part of the continuum with “nature,” then the whole remains of-a-piece AND the observer sees the emergent properties of the whole rather than the parts. What the observer sees is a result of his/her alienation from the mindnature chiasm. If the observer separates his/her self from the mindnature chiasm then the nexes of ultra-efficiency look like mathematical systems divorced from nature. But, if the observer does not separate his/her self from the mindnature chiasm then the thresholds of complexity remain embedded in spacetime itself and become features that undistinguished natural-mental processes can take advantage of to increase efficiency. Non-separation of the observer from the mindnature chiasm leaves the lifeworld in tact. Separation causes alienation of the subject from the object and leads to either materialism or idealism. If the lifeworld is not separated then subject does not separate from object and the observer is implicated in what ever system he/she observes. In this state of non-separation emergent characteristics of phenomena can be observed and synthesis dominates analytic fragmentation. The transcendental subject projects a prior synthesis on which its analysis of phenomena is based. Objects become

noumena that can only be partially known. However if the subject and object are not allowed to split then the fragmentation of phenomena is projected and on the basis of that syntheses are seen. We saw in the last paper in this series that part of this fundamental prior fragmentation is the projection of discontinuous time, we might also mention discontinuous space and quantization of phenomena in discrete spacetime. The non-separated observer lives in a macro-quantum mechanical universe in which discretization is prior to the arising of syntheses. Whereas the separated observer that drives a wedge between subject and object must project synthesis in the form of illusory continuities in order to be able to analyze phenomena. In our culture the projection of a priori synthesis and a posteriori analysis is the dominate mode of transcendence. It is opposite the projection of a priori disconnection and the understanding of the deep synergy of things based on their arising out of the prior fragmentation. We noted in the last paper that the magician meta-systems functioned primarily in relation to discrete and disconnected time. Similarly we could talk about discrete and disconnected space and the macro-quantization of phenomena of the non-separated observer. Projecting separation we realize synthesis and synergy as an end result and are able to see the Fullerian Fourths in creation. From the view of the transcendental subject of the noumenal transcendental object this synergy is covered over and completely hidden. That is why Peirce could prove there were only Firsts, Seconds and Thirds as logical categories. Categories are seen only as categories in the mind not in the mindnature chiasm. In the mindnature chiasm there are thresholds of synergy like the special systems that form nexes of ultra-efficiency for organization of systems. These are realized when we take the illusory continuities projected by the observer through the process of ideation and realize that they are fragmented. The fragmentation appears in the conjunction of discrete streams of illusory continuity. Out of them arise the algebras that specify these nexes of ultra-efficiency where the holes in the intertransformability are patched by appealing to the relation between illusory streams. So the subject appropriates the algebras at first to shore up the streams of illusory continuity in the face of intertransformability. But this appeal to different kinds of illusory continuity that only appear in mutual conjunction brings fragmentation into the world of the subject. The subject itself becomes fragmented into conjunctive streams of continuity. Once fragmentation enters it is projected onto the noumenal object. Where the subject is fragmented the object is unified into dissipative, autopoietic, and reflexive anomalous systems. These anomalous or special systems provide a limiting case for scientific exploration that splits subject from object. These special systems are anomalous objects which are sustained paradoxes. Alienated science only sees them as impossibilities. Order from

nowhere is an impossibility. It implies that there are unseen causes that order material phenomena. Life is an impossibility because reduction cannot see how material things can combine to produce *elan vital*. The social is impossible because of the paradox of intersubjectivity and the problem of solipsism. Yet when we look out at our world we see living things and social living things and we see dissipative systems that have order appearing from singularities within them. To the scientist who is alienated these are epiphenomena that are really explained by lower level emergent levels such as atoms and chemistry of molecules. But to one who is not alienated from the mindnature chiasms and lives in the lifeworld rather than the reduced universe of science the emergent properties of these special systems are obvious.

So we have seen that conjunction plays a very special role in the special systems allowing them to come into existence and giving them some of their very special properties. Conjunction itself is strange in that it holds things which could not be recognized as different apart and in so doing allows their difference in kindness to appear. It holds these different kinds of illusory continuity apart-yet-together. They cannot ever be brought completely together as the conjunction does not actually allow the addition to take place and the can not exist completely apart either as the differences that appear in conjunction disappear when the number streams are disconnected. So “apart-yet-together” is a middle term between complete disconnection and complete connection. We saw above that the subjectivity fragments when it attempts to strengthen intertransformability but this causes the noumenal objects to take on a special unity such as that of the autopoietic system. When the unity of the noumenal object is conjoined to the fragmentation of the subject then we have the mindnature chiasm. The subject becomes part of the system being observed and the emergent properties appear. In the conjunction of a fragmented subject and unified object emergence appears because when these two extremes with reversed roles are combined the surplus siphoned off by the subject is returned to the object. Thus the whole greater than the sum of the parts appears again. The subject is that supplement which had been taken out of play by alienation and reductionism. When the supplement is returned then the special properties of the whole are seen again. But, what is lost is the objectivity in which the subject stands as inquisitor over the tortured object.

So we must ask where the conjunction gets its own special properties. If we assume projecting discontinuous spacetime instead of continuous time and space, then we can see the conjunction as the connection between these discontinuous segments

and the quantized phenomena that appear within the discrete universe. But this brings up the points explored in the last essay in this series that dealt with how such systems cope with discontinuous time and space. We noted that discontinuous space is dealt with by instantatons or four dimensional solitons. Discontinuous time is dealt with by the embodied mechanism of karmic causation that Goertzel has modeled with the magicians meta-system. Quantization of phenomena implies macro-quantum mechanics which rejects the Copenhagen interpretation and says that the whole universe is quantal from micro to macro. It is only our projection of illusory continuities at the macro level which is a function of how we project our worldview that do not allow us to see this. We siphon off all intimations of it into a catch all rejected (nonscientific) category called the paranormal. Through conjunction we produce constellations within discontinuous spacetime/timespace and between macro-quantal phenomena. Magician systems provide one important underpinning of these conjunctions as they relate to discrete time. Spatial conjunctions we call patterns and boundaries that cannot have conjunctions that bridge across them we call forms. We have already noticed the inherent complementary nature between pattern and form. Pattern and form are ways of looking at relations and anti-relations. Juxtapositions are emphasized in defining forms and relations de-emphasized. Relations are emphasized in defining patterns and juxtapositions de-emphasized. But both pattern and form ignore the necessity of temporal juxtapositions and relations. This is supplied at the trace level by magicians that define how conjunction between discrete moments is possible despite radical separation. At the trace level differing and deferring appear as DifferAnce. It allows us an implicit temporalizing of difference which maintains continuity despite radical discontinuity as a side effect.

In order to understand conjunction which makes the SAME in spite of a priori fragmentation in spacetime and among phenomena we must delve into the self-blocking of contradictions in the Greimas square. Conjunction holds together-yet-apart in spite of fragmentation. Self-blocking contradiction also holds apart-yet-together two pairs of elements that would annihilate each other otherwise. Self-blocking annihilations of contradictions lead as we have seen to annihilation cascades that form the basis of magician systems. Magician systems in turn are meta-algebras which use the emergent properties of the special systems as operators and thus tie the special systems together in their wholenesses. The special systems in turn hold together the disparate illusory continuities that are their parts. When these parts are not seen as part of wholes then they fragment into variables randomly tracked by General Systems Theory without any realization of their inner

connection. As we move from meta-system to special system to form within a general system we are tracking the unfolding of inner possibilities for special systems are an inner possibility of general systems and magician meta-systems are an inner possibility of special systems. This is expressed best in the unfolding of self-blocking contradictions from out of conjunctions. How can conjunctions hold apart-yet-together. This shows that there is some inner structural tension, some kind of tense-gridity as Fuller would say, that forces things apart yet keeps them together. The plus sign “+” is a black box and does not express any of this necessary inner structuring that allows the tense-gridity effect to occur. What we posit is that this tense-gridity effect is not just something that occurs in space between numbers but also in time and so is intimately related to the annihilation cascades of self-blocking contradictions which allow the time for conjunction to occur in. When we unfold the black box of the plus sign “+” of conjunction we get a Greimas square that temporalizes the cancellation process and allows things to hold together-yet-apart despite the fact that outside that relationship they would cancel their distinctive properties and vanish completely. This shows us that conjunction is inherently fragile and brittle in relation to its temporality. Conjunction must be maintained as a collusion magician systems enacting their lifecycle in the face of the continual annihilation in discontinuous spacetime/timespace.

Figure 91:

Traditional Paradigm:

	intentional morphe	hyle
Subjectivity	----->	
unity	a priori synthesis	Object (noumena) analyzable object

Autopoietic Paradigm:

Subjectivity Fragments as kinds of illusory continuity appear	Object becomes a strange kind of noumenal unity as one of the special systems
Nowhere	Dissipative System
Implicated Observer	Autopoietic System
Mit-Sein (Dasein lost in They) desiring machines	Reflexive System Socius

Why is contradiction worth exploring more deeply? It is because since classical Greek times all motion was seen through Zeno's paradoxes to be contradictory and thus impossible in a world where contradictions are not allowed. The special systems provide the lubrication by the intrusion of four dimensional rotations into three dimensional space which allows motion to occur which overcomes the stasis of contradictions grid lock. Between the dynamic of systems and the static duality of meta-systems exists the possibility of overcoming the contradictions that arise between systems within the meta-systems which make motion as a side-effect possible. The paradox of the unmoving mover (Aristotle) or the self-moving (Plato) is resolved by the existence of the anomalous special systems that make motion an actuality that is realizable through a breach in dimensionality. As we will see if we assume that inconsistencies can exist via a para-consistent logic then motion is no longer impossible as Parmenides would have it. Motion remains subject to contradiction intrinsically. But this explains why Magician meta-systems must exist. Magician systems work out the contradictions that appear in the motion of things in the universe. Motion must also link together discontinuous moments in the universe. Magician systems are the concrete theoretical mechanism that makes this possible for the special systems. The fact that self-blocking annihilation of contradiction underlies conjunction means that the most durable systemic relations of the special systems are founded on the most fleeting of relations that only exist as long as it takes for them to manifest and then self-cancel.

## **2. Deriving the Greimas square from logic.**

Greimas' square is founded on the square of contrary opposites and contradictions in logic. In logic the upper pair (AE) of opposites are abstractions and the lower pair (IO) are particulars. There is an implication down from the opposition at the quantification level to the opposition of particulars. Greimas took this square and generalized it. It is clear that the difference between the upper and lower oppositions is the difference between Quantification Universal verses Existential quantification. This is a difference that makes a difference just like the differences that generate opposition. In the generalization two differences that make a difference when crossed produce the extreme opposite or contradictory of anything. In this way of looking at the logical square the implication (which Onar Aam has shown itself has the same structure as the Greimas square in personal correspondence) is merely a different kind of opposition from the first opposition. We have labeled these two kinds of opposition ANTI and NON. So the extreme opposite generated by crossing oppositions is the ANTI-NON element. The ANTI

and NON become contradictions and the ORIGINAL element and its ANTI-NON become contradictions. Contradictions cancel (in logos) or annihilate (in physis) each other if they are allowed to join. Contradictions can only remain in existence if they are blocked from canceling or annihilating. Cancellation is what occurs in the mind and Annihilation is what occurs in Nature. These are two sides of the same phenomena. In this case one contradiction blocks another contradiction from canceling. We call this the minimal annihilation mosaic. Since blocking is not necessarily permanent then it takes time for release and annihilation to occur in any annihilation mosaic. When annihilations have side effects they can produce annihilation cascades that can become stable if they form loops. We posit that looping annihilation cascades with side effects are the fundamental basis upon which magician meta-systems are built up within discontinuous time.

Heraclitus was the first one in the Western tradition to point out the unity of opposites or contraries. He posited that motion exists contra Parmenides. He called the basic flux of the universe FIRE. The annihilation mosaics that underlie magicians are a good analogy for FIRE. FIRE destroys and annihilation does so utterly. Heraclitus also posited that contradictions can exist side by side in reality. Looking at all he said (or what we know of it) we could see him as positing the existence of annihilation mosaics as the fundamental reality. Annihilation mosaics take the unity of opposites, the FIRE of annihilation, and the existence of contradictions and places them all within a single logically derived framework that was first used by Greimas to study the standing contradictions that are worked out in narratives and society. What we have to notice here is that a thing can be contrary different things in different ways. These different contraries can be crossed to produce an extreme opposite of a thing which is contrary in every respect. Next we see that things that are contrary to a thing in different ways might contradict each other. In such a case there come into existence orthogonal contradictions that form a minimal system. This minimal system has two relations of contrariness, two of contradictoriness, and two juxtapositions that can turn into annihilations. As a minimal system this formation of self-blocking contradictories has stability momentarily. A minimal system has 720 degrees of angular momentum just like a spinnor and a spinnor is the minimal configuration that has a stable position in spacetime. Thus the minimal annihilation mosaic represents a point in spacetime. In spacetime you have to be moving like a spinnor in order to stand still. But we can see how the minimal annihilation mosaic becomes a point in spacetime and thus forms part of the substrate of spacetime producing virtual particles out of nothing which return to nothing unless conserved. But with annihilation cascades non-

conserved particles can form lasting chains of annihilation patterns through side effects. These meta-stabilities of looped annihilation cascades where particles form hyper-cycles that appear last even though they do not actually persist is the basic necessity for the manifestation of any of the special systems. Looped annihilation cascades can be seen to twist as positive and negatives are statistically inverted to form the basic patterns of the special systems (dissipative, autopoietic, and reflexive) over time within their cascade.

In the annihilation mosaic the two pairs of contradictories that annihilate interfere with each other and prevent each other from destroying their contradictories. The annihilation mosaic must untwist in order to allow contradictory pairs to 'have at' each other and destroy themselves. By untwisting it is no longer a full spinnor and loses its stability within spacetime. The untwisting is a catastrophe that engulfs the stability of the annihilation mosaic. An annihilation cascade is a series of these untwisting catastrophes in discontinuous time. The real question is how these stabilities are produced originally and what keeps them from untwisting so that annihilation becomes possible for them. We can think of the annihilation mosaic as a knot in spacetime that when it unknots disappears. The untwisting is like untying the knot. The real question is how the knot gets tied in spacetime in the first place to produce momentary temporal stability in the face of continual annihilation.

It is clear that opposites do not appear alone in things but that each thing has a myriad of facets through which it can be contrary other things. When facets relate to things that are contradictory and when the extreme opposite of the original thing is produced then the twist is produced which is stable in spacetime but which is ultimately unstable internally. The twist is introduced when the aspects of a thing call up contraries that are contradictories. Contraries of a thing that are contradictories act like the stick in the mouth of the alligator that keeps it from slamming shut with devastating effect. Since every thing has myriad aspects and by those aspects it can call up myriads of contraries we can say that contraries that are contradictory are probably a fairly likely phenomena. Somehow the two dual contradictories repel one another by attempting to use the same space to annihilate each other. This repelling need only occur for a moment for the annihilation mosaic to exist. Think of it like this. A new First comes into existence. It must be multi-faceted to be genuinely new because it must integrate multiple significant difference from what already exists and thus achieve independence from other Firsts that already exist. But once it appears then these facets lock into opposition with other Firsts some of which are contradictory to each other. The Greimas square

is only the simplest possible formation of this crossing of contraries. Contraries are marked differences that generate oppositions and contradictions are doubly marked differences that make a difference (cf. Bateson) that separate in resolvable or irreconcilable extreme and conflicting opponents (cf. Sartre Critique Of Dialectical Reason). Contradiction is an embodiment of and generator of nihilistic extreme opposite that constitute “wicked” (cf. Simon) non-optimizable problems as opposed to the mercurated differences of simple opposition. An example from traditional Chinese medicine is the relationship of major and minor yin and yang to the sick extremes of closed Yin and Yang Splendor. A First may be contrary to many other Firsts and so there is not just one but many conflicting contradictories that are contrary to it. All these conflicting contradictories stand between the First and its extreme opposite or contradictory. Each is held apart by their rushing together at once to annihilate. The mythological archetype of this is Cadamus throwing the stones in the midst of the men of earth who rush together and destroy each other except for the five survivors who with cadamus found Thebes (This is the story of an autopoietic ring like the five Hsing emerging out of chaos of war.) It is existing micro-emergents that rush to fill all these roles. They can do that because of the utter differences between the Firsts. The identification of contraries and contradictories is an automatic recognition between them of each others differences. Natural and Nihilistic or extreme opposites arise spontaneously in this process that upon annihilation becomes the FIRE by which the flux of creation moves. Since Firsts are naturally produced out of the VOID this process never ceases. Magicians, Special Systems and even General Systems all arise out of the temporalization and delay in this process of annihilation. Each are successive levels of reification of the process.

But we still have not explained how the twists got into the annihilation mosaics. To do this we have to appeal to a dialectical theory of change. In this theory we see that Synthesis that create synergies are constantly occurring and that synergies are dynamic not static. Syntheses take two contradictions at some point in time and resolve them into a higher unity by making some small changes that defuse the contradiction that is being generated at that moment. These small changes can be seen as twists in the relations between elements in the contradictory tableau (i.e. the whole diacritical set of contradictories at some synchronic discrete moment). But since there are many Firsts that abound together at any one moment then creating one synthesis that resolves some contradiction will produce other twists that reveal other contradictions. Thus we can see that the twists at any one moment are contingent and that when changed to other twists produce some synergies but as a

side effect produce other contradictions that will have to be resolved at the next moment. Plato's dialectic in dialogue basically presented this kind of dialectic where positions of conversants produced contradictions in the dialogue so that the positions were changed slightly as a new starting point. When a definition that did not produce contradictions was found then this definition was considered to be a FORM that is something that lasts in the stream of dialogue. The tweaking of arguments and definitions is here analogous to the twisting of the relation between contradictories in the stream that is constantly producing contraries and contradictions and out of contradictions syntheses of synergies that as side effects produce other contradictions.

We have already noted previously that Firsts are micro-emergences. If we hold to that vision we can say that discontinuous time does not have to be in lock step like those produced by CPU cycles but instead are probably are statistical so that the minimal time unit is the production of destruction of a First. It takes so long for a First to emerge and become what it is inherently and that is the minimal discontinuous time. That time is the time it takes for that first to transition all the kinds of Being as it appears out of the void and enters our world as an utterly novel thing. Firsts are produced within the discontinuous MATRIX of timespace/spacetime stochastically. When they arise they have many aspects some of which are anomalous and some of which relate to things that already exist by their participation in sortals. When they arise Firsts recognize their contrariness to each other and occasionally realize that they are contradictories. The whole moves toward synthesis and introduces twists to resolve contradictions which have as side effects other twists. A First may have many contraries but only when these produce and extreme opposite is a nihilistic situation produced. Firsts continually produce nihilistic opposites out of the primal soup of their relations and juxtapositions. In effect other Firsts arise from the field or soup to fill the place of the contrary as an existential instantiation. In this way specific annihilation mosaics are created. When they untwist due to synergistic movement overall then they annihilate the contraries involved. These annihilations mosaics may be added together to produce cascades that can be twisting or looping. These form the basic structure underlying magician meta-systems which appear as continuities at the trace level. Traces build into signs that in turn build into forms that appear to have continuity over time. The sortals produce the Universal quantifications which in turn are instantiated by existential quantification by firsts that fill in the variable of opposition. Grenander's bonds on generators could be seen to fulfill this role. Bonds can be statistically linked and the bond values might be the sortal types that produce contrariness and contradiction. In

this way we can see how the field works to instantiate the Firsts in the relations or juxtapositions within the field and these annihilate to produce the meta-stable patterns across discrete time fragmented by continual annihilation.

### **3. Unfolding the Greimas square to find the special systems.**

The logical square describes the constraints that universals impose upon particulars in the process of quantification. Greimas abstracts from this to produce a square that defines how any two characterizations of something interfere with each other. If one characterizes something as “A” then it is possible logically to come up with an opposite characterization “anti-A” and any other characterization “non-A”. The contradiction appears when one combines these two opposite characterizations to produce the “anti-non-A” which is the name of the Other. The Other is always the opposite of the self but muddled by other characterizations that lend the other the mantle of the strange, weird, or uncanny.

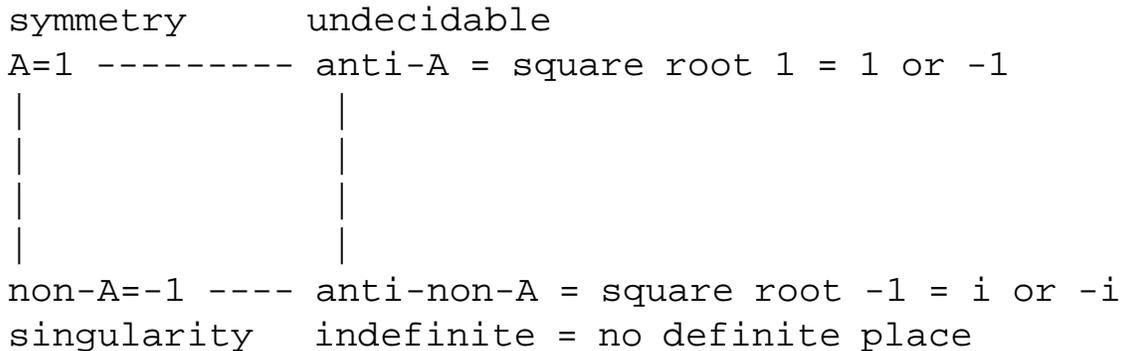
If we go back to our characterization of consciousness having two centers 1 and -1. The -1 of the singularity is the anti-center of consciousness. The number one is the point of symmetry that hides the unconscious. The number negative one is the singularity at which the dissipative order from nowhere appears that we know as language. Now, what if we want to produce another characterization of the ellipsoid of consciousness. We might do that by taking the square root of the two centers. It is always possible to take a square root because it is an iterative operation of something on itself. Taking the square root of one produces either 1 or -1. This operation is similar to the differing and deferring undecidability of difference where we cannot decide whether we are at one or the other origin points of consciousness. This undecidability becomes an indefiniteness if instead we take the square root of negative one. The answer to that is either  $i$  or  $-i$ . These imaginary points are not only undecidable but also impossible to place anywhere in real space. They are indefinite because we cannot place them anywhere definitely in spacetime in relation to consciousness without producing another dimension relative to the  $x$ ,  $y$ ,  $z$  of normal space. It is precisely by creating such a fourth dimension that we create spacetime as a four dimensional plenum instead of the three dimensions of normal space.

We can say that each point of consciousness is a stationary point in spacetime. As such it must have the structure of a spinnor. This spinnor which produces a spin of  $4\pi$  passes through 1, -1,  $i$ ,  $-i$  points and thus posits that there are imaginary points  $i$  and  $-i$  that appear when consciousness is related to everything else in spacetime.

Thus the boundary of consciousness is not a simple real ellipse but is instead something more like the Mandelbrot set that shows the fractal and chaotic interface between the real and the imaginary numbers. We have already postulated that there are meta-Mandelbrot sets associated with the quaternion and octonion sets (Onar Aam has produced pictures of the fractal octonion sets). The boundary of consciousness with everything else in spacetime would have the nature of these three possible Mandelbrot sets. By this way of looking at the simplistic geometrical model of consciousness the imaginary and hyper-imaginary numbers become precisely the relation of the ellipsoid of consciousness to everything else within spacetime via the chaotic fractal interface generated using  $i$  and its cognates.

So interpreting Gremias' square in these terms:  $A=1$  giving us the symmetrical center of the unconscious;  $\text{anti-}A = \text{square root of } 1 \text{ (} 1 \text{ or } -1\text{)}$  giving us the undecidable;  $\text{non-}A = -1$  giving us the singularity of language from which pours the order from nowhere; and  $\text{non-anti-}A = \text{square root of negative one (} i \text{ or } -i\text{)}$  giving us the indefinite.

Figure 92:



So we see that we produce the imaginary numbers by a simple unary operation of something on itself. That unary operation gives us very different results if we apply to it to the two centers of the ellipse of consciousness. If we apply it to the symmetry point of the unconscious then we get an undecidability between it and the singularity. If we apply it to the singularity we produce the fourth dimension or the nowhere from which the singularity gets the ordering that it applies to consciousness. This fourth dimension contains the displaced undecidability between the poles  $i$  and  $-i$  projected on this indefinite realm that is literally nowhere.

Notice that the  $1$  and  $-1$  will annihilate each other ( $1 + -1 = 0$ ). Similarly  $i + -i = -1$  ??? [The answer here should be  $0$ . At the end of this section Onar Aam proposes a solution to this problem. In order to allow him to explain this contradiction that

arises in my narrative himself I will leave the original contradiction in place. At this point the mathematics and my interpretation of it were at odds. I believe Onar has found a good solution that obviates the contradiction in my narrative]. The ellipsoid of consciousness is defined in such a way as to hide the inner possibility of the annihilation of consciousness in which the singularity of language collapses into the symmetry point of the unconscious. If the undecidable points from the square root operation are added then annihilation is the result. If these same undecidable points are added in the imaginary realm then they collapse into the  $-1$  singularity. Annihilation is the hidden possibility of the complex numbers and their algebra as it models the dissipative system.

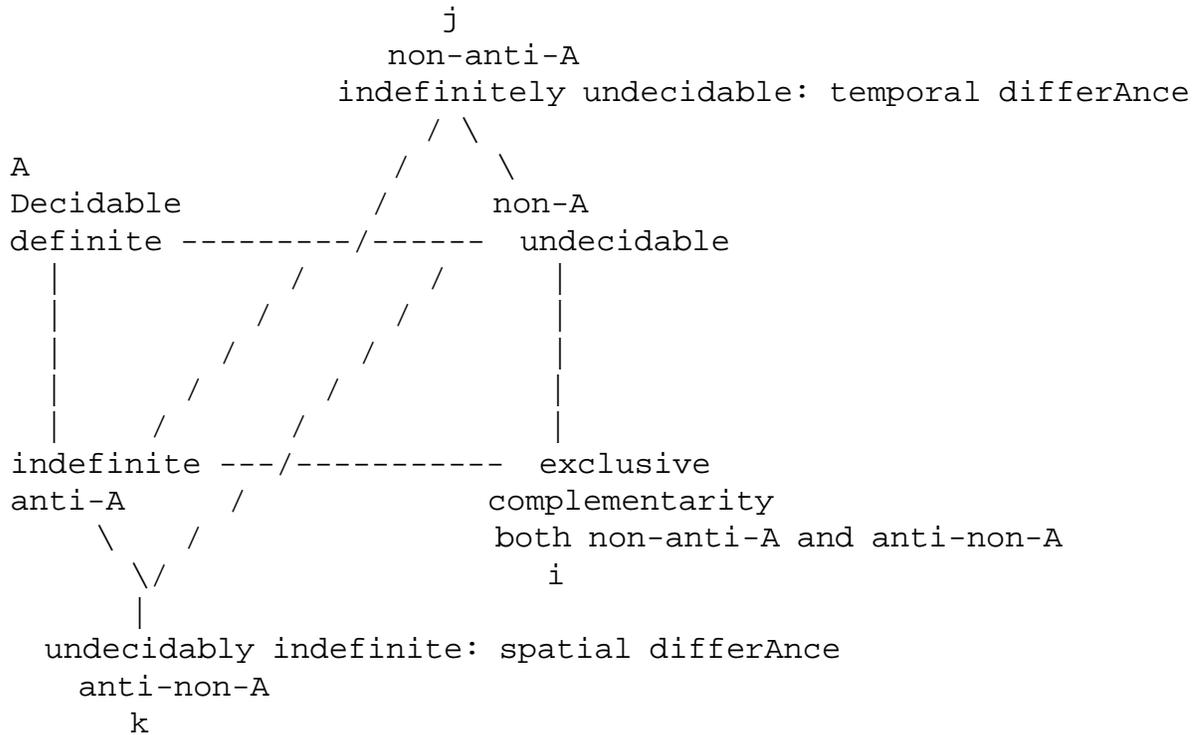
What is of interest here is the fact that this model is easily extended to give us the other imaginary values our hyper algebras demand. First we note that we have ordered the anti- and non- prefixes. What if either order that is possible were permitted. In that case we would get the anti-non-A and the non-anti-A and these correspond to the  $j$  and  $k$  imaginary numbers exactly. We can interpret  $j$  and  $k$  as partially indeterminate and undecidable to different degrees. They represent the chiasm of indeterminateness and undecidability. One emphasizes the phase of indeterminateness over decidability and the other vice versa. The number  $i$  or  $-i$  represents the ideal balance point of these two characterizations while  $j$  and  $k$  represent the chiasmic dominance of one characterization over the other. In this way the quaternion values of  $i$ ,  $j$ , and  $k$  unfold from the Greimas square in a fairly natural way.

Notice that it is the commutative property that is lost which produces the  $j$  and  $k$  out of the  $i$ . At the quaternion level where the autopoietic system manifests it is precisely the loss of arbitrariness in the ordering of the anti- and non-characterizations that allows the chiasmic internal structure of the square of contradictions to unfold.

We should go on to notice that we can extend this model further by allowing the undecidability at the level of the first square to open out forming two hinged squares both arising from the  $1$  and  $-1$  of the ellipsoid of consciousness. When the reversibility of each of these now decidable facets is considered then we automatically get not just  $j$  and  $k$  but also  $J$  and  $K$  hyper imaginaries because  $I$  has decidability differentiated from  $i$  and  $1$  from  $-1$ . At this final level of unfolding the structure posits a new value  $E$  that completes the octonion. That new value is a characterization beyond undecidability and indefiniteness which we will call

exclusivity. Breaking apart the undecidable allows us to associate their derivatives as we wish and so we lose the associative property which is exactly what distinguishes the octonion grammar. We have generated the fundamental basis of the reflexive special system when we did that. We also generated a new characteristic called exclusivity. It means that we cannot have one side unfolding from split undecidability at the same time as the other or undecidability becomes decidable. All the indefiniteness and undecidability is combined and projected as a meta-otherness.

Figure 93:



What this really means is that the association  $i(jk) \neq (ij)k$  and  $I(JK) \neq (IJ)K$ . [Here again is a mistake in my understanding of how the octonion worked at the time when I first wrote this working paper. Onar Aam subsequently corrects this mistake and in order to allow him to say the correction in his own words I will leave the mistake in place.] When you perform this non-association you generate the exclusivity of the unfolded undecidables that were non-commutative at the next level down.





The important point for us in this argument is that all Greimas squares have an inner structure that unfolds the hyper-imaginaries step by step -- by sacrificing the same properties that disappear from the hyper algebras one by one. The dissipative system displays the annihilation operator --- the inner possibility of the square of contradictions is annihilation of logical contradictories. The commutative property gives us a basic undecidability. The losing of that property unfolds a chiasm in which different orderings of the undecidable give possibly different results. The undecidability and the arising of the chiasm produces three imaginary values. If we lose the association between these values then we move from the autopoietic quaternion level to the reflexive octonion level where a further unfolding occurs. At that level undecidables are postulated to be decidable in different worlds. Thus, the structures of the chiasm unfolds into two separate dual chiasms giving IJK as opposed to ijk as imaginary values. The difference between ijk and IJK is one between unity and separation. IJK does not have quaternionic intertransformability without the intervention of E. From these two decisive structures further unfolds the antimony of the original thesis named the imaginary value E that is opposite of 1 (A). This antimony is the source of a dual structure to that posited by the original thesis. It is in fact the deep opposite of the original thesis rather than its superficial opposite that the anti-appears to be. It is an opposite that appears past chiasm and decidability at the limit of knowledge. It is the enantiomorphic image in the mirror of existence of the thesis. Further, the E lends unity to the disparate elements IJK whereas the E participates in several quaternionic mediations between the ijk and IJK elements. and this expands the closed unity of the quaternion into octonion reflections.

This unfolding of the square of contradictions that first produce chiasm then attempts to produce decision of undecidable only to posit exclusivity has the effect of delaying cancellation of the square of contradiction itself. First the square is caught in an undecidability as to which blocking contradiction to resolve first in order to unravel its contradictions. Then the chiasms appear which allows differential contributions of the elements of the square of contradiction to be taken into consideration. Finally the undecidability is decided by projecting possible worlds in which each decision is taken and the chiasms are repeated. But this finally yields an inexorable exclusivity that actually breaks the universe into two possible universes that need to be resolved into a single result. This complex unfolding prevents immediate cancellation of the square of contradictions so it allows a temporal lag to occur which is the moment of existence of the annihilation mosaic. If you add to this the possibility of looped annihilation mosaics then one gets a

theory that explains how things can continue to exist in the face of the FIRE of annihilation.

The square of contradictions has in fact a deep substructure that was not appreciated by Greimas when he applied it to narratives. That deep substructure refers to the levels of Being. A thesis such as “A” is posited as present to hand. That positing calls forth the process of defining characterization by identifying the anti-thesis and considering everything excluded from the gestalt of the dialectic. The dialectic itself is a process within which the thesis and anti-thesis are involved that part of the basic flux of existence. Normal dialectics assumes that it is the conflict of the thesis and the anti-thesis that causes them to persist until they are supplanted by the synthesis before a new bifurcation of thesis and anti-thesis occurs. But instead we see that there is a subtle play between the relation of thesis and anti-thesis and their combined relation to everything else as they define a system. This subtle play causes us to define the boundary between the dialectic and everything else. From that definition of a boundary there arises the possibility of defining the radically other which is a combination of the anti-thesis and what is excluded from the dialectic. We notice that this definition of the radically Other involves a basic undecidability. Does the anti-thesis predominate or what is excluded? A chiasm arises between these two phases of the interval between the anti-thesis and the non-dialectical. We can look at it either way making the anti-thesis more important or the exclusion boundary more important. The chiasm does not resolve the undecidability. Therefore we project two possible worlds where we decide one way or the other. This causes two different groups of imaginaries *ijk* (gatheredness) and *IJK* (separation) to appear. If we in turn lose the associative property between these, then the actual antimony of the whole dialectic is produced in which there is a different ultimate Other. We could see this different ultimate Other as the new anti-thesis at the next level up appearing on the horizon. If we posit that the new ultimate Other (E) is that next level anti-thesis then it is possible to understand the structure of the dialectic better as involving the interplay of imaginaries at the various hyper-levels at which they appear. From this view the inner necessity of the structure of the dialectic comes into view and we see that the process of the dialectic unfolding is precisely the process by which annihilation is staved off in the Greimas square which allows annihilation mosaics to persist momentarily. So the process of unfolding is related to the second meta-level of Being (Process Being) while the underlying infra-structure of staved off Annihilation relates to the third meta-level of Hyper-Being. Finally the chiasma that appear within the unfolded logical square relate to what Merleau-Ponty calls Wild Being which is the fourth meta-level of

Being. The internal structure of the Greimas square brings all these meta-levels of Being together into a single interlocking structure that can be seen as the Dialectic or instead using Structuralist approaches as the inner structure of interferences or tense-gridity that prevents instant annihilation. Similarly we can look at the succession of arising of thesis and anti-thesis phenomenologically looking at its essential structure or we might look instead at the meanings of these hermeneutically. Hermeneutics applies the hermeneutic circle that we recognized in Rescher's network structure of Cognitive Systematization. When we allow loops within the annihilation mosaics which create the possibility of persistence in spite of continual annihilation then we make this hermeneutical or cognitive systematic perspective a real part of our critique. Also phenomenology as Merleau-Ponty argues is the science of essences. What is the testing of a thesis by the production of anti-theses and non-theses but a way of reducing them to and making visible their essences. Thus if we look at the application of Greimas square as a method we see that it defines essences and so is fundamentally an expression of phenomenology. Greimas uses these structures to define narratives. If we see narrative as chains of annihilation mosaics and view them as dialectical, then we can see why this method was so fruitful for him. He was basically abstracting the thesis/anti-thesis structure from a series of logical oppositions presented in the story. His method is a natural bridge between the static structuralism of Levi-Strauss and the Dialectics of Marx/Hegel.

Figure 96:

Binary oppositions	Levi-Strauss	STATIC
Logical Squares	Greimas	Schematic
Imaginaries	Palmer	Prototypical (unfolded)
Dialectics	Marx/Hegel	DYNAMIC

Underlying the flux of the dialectic is a substructure composed of all the different kinds of Being working together. This substructure can be summarized in series of Greimas logical squares. A single square can summarize a series or a series of squares can attempt to map a set of transformations approximating a dialectical movement. Underlying the square is a series of binary oppositions that Levi-Strauss emphasizes that does not change but creates the field in which all changes take place. What the formulation of prototypical or unfolded structures offers is a way to understand the details of dialectic transformations which connects the logical square to the succession of conflicting thesis and antithesis pairs.

We are lead to this understanding of the inner structure of the dialectic by our

attempt to understand the workings of magician meta-systems and their relation to the special systems theories. In those special systems there is the conjunction that makes visible the otherwise invisible. We have discovered that the inner structure of that conjunction is in fact the Greimas square of logical contradictions that are mutually blocking their annihilations. When we ask how that could possibly be it becomes clear that it is only possible because of the unfolded complexity of the structure inherent in the Greimas logical square, but hidden. When we unfold that complexity we find that it is exactly those structures which give rise to the hyper algebras that define the special systems. So the hyper-algebras and the special systems they define the complexity thresholds of are an inner possibility of the dialectic that connects the dialectic to its structural foundations through the logic of contradiction. Similarly we find that the notion of loops of annihilation mosaics gives us a hermeneutical circle similar to what Rescher calls cognitive systematization of axiomatic networks. And we find that the method of testing of a thesis is complementary to phenomenologies explorations of essences. Thus our unfolded/infolded structures connect in basic ways to the fundamental humanistic methodologies of our time.

But the method we expose is that of Heuristic Research which dwells with a subject attempting to become one with it and thus gain inner understanding. In his case we recognize that the role of Heuristic Research is to dwell in annihilation. All of the other methods in their distancing gloss over the absolute reality of annihilation. The magician meta-systems posit collusion to bridge the abyss. Hermeneutics recognizes that the hermeneutic circle is really broken and forms instead a spiral. Dialectics jumps over the bifurcation points where theses and anti-theses mutate into syntheses. Structuralism studies the signifiers on either side of demarcations without studying the nature of the splits themselves. All of the different methods and models jump over the discontinuous and nonlinear segmentations or chunks within the historical sequence. But the major point here is that Magician meta-systems allow us to not assume continuity. It gives us a formalism that allows us to understand the meta-system within which all systems evolve and vie for viability in ecosystem niches. In order to deepen our understanding of this noncontinuous formalism we have had to look into conjunction and within conjunction the logical square of contradictions. In that we have seen infolded the same fundamental structures that inform the hyper-algebras and that underlie the different special systems. But Heuristic Research would bring us back to the annihilation itself and ask us to dwell in that state of continual falling away which makes us realize the utter emptiness of everything in the Buddhist sense of “sunyata”. Heuristic

Research would have us stop the train of dialectical thought and stare into the mirror of the Void.

This is a good point to recap our progress. We started out to look at the special systems and their mathematical analogies. In the process it was discovered that there was some kind of relation between these special systems and the meta-systems and that Magicians can be seen as meta-system formalisms rather than just models of discontinuous systems. We took that route and explored meta-systems structures finding the strange nature of conjunction that allows visibility of invisible kinds of things. Conjunction we discovered to be modeled by the Greimas square. When we unfolded the Greimas square we found that it contained the proto-structures from which the special systems arise. So we have in fact traveled full circle. The magician meta-system model that embodies the four meta-levels of Being arises co-dependently with the special systems that also embody the four meta-levels of Being. The special systems define the relation between the system and meta-system. The dialectical development of the system is encompassed by the inner structure of contradiction and the logic of contradiction which works itself out by the delay of annihilations. These delays produce the illusion of existence which is in fact nothing more than the side-effects of annihilations giving rise to other annihilations and sometimes forming loops that persist within the ongoing FIRE of utter destruction. In the rest of this essay we will go on to attempt to understand the relations of systems, meta-systems and the special systems. But here a fundamental stopping point has been reached where we can turn toward the nature of the annihilation itself which renders existence an illusion.

When we look at annihilation mosaics we see that from one point of view thesis gives rise to anti-thesis that in turn give rise to synthesis. But from another point of view Synthesis is continually breaking down into thetic and anti-thetic parts as reductionism posits. These two views relate to whether we see Firsts as prior to Fourths or vice versa. We have seen how the attempt to render decidable the undecidable opens up alternative possible universes in the unfolded square of contradictions. Storrs McCall in *A MODEL OF THE UNIVERSE* explores this branching that occurs at these decision points that produces a myriad of parallel universes. He notes that there is two different topological structures of these branchings -- upper cut which looks like a Y and lower cut that has disconnected transition points. One is locally Euclidean and the other is non-euclidean. McCall shows a myriad of different possible connecting structures with branches. Since branches can go in either direction we see here the way in which the rhizomatous

structure is created between the continual processes of bifurcation and synthesis. Upper-cuts give continuous transitions across discontinuities but they are not locally Euclidean. Lower-cuts give discontinuous transitions across discontinuities but they are locally Euclidean. These two types of transition are probably undecidable in any case. The momentary intersection of bifurcation and synthesis renders each point in time indefinite. When we take these two phenomena together that produce the rhizome we see that it gives us a reality that is both indefinite (due to the overlap of bifurcation and synthesis) and undecidable (due to the proximity of upper and lower cuts at the same point in spacetime). The result is the rhizomatic or non-arborescent structure of heterogeneity that Deleuze and Guattari talk about in A Thousand Plateaus.

But the question quickly becomes what predominates the indefiniteness of bifurcation and synthesis or the undecidability of upper and lower cut transitions. In fact it is impossible to say as both chiasmic relations may predominate in any case. Therefore, we have a universe where the indefiniteness between bifurcation and synthesis predominates over the type of transition and another universe where the type of transition predominates over the indefiniteness in each case. If we try to decide this undecidability these two possible and overlapping universes are separated out and become parallel. That separation causes us to posit the utter opposite of the entire structure which is the spacetime block or endless time in which all possible alternatives in fact coexist rather than any one particular alternative being chosen. Thus the rhizome becomes encased in a block of spacetime with all possible rhizomes. All possible bifurcations and syntheses coexist with all possible transitions using both upper cuts and lower cuts in their own possible universe. Looking at the annihilation mosaics as transitions between bifurcations or synthetic reversed-bifurcations we see that the inner structure of contradiction has implications for how we view the universe as the intersection of different aborescent structures within a rhizome.

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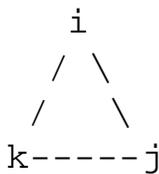
Onar Aam considers the mathematics of the Grimas square:

Trying to unfold the complex algebras from anti, non and anti-non is a noble enterprise and intuitively feels right. I also understand that you let the real numbers represent the purely present reality and that makes it natural to let \*i\* be time. By mixing real and imaginary number you get the purely present + time = process

being. I am, however, searching for an asymmetry at this level. In equilibrium systems time is symmetrical, but not in dissipative systems. Time has an arrow. This should be reflected in *\*i\**. However, as many have pointed out the arrow of time very much relies on someone observing the arrow of time. Since observation is associated with autopoietic systems it is reasonable to assume that the time-asymmetry becomes visible at the quaternion level. And so it does. Commutativity is lost. By intertwining time (i) with j and k the asymmetry of time becomes visible.  $ij = -ji$ ,  $ik = -ki$  and  $jk = -kj$ . These three variables form an associative *\*ring\** (corresponding to an autopoietic ring?). Now, to the inaccuracies in part three. First, defining ANTI as a square root is hazardous. Sure, anti-A of 1 produces 1 and -1 but when you perform anti-anti-A you get 1, -1, i and -i. Second, you define non-A as -1 and from there you get that i and -i annihilate and becomes non-A which is obviously wrong. (You seem to have noted so yourself)  $i + -i$  equals 0 not -1. (remember, when not in conjunction with the real axis the imaginary numbers behave exactly like R) To me it seems much more natural to define ANTI and NON as I did in a recent post to you. ANTI-value is NEGATIVE value. Thus anti-A = -A. (anti-anti-A is therefore A) Second, NON-value is that which has NO value, nothing, zilch, zero. Therefore NON-A = 0. (Now you can safely say that annihilating i and -i is non-A)

Ok then on to the quaternion. In your article you state that  $(ij)k \neq i(jk)$  and  $(IJ)K \neq I(JK)$ . This is false. The *ijk*-triplet makes up the associative ring which I stated earlier.

Figure 97:



You may annihilate any pair of imaginary numbers to get the third (moving clockwise around the ring).  $i=jk$ ,  $ij=k$ ,  $ki=j$ ,  $k=ij$ ,  $jk=i$ ,  $j=ki$ . And finally all annihilate to become anti-A:  $ijk = jki = kij = -1$ .

To the octonion. Although the octonion loses its associativity it still has a lot of local associativity. For instance, in the octonion there are not one but *\*SEVEN\** such associative rings:

Figure 98:

i jk  
 iJK  
 I jK  
 IJk  
 I iE  
 JEj  
 KEk

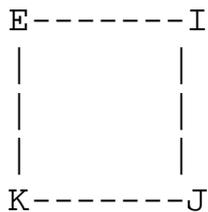
In addition several associative epicycles exist. With the help of E, IJK becomes associative an associative ring. Like  $ijk = -1$   $IJK = E$ . E therefore has a similar status as -1. The associative epicycles I've been able to determine are these:

Figure 99:

E IJK  
 K JIE  
 E iKj  
 j KiE

These may be played with exactly like ijk

Figure 100:



$E = IJK$ ,  $EI = JK$ ,  $EIJ = K$  etc. and you have  $EIJK = KEIJ = JKEI = IJKE = -1$

(Note how this epicycle resembles the Greimas square)

So although I see a great potential in the anti, non, anti-non enterprise there are some inaccuracies which need to be fixed.

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Onar Aam gives a possible solution to the problems in this part of my paper:

I now think I've "corrected" your mathematical inaccuracy in your part three. At least some of it. What you call a relaxed mode can in fact be conceptualized quite precisely. Here is what I've got:

Now, we may view complex rotation as annihilation or annihilation with side effects. The mathematical operation which corresponds to self-annihilation is  $i*i$ , which is  $i$  annihilating itself because along the  $i$ -axis we have that  $i^2 = 0i$ .  $-1$  is nowhere. When  $i^2$  self-annihilates it disappears into nowhere ( $-1$ ). Suppose now we start with nothing and perform the exact opposite operation (the Anti) of squaring. This is squareroot and corresponds to anti-self-annihilation. Suppose now that we perform the squareroot on  $-1$ :

$$\text{sqr}(-1) = i.$$

We then have that  $i$  comes into existence from *\*nowhere\** ( $-1$ ) through anti-self-annihilation (squareroot).  $i$  is *\*ordered\** from *\*nowhere\**. Thus, anti-self-annihilation corresponds to *\*self-organization\**. Hence,  $i$  corresponds to the level of the dissipative.

So the mistake I think you did was to not distinguish between additive annihilation and squaring annihilation. They probably have different meanings. My wild guess is that there is a difference between *\*nothing\** ( $0$ ) and *\*nowhere\** ( $-1$ ). when you add  $i + -i$  you get *\*nothing\** ( $0$ ). Self-annihilation  $[(+i)^2]$ , on the other hand, is an eclipse of existence, the center of the vortex. Its existence disappears into *\*nowhere\** ( $-1$ ) where it can easily be brought back into existence through self organization. It is exactly the complex dance of annihilation and self-organization, in and out of nowhere, which gives dissipative systems a hyper being. Note that additive- and squaring annihilation are qualitatively different. Additive annihilation is the bringing together of opposites which ( $i$  and  $-i$ ) results annihilation into *\*nothing\**. Squaring on the other hand is *\*SELF-annihilation\** ( $i*i$ ),  $i$  operating on itself, which brings the system into *\*nowhere\** ( $-1$ ).

#### 4. Aufhebung

Hegelian dialectics as they are displayed in his works are very complex and controversial. In that context he uses the term Aufhebung to express the production of the synthesis out of the thesis and anti-thesis. Aufhebung means to conserve, negate and superseded. There was always a question whether this particular word

from the German language expressed something of universal importance or whether it was merely an exotic concept peculiar to the German language.

The concept of the dialectic is that reasons or grounds carry within themselves contradictions that are overcome by higher syntheses and that this is a process of integration that occurs historically over time. History is this process of self-overcoming by social groups that forge new grounds for authority within themselves. Dialectics as Hegel saw them historically are tied directly to the social structures as their means to legitimation.

We have advanced the concept of Fullerian synthetic Fourths previously in this series of papers. The dialectic can be seen as a way of forging Fourths as a historical process within time. Firsts are micro-emergent eventities. They appear as so many independent theses. When we see an anti-thesis then we have constructed a relation of Seconds between two Firsts. The Thirds are the significances that accrue from sets of relations taken together. When Thirds are overdetermined then it is possible to construct synthetic and synergistic Fourths. The Fourths are new syntheses that appear out of and within the significant (Third) relations (Seconds) of independent theses (Firsts) to each other.

As mentioned the opposite movement from synthesis reducing to parts probably also occurs just as frequently as the move toward greater and greater synthesis. We might characterize these two movements as fusion and fission. Since both fission and fusion are continuously occurring and interfering with each other the result is a rhizomatic world that cannot be accounted for entirely by dialectical movements.

Aufhebung means to conserve while superseding through negation. The appearance of the anti-thesis is the active negation. The synthesis conserves the relation of the thesis and anti-thesis to each other in the act of superseding both of them. Thesis and anti-thesis are themselves amalgamations of Firsts that are brought into a relation with each other. That relation yields up significance as a by-product. The synthesis of the two sub-theses is the creation of an integral and synergetic Fourth. The integration of the sub-theses allows a fit between the thesis and anti-thesis that overcomes their conflicts. Significance is the vehicle that allows the proper fit to be found. The fit conserves the essence of the thesis and the anti-thesis at a new level of integration while superseding them. It negates both of them in the process -- negating the negation but not returning to the original thesis but instead advancing to a new thesis that amalgamates the old sub-theses.

In the reverse of this process we see a whole thesis breaking up into conflicting thesis and sub-thesis parts. A Forth allows multiple determination of parts within a whole to be used for different purposes. When these parts separate and no longer allow overdetermination then we get the fissioning in which the parts separate out from each other and the whole collapses. We call the fissioning reductionism. In the process of reduction relevances are being generated as we see how the different parts fit into the context of other parts.

In the rhizome, both significance and relevance are generated by opposing fusion and fission processes and they interfere with each other. In the rhizome we have reduction to Firsts and synthesis of Fourths and the play of Seconds (relations) and Thirds (significance/relevance) continually occurring.

When we look at the rhizome it is clear that undecidability and indefiniteness are continually at work muddying the waters. So there is no definite and decidable dialectic that is discernible. Instead we have an undecidable and indefinite dialectical movement within a context of continual fission. When we look at the indefinite and undecidable dialectic we see that there is not just the thesis and anti-thesis but also the boundary with the non-dialectic represented by the non-thesis. As such the non-anti-thesis as Other arises as the specter that haunts the dialectic -- as the unconscious that haunts Geist (Spirit). Spirit is the self-consciousness of the human community involved in the dialectical unfolding. Geist is pure presence of that community to itself. The opposite of that pure presence of self to self is its unconscious that haunts it at every point. The Other arises as the combination of the anti-thesis and what is beyond the confines of the dialectic itself (the non-thesis). But once the Other has been recognized it is possible to think of it as chiasmic in that the anti-non chiasmic phase can be separated from the non-anti chiasmic phase. This occurs when we lose the commutative property and suddenly which phase is emphasized matters. At that point we actually have three points of reference, anti/non-thesis, non/anti-thesis and non-anti-thesis (commutative). When we wish to force a decision between these a second set of three are generated in separate possible worlds. This is due to our losing the associative property between these three possibilities. That projects the ultimate opposite of the thesis -- that stands in for the new synthesis mediated by the anti-thesis and the non-thesis (or Otherness).

This is the inner structure of the dialectic which, in fact, is reversible. We can instead see the synthesis as degenerating by this same set of possible moves taken in reverse. The synthesis carries in it two possible worlds where overlapping parts or



Figure 105:

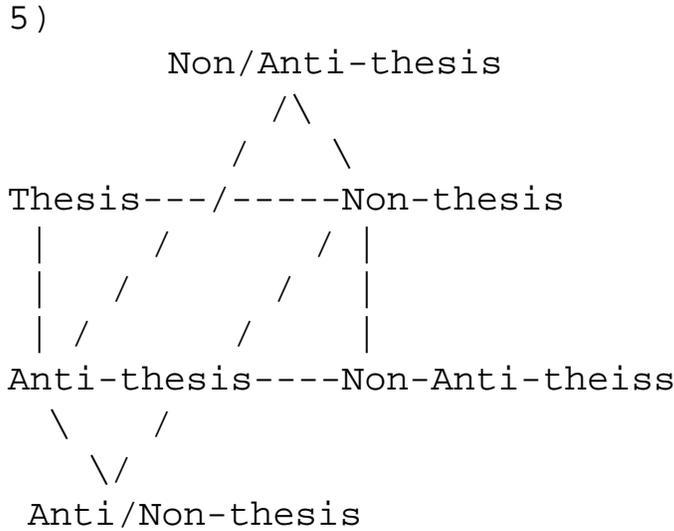


Figure 106:

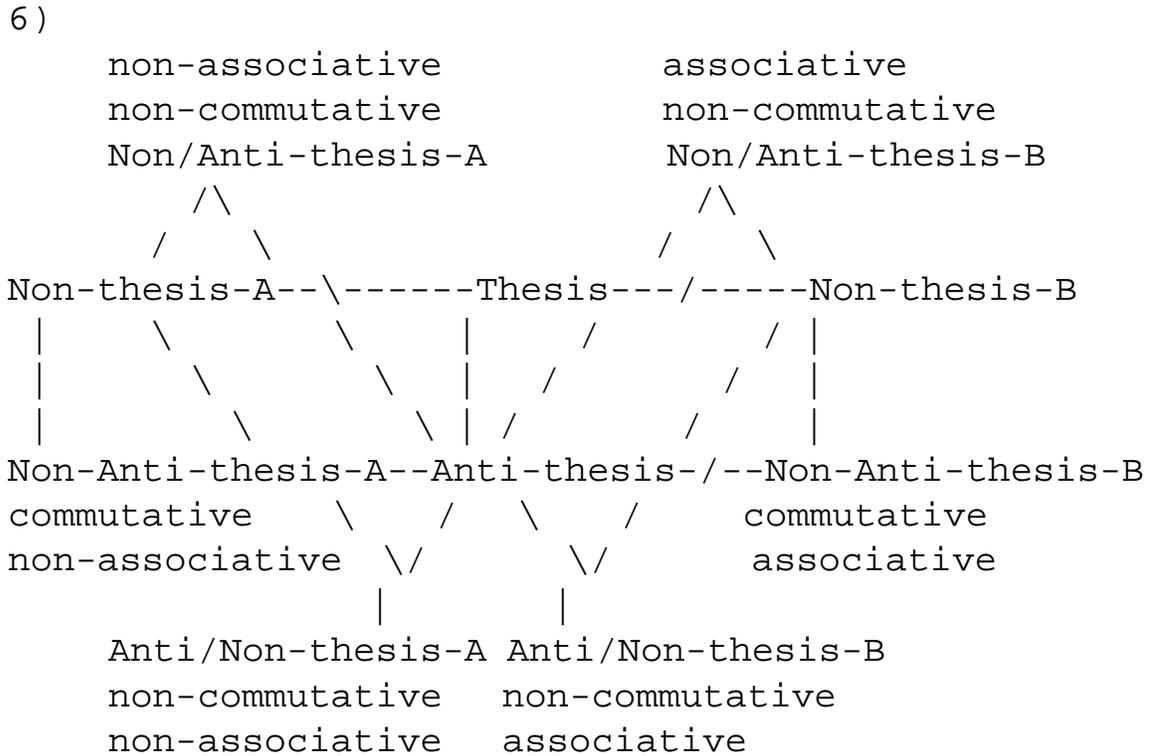
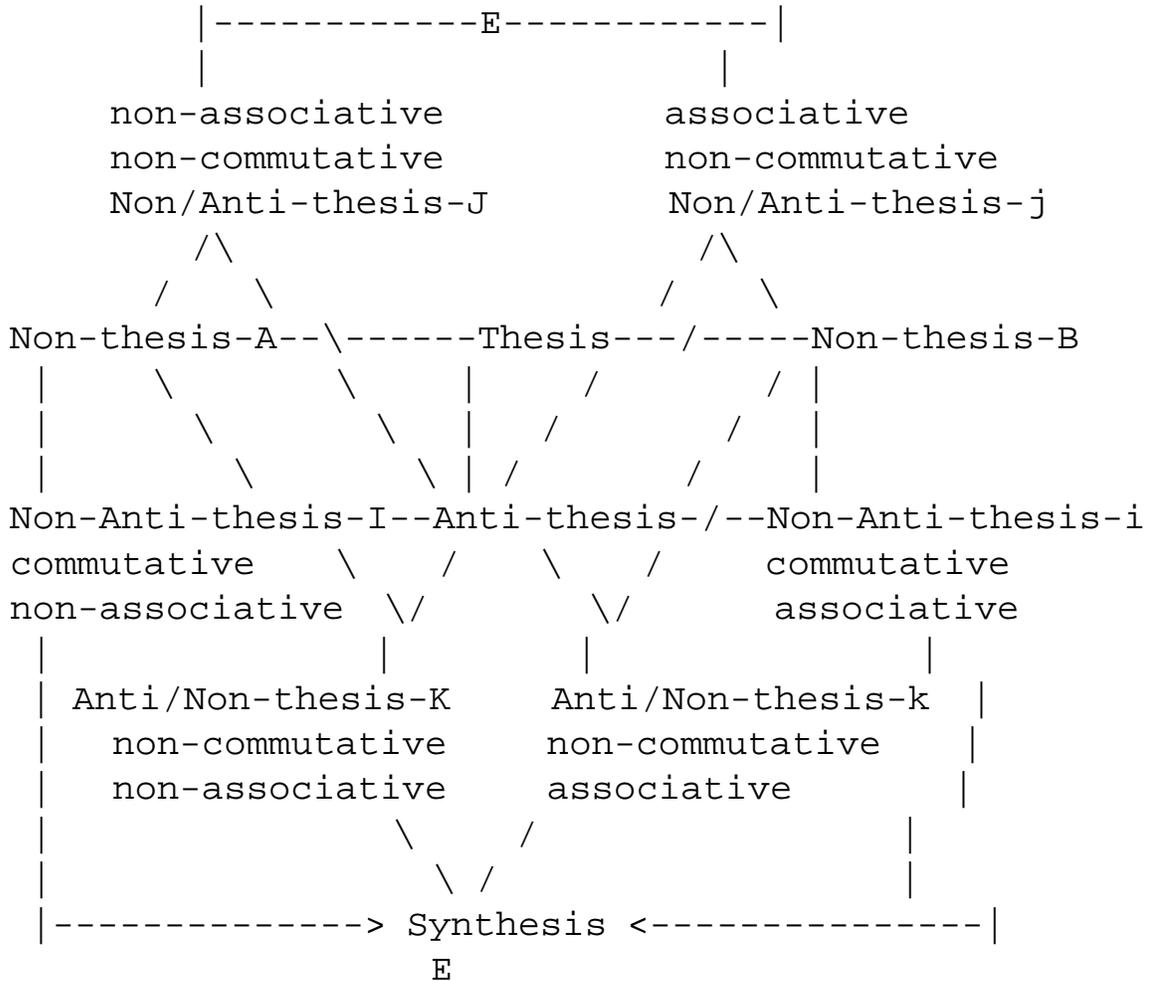


Figure 107:

7)



Notice that the Synthesis E has a mediated relation to the Thesis and Anti-thesis. It is mediated by commutative and associative properties or by chiasm and possible worlds A and B. Instead we might say Otherness and an internal structuring that fuses the dualism and reflects. To the extent it produces a reflection it participates at the level of a reflexive social system and to the extent that it is chiasmic it blends the living/cognitive or social/psychological together.

The move from thesis to anti-thesis and non-thesis on to the anti-non-thesis and its loss of commutation and finally its lose of association to produce the synthesis shows us the inner structure of aufhebung. It allows us to see the continuity between the level of parts and the level of whole. This continuity is achieved though the

existence of the special systems. The meta-system is the background within which the dialectic is occurring that allows there to be many non-theses that play off the thesis and anti-thesis pairings. The meta-system is an arena of firsts that can be taken as thesis and anti-thesis pairs. The meta-system is the origin of all the elements that are taken up and synthesized by the dialectic. The meta-system is the rhizomatic pool of partial-wholes and networks of parts that renews itself by fissioning what has been fused and fusing what has been fissioned. Within the meta-system the dialectic produces the showing and hiding relation between thesis and anti-thesis. The background to this showing and hiding process is the parts of the rhizome within the meta-system. The dialectic is continually defining itself against this background. In that process the Otherness of the anti-non-theses appear. These may be seen as chiasmic and reflected and that produces the ultimate opposite new thesis which is opposite both the thesis and anti-thesis that is also a synthesis. The synthesis is a detotalized totality within the meta-system at the same time as it is a totality at the level of the dialectic. It is at once a totalization of everything to this point and still only an way station on the teleonomic path of the system.

In Hegel's terms the chiasmic element brings consciousness and the reflexive element brings self-consciousness. So consciousness and self-consciousness are built into the motion of conservation, negation and supersession of *Aufhebung*. The fourth arises through over determination of the use of parts within the synthesis. Thus the functions of the thesis and anti-thesis are preserved within the synthesis even as they are being superseded by the new integrating level of the Fourth. The negation of the Firsts is only apparent as the essential relations and significances are being carried over to the new Fourth. Supersession is really merely an reiteration at a different meta-level. Anomalies are resolved as a new paradigm replaces the old one. Categorical discrepancies vanish as a new episteme replaces an older one. Such a resolution could occur at any of the levels of ontological emergence.

Hegel pointed to the general necessity of contradictions if we are going to think about movement known since Zeno's paradoxes. Such a system that allows such real contradictory elements to coexist is called para-consistent. Para-consistent logics give us the flexibility to confront the contradictions that actually occur in existence, called catch-22 situations externally or schizophrenic conflicting mindsets when internalized. Our world is both undecidable (para-consistent) and indefinite (para-complete). So the system of the dialectic merges into the rhizome of fissioning elements within an overall meta-systemic background that cannot ever be

rendered fully decidable or definite.

Arkady Plotnitsky in his books *COMPLEMENTARITY* and *IN THE SHADOW OF HEGEL* advances an anti-epistemology that attempts to show the relation between the restricted economy of the dialectic as defined by Hegel and what Bataille calls the general economy. Here the word economy refers to the internal and external flows of a system. Every system restricts these flows to those that are relevant to it. The general economy are all the flows within the meta-systemic environment within which the system appears. The meta-system is also a proto-gestalt to the extent that it is the always already lost origin for the systemic gestalt. The proto-gestalt has what David Boehm calls implicate order, and infolded ordering that becomes explicit when unfolded. Each system has what Plotnitsky calls the shadow of a general economy which haunts it. So the dialectic as the dynamic of the systemic gestalt that shows and hides thesis and anti-thesis by transforming them into a synthesis or fissioning back into parts has the meta-systemic general economy within which the dialectic operates and which it assumes. That general economy is the primordial soup that the dialectic arises out of and the environment providing resources that sustains the conflict between thesis and anti-thesis within an arena with its own hidden rules that govern the interactions of the opponents. Within that arena the conflict of opposites becomes hidden and the synthesis that supersedes yet preserves continuity is shown. There is a continuum of showing and hiding as each new synthesis is shown as a series of supersessions -- or under fissioning, a series of reductions.

*Figure 108:*

General Economy	Ultra-efficient Economy	Restricted Economy
Meta-System	Special System	System
Proto-Gestalt	Paradoxical Gestalt	Gestalt
Whole less than sum of parts	Whole same as parts	Whole greater than sum of parts
Result of complete fissioning	Fission/Fusion	Result of complete fusion
Reductionism	Partiality	Dialectic
Parts only disassembled	Rhizome	Whole only assembled
Soup, Shadow	Perpetual motion machine	Thing, Object

Between these two higher logical types there exists the hidden possibility of the special systems for whom the whole exactly equals the sum of the parts. These special systems are based at levels of complexity indicated by the existence of

complex, quaternion, and octonion numbers and their algebras. They form the basis within the internal structuring of physos/logos for the dissipative, autopoietic, and reflexive special systems appear. The algebras of the special systems use conjunction which keeps the different kinds of numbers at each threshold apart yet together. Those kinds of numbers can only be seen in conjunction and disappear when the conjunction is broken. Yet the conjunction never quite results in any real addition of the different kinds of numbers because that is really impossible. When we look at conjunction we find that its inner structure is equivalent to the Greimas square of contraries derived from quantification in the logic of propositions. And when we look carefully at the inner structure of the Greimas square we see that it is constructed of self-blocking contradictions. That self-blocking is due to a delay that occurs because there is a substructure to the square itself. That substructure repeats the relaxation of properties that generated the different algebras. And ultimately it give us an articulated relation between the meta-system and system that can be enacted via the dialectic unfolding. The special systems are the external and static depiction of an infrastructure that appears again in relation of contradictions to each other and allows the unfolding *Aufhebung* of the dialectic. The dialectic must be a dialogic movement because of its inherent social nature. It is based on reflexivity at the social/psychological level that yields self-consciousness. It is based on the chiasmic relation of dualities that yields consciousness within the living/cognitive autopoietic system. It is based on the pattern/form chiasmic relation at the level of dissipative system which sets up the basic movement of the dialectic as a dissipative system within the meta-systemic arena.

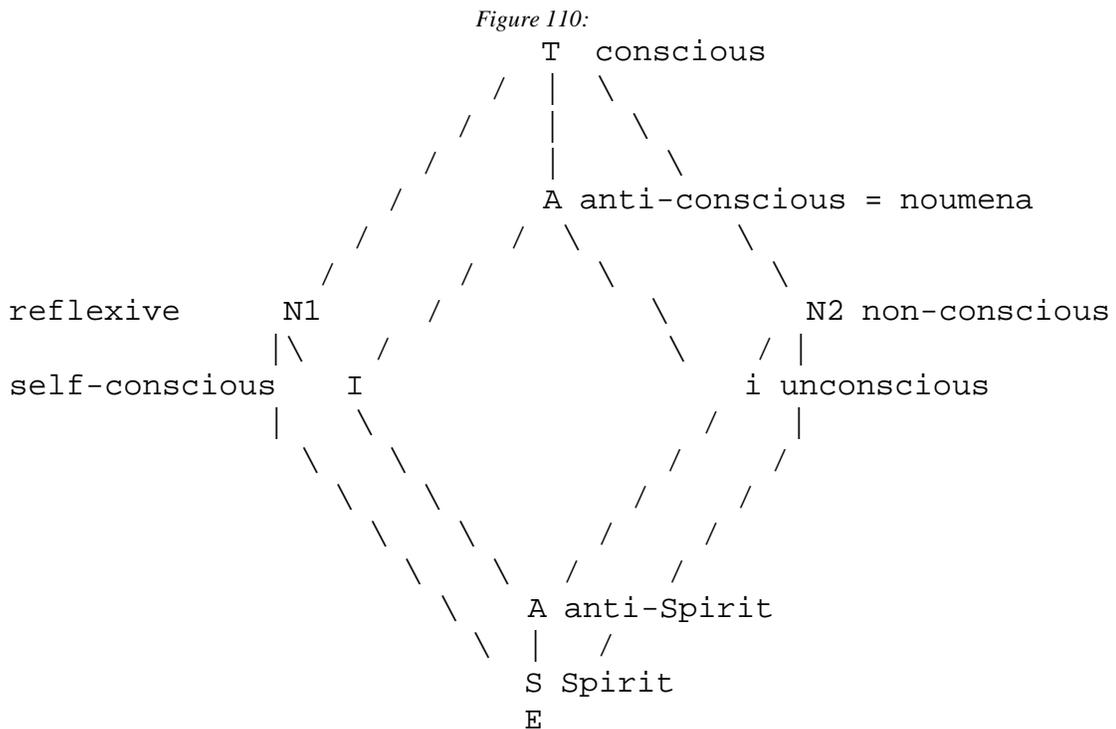
## **5. Where does synthesis come from?**

The question arises and needs to be explored as to where the synthesis comes from which appears to be projected as the E imaginary term. First we construct the Greimas square of contradiction, then we fall back from the positing of the Other as the anti-non-thesis into the chiasma of the reversibility between anti and non when the commutative property is relaxed. After that if we go on to relax the associative property then two possible worlds are created in which there are two 'nons' and to anti-nons where we distinguish between the unity of *ijk* and the dispersion of *IJK*. At this moment at the octonion level there is the projection of the E which is the final element of the octonion imaginaries that appears suddenly as if from no where as synthesis. However, there is another way we can look at this situation which must be considered. We can see the production of the two nons and anti-nons from the thesis and anti-thesis as the fragmentation of the Other as the non-thesis



the Magician system arise by the relaxation of the algebraic properties in the generation of hyper-algebras. First it is the production of blocking contradictions that gives us the characteristic of annihilation and produces the contradiction (anti-non-element) in relation to the thesis. But this element is recognized to be the Other which is an extreme opposite to the thesis and in fact is too extreme a position. We are forced to fall back from this extreme into non-dual chiasmic modes where either the anti or the non is emphasized -- but in which they form reversible relation. So we posit that within the square of contradictions are a series of reversible chiasmic relations between the contradictions that allow us to avoid contradiction by entering a non-dual mode that is implicit within the square itself. Then when we go further and lose not just the commutative property that reveals chiasma but also lose the associative property then we see that there arises possible worlds in which many contradictions or Others confront the thesis and anti-thesis pair. In our case two such Others arise as the anti-non-thesis differentiates itself. This spreading of the wings of the square of contradiction, so to speak, reveals the possibility of the dual of the winged square of contradiction. That dual when figured gives us the synthesis and anti-synthesis as the opposite duals of the thesis and anti-thesis mediated through the fragmentation of otherness and the inner non-duality within the square of contradiction. Synthesis unfolds from the articulation of the square of contradictions itself; not from any external source. The square of contradiction is already taking into account the relation between the thesis and its opposite and the relation of both of them to what is other than them (the non-thesis). This concern for the other produces the Other (anti-non-thesis) from which we must draw back into non-duality, because the Other is too extreme a difference to contemplate (this is the position of Arkady Plotnitsky's anti-epistemology). Drawing back into the non-duality from the Other, allows us to create an inner difference of possibility which cause the square itself to unfold its wings. This inner difference of possibility is the same as the fragmentation of the Other. The fragmentation of the Other causes the fragmentation of the Self (the thesis/anti-thesis pair). The fragmentation of the Self occurs when the other is taken into the self at some level and to some degree which is less than the absolute Other. The synthesis and anti-synthesis is the new coherence of the Self with some element of the other added which allows the differences between thesis and anti-thesis to be overcome while preserved. The move from thesis/anti-thesis pair to synthesis/anti-synthesis is a negation because we are thrown from one winged square of contradiction into its dual. But we remain within the same ring of squares of contradiction which encompasses and extends the thesis/anti-thesis duality by encompassing some element of otherness while at the same time it recoils from complete Otherness which fragments causing the Self

to fragment as a mirroring. We see the arising of the synthesis but it is bound to the new anti-synthesis and both of these are part of the same ring of contradictions. The expansion of the Self to encompass a synthesis by incorporation of the Other at the same moment causes the dependent co-arising of an even more radical departure from the original center of the self that must be taken into the Self in order to explore the new face of otherness and to construct another picture of the absolute Other at the next level of unfolding. There is a possibility of a continuous unfolding in which the Self evolves by always taking into itself otherness by a recoil from the Other and by the differentiation of the Self through the fragmentation of the Other. This unfolding is opposite the loops of annihilations that give rise to side effects which further annihilate. The unfolding of the Self through the inner logic of the dialectic is the progressive face of what in its obverse is the continual annihilation of the world that is prolonged via the constant production of side-effects that themselves annihilate but produce their own side-effects and sometimes create stable loops that allow us to see the world as a stable cluster of states of affairs in spite of continual annihilation. When annihilations block the Self arises as the unfolding of the Greimas square which will enter into a ring of squares of contradiction that progressively produce higher and higher levels of synthesis and anti-synthesis. But all these levels of dialectical unfolding are a house of cards that falls into the catastrophe of annihilation by the very mechanism that produces successive synthesis. The production of the Synthesis is the unblocking of the contradiction of the ring. So the creation of higher and higher levels of synthesis in the Self is precisely the process of annihilation of the Self. The dialectical unfolding of the Self is dependent on the inner dimension of destruction by which the Self is annihilated. So here we find the truth of the Buddhist assertion that the Self IS empty. The self is falling into annihilation in its very act of expanding to comprehend otherness. This is because the relaxation of the algebraic properties of commutation and association by which synthesis occurs causes the square of contradiction to unblock itself which triggers annihilation. We get a picture very similar to that Nietzsche proposes for Zarathustra climbing the mountain. As he puts down his foot the mountain is created to be a place for the foot to fall, but as he raises his other foot the mountainside vanishes from under it fading into nothing. Similarly the expansion of the self is the annihilation of the self.



If we apply this unfolding of the Greimas square of contradiction to consciousness we see that we can define the anti-conscious along with Kant as the noumena. The aspect of the object that never appears within consciousness. The non-conscious is everything else other than consciousness that is not noumena. It might be seen as the side-effects of our actions/thoughts that we are not aware of. The anti-non-consciousness is then the unconscious discovered by Freud and illuminated by Jung, Lacan and others. We identify it with what M. Henry calls the essence of manifestation or pure immanence, i.e. that which never appears in consciousness which Henry likens to Meister Eckhart's Cloud of Unknowing. It is that which never appears but which counter organizes consciousness in a way that allows us to see its traces in what does appear. The unconscious is too absolute in Plotnitsky's sense. We must fall back from the unconscious which is transcendent and cannot ever be known. As Lacan correctly analyzes it the Unconscious in this sense is the absolute Other. When we lose the ability to commute the anti-non freely we are left with the chiasm between the noumena and the non-conscious. These are differentially exercised and become a reversible phased interval. Falling back into the non-dual chiasm we see the "invisible" as the phase tilted toward the noumena and "semi-consciousness" of the states between waking and sleeping as the phase tilted toward the non-conscious. The invisible comes from the symmetries of the

unconsciousness that we have spoken of before which is what hides the unconscious from us even though we are in the midst of it. Similarly we can imagine a chiasma between the unconscious and consciousness. When this chiasma is tilted toward the unconscious our attention is drawn to the distortions of the unconscious in consciousness and on the other hand when the chiasma is tilted toward the conscious then we see the visible as the asymmetries that allow us to differentiate things within the conscious realm. These two chiasma which connect the contradictions of the square allow us to describe what appears within the realm of consciousness within the limit of the unconscious in terms of the visible and invisible as opposed to the distortions and the semi-conscious states. These reversibilities of the chiasmata form a field which we can identify with Lacan's concept of the Imaginary. The Imaginary is identified with the symbiosis with the mother of the child. In this symbiosis in which the child "bears" (cf. Levinas) the ministrations of the mother there is a showing and hiding between the visible and the invisible within which appears the distortions and displacements that prove the existence of the Other that is never shown. But all this takes place without high definition in a hazy or semi-conscious state of mind that cannot be exactly pinned down.

Figure 111:

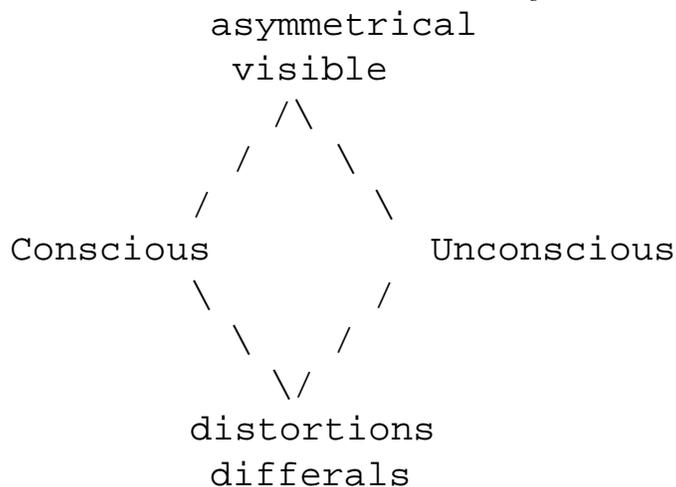
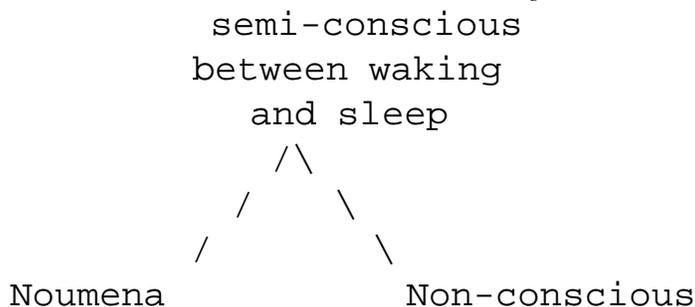
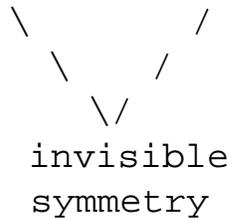


Figure 112:





When we fall back from the definition of the Other to the chiasmic field suddenly there are three imaginary values instead of one. The imaginary value of the Other has differentiated into two other imaginaries of the reversibility between the phases of the interval of the chiasm. If depart from this state to loose the associative property as well as the commutative property already lost, then we generate a second possible Greimas square of contradictions. This second square of contradictions posits that the non-conscious is reflexivity and the anti-non-consciousness in this case is self-consciousness instead of the unconscious. Self-consciousness like the unconscious is too absolute in our conception. We are never perfectly unconscious nor self-conscious. We need to take a more radical position that relaxes into a non-dual chiasmic field. As we fall back from extreme otherness of the self-consciousness there are generated four moments of reversibility. These are as follows:

Figure 113:

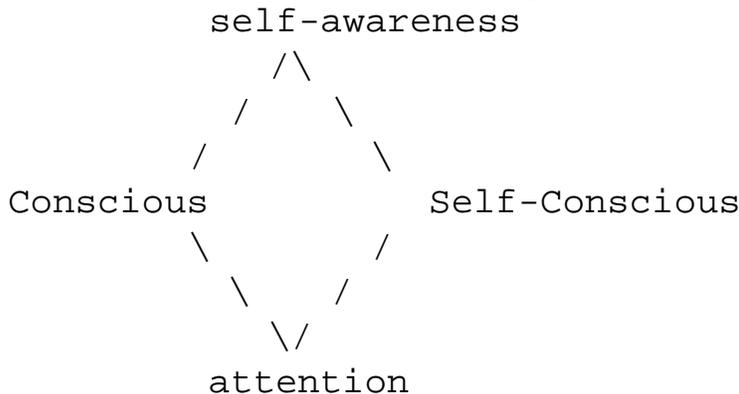
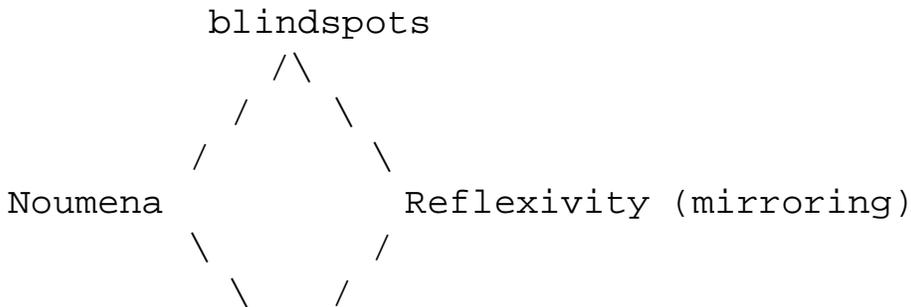


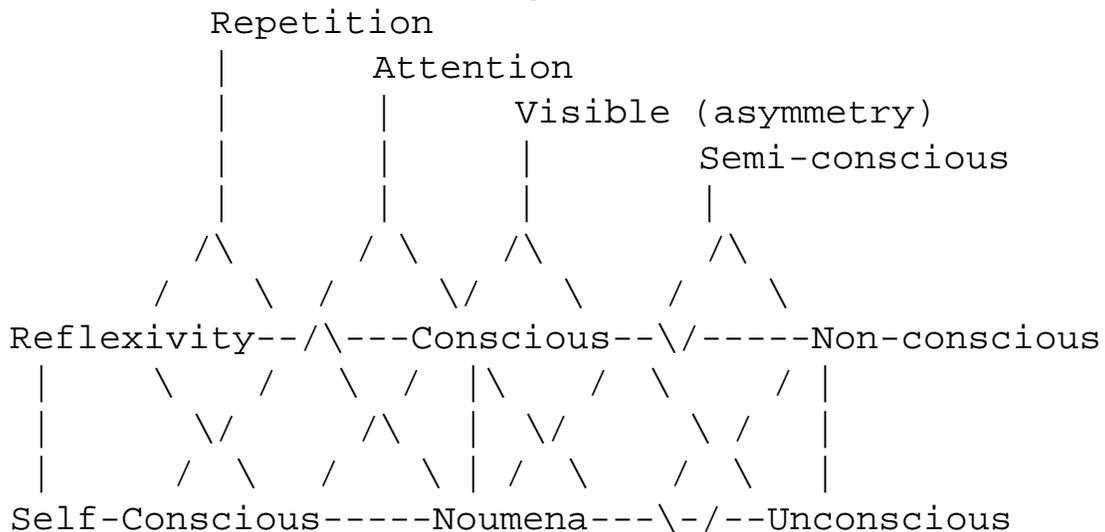
Figure 114:



\/  
repetition

These moments of reversibility form an interference pattern within the block of contradictions. Thus the relations between the moments of reversibility are completely indeterminate and undecidable. Where the reversibility occurs is dependent on the position of the observer. The positions of the observers are at points outside any one chiasma at other points on the dialectical cube. Each reversibility is independent of every other reversibility. So there is no way to determine the structure of the whole field from the outside. It is like a plastic cube with flaws in it that intersect and criss-cross. Only in this case the play of each reversibility may change over time and it will look like it is in different places to different subjects from different frames of reference. This is the nature of chiasma. They are like spacetime blocks in which the reversibility between time and space changes from different inertial frames. In this case the different reversibilities intersect within the cube of the dialectic and create an interference pattern that is constantly changing. Some of the changes are merely apparent -- existing as relative shifts in relation to observers. Other changes are real differences in the play of the reversibility in relation to its limits. The two together create an indeterminateness and undecidability that cannot be healed. But on the other hand it allows us to enter into a non-dual relation that is not completely dominated by the terms of the square of contradiction as it appears externally. Instead we have revealed an inner dimension to that cube that has not been articulated before. We have discovered the inner logic to the dialectical process, and non-dual chiasma plays an important and unexpected role in that process.

Figure 115:





into another dimension and splits into a winged structure that calls forth its own completion by the postulation of the dual winged structure that completes the circle or more exactly completes the cube. The significant point is that synthesis and anti-synthesis do not come from out of nowhere, as perhaps they seem to in the external descriptions of the dialectic, but come from the completion of the cube created with the chiasmic square unfolds into an orthogonal dimensionality. A crucial thing to notice is that the synthesis appears diagonal to consciousness and anti-synthesis appears diagonal to the noumena across the cube. In other words the synthesis comes from the triangulation of the two anti-'nons' of the fragmented Other while the anti-synthesis appears out of the fragmentation of the non-thesis. In other words things come out of their opposites. The cube gives a rigorous treatment of this necessity first alluded to by the Tao Te Ching.

Playing out this example we can learn something about the model of consciousness we have attempted to develop in earlier papers in this series and the series ON THE Social Construction Of Emergent Worlds. First the thesis and anti-thesis can be seen as the two epicenters of the ellipse of consciousness adapted from the model of Dunne and Jahn (Margins Of Reality). So this unfolding can be seen as the structural transformation of that ellipse of consciousness. But it also allows us to understand that such a determinate and decidable model is only a classical approximation and that actually that classical model breaks down immediately into an non-dual chiasmic field of interferences (mutually exclusive and interacting constraints). We can never experience pure self-consciousness or pure unconsciousness. These are conceptual extremes that are too absolute and not complementary enough. When we add mutual interacting complementarities then we get the pattern of chiasma within the dialectical cube. Out of this dialectic arises Spirit (Geist). But this again is an extreme opposite that is conceptually posited that is never experienced. Spirit is the heart-mind glorified. The opposite of this (the anti-synthesis or anti-spirit) is the dark shadow of the spirit that Plotnitsky talks about. It is the nihilistic landscape, the body as dominated, the negative fourfold (Chaos, Night, Abyss, Covering) that haunts the positive fourfold of Heidegger (Gods, Man, Heaven, Earth). The glory is the fusion of the positive fourfold the attempt to completely rise above (transcend) the negative fourfold. Thus the extreme of Spirit creates the opposite extreme of everything left out and abandoned by the economy of Geist. When you move dialectically from the Unconscious and Self-consciousness you get Spirit. The backlash from this movement is the Anti-spirit that is poised between non-conscious and reflexivity. Anti-spirit is engendered by the less extreme parts of the square of Greimas that embodies

otherness. Spirit comes from the dialectical jump from the unconscious and self-consciousness simultaneously. Spirit is the extreme of human awareness embodied by Achilles (heights of glory) and Oedipus (depths of degradation). Spirit appears to fuse the positive fourfold but it contains within it a moment of darkness (the inhuman murder of Achilles enraged or the broken incest taboo of Oedipus). Spirit is haunted by the shadow of anti-spirit as Arkady Plotnitsky has shown. The classical restricted economy entails the wider general economy that embodies the complementarities of non-dual relations drawing back from the conceptual extremes of the classical models.

The movement from thesis to synthesis is a motion of transcendence. Here we are seeing ontological monism in action where transcendence attempts to ground itself. But that very movement is the unblocking of the square of contradictions that leads to annihilation. This is the essence of the problem for ontological monism. It passes through the Abyss to ground itself. It is inherently groundless. In the very action of transcendence there is the groundlessness of annihilation sewn. But in the process we also pass through the chiasmic landscape implicit in the dialectical cube and we also realize the possibilities of other dimensionalities as the square unfolds its wings and realizes its duality. This implicit duality and these realms of possibilities in other dimensions are very important discoveries which link to the different kinds of Being and their articulation into meta-levels.

A crude dialectics presents us with a deterministic and almost mechanical dialectical process. What we find unsatisfactory in the presentations of Hegel and Marx might be summarized by the deterministic and decidable movement of a three stroke engine that they posited. Attempts such as those of Sartre in Critique Of Dialectical Reason to render a dialectical account of the dialectic have not been embraced by other theorists of the dialectic and so this philosophy seems to have foundered in our much changed world where natural philosophy in the form of high energy physics has taken center stage revealing principles that completely destabilize all classical models of the universe. This is why Arkady Plotnitsky's work is so important. He brings together the work of Derrida, Bataille, and Bohr and show how they interrelate and produce an anti-epistemology. Which would lead ultimately to an anti-ontology such as that we have posited that sees the meta-levels of Being intersecting with Buddhist emptiness. Just as Plotnitsky says Derrida is not radical enough, we posit that Plotnitsky is not radical enough when he restricts himself to the critique of epistemology. In the ontology developed in these papers and before in my dissertation The Structure Of Theoretical Systems In Relation To

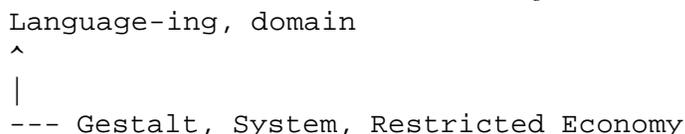
Emergence (L.S.E. 1982) there are a series of ontological meta-levels discovered in modern continental philosophy that end in unthinkability. When we interpret that unthinkability as emptiness (in the Buddhist sense) then we realize that we have constructed an implicit anti-ontology that is the dual of Plotnitsky's anti-epistemology. The four meta-levels of Being cancel with emptiness to leave only a void. So annihilation appears at multiple levels within this anti-ontology. But the cancellation leads us to non-duality that can be described chiasmically as the ultimate position of our metaphysics. Loy describes this position very well in his book Non-duality. We can describe this non-duality through the logic of the unfolding of the dialectic. That non-dual chiasma is opposite the bifurcation of dimensionalities in the unfolding of the dialectic. These are our complementarities and they relate to the different kinds of Being. In Software Engineering Foundations: Software Ontology it has been shown that each kind of Being is related to a different kind of mathematics. Deterministic mathematics is restricted to Pure Presence while other relations are those between statistics and Process Being, fuzzy math and Hyper Being and finally chaos math and Wild Being. Both Hegel and Marx's dialectics were constructed as deterministic models of impossible processes. In other words motion assumes contradiction which classical systems did not allow. Dialectical treatments embraced contradiction and dealt with movement which other metaphysical systems avoided in order to stay in tune with logic. So dialectics appeared to move into the process arena but represented process as conflict resolution which was deterministic and mechanistic and thus almost as frozen as the non-contradictory systems of philosophy. Sartre was the first to treat the dialectic dialectically in a major critical work. Thus he introduced true process into the dialectic. But it is a work that has been more or less ignored even within the French schools of thought. But it is the true inheritor of the dialectical movement which has been radicalized in terms of Process Being. Dialectical Dialectics or meta-dialectics cannot be deterministic. At most they can be treated only statistically. Sartre does not himself draw this conclusion but it is clear that there is a direct relation between the Process Being of Heidegger and meta-dialectics of Sartre. Annihilation only enters the picture when we reach the level of Hyper Being. When we consider the discontinuities that break up the assumed continuity of processes then we see that these continuities may be understood in terms of the cancellation of group (mathematical) transformations. So it is at the level of Hyper-Being that the square of contradictions becomes important to us. Discontinuities pop out of nowhere and transform the dialectically evolving dialectics. At this level we must leave behind statistics and consider fuzzy sets as our way of portraying the possibilities out of which the probabilistic actualities arise. Finally when Wild

Being appears we see the chiasma between continuity and discontinuity. At this level it is chaos theory that describes the mixture of order and disorder that ensues. In Wild Being we get as close to the non-duality of emptiness itself as possible and still be able to talk about it or think about it.

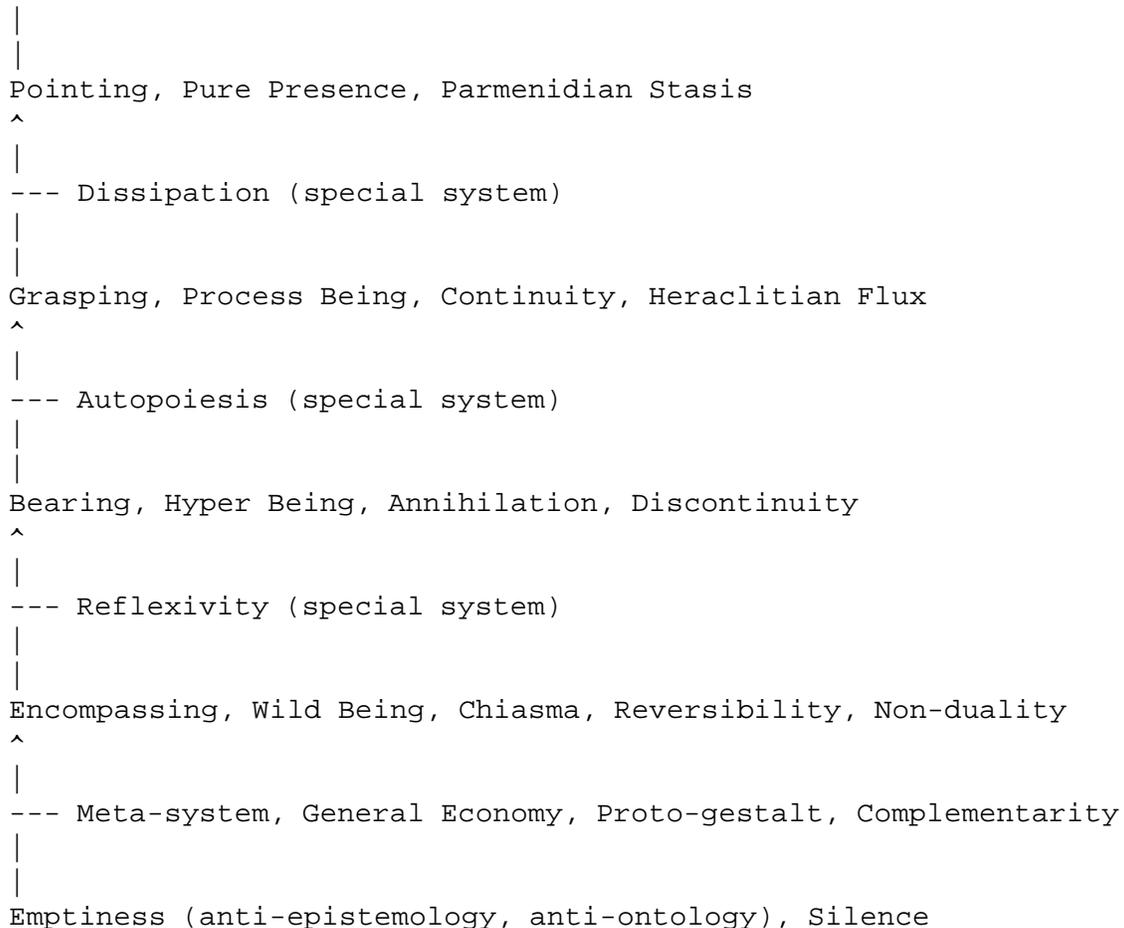
Now consider this. When we speak of the thesis and anti-thesis duality we are talking about determinate and decidable terms. But when we start talking about a non-thesis suddenly we are entering some degree of indeterminateness into our considerations. In this case that indeterminateness might be modeled by statistical probabilities. But as we fall back from the Other (anti-non-thesis) then we enter non-dual chiasmas which model chaotic interference patterns between multiple reversibilities. Only after we have fallen back into non-dualities do we enter the stage of producing dimensions of possibilities beyond those conceived of in the initial formulation of the square. This production of possibilities brings fuzziness into consideration. Essentially we have posited the extreme Other and fallen back from it into non-duality. But out of that retreat comes the consideration of other possibilities which allows us to rise above the undecidability and indeterminateness that haunts the square of contradictions. This allows us to rise above the cancellation of thesis and anti-thesis to a new level of synthesis. The dialectic produces Fourths out of Firsts and their diametrical opposites. But this production does not occur merely by positing Seconds and the continuities of Thirds. Instead it comes from the falling back away from extreme opposites of the initial First and the branching out into other dimensions though which overdetermination of relations become possible.

So similar to the formalism of Goertzel's magicians the inner logic of the unfolding of the dialectic contains within it all the different kinds of Being interacting to create a complete model of chaotic processes. The difference is that Goertzel's magicians model the meta-process whereas the inner logic of unfolding of the dialectic comes out of the application of the algebraic properties of the special systems to the square of contradiction and is an unexpected result. We might posit that there is a series of steps from the meta-system (general economy) that embodies the complementarities of our anti-epistemology and anti-ontology to the system (restricted economy). These series of steps are as follows:

*Figure 117:*



## Reflexive Autopoietic Systems Theory



In this schema what we see is that the meta-system describes the limits of our ability to know and control. Chiasmatic Wild Being is as close as we can get to comprehending the nature of the non-duality of the emptiness about which we can only be silent. But we move toward the systemic gestalt from the meta-system in a series of states each of which alternate a special system with a kind of Being. This is to say that the discontinuities between the special systems are the kinds of Being and vice versa. These special systems allow us to build up the properties of superconductivity that are unique to them. We can model the meta-system itself with Goertzel's magicians. But Magician meta-systems are dependent on annihilation and embody the properties of mutual action and gestalt bonding. These properties come from the special systems. And when we consider annihilation and its blocking we come to look closely at the concept of conjunction. Eventually we realize that conjunction is in fact captured in the Greimas square of logical contradiction. When we apply the algebraic relaxation of properties to the Greimas square then we find the inner logic of the unfolding of the dialectic. So there are complementary views of the special systems as moments in the unfolding of the

dialectic and as special systems that embody dissipative, autopoietic, and reflexive properties. These are dynamic in integrated as opposed to static and independent modes of the special systems. Together these special systems allow us to differentiate the stages of emergence defined by the meta-levels of Being which in turn allow us to differentiate the special systems from each other. In the dialectical manifestation the different aspects of the unfolding of the dialectic embody the kinds of Being in coherent and interrelated action. Finally what has emerged is presented to us as a showing and hiding gestalt or system. That system is the folded up meta-system. The system and the meta-system are complementary ways of looking at the same thing, the manifest eventuality within the western worldview. That eventuality has popped out of the void. But in this worldview the layers of Being and the differentiation of the special systems intervenes between the thing and its shadow (the meta-system). We might call the science of special systems HOLONOMICS expanding on the intuition of Arthur Koestler who envisioned that there was a special structure between the view of the whole (the systems view) and the view that only sees the parts (the meta-systems view.) This intermediary structure between the system and the meta-system which is Janus faced differentiates into the three special systems related to dissipative, autopoietic and reflexive systems. In other worldviews like the Islamic and the Chinese a completely different coherence occurs which posits that there is only the void and the eventuality and the kinds of Being vanish. But true to the complementary spirit of these worldviews, the entity is seen now as an instance of a special system. What is a lost possibility in the western system that is only discovered as an extreme anomaly is the primary mode of perception and thought in the traditional Chinese and Islamic systems that have no concept of Being and only have things arising directly from the void without intermediary. The special systems are the primary way of viewing phenomena in these traditional systems, and that is why they are so ill understood by us today as we start from exactly the opposite ontological and epistemic premises.

Languaging is the opposite of silence. It can only occur on the basis of handedness of the various meta-levels. The domain of language encompasses the systems and meta-systems. Meanings appear directly from the void. The meta-levels of Being only serve to repress this primordial process. Thus when we posit the Geode theory of meaning there are three layers. The Geode has the other shell that looks like a rock ball. Within that there is a crystalline structure which in this case is represented by the meta-levels of Being and the special systems. Finally, the geode is empty inside. All things in this world are empty in the Buddhist sense. It is because they

are empty that things can be full of meaning. It is because of the emptiness that we can appreciate the crystalline structuring. But ultimately there is only void and things. Being is an illusion. It is constantly undermined by its own groundlessness. This has been a claim since Nietzsche. But our work has shown exactly how this occurs. It occurs because the dialectical process of creating Fourths from Firsts is exactly the process that allows the square of contradiction to unravel and self-annihilate. As you take a step forward you are taking a step backward. Thus we are caught like Zarathustra placing our foot down to find the manifest mountain and raising our foot only to have it vanish beneath us. This walking on the void, mythologized in our tradition in the story of Jesus walking on water, must be accepted as the non-duality of manifestation (primary process). The Western tradition self-destructs. But when Being is washed away from our eyes, then we see that the world has not vanished but has only been realized anew with respect to its essential nature that Plato tried to point out in the parable of the Cave and the one who is taken forcibly from the cave. That one cannot describe the world beyond the cave that he has seen, the non-dual world. Yet we live in it every moment. That is the Dharmadatu, the Tathagata Gharba, the interpenetration of the world seen from the point of view of emptiness in which there is pure Fourthness without the necessity of its production.

## 6. In the Magical Mirrorhouse

We can describe our problematic by means of a diagram which Onar Aam (onar@hsr.no) and I have variously worked on and improved.

Figure 118:

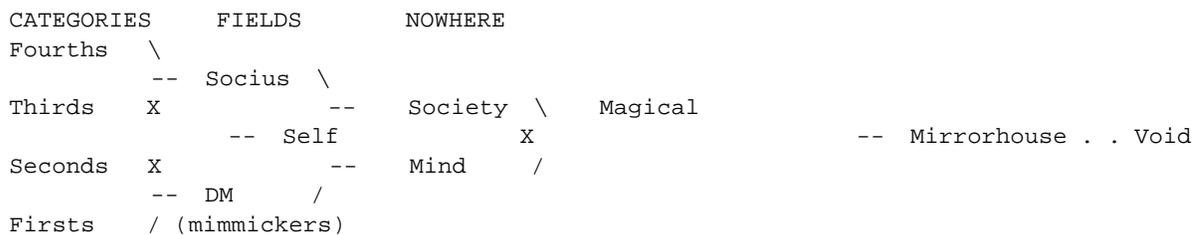
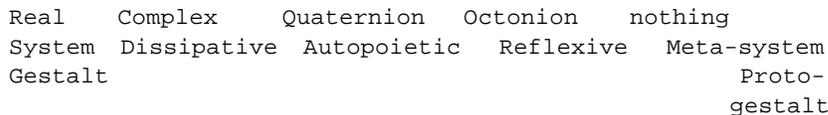


Figure 119:



where DM = Desiring Machines (Deleuze and Guattari ANTI-OEDIPUS) which Onar Aam calls the Mimickers and I prefer to call the Chatterers or better still with David Grove would call the 'children within' the adult (that is the fragmentary selves stopped at specific points in time before traumatic

## Reflexive Autopoietic Systems Theory

events in our lives.

*Figure 120:*

Firsts = orthogonal asymmetrical emergents

Seconds = relations between emergents

Thirds = continuities based on relations

Fourths = synergies of relations embedded in continuities

Society	Two ways to
dissipatively	combine
orders the	hierarchy
desiring machines	and heterarchy
OR	
Mind dissipatively	Onar relates these
orders the socius	to the genetic
	regulative system

The self is the	
interface between	The two flows resonate
these two	to produce a symbiotic
dissipative flows	balance between the two
	dissipative systems

The nodes of an autopoietic system are themselves quaternions as well as the autopoietic system as a whole. The nodes of the autopoietic system replicate the whole autopoietic system.

When two individuals who both have selves developed by this interfacing of dissipative systems entrain they produce a reflexive system

Notice that in this scheme Desiring Machines (DM) are the field that is ordered by Society as when a baby as organism is socialized. Society is the Nowhere from which the ordering comes to the baby. This is called by G.H. Mead the “Generalized Other.” The socius is the field that is ordered by the order from the nowhere of the Mind. In other words we project our construct of the mind on the actions of others. The socius is the general operation of intersubjectivity. We do understand what others are doing even though we have not possibility of direct introspection. We hypothesize that this is because each of us has a mind like the minds of others that organizes the social field in such a way that we know what others actions mean. It has recently been hypothesized that autism occurs when those parts of the brain that allow us to project the social field and imagine the

perspectives of others are dysfunctional. What we see here is a model of a dual dissipative system where the abstracted “Society” organizes the field of the bodies response while the abstracted “Mind” organizes the social field. Thus the two dissipative systems form a chiasma of exchange and interaction. It is not the Mind that organizes the Desiring Machines and the Social that organizes the social field as would be assumed in a dualistic system. But in the non-dualistic system each side of the dualism of Society and Mind orders the substrate of the other side of the dualism. This dynamic chiasma causes an interference pattern to appear that is the Self. The self is the interface between the socius and the Desiring Machines. Deleuze and Guattari say quite rightly that the Individual level which we usually focus on in Western culture is an illusion. It is in fact the realm of side-effects thrown off by the dual motion of dissipation from two no-wheres onto the substrates of the other simultaneously. These two loops when they become harmonized form a symbiotic relation that becomes the autopoietic system. But even when symbiosis occurs because we lose the associative property there are asymmetries which occur in the homeostatic activities of the interlocked symbiotic dissipative systems. Those asymmetries appear as the mirrorhouse of reflexivity which is the basis for heterodynamic ecstasies. Ecstasy means out of oneself. Two individuals that have both been brought up in the same social field and have similar orthogonal sets of desiring machines may at a higher level enter into a symbiosis with each other in which each of them are out of themselves. But that becomes a mutual projection of a world which encompasses both of them belonging together as the Same. Each of the individuals are out of themselves into each other. This is almost a definition of mutual love and understanding. Each individual has Care as Heidegger says but the Care for the other more than the self is what establishes the love that is the basis of our mutual world. We can do that as individuals because internally each of us do that with the two dissipative systems that compose our self as the interference pattern between them. Thus the self and the mirrorhouse are duals of each other. The mirrorhouse is the Self of society. The Hindus called that greater self Atman. We might call it culture. Whatever we call it it is the mirror that every individual looks into by which he sees everything outside him as a mirror of what is going on inside himself. All of us projecting onto the world and seeing what is undifferentiated in ourselves as differentiated in the world creates the magical mirrorhouse. What is magical is that in the case of the reflexive system what goes on outside really is that goes on inside. The inside is the outside and the outside is the inside. In these statements the IS must be crossed out as Derrida suggests in *OF GRAMMATOLOGY*. There is an essential movement of DifferAnce between the inside and the outside that makes them the Same but not identical. In other words,

distortion enters into the transformation between the inside and the outside as we realize their Sameness. They are the Same inspite of this distortion that refuses to allow their identity (cf. Heidegger Identity And Difference).

The Buddhist analysis on this model is doubly right. The self is an illusion, whether it is the self of the individual or the greater self of the society within the projection of the world. The self between socius and desiring machines is just an interference pattern. The Magical mirrorhouse between Society and Mind is similarly just an interference pattern. The only difference between these two is that we are suspended in one as individuals acting together while each of us has suspended within us the relation between the social field and the orthogonal desiring machines. All the interference patterns of the Selves are together the single encompassing interference pattern of the Magical Mirrorhouse. The Selves appear as figures on the ground of the global interference pattern. There is a single hologram which self sees from different viewpoints which makes them think there are really many different holograms. This inability to decide and distinguish the Mirrorhouse from the Selves is a fundamental problem, a wicked problem that can never be resolved because we are selves that are trying to resolve it. We are completely embroiled within the rhizome of the mirrorhouse, always caught in the middle of it with no access to any “headland above the world” from which we could sort out the selves from each other. Thus standing waves set up by the special systems within this global/local interference pattern are utterly non-dualistic. It is impossible to create a determinate and decidable system on the background of the undecidable and indeterminate meta-system. Every time we attempt to do so our sand castles are washed back into the sea of non-duality.

Desiring Machines form a rhizome of connections (Seconds) between orthogonally manifest juttings from the unconscious (Firsts). The Self or individual is made up of relations between the person and everything else in the world which is socially constructed as a logocentric narrative. (see \_Conversational Realities\_ by John Shotter London: Sage 1993). The logocentric continuity of the narrative in which there is diacritical significance generated qualifies as a Third in Peirce’s categorical system. The socius is the network of individuals that appears as a field within which the Selves of the community are organized by the community. Thus the social fabric qualifies as a Third but also has the synergistic qualities of B. Fuller’s fourths. Between the Desiring Machines and the Self there is an interference pattern not unlike the Mandelbrot set. The same is the case between the Self and the socius. As Aam points out these are dynamical systems with chaotic dynamics. The

Social and the Mind are constructed out of the relations between the Socius and the Self in the first place and between the Self and the Desiring Machines in the second place. They appear as dual ways of combining the hierarchical and heterarchical networks that Goertzel mentions in The Structure Of Mind and Chaotic Logic. It was my discovery in an earlier paper the series On The Social Construction Of Emergent Worlds that by reversing the roles of these two kinds of networks one can move from the psychological model of Goertzel to a social model that employs his results. Thus I venture that the Social and the Mind are duals which appear from the two possible combinations of the hierarchical and heterarchical networks.

Omar Aam goes so far as to relate Mind and Society in this cascade to the genetic regulatory system that appears in evolution. In other words these are sources of order that appear from statistical variation and holding certain things constant over time. They are as J. Monod suggests teleonomic systems not reified teleologies as we often reify them to be.

Between Society and Mind appear another interference pattern constructed like the Mandelbrot set but made using the quaternions. The Julia sets associated with this meta-mandelbrot set is are very complex and interesting. We have already seen that there is a mirroring back and forth between the autopoietic quaternions at the level of the reflexive. At this level there is an even higher order meta-meta-mandelbrot set and associated Julia sets which describe the dynamics at this level. This meta-meta-mandelbrot set is constructed from the octonions instead of the quaternions. Omar Aam is the first person to create pictures of octonion fractals and display them. He notes that at this level the fractal patterning becomes gaseous -- so subtle as to be almost non-existent which he has described as a liquid crystal.

The mirroring back and forth of Society and the Mind are captured very nicely by Aam's concept of the magical mirrorhouse. I have previously talked about what Aam calls the mirrorhouse in terms of the endless generation of illusion by the ideational mechanism. The different kinds of Being lay bare the inner workings of the ideational mechanism. And now we discover that the parts of that mechanism are the different special systems. Once the illusory continuity of Pure Presence is established then upon that surface myriad illusions are projected by the mechanism of ideation. Those illusions are like the reflections off the walls of the labyrinth of a funhouse of mirrors. The structure of the mirrors themselves in the funhouse may be called the mirrorhouse. They are the myriad distractions which in Arabic are called Dunya. Dunya is the opposite of Ard or Earth. Ard is what you own and what

you need to consume personally. Dunya is everything beyond your needs and what you can actually have in the world. The myriad illusions of Dunya have an excellent illustration in the myriad gods, goddesses, demons, cultic shrines and other religious aspects of Hinduism. A similar observation might be made concerning the Greek gods and myths. This overproduction of semiotic meaning which continually varies against itself and contradicts itself is in sharp contrast with the radical monotheism of Islam, Zen Buddhism, or Chinese Taoism all of which in their pure form preclude idolatry of every kind. This haphazard ramification of in multiple dimensions of images upon images upon images . . . is an excellent model for the endless illusion that occurs in the mirrorhouse of reflexivity. That illusion is projected upon the screen of the Void though the illusion of logocentric continuity generated by ideation. It is the opposite of the system that stands on the groundless ground of pure presence. Dogmatic monotheistic theology is the opposite of the myriad systems of polytheism. Dogmatic monotheistic theology projects God as the Supreme Being whereas polytheism projects myriad gods and goddesses as rival beings within the illusory divine world of the immortals that appears as part of the positive fourfold (heaven, earth, mortals, and immortals first enunciated as the structure of the world by Socrates in the Gorgias and revitalized by the later Heidegger) in contrast to realm of mortals. The dogmatic theologian (Aquinas, Augustine) like the dogmatic philosopher (Aristotle, Hegel) wishes to construct a consistent and coherent system while the polytheist\ontologist like Nietzsche does not believe any system is ever possible. The dogmatist attempts to construct the system while the polytheist\ontologist continues to indicate the shadow of the meta-system that demonstrates the impossibility of ever getting complete closure for any system. All systems that we bring into the sharp light of the positive fourfold of the world (the clearing in Being) float on the Abyss of groundlessness, they cover over or repress all the other possible systems, they have within them inexplicable paradoxes and opacities, and when set into motion they have chaotic regimes that are non-intuitive. In other words the negative fourfold haunts every thing presented within the arena of the positive fourfold. A truly radical approach is that which is taken by Islam, Zen Buddhism and Taoism which is to ban idolatry at the same time as destroying the notion that God has Being. Thus Zen destroys the idols like the Muslims have in the past. Taoism speaks about the Way not any Being. In Zen one must kill the Buddha on the road if one meets him. In other words, whatever would de-center ones spiritual experience from oneself is an illusion. Everyone has the essence of Buddhahood within them. In Islam God is not a being, not even the Supreme Being, but is a unity beyond the void, beyond our comprehension in all forms yet not transcendent. God is both connected and disconnected to creation at

the same time without contradiction. All three of these examples of religions propose a supra-rational comprehension of the inner dimension (reality) of existence. They go beyond both systematic dogmaticism which posits a Supreme Being or One Being and meta-systematic polytheism/ontologism. The truly radical alternative is an anti-epistemology AND going beyond Arcady Plotnitsky's formulation an anti-ontology. This is why we posit the void or emptiness along with the Buddhists and the Taoists. It is a realization of utter ignorance which has resonances in the radical monotheism of Islam. Unlike in Christianity God is no father and no being, not even a Supreme Being, in Islam. Islam is closer akin to Judaism in that regard. The point is that the dogmatist who wishes to produce a system assumes that the mirrors of the mirrorhouse have no flaws, no distortions, so our representations may correspond to the states of affairs in the world. The polytheist/ontologist assumes that those mirrors within the mirrorhouse are full of distortions. The mirrors face each other so that images reverberate to infinity. They may be at odd angles with respect to each other so that the reflections are distorted. So both Heidegger who believes in Ontological Monism and Henry who following Meister Eckhart posits a Cloud of Unknowing, or an ontological dualism have flawed visions of the world. We have followed the reasoning introduced by Henry to discover at least four meta-levels of Being. But whether the multiple meta-levels are four, five or infinite is less important than the difference between a monism and a poly-ontology. One posits a system in which transcendence can ground itself through the use of two meta-levels of Being to form an Escher waterfall structure by which Being can wrap around itself to make the Eternal return of the Same occur. Prior systems attempted to produce axiom like foundations for philosophy, called First Principles. Heidegger used Husserl's discovery of the modes of Being (apparent in Essence Perception) to allow exactly what Kant had forbidden philosophy -- access to the transcendental realm. The poly-ontological view posits that there are even higher meta-levels of Being at which there are aspects of the world beyond manifestation. Merleau-Ponty discovers two further levels beyond those Heidegger uses in his self-grounding philosophy expressed in BEING & TIME. But which ever of these positions one takes there is the discovery that the non-concept/non-experience of the Void(emptiness) annihilates both system and meta-systems.

The whole ideational mechanism is dismantled by the ultimate paradox of an empty emptiness that negates the concept of the full fullness of Being in all its kinds. What lies beyond the Void is inaccessible and incomprehensible. We are denied access no matter what we do or no matter how clever we try to be at

reconstructing what lies beyond the blocked door of the unseen, unheard of, and incomprehensible. Dogmatic system builders that assume a unified Being, Ontological Monists that assume that transcendence can ground itself by playing two kinds of Being off each other, and Poly-ontologists of all sorts that assume Ontological Dualism and even more kinds of Being are all wrong. Being itself is an illusion and what is worth knowing cannot be captured in that illusion and its attempts to ground itself. So the mirrors and the images ramifying in the mirrors of the magical mirrorhouse are both illusions and it is only the tincture of emptiness that can cure this miasma of our worldview.

As Onar pointed out to me in a private correspondence it is Goertzel's Magicians that live within this illusory house. So the house is magical and so are its inhabitants. There are three dynamics. There is the dynamism of the Magicians that make up the field of the meta-system. There is the dynamism of the dialectic that allows the system to evolve within the play of the meta-system. And there is the dynamism of the gestalt of the system itself. When that system is seen as structural and as containing both undecidable and indeterminate aspects then all three of these dynamics embody the four different kinds of Being. A final dynamism to add to these four is the languaging of language that occurs at the domain level. The four different kinds of Being establish the handedness (present-at-hand, ready-to-hand, in-hand & out-of-hand) that language is founded upon -- the undercurrent of signing gesture and gesticulation. Language establishes the meta-meta-level of the domain within the compass of the world. All the arguments about meta-levels of Being are repeated again at this new level. But language adds a new dynamic on top of the dynamic of manifestation itself. So there are actually four dynamics:

- o Languaging of Language within the Domain (texts and speaking)
- o Magicians within the field of the Meta-system
- o Dialectical evolution of the System within the meta-system
- o Dynamics of the Structural System itself.

These four together make up the inner structure of the worlding of the world. The magical mirrorhouse is alive with activity from these different species of dynamical entities. Language is the medium of exchange between the images of the illusion. The illusion is itself illusory just as emptiness is empty. In fact it is the illusory nature of the illusion that makes it the Same as the emptiness. So the illusions tell stories of other illusions which in turn tell stories in a tale like the Mahabharata or A Thousand and one Nights. The thing that makes the mirrorhouse magical is this meta-illusory nature it has. We cannot tell which is the tale and which is the teller.

When we get caught up in it we become utterly lost. So it is necessary to keep reverting our attention from the scenes within scenes of the intertwining stories within stories to the mechanism by which this illusion is created. When we do that we are brought back to the four different meta-levels of Being and the unfolding from the Meta-system to the system through the states of the special systems. It is that system that is annihilated by the tincture of emptiness. When the mechanism that produces the illusions disappears then the illusions themselves disappear. But finding the core of the ideational mechanism within the funhouse is very difficult as it is fragmented and scattered in the reverberating images within images. We need the help of all our humanistic sciences (structuralism, hermeneutics, dialectics & phenomenology) plus the counter-distancing of heuristic research in order to locate that core and dismantle it. It is only by asking the meta-question: "How do new things come into existence?" that it is possible to break the fascination of the movie of illusions. We ask not only how new things come into existence within the panoply of the generated illusions but how does the illusion mechanism that we call manifestation come into existence? And finally we ask how the possibility of asking the question of the manifestation of manifestation comes into existence? Asking questions like this within the magical mirrorhouse allows us to locate and recognize its core -- the illusion generating mechanism itself. That illusion generating mechanism is no different from the house itself because when it stops then the house vanishes. It is like the house of Baal. According to Ugritic myth when the master craftsman god built a house for Baal he asked if Baal wanted a window. Baal (Zeus) said no. But later the Master Craftsman asked again and Baal agreed. Immediately the Window was installed and Death (Mot) came through it to wrestle with and bind Baal. The house without windows and doors is no house. But in the case of the mirrorhouse it is precisely the mirrors and doors that introduced distortions into its structure. We can construct images of the mirrorhouse in language as have Analytical Philosophy and Deconstructionism. But opening up the mirrorhouse to what is beyond it destroys it. We discover that the mirrors are illusory images themselves. The mirrorhouse is a palimpsest of images on images, words on words and nothing more. It is not set over against emptiness, it is the same as emptiness. The mirrors and the images in those mirrors are the Same, eternally recurring and reverberating like the echoes of the Big Bang.

Let us focus in further on the actual structure of the mirror of the magical mirrorhouse and its non-dual relation to the image in the mirror. It is important to realize that the mirror is in fact a palimpsest, that is it is made up only of images and that there is no difference between the images and the glass of these magical

mirrors. In fact we might relate the magical mirrorhouse to what we have called the MATRIX of spacetime in earlier studies On The Social Construction Of Emergent Worlds. Iqvar Johansson calls the Matrix of Spacetime/Timespace his fundamental category. But that Matrix is merely the externalization of the social ecstasy of the group we see in the magical mirrorhouse as the foundation for the world via intersubjective non-dual reflection. David Loy in Non-duality “bites the bullet” and declares there is no external world in a non-dual world. Spacetime is the sine quo non of pure externality. But we must recognize that the Spacetime/Timespace matrix is merely the dual of the magical mirrorhouse which is the upwelling of the social logos. In fact, the upwelling of spacetime is the physis dual of that social logos. In our non-dual theory these two become indistinguishable. Loy’s biting the bullet and denying externality beyond the phenomenal is an attempt to become decidable and distinguishable. When we push toward that kind of determination then we will fall into one side of the duality between socially constructed physis and socially constructed logos. But becoming rigorously determinate itself is problematical. If we fall back from the absolutism of that rigor we find that the upwelling of the social logos seen in the mirrorhouse as language is merely the dual of the unfolding of the social physis of spacetime where everything is some kind of warpage in spacetime. In one case we are talking about pure social internality and in the other we are talking about pure social externality. But when we relax back from this position of rigor then we realize that the mirrorhouse is spacetime and vice versa (where the IS is crossed out). In fact the magical mirrorhouse is what Heidegger calls the *House Of Language*. Language alone possesses the ability to become purely self-descriptive. This essential reflexivity that Heidegger points to when he talks about “Language Languageing” is what unfolds as the special kind of reflectiveness of that occurs at the level of reflexivity. What is magical about the mirror house is that it is an illusion sustaining an illusion. It is a language describing itself. The important point here about language is that it alone has the capacity to sustain communication from beyond the void. It is that foundation on radical emergence that gives language its power. As Eric Gans (*Originary Thought*) says there was the event of the emergence of language which defines us as human beings. That event is founded on the handedness of the levels of Being. Gans describes language arising in the move from grasping to pointing. But in effect there must have been a cascade of emergences that were all related within a field of associated originary events. Spoken language must have been only the culmination of these based on the prior emergence of different gestural languages which never quite could attain perfect reflection that can occur in language. When I say something as G.H. Mead says I hear it essentially the same as everyone else who is

listening. Thus there is the possibility of perfect reflexion which would allow a vanishing of language into the unconscious. And indeed we are largely unconscious of the role of language in our lives. Language speaks through us and we seldom listen to what it has to say beneath the din of our talk and chatter. So language emerged only to vanish immediately. We experience it as an ordering from nowhere of our inner and outer discourse. Logocentrism is split between thought and social chatter and discourse. We see the talk (inside and outside) but we do not see from where this ordering of our talk arises. Thus there is one big dissipative system of our collective and individual consciousness by languaging. The nowhere out of which this ordering appears is the void and the ordering (nomos) that appears in both inner and outer logos is a message of the deep ordering from beyond the void. The possibility of the perfect reflectivity of language (perfect self-description) allow this interface with the void to be explicitly defined. In the universe of handedness (animality, cf Derrida On Spirit) this perfect reflexivity is not possible. Thus we see the breakdown of the commutative and associative properties as the special systems unfold from annihilation. There is in fact an interval between annihilation within the physis and the cancellation within the logos. That interval is associated with the arising of thresholds of complexity associated with the octonion and quaternion numbers. If we posit that the real number line is the hallmark of the coordination within the Matrix of spacetime, then with the complex numbers comes conjunction that blocks annihilation of different kinds of numbers. But that pervasive annihilation of different kinds of numbers fragments our descriptions of timespace. The first hint of that is the minus sign between time and the xyz axes in spacetime. Basically when we break the four-dimensional unity up into space and time we get that fragmentation that expresses itself in the chiasma between Spacetime and Timespace. So the complex numbers fragment the continuum. This fragmentation continues as we move from one algebra to the next. Complex numbers have the same properties as real numbers so we accept them and accept the radical discontinuity they represent in order to use them to solve real problems. But as we move up the ladder of algebras and relax properties (commutative and associative) we finally get to the endpoint where any further relaxation of properties would leave us with no algebra. What exists beyond that point is the meta-system beyond the special systems in which duality of complementarity becomes the most conspicuous characteristic. Out of that duality comes the perfect reflectivity of language which is able to describe itself at the next meta-level up from the meta-system (i.e. at the domain level). In that perfect self-description we reach the magical mirroring of the mirrorhouse of language. We have also gone to the opposite extreme of logos as opposed to physis of the Matrix of spacetime/

timespace. Language arises straight out of the dual complementarities of the meta-system but encompasses the system and special systems as well to create a higher level organization called the meta-meta-system or domain. The domain stands between the meta-system and the world as a point of perfect balance but in which there is constant emergence of grammar. Language describes language but the grammar of the language is constantly unfolding out of nowhere, out of the void. As human beings we are organized to constantly face that interface with the void that language defines. As Gans says we become human by witnessing and constantly re-enacting the originary event of language coming into being. The first word is the name of God. From that all the myriad names of things unfold. From that too come our initial epistemological categories and ontological referents (kinds of Being) that support the world. Epistemology and Ontology are intertwined and cannot be separated at the point of arising. That origin even though as Gans hypothesizes is a single unique event in human history is always already lost to each of us who were not there. We are always displaced from the source of revelation unless we are the ones being revealed to by the deep unity beyond the void. Language is the instrument of that revelation for only it has perfect self-descriptiveness and perfect intersubjective perception which embodies the complementary dualities of the meta-system. But by embodying those complementarities we are raised by the emergence of language up to a new meta-meta-level or domain. Language in its perfect balancing is like the symbiosis of the autopoietic system at the next higher level of abstraction. Similarly the heterodynamics of the reflexive system is like the Worlding of the World which is not balanced but always out of balance and ecstatic. From out of the perfect self-description and perfect self-reflection within the social group that language entails come upwelling in thought and external speech of the world. The world is an encompassing dynamism that is supported by the different kinds of Being in relation to our animality (handedness). The world is articulated in speech as a repercussion from the first word that named God (i.e. the deep unity beyond the Void). But we need to recognize that language is like the closed perfection of the autopoietic system which unfolds heterodynamically to embody the complementary dualities of the meta-system. The world on the other hand is like the heterodynamical reflexive system but enunciated through speech. The handedness (animality) is the basis of the worlding of the world (the kinds of Being) are the basis of the unfolding of the world but enabled through speech. The Linguaging of language embodies the complementary duality hidden in the meta-system. It is visible because of the continual emergence of grammars but it is invisible due to the symmetry of the enunciated word for the listeners. This produces the split between what Sussarie called *Langue* and *Parole*. The source of

revelatory language that gives us words from beyond the void nevertheless gives us events that occur within the world at a particular place. This is the larger Koan that we must comprehend in a supra-rational kind of understanding. The void is not out there beyond the world somewhere. The void is within the world so that articulation of meanings that pour in from the void arise within the world and everything is empty like the geode that exists within the world. The emptiness of things that allow meanings to unfold within the world is our own projection. The languaging of language within the worlding of the world is the infolding/unfolding of this projection of ourselves onto ourselves as we realize the twist of fate that renders what is outside us our insides and vice versa. This is not the same as Heidegger's ontological monism. It is articulated through the unfolding of the meta-levels of Being and the realization of Language and speaking on the basis of gestural language of handedness and of the ecstasy within language that allows the positive and negative fourfolds that ground the worlding of the world to be self-constituted and mutually arise dependently with that intermirroring that Heidegger speaks of so eloquently. Language arises out of the complementary dualities of the meta-system and may be seen as a symbiotic balancing of these dualities similar to the homeostasis of autopoietic systems but at a higher meta-meta-level. Similarly the mirroring within the positive fourfold that arises as a dual of the negative fourfold that composes the world is based on the reflection in the mirroring of the reflexive system but again at a meta-meta-meta-level where the order of the world is constituted. World encompasses the matrix of spacetime/timespace and the mirrorhouse that gives us access to language as the embodiment of pure complementarity. The duality between logos and physis is resolved within the world that encompasses both ends of the unfolding series of special systems. The mirroring of the positive fourfold occurs in language between heaven, earth, mortals and immortals. Mortals and immortals speak through the signs and oracles. Heaven (nowhere) and Earth (the field of somewhere) speak through the dissipation of order. Mortals and Heaven speak by the language that emerges from the void. Immortals and Heaven speak in terms of pure nomos beyond the duality of physis and logos. Immortals and Earth speak in terms of the autopoietic ring which encompasses Aphrodite and the Cathotic spirits (furies) that are unleashed with the closure of the autopoietic system is broken. Mortals and Earth speak the language of mutual dependence and ecological understanding. All these kinds of speech appear within the mirrorhouse of reflexivity that bind the portions of the positive fourfold together. Language is the mirroring between the different aspects of the fourfold. Sometimes that speech is full of light and enables us to see the bright clearing of Being that arises between the mirrorings of the positive fourfold. But

other times that mirroring is dark and instead we perceive the normally hidden aspects of the negative fourfold. That darkness flows from the symmetry of language that is the basis for the asymmetry of speech within which we see the highlights of the clearing in Being. In language the asymmetry and symmetry are joined. In Wild Being it was continuity and discontinuity that became mixed but in language it is asymmetry and symmetry that become complementary pairs of opposites that are non-dually joined in a single formation that is the medium for the mirroring within the world. In the world it is the physis/logos duality that become joined in a single encompassing. In that greater non-duality we see pure Nomos itself that the Chinese called Li. One principle (nomos, li); myriad manifestations. The magical mirrorhouse produces myriad reflections of images of images. The images are the reflecting surface for other images in a rhizomatic palimpsest. It is seen as dark, chaotic, covered or abysmal from one viewpoint and as a bright clearing in Being from another viewpoint. These two views can never be separated. They are complementary sides of the same “matter” about which our anti-epistemological and anti-ontological intuitions are continuously being strengthened as we fail to unravel and comprehend the “matter” over and over again.

## 7. Timestreams

We have given (in sections 4 & 5) a dialectical unfolding of the Greimas square which produces the inner logic of the dialectic. From that we spoke in the last section about Onar Aam’s concept of the magical mirrorhouse. In this section we will attempt to capture some of the aspects of the exploration of the structure of the special systems that Onar Aam and I have worked out together based on his knowledge of the working of these hypercomplex algebras. My contribution will be to set these algebraic findings in a more general context. That context will concern a social theory of time based on the mathematical foundation of these hypercomplex algebras.

Time runs backward. This is a fundamental insight that Igvar Johansson has had in his Ontological Investigations. Just like when we put on inverting glasses and after a while things look right side up again, so to our brains compensate for the fact that we have to experience time backwards. We must experience it backwards because otherwise we could not resonate with others producing actions that are simultaneous with theirs. There is this lag time of perception that would prevent harmonic resonance from occurring if time went forward. And we know from the micro-movements that accompany speech that we are continuously resonating with

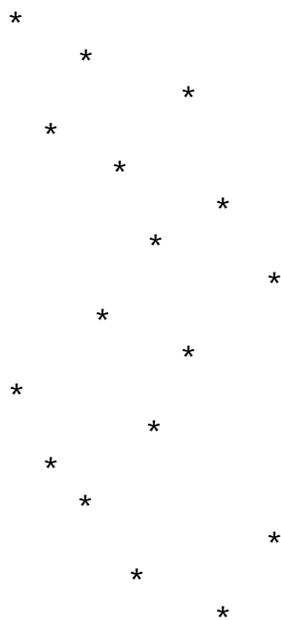
others as we perform the dance of speech. So resonance is a basic condition of social conversation. We must add to this the model of internal time consciousness developed by Husserl and Heidegger. Events are coming in and being layered in short term memory. But we read that short term memory backwards in order to grasp that part of it we need to respond to in the next specious present moment. We are facing our short term memory walking backwards into the future. Our view of the future is very limited because short term memory is limited. It is said that we can keep  $7\pm 2$  things in short term memory at one time. Eberhardt Rechtin (Systems Architecting) made the comment once that those may be  $7\pm 2$  conflicting things that are held together in short term memory. So even though there are only a few things that can be held in conjunction at once the situation between them can be very complex. That complexity of interrelations between conflicting elements within short term memory may in fact be modeled by the eight streams to nine time streams of the octonion. The ninth stream is the implicit anti-synthesis. So short term memory can hold the elements of dialectical unfolding. That is how we resonate with different people in the social unfolding of situations. Each of us is looking at our short term memories. But what we see within those short term memories is the eight to nine independent time streams that we are coordinating our actions with. We look at those independent time streams and use the octonion structure to intertransform between them. The strange twists in the octonion and quaternion structures allow us to twist back to project the results of our grasping into the future.

The present is not a unified purely present moment as Saint Augustine would have us believe. Wm James expands that infinitesimal moment of the frozen present to include some duration calling the extended moment the specious present. It is in the specious present that a new quantum of experience is placed within short term memory. But we are not in a unified present with other agents. Each agent may be in his own time stream. In fact we have seen in previous papers from the Software Engineering Foundations series (Software Systems Meta-methodology) that Agha's *Scenario And Worldview* minimal methods (mentioned in Actors) shows us the separate time flows of different agents and relates them to each other. When we view the present what we must understand is that it is not uniform but is rhizomatic just as things in space are rhizomatic. This means that not only is our experience of time different but we are actually within different time flows (worldlines). It is thorough the octonion and its embedded quaternion and complexnion timeslip structures that we are able to bridge the gap between different time flows that disconnect us as agents within the matrix of spacetime.

Each agent's short term memory is like a FILO (first in last out) queue. As a quantum of experience comes in as a borne specious present it is pushed on this stack. The point is that the stack may contain up to nine quanta that are all in conflict. All the elements in the stack are like parallel processing timestreams. When I look across the stack I can see each of the timestreams developing over time. Given Husserl's model of internal time consciousness each of the quanta begin to fade slowly as it is overlaid with the experiences in the succeeding specious present quanta. But by attention being focused back to some locus of experience a stream might be renewed or updated. Thus in a serial fashion we might see all the streams in the short term memory being refreshed and maintained over time. The short term memory is not a stack then, but a matrix in which a locus of experience is maintained by being refreshed or repeated allowing it to evolve and be monitored by looking at snapshots over time.

Figure 121:

r i j k I J K E -E



\*=refresh of contents of timestreams in the short term memory

Because the refresh rate is much faster than the short term memory lapse rate time streams may be maintained almost indefinitely within short term memory. It is these evolving timestreams that short term memory holds together in conjunction even if they are in conflict in order to piece together a response to the situation in which multiple agents are coordinating their activities. We do not need backward time to react to events. We need backward time to coordinate our resonant actions. Resonate action is not a response to the other but a doing something complementary at the same time as the other. Due to processing and communication speeds a

resonant response must be based on timing of ones own actions with the history of the timing of the actions of the other. One cannot respond to an action of the other and become resonant. Instead, we must look through the layers of our short term memory at our capture of the timestream of the other and predict when his next repetition is going to be and time our reaction to that some point in time. This means as Igyar Johansson says that we must read our internal time consciousness records backward and attempt to grasp the significance of those actions and the timing in order to predict when the next moment of response should be and what that response should be. Forward reading would allow us to react but not to resonate with the other and we know that the glue of social relations is resonance particularly in conversations. It is the resonant dimension that G.H. Mead was missing in his social theory which attempted to combine the concept of emergence from Biology of his day taken from Smutts and the theory of Special Relativity. He attempted to build a behavioral symbolic interactionist theory based on reaction and response but the emergent field is instead resonant (based on simultaneous coherent actions of the participants in the social field). We can see this if we look at the micro-movement studies of babies absorbing language prior to their own ability to speak or of persons engaged in conversation. High speed photography discerns the resonating dance of different segments of the body that frame the parts of speech between the participatans in the conversation. This resonant behavior is even found in infants that is just in a room with people engaging in speech before the baby can speak. If we are interacting with multiple people who require different resonant patterns then we need to keep multiple time streams active for each person or group we are resonating with. This theory predicts that we can resonate with at most nine other persons or groups concurrently. Each resonance pattern is maintained in our refreshed short term memory. We look at these backwards through the layers of refreshment in order to decide what to do next. Where two resonance patterns conflict or interfere then we must make a decision which pattern to follow at any given point in time. That would probably be a conscious decision. But resonance in general is a built in non-conscious response behavior. Onar Aam calls these automatic response mechanisms or habits “mimikers” because they mimic what is happening outside us and automatically regulate our responses. This is related to the concept of Deleuze and Guattari of the Desiring Machines which we have been using as our way of talking about these partial objects that jut out from the unconscious. When we call them mimikers we are looking at them in time whereas Deleuze and Guattari’s view is basically atemporal. Deleuze and Guattari talk about connections between desiring machines. But the point is that these connections are not static. What is actually occurring is that we are resonating with multiple

different timestream inputs simultaneously in order to maintain the connection over time. That resonant connection occurs only by adapting our pattern of response to the response of the other via our short term memory and our view of the timing of what we remember from the immediate past. The idea of mimickers is much more dynamic. It derives from Onar Aam's analysis of Dawkin's concept of the meme as the quanta of cultural transmission. This would say that the concept of the specious present of Wm James is articulated so that all of our social experience were broken up into quanta that we transmitted between each other in the form of memes. G.H. Mead would merely call this symbolic interaction and the meme a symbol composed of signs. (Memes are the equivalent of genes on an ideational level. It is not clear that the concept of Meme per se is of any worth. It is introduced here only because it is the origin of Onar Aam's concept of mimickers derived from Dawkins The Selfish Gene.) Even though we may not accept the concept of memes as such it is possible to look across the social field and see that every individual within the social fabric are experiencing quanta of integrated experiences that are communicated from person to person. These quanta are reciprocated in a resonant network of individuals. Within the individual there are Desiring Machines (thinking them spatially) or Mimickers (thinking them temporally) that are resonating with different external sources at the same time in an elaborate dance. In that dance we are trading back and forth quanta of experience be those natural complexes of actions, symbolic gestures or what ever. These patternings are accepted and responded to by the behavioral subcomplexes or fragments of the individual.

As noted above the resonant behavioral subcomplexes (Desiring Machines or Mimickers) are organized out of nowhere by the Social, that is by the entire array of generalized others of the individual to which he has to respond. The individual attempts to appear as a coherent unity to others (i.e. as having a mind) as a nowhere that organizes its action within the social field. The self is the interface between these two dissipative special systems within the individual. What we note is that the Desiring Machines or Mimickers are particle like subcomplexes of behavior that allow the individual to resonate with disparate external timestreams. The socius is a wave like field of the resonant actions of different individuals. So if we see the dual dissipative special systems as configured so one deals with particles and the other with waves then we get an interesting picture of what happens when the dissipative systems form an autopoietic special system. In other words they are doing the transformation between the complementary ways of looking at the relations between eventities. We have already noted that this transformation is between  $N^2$  and  $2^N$ . So we get a scenario of this kind. Within short term memory there is at the

same time both particle like nexus of experience and wave like qualities associated with them. There are maximally 81 different relations between these particle like nexes. But when we transform these into qualities we see that there are maximally 512 qualities that these nine nexes of experience (imaginary time streams) can generate. We note that the maximal number relations corresponds to the number of operators in the positive and negative aspects of the Matrix Logic of August Stearn. In a showing and hiding logic such as Matrix Logic what we have hidden is what is in our short term memory, it is our assessment of what is happening in the multiple timestreams and what we are going to do next based on the programs of our habit complexes (mimickers) and our cognitive analysis of the situation. What is presented can be manipulated by 16 operators of the positive logic. The other operators allow us to manipulate what is hidden within our manipulable interior (the short term memory).

When we look at this situation from the outside what we see are the other individuals as eventities in the social field (socius) surrounded by a cloud of qualities. In other words the social field outwardly appears as qualities. We are resonating with these other eventities at the level of Mimickers or Desiring Machines but appearing to be coherent unities by projecting on the social field an appropriate set of qualities. The social field in turn is appearing as a generalized other or *Society* that is orchestrated in order to present a coherent unity to our experience and thus create the right patterns of responses in the Mimickers (Desiring Machines). So there is a double feedforward and feedback loop established which forms an autopoietic closed ring. But that double loop is transforming between a quality and quantity view within both fields (mimickers and socius). There are two abstracted non-entities or no-things called society and mind that are organizing and transforming between these two fields in a chiasmic manner. And the interference pattern between these two chiasmic dissipative systems locked together in a symbiotic resonating relation is the Self.

I like the name chatterers instead of mimickers -- because it describes what we really experience better with is a chattering of insignificant trivia in our heads. The tapes from David Grove on Healing the Child Within are very revealing in this respect and he says some very interesting things from his experience healing the psychosomatic remains of trauma. I think what he is calling the child within is what we have variously called:

*Figure 122:*

Desiring Machines (following Deleuze and Guattari)

Mimickers  
Chatterers  
Partial-Selves  
Children-within

If he only said healing the children within. He says that when we have a traumatic experience our self splits and part of it stays locked into a cycle prior to the trauma. What we need to do to heal ourselves from trauma is to guide that stuck part of ourself past the trauma; then that stuck part becomes a healing resource within the psyche of the patient. His hypnotherapy is the most sophisticated. What is particularly interesting about it is that it is not voyeuristic. The therapist never needs to know what the patient is experiencing or what the trauma was but he can still act as a healing catalyst. He says that during a therapy session of an hour the child-within may only be present for a few moments and you have to work hard to keep from the adult answering your questions -- you must keep your questions on the level of the child and talk VERY slowly. In fact he says that the child within “lives” between the words and so the longer the pauses between words the more time you are giving the child-within to react. He gives lots of examples from real therapy sessions (recordings) as examples. One of the things he says is that a sign of a stuck child-within is that it uses the -ing on the end of words to keep something from happening and to prolong its frozen state that keeps the trauma from occurring. We posit that Be-ing and Becom-ing are exactly these frozen states of freezing before a trauma. Becoming is the freez-ing whereas Being is the frozen state. In Be-coming the frozen state of Be-ing is coming. When the trauma occurs the self-boundaries are lost and the child blanks out and it sees this as death. During this time external things can get introjected into the self which need to be pushed back out into the world during the therapy. This is done by transforming metaphors similar to the transformations that occur in myths. Something negative can become a tool for healing and transforming and it is the child-within that does this transformation by actually moving/or transmuting the metaphors. The child-within has its own wisdom that allows it to know what needs to be done to heal the person whose self-fragment it is.

Actually the child-within metaphor is probably the best of the different nomenclatures we have for these self-fragments. Children have as one of their characteristics to mimic and as another to chatter incessantly as they exercise their language capacity. As suckers of breasts (partial objects) they are in fact the prototype for Deleuze and Guattari’s desiring machines. But we know what

children are and we were all a child at one time so we know what it feels like to be like a child and to deal with a child. If we borrow Kristeva's idea of the chora and think of each of us being composed of a chorus of children -- the Greeks had those too -- which are self-fragments split off by traumatization as we grow up -- there is not one trauma but many so that we end up with many self fragments -- which interact and chatter to each other locking the adult into compulsive cycles and creating somatic memories that stand in for blocked eidetic memories. I think the only thing Groves has wrong is that he assumes that we have one unified inner child. Actually we have an unruly class and each of us as adults are virtual teachers who are either managing or not managing that class. When the class goes in multiple directions at once then we have split personalities. When we cannot get the class to quiet down then we have schizophrenia. I think that perhaps the problem we have is that we assume that we are dealing with adults when we look at the self-fragments and what we need to realize is that these self fragments are trapped at the age of splitting. Someone with multiple traumas or who was over sensitive might have many many fragments trapped in cycles prior to different traumatic events. I posit that these children trapped in different pre-trauma magical fending off routines before self-dissolution episodes can interact with each other and connect with each other just as D&G describe Desiring Machines doing. Just as in a class two kids might pass notes or throw spitwads at each other. And in fact they can form an autopoietic hyper-cyclic ring --- THAT ring is the self. The self is made up of the children-self-fragments resonating together. Each adult is made up of these resonating rings of self-fragments trapped at different ages. When two adults get together in marriage for instance then different of their self fragments will interact with the self-fragments of the other creating the peculiar chemistry of the marriage. For each child its knowledge is embedded in its body -- may not be cognitive yet. So these somatic memories make up the armoring of the body of the adult. It is this somatic memory armoring that Grove treats -- he treats the most unruly members of the class that cause frequent disruption of the adult routines. So we can see the adulthood as a supplement to the class that instills order from above. But the class may also be seen as a meta-system in which the self-fragments interact. When there is exact balance between the supplement and the lack of the meta-system then we have an autopoietic resonance in which the class acts as ONE without outside ordering of the adult teacher and without falling apart into a self-destructed non-unified field awash with the different children lost in their own fantasy worlds or obsessional cycles that they cannot break by themselves. We will describe this state of harmony as playing a game together -- you know those spontaneous games that children make up when not being supervised that are handed down to class to class

on the playground. So the autopoietic state is equivalent to spontaneous group play. This play can go in one of two directions: develop a supplement and thus create a set of power relations between the players as when one child starts making up the rules ---- or toward a lack. When the lack appears it becomes a closed container (bubble) that as a minimal system contains the octonion reflection of the quaternion mirroring. Thus the lack is filled with endless illusion as with fantasy games. The dissipative system occurs because of the supplement because that is the accursed share or excess that allows power plays to occur. The reflexive system occurs because of a lack that forms a hollow bubble (minimal system) within which infinite mirroring occurs in a trapped space. This is the difference between the nihilistic opposites Yang Splendor (too bright) and Closed Yin (too dark) [cf The Stone Monkey. Holbrook]. Yang Splendor is so Yang it appears Yin and Closed Yin is so Yin that it appears Yang. Thus the dissipative system orders its field with an overflowing order from nowhere. When we look at the ordering we see Yang but when we realize that the ordering must come from somewhere then we see the dissipative system as yin. Similarly the closed tetrahedron that mirrors on the inside is yin but the endless variety produced is yang. Notice that in one case we know where the endless variety is coming from (reverberation of trapped light) but in the other case we do not know where the ordering is coming from. That is why we say it is from nowhere. The order from nowhere could stop any moment whereas the mirroring is self-sustaining production of variety. In the middle is the autopoietic ring in which each dissipative system provides the ordering for another in a pair or in a series that forms a hyper-cycle. This is the balance of mother child symbiosis. It is broken from two sources. From the side of Yang Splendor by the father who imposes external order on the mother and child of nothing else by the provision of resources at particular times. From the side of Closed Yin it comes from the child's own realization of mirroring which recognizes itself within the mirror and realizes the illusion of the illusion. The realization of mirroring and the fundamental understanding of illusion is fundamentally necessary to understand emptiness/interpenetration. When we see the dissipative system filling the environment with order we understand emptiness. When we see the reflexive system folding in on itself in infinite resonating reflection we understand the meaning of interpenetration. So these two special systems either side of the balance point of Hun Tun (autopoietic unity) allow us to recognize the intrinsically dual nature of emptiness/interpenetration. Between them is the symbiotic dual which is practicing non-action. It is in non-action because that is homeostatic balance. Every action is perfectly countered within the hyper-cyclic ring so nothing is happening except a fine tuning that keeps the balance with an action that keeps movement away from

the balance point from happening.

<BEGIN EXTRACT>

Constructing the Self: from complex to hyper-complex algebra

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by Onar Aam

I posit that mimickers are homeostatic. That is, they are dissipative, corresponding to the level of the complexion. Let us now assume that the mimicker can be modeled as the imaginary number  $i$ . Alone the mimicker is only a REFLEX (it may merely produce a recognition or an association). But when many mimickers are put in CONJUNCTION ( $i+j+k$ ) they form a regulatory system. Together they produce annihilation cascades of associations and recognition. BUT alone they are strongly habitual. Alone they are only able to produce HABITUAL SPEECH. Besides they lack an agent to present their perceptions to. This is where the self enters the picture.

We have used the plus-operator to create the conjunction of mimickers operating together. But the multiplication operator suggests that another structure may be constructed from  $i, j, k$ . This structure is the SELF (corresponding to  $i*j*k$ ). So the mimickers ( $i+j+k$ ) present their associations and recognitions to the Self ( $ijk$ ). We may justify this notion with the fact that  $ijk = -kji$ . Thus, the loss of commutativity corresponds to the consciousness of the Self. The commutative asymmetry of the quaternion renders the habitual speech of the mimickers visible to the self.

We have that  $(ij)k = i(jk)$  which means that ijk may be seen as a UNITY. Thus, we have that the intactness of the associative property corresponds to the IDENTITY of the Self, i.e. that which makes the Self feels like a unity. ijk is ONE. Ok, now we have deduced the mimickers in conjunction from plus-operator, and the existence of the conscious agent, the Self, from the multiplication operator. But we still have the problem of habitual speech. The mimickers are not able to produce anything but a flow of habits. Therefore they alone cannot explain the richness of our thoughts. This is why we have to view the Self as more than a passive conscious agent. The Self also has the property of FOCUS and INITIATIVE with which it can BEND the habitual speech of the mimickers

producing non-habitual thought. This too can be described with the quaternion properties. We may view the flow of habitual speech as CONSTANT FLUX. In other words, a velocity vector. The self may control this vector in two ways: FOCUS and INITIATIVE. With focus the Self is able to scale the length of the speech vector. Thus, focus decides the level of attention, i.e. how visible the habitual speech will be. The length of the vector then directly corresponds to visibility/attention. Second, and this is the most important, the vector may be *rotated* [rotation is an innate property of the quaternion.] This corresponds to *initiative*.

We may not only choose how much to focus on something but also *what* to focus on. This completes the properties of the self. Since acceleration (rotation of a constant flux vector=acceleration) is the last derivative with meaning the Self has no higher properties. It is interesting to note that all the four properties of the Self came from the quaternion multiplication. The Self is the CONSCIOUS AGENT of the mind. This came from the asymmetry of the quaternion multiplication ( $ij = -ji$ ). The Self is a UNITY. This came from the associativity intact:  $(ij)k = i(jk) = ijk$ . The Self has the property of FOCUS. This corresponded to linear scaling of the quaternion (real multiplication.  $Q = r*Q$ ) Finally, the Self has INITIATIVE which came from the innate rotational properties of the quaternion multiplication.

Let's summarize the properties of the two conjunctions:

( * )	( + )
SELF	MIMICKERS
-----	-----
CONSCIOUS	PERCEPTUAL MACHINES
UNITYREFLEXIVE	RECOGNITION/ASSOCIATION
FOCUS HABITUAL	SPEECH
WILL	

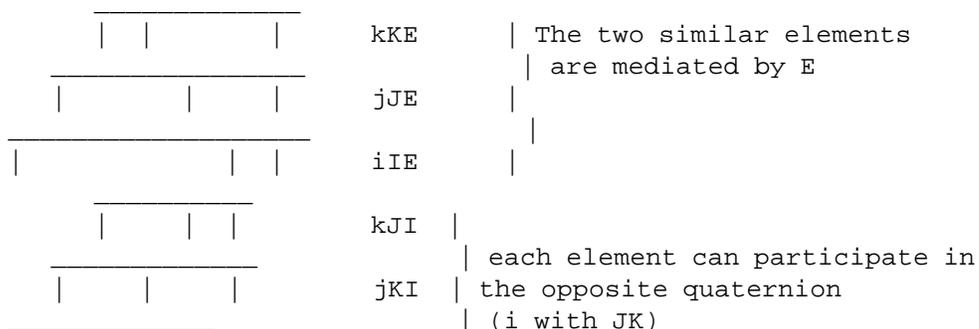
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<END EXTRACT>

Through this short excursus on the Self quoted from correspondence with Onar Aam we can see how the self as the locus of the coherence of the individual may appear in relation to the mimickers (Desiring Machines). All that is missing in this

analysis is the fact that all the individuals are producing Selves within the social field and that field is qualitative as well as quantitative. Selves are social constructs or mutual reflections within the social field. They all appear to have conscious unity with focus and will. When we look at a single individual we abstract Mind and when we look at all the individuals together we abstract society as the locus of ordering from nowhere. But in actuality it is the field of the short term memory and the social fabric between individuals that are self-organizing. Both of these fields are modeled on the quaternions as we have noted the individual appears as a quaternion within the social field and the nodes within short term memory appear as quaternions as well so there is a reflectivity between the Mind and Society that makes them duals. In fact the only real difference is the way the heterarchy is related to the hierarchy in each. This is only to reiterate that the individuals are trapped in the magical mirror house of the octonion level reflexive system and it is that mirrorhouse that is reproduced within each individual as the organization of the separate time streams within short term memory.

The octonion organization allows for the dialectical unfolding of new time streams from old time streams. It has a partially associative structure that allows different individuals to be the Same and belong together within a braided set of timestreams that at a lower level have associative properties of the quaternion. Several different associative rings are produced in the octonion that allow us to posit the first associative ring  $ijk$  over against the dual non-associative  $IJK$ . These two are tied together with an interesting set of six associative rings which posit the E timestream as the synthesis which brings association to the  $IJK$ . This partial associativeness mediated through E allows the production of an internal dual to the Greimas square that is the key to its unraveling. The annihilation of the elements of the  $EIJK$  internal square produces the associative sub-rings. We can picture this unfolding of the nine separate time streams with the following figure that pictures the relations between them through the associative rings.

Figure 123:



## Reflexive Autopoietic Systems Theory

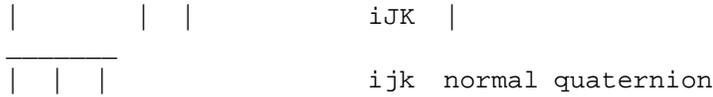
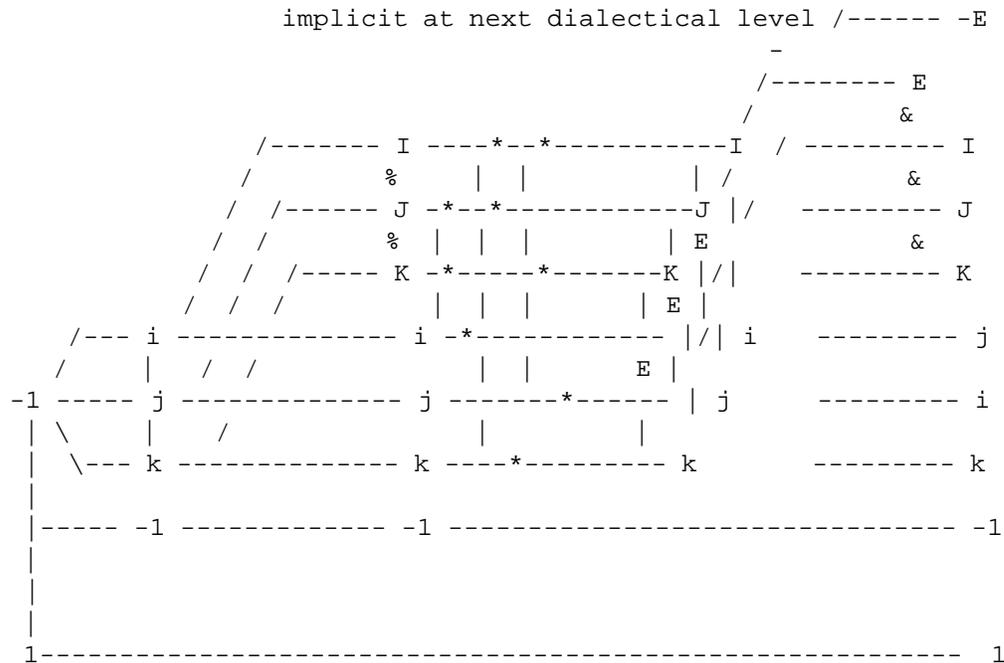


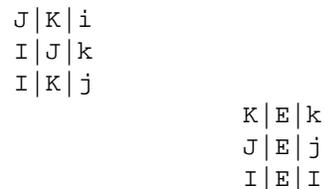
Figure 124:

i	j	k	K	J	I	E
i-1	k	-j	J	-K	-E	I
j-k	-1	i	I	E	-K	-J
k	j	-i	-1	E	-I	J
K-J	-I	-E	-1	i	j	k
J	K	-E	I	-i	-1	-k
I	E	K	-J	-j	k	-1
E-I	J	K	-k	-j	i	-1

Figure 125:



i|j|k vertical bars show association



I%J%K not associated!  
 (E&I)&J&K or E&(I&J)&K semi-associated!  
 The six commutative rings other than the initial ijk ring are:

Figure 126:

i	j	k	I	J	K
/b\	/d\	/f\	/a\	/c\	/e\
K---J	I---K	J---I	E---i	j---E	k---E

We might relate these along with ijk to the seven chakras of traditional

## Reflexive Autopoietic Systems Theory

Hindu mythology.

These produce 64 representations of the octonion by reversing polarity of these associative rings.

*Figure 127:*

i	j	k	E	I	J	K
.	.	.	.	.	.	.
.	.	.	.	a	-a	b -b
.	.	.	.	c	d	-c -d
.	.	.	.	e	f	-f -e
.	-a	-c	-e	.	a	c e
.	a	-d	-f	-a	.	f d
.	-b	c	f	-c	-f	. b
.	b	d	e	-e	-d	-b .

This table courtesy  
of Onar Aam.

The variables a,b,c,d,e,f may have one of two values: plus or minus.

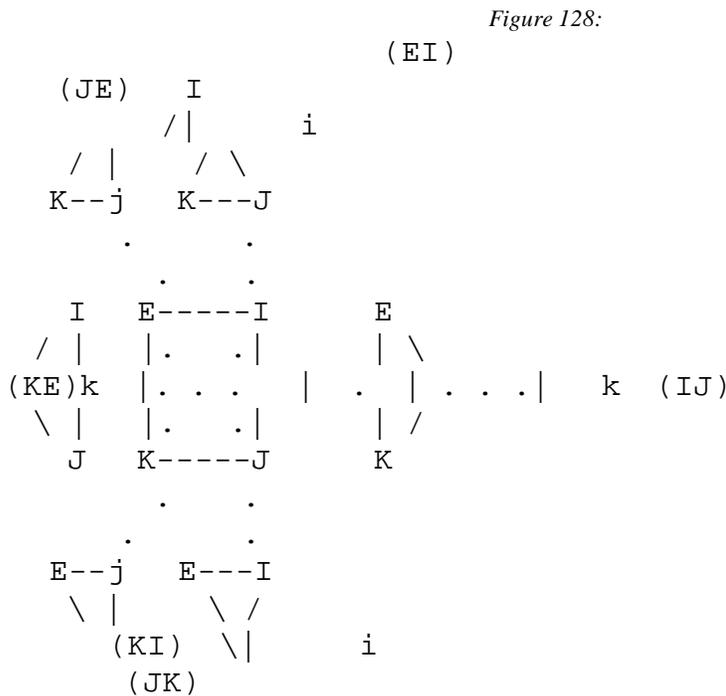
Onar Aam has discovered that the sixty four representations of the octonion that occur when you permute the plus and minus signs contains implicit mobius strips woven together. This suggests that between the representations of the octonion and its internal structure there are non-dual relations that bind together the representations into a coherent tapestry. The octonion must be represented by one of its 64 representations in order for the inner structure to be studied. Mathematicians tend to ignore representations when they study a kind of mathematical object. But in the case of the octonion the relation between the appearance of representations and the core structure of the octonion cannot be separated easily.

This undecidability in the representation of the octonion leads to the movement of the partial non-associative properties within the cube of the octonion under different representations. Onar Aam has characterized this as a Liquid Crystalline structure that is partially crystalline but partially open to change. This is the intersection of the different chiasmic reversibilities within the cube of dialectical unfolding. That undecidability projects sixty four possible states of the social field. We have already seen that the substructure of the social field is connected to the hexahedron of five dimensional space that also projects 64 possible states on the social field. Now we find another confirmation that the I Ching is indeed a description of the social fields intrinsic structure. Here we find that because the representations of the octonion have an intrinsic decidability. This organizes the cloud of qualities that surround the individuals in the social field and it organizes the qualities that define the interpretations of experiential nexes within short term memory that is the internal representation of the external social field that allows us to resonate with that field. By Ashby's law of requisite variety the internal model needs to be as complex as

the external environment demands. In this case the external environment demands resonance and that causes us to model timestreams of others. We do that based on the dissipative, autopoietic and reflexive special systems and their connection to the complex and hypercomplex algebras. The mathematical objects give us a bridge between the unfolding inside (logos) and the unfolding outside (the physis) and so are an embodiment of Nomos or law.

The unfolding of the timestreams allows us to track the resonant patterns of multiple others and respond in kind. They allow us to dialectically generate new timestreams from multiple old streams. But because they operate on the principle of annihilation in which associative rings generate each other as members it also builds this emergent evolution on the basis of annihilation loops so that the structure allows for the destruction of the self in the very moment of transcending the self.

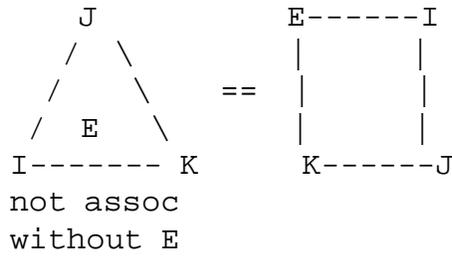
Unfolding of the associative rings and the semi-associative loops that result from structure. IJK are not associative without E. Square leads by annihilation to six associative rings.



[In parenthesis is shown which pairs of imaginary numbers are annihilated by multiplication. Diagram courtesy of Onar Aam.]

Reflexive Autopoietic Systems Theory

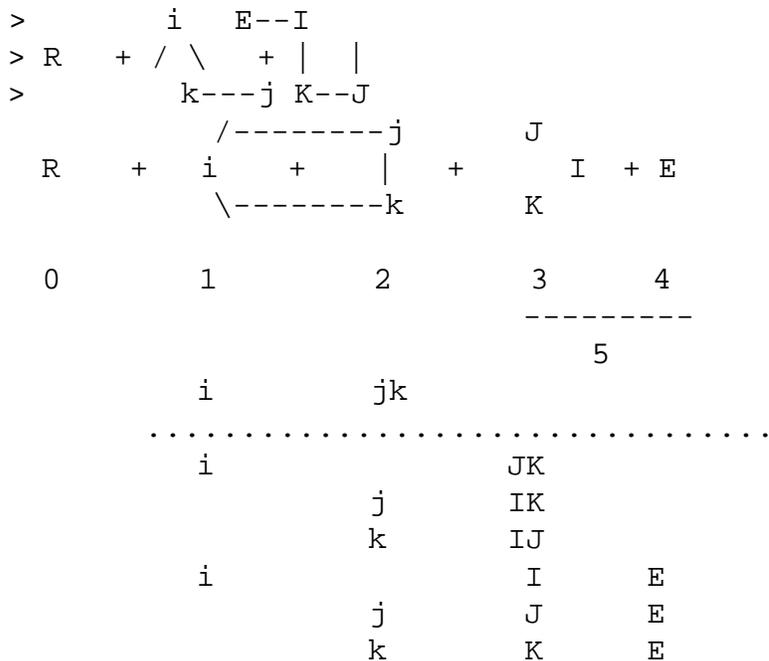
Figure 129:



IJK is not associative without E. Annihilations of any elements of this square produce the six associative triangles. It is as if the E or synthesis appears in the midst of the non-Associative elements making them semi-associative and by annihilation producing the substructure of the six other associative rings other than *ijk*. So *ijk* is the primary associative ring which gives rise through the other associative ring to a non-associative image of itself and an element that contains the associativeness as a separate entity. When this associative element is added then the IJK becomes semi-associative.

It is an anti-Greimas square. The original Greimas square only annihilated contradictions across the square. This square will annihilate in any direction and thus unravel. What we have here is a structure that is meta-unstable -- i.e. it can annihilate in every direction unlike the Greimas square where two annihilations block each other.

Figure 130:



## Reflexive Autopoietic Systems Theory

- 0 illusory continuity
- 1 breaks up into singularity that allows annihilation
- 2  $ijk$  arises as annihilation with side effects
- 3  $IJK$  arises as non-associative elements
- 4  $E$  arises as associative counter element
- 5  $EIJK$
- 6 there are ties between  $iJK$ ,  $IjK$ , and  $IJk$
- 7 there are ties between  $iEI$ ,  $jEJ$ , and  $kEK$

This structure confirms my suspicion that what the octonion gives us is an unraveling of the Greimas square. It does so by creating a second inner square that can annihilate in any direction which is unblocked. But the unblocking is in a semi-associative mode.

When the book of the Greimas square opens it produces the inverse of the associative  $ijk$  in the appearance of the  $IJK$ . But then out of the middle of the  $IJK$  which is non-associative it produces  $E$  which is an associative catalyst. That renders the whole structure semi-associative and produces an inverse Greimas square that does not block in higher dimensions. The square unblocks and annihilates producing sub-annihilation rings that produce side-effects. So in the very moment in which annihilation occurs you get the dialectical production of the synthesis (and implicit anti-thesis). The implicit anti-thesis is hidden behind the original associative ring ( $ijk$ ).

I think we have gone the long way around to prove that dialectical synthesis production is annihilative destruction.  $EIJK$  has meta-unstability. Note that the side effects from the annihilation at the Reflective level are annihilation loops at the quaternion level which in turn produce separate  $i, j$ , or  $k$  at the complexnion level.

$EIJK$  is a meta-unstable projection of the Greimas square that is self-blocking. What can be said about knots in the fourth dimension? They are virtually unknotted. This is the mechanism for virtually unknotting knots in the third dimension. By unknotting them in the fourth (hypercube) or seventh (octogon) dimension.

This is a list of the things that the octonion structure is doing simultaneously:

- o Unknotting the blocked Greimas square.
- o Establishing interdependence of non-associative and associative images (i.e.  $ijk$  and  $IJK$ ).

## Reflexive Autopoietic Systems Theory

- o Allowing for 64 different representations of the non-associative aspect of the octonion.
- o Creating six associative rings out of one.
- o There are six associative rings produced and six points of undecidability that generate the 64 representations.
- o It creates a complex interference pattern between simultaneous chiasma.
- o It posits implicitly the anti-synthesis hidden by the first associative ring.
- o Because different people can look in from different viewpoints on different representations it creates an indistinctness as well as the undecidability for a single viewer.
- o It brings us up against emptiness (void) because the higher algebras involve total annihilation instead of being continuously intertransformational.
- o It embodies the magical mirrorhouse of the social by producing a metaphor for Sameness (belonging together).
- o Models interpenetration.

Of these different simultaneous interpretations the modeling of interpenetration is the most interesting. Here we can think of the associative ring as the perfect model of interpenetration. Each part is a whole constructed of the other two parts within the ring. So all together the differences between  $i$ ,  $j$  &  $k$  exist by their mutual participation in each other.  $k$  is only  $ij$  where  $ji$  is  $-k$ . So it goes for all the other members. Each is a whole made up of the others as parts. So they perfectly interpenetrate and form the simplest possible autopoietic ring. That ring can be interpreted as an annihilation mosaic in which all elements are side effects produced by the annihilation of the other members of the ring. The wholes are all autopoietically closed in that it is impossible to take apart any of these wholes except in complete parts that are themselves closed wholes. This creates an interesting relation between closure and differentiation. The  $i$ ,  $j$ , &  $k$  are all different diacritically by their relation to each other but they are also all closed unities that we cannot see inside of except to the extent we get other wholes that are closed by reversing the annihilation process. When two dissipative systems combine an asymmetry is created in which three of the elements form an associative ring while the other becomes the dissipative field for the whole ring. In this way the singularity  $i$  unfolds into the  $ijk$  associative ring. Instead of being just a singular point with no differentiation it unfolds into an autopoietic ring with differentiation while maintaining closure. The  $i$ ,  $j$ , &  $k$  are atomic units of this ring that we cannot see into or differentiate. All other autopoietic rings such as the fivefold HSING are based on this structure minimally displayed by the associative ring. As shown in the

study of Aphrodite and her five embodiments carried out in THE FRAGMENTATION OF BEING AND THE PATH BEYOND THE VOID we see that each face of the ring is manifest separately and the ring itself cannot be broken into. This is due to the fact that each whole face is the result of the annihilation of two of the other faces so only one face stands at any one time. In order to get continuous annihilation as a cycle one needs two such rings that are producing complementary opposites. Once cycle needs to produce pairs while the other needs to destroy pairs. If the two cycles are balanced then one gets a continuous hyper-cycle of appearing and disappearing elements. When you add the positive and negative characteristic of the elements then one gets the twisting of that is characteristic of the quaternion. Extending this twist to fields other than three is called a Clifford Algebra. It is an extension of the quaternion algebra. A similar extension at the level of the octonion is called the Cayley non-associative algebra.

We can look at the octonion as the inner structure of the quaternion associative triangle revealed. The octonion unfolds out of the quaternion showing an even higher order model of the inner structure of the singularity. Within the octonion there is a mirroring of the original quaternion in six new images which have complex interrelations. There appear the  $e_i = I$ ,  $e_j = J$ , &  $e_k = K$  new imaginary elements that are completely unassociative. To these are added the synthesizing E imaginary which lends partial associativity to the square EIJK. So associativeness of the  $ijk$  is broken apart in the manifestation of the IJK and E becomes a catalyst that allows partial associativity. This partial associativeness produces a very interesting structure because with the octonion arises the ability to choose a representation and that choice changes where the asymmetry within the octonion lies. Between the different possible representations there are Mobius like relations in which contradictions are produced by the braiding of these contradictory relations there exists many different non-dual structures that connect the appearances of the octonion together into a twisting tapestry of great complexity.

The IJK can be seen as the internal difference between the elements of the  $ijk$  ring. The E can be seen as the inner core of associativeness. The E unites with the IJK to give partial associativeness back. So we see that what is whole and unified under the  $ijk$  ring is separated and disunified as E and IJK. Placing E with IJK partially reunites that unity but cannot completely restore it. The mirroring of the associativeness in all six associative rings creates a magical reflective structure. That structure is a perfect model for interpenetration if we remember that each of those images contain the whole of the network of associative rings within

themselves. Each ring can unfold into an octonion and beyond the octonion into the higher order non-associative algebras. We are looking at an infinitely deep web of nodes in ever more complex interpenetrated structures. When the unity of the associative ring is broken then what we get is a complex mirroring that allows for a picture of transcendence by the production of the E synthesis. But the structure returns upon itself dialectically so that there is a constant production of transcendence in the very act of annihilation. And this demonstration of emptiness is simultaneously a model of interpenetration of Indra's net of associative jewels caught in a complex mirroring of the octonion with its differentiation between appearance (representation) and core structures. Each associative ring is a closed autopoietic unity that none the less unfolds into a complex chakra like structure in which different associative rings are related to each other via non-dual reversibilities. This image of interpenetration (which is at the same time an image of annihilation cascades and dialectical advance) is the culmination of years of attempting to understand the cognitive picture of interpenetration as it arises from Buddhist philosophy. Now there is a complex but interestingly structured model for this mirroring that produces the network as a reflection of one of its nodes back onto itself. Each node is a separate isolated unit and a reflection back on itself of the whole network of quaternions. The reflection allows us to see how the internal structure of the autopoietic system is the same as the external relations between different autopoietic systems. The inside ~~\_is\_~~ (crossed out) the outside and vice versa. The essence of the social is interpenetration, is the creative advance of the dialectic, is the loops of annihilation cascades, and finally is the reflectivity of the fourfold mirroring that Heidegger speaks of by which the unfolding of the octonion is produced from the quaternion through the doubling procedure.

A great deal of further exploration of the octonion structure needs to be done in order to fully understand its implications for the structure of the social mirroring of the reflexive special system. This section merely records a starting point for these further explorations.

One late breaking result of Onar Aam is the realization that the quaternion structure actually "mirrors" the reflections in three mirrors in a triangular perpendicular configuration. The means that the Octonion structure is the result of the reflections of a tetrahedron with mirrored interior surfaces. If the three mirrors of the triangular perpendicular configuration are all tilted inward so they intersect to form a tetrahedral pyramid then they open out to a floor. We can call this point  $ijk$  which is intersection of the three mirrors  $i$ ,  $j$ , and  $k$ . If we look at the floor facing  $ijk$  we

would see in the center of it a reflection called E. The points where the floor intersects the tetrahedral pyramid would each be reflections of  $ijk$  in the form of  $iJK$ ,  $IjK$ , and  $IJk$ . The point E would itself be reflected on the surfaces of the tetrahedral pyramid in the form of  $iEI$ ,  $jEJ$  and  $kEK$ . Thus the eight quaternions of the octonion are associated with the four vertices of the tetrahedron and the four midpoints of its triangular faces. The tetrahedron is self-dual. Thus it reflects itself internally and that internal reflection goes to infinity until it defines the point at the center of the tetrahedron as the limit of its infinite reflection. That point can be seen as the fifth point in four dimensional space that makes the tetrahedron into a pentahedron. Equally each mid-point on each exterior space could be extended by reflection to produce four extension tetrahedrons on the base of a central original tetrahedron. Onar Aam has pointed out that the floor on which E is projected can actually be a magical mirror escape route to another world, like that through which Alice escapes to wonderland, so that we can think either that there is one tetrahedron and its reflection in the floor or there is actually another tetrahedron. This gives the difference between what he calls the non-magical mirror house where one pretend to be two or the magical mirror house where two pretend to be one. This is a mathematical analogy for what Heidegger calls the Sameness of “belonging together” that is the route of the social. For a given tetrahedron any of its sides can be taken as the floor so this mirroring occurs in four directions at once. When we think of the apexes of all the extended tetrahedrons (that make up a bigger tetrahedron) as all one point we realize that these are the five (four extensions plus core) that make up five tetrahedrons of the pentahedron. Thus the extra point may either be seen as at the center of the tetrahedron or as an extension from one of its faces.

When Onar Aam produces a ray tracing of this inwardly mirroring tetrahedron it turned out that there was an extra source of distortion that manifested unexpectedly due to the 1.47... degree difference between the angles of the sides of the tetrahedron versus the icosahedron that appears in the internal mirroring. This difference is introduced because of the golden section basis of the icosahedron that yields a non-whole number of quantal parts as compared to other platonic and archimedean solids in three dimensions.

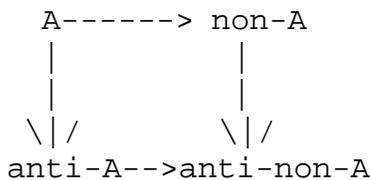
Frank (Tony) Smith (Georgia Tech) has produced an argument that shows that when we truncate the tetrahedron introducing small triangular windows we see an octahedral shape in the reflections. He shows that these octahedral shapes in the reflections give you the 480 multiplication of all the representations of the octonion.

Onar Aam has shown that these representations are related to each other by intertwining Mobius strips. There is a shifting asymmetry within the octonion that is impossible to pin down. Onar Aam has called it the bump in the carpet that moves as you try to pin it down. That asymmetry makes the Mobius strips twist in different places in different representations. What we have seen is that these representations are merely the mirroring internally of a mirrored tetrahedron which produces an infinite mirroring with the eight quaternions of the octonion as the vertexes of these regressing and shrinking series of tetrahedrons. If instead of introducing an observer via truncation we introduce four colors of light at the vertices then each point in the infinite holographic reflection would have a color value. I speculate that this color represents the escape velocity of the meta-meta-mandelbrot sets that appear only in Julia representations. Onar Aam was the first person known to produce octonion fractal images that show that these fractals might look like.

Onar goes on to note the inner coherence between the Greimas square and the octonion:

Let A be something we project being upon. There are two ways to transform A, either by negation (ANTI) or by nullification (NON). Thus, from A we have anti-A and non-A. Now we may nullify and negate these and obtain anti-non-A. We then have completed the square.

Figure 131:



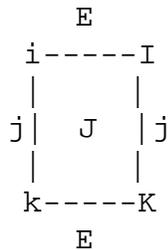
Define i as a being.  
 Define j as the ANTI-operator.  
 We then deduce k=anti-i (i=jk)  
 Define a NON operator which we call E  
 We then have that I = NON-i (I = Ei)  
 And we get ANTI-NON-i which we call K (K = Ek = non-k = non-anti-i)  
 Finally we get an ANTI-NON operator J = Ej = non-j = non-anti  
 From the new operator we can generate the following

$$\begin{array}{l}
 IJ = k = \text{anti-non} [\text{non-i}] = \text{anti-i} \\
 Ij = K = \text{anti} [\text{non-i}] = \text{anti-non-i} \\
 iJ = K = \text{anti-non} [i] = \text{anti-non-i}
 \end{array}$$

i and anti-non-i are contradictions because  $i \neq K$ , and non-i and anti-i are contradictions because  $I \neq k$

Thus, the Greimas square looks like this:

Figure 132:



where  $j = \text{anti}$

$E = \text{non}$

$J = \text{anti-non}$

## 8. Information Mechanics

Michael Manthey has written a paper called “Toward an Information Mechanics” (IEEE 1994 0-8186-6715-X) which I would like to explore at this point in the development of the argument. Basically he shows that turning machines (TM) need synchronization mechanisms between tape reader and controller and that this is assumed but not specified in the formalism. He points out that all programs that do not halt are defined as noncomputable. So living things, operating systems and other things that are not meant to stop are not computable.

In prior papers we have shown that there is a hierarchy:

Real number line = System = Turing Machine

The Turing machine works on an endless tape that sequential tape. The sequential tape has linear order but no distance. The read and write operations embody the partial order with distance which is the dual kind of order. The running of the turing machine approximates the illusory continuity of the real number line in time where the two kinds of order interleave to produce the illusion of full order. We see this as the simulation of a dynamical system.

Certain operations of the turing machine itself are non-computable such as its own halting. But in general the output of a non-halting machine is not well defined since the turing machine formalism concentrates on the final output of computation rather

than the ongoing computational process itself. For certain kinds of machines computation is not meant to stop with a final output but is meant to be ongoing and only stops when there is a fault in the system or it is arbitrarily turned off by some external agency.

Manthey shows that the turing machine needs a semaphore to produce sequential computation between its controller and tape reader. It assumes that all computation is necessarily sequential and it assumes the enforcement of that sequential nature of ideal “computation.”

Complex numbers = Dissipative System = Universal Turing Machine

A universal turing machine is a meta-turing machine that can represent any turing machine. This means there are two tapes. One tape carries the program and another carries the controller. The universal turing machine has a program to read the state machine controller from the tape onto the second tape where it is run and then to unload that state machine and load another. This is a primitive view of what happens with a multi-tasking operating system. Here the semaphores would control the relation between tasks instead of the relation between the controller and the reader. The point is that the storage of the state machine controller is itself writable like the tape and is therefore like another tape. Previously we have posited that these two tapes might be two sides of the same mobius tape. Be that as it may the universal turing machine has two tapes or timestreams just as the complex numbers have two illusory continuities (x and i) held together yet apart by conjunction. The two tapes order each other as information from nowhere. One tape carries the program that makes the Turing Machine universal. The other carries the encoded controller of a specific turing machine. The first tape loads the encoded turing machine and decodes it and then it computes the instructions on the second tape until there is a meta-command to switch to another turing machine task. Where does this order to switch come from? It must come from an outside agency. Thus there is a need for a higher level autonomy that is given in the autopoietic system.

Quaternion numbers = Autopoietic System = Two Universal Turing  
Machines exchanging  
images of each other.

At the next level up two universal turing machines act as external agencies to each other telling the other when to switch programs. In order to coordinate each other they must have images of each other. This they get by exchanging coded images of each others suite of specific turing machine representations. Then each can act as the controller for each other. Thus there is feedback between them not of information but of control. They form a symbiotic relation to each other coordinating each other. When this coordination is parallel then there is a resonance between the two symbiotic controllers. If this resonance exists as concurrence of control in time then they must be moving backwards in time in relation to each other.

Octonion numbers = Reflexive System = Two Universal Turing  
Machines with protocol  
for coordinated  
communication

When the two Universal turing machines exchange information as well as control and coordination information then they mimic a reflexive distributed artificial intelligent system. They can exhibit coordination and anti-coordination (which is the equivalent of war). Both are social phenomena within the auspices of a meta-turing machine which contain the two or more sub-UTMs.

16-nion numbers = Meta-system = Minimal system of UTMs exchanging  
both information and coordination.

Beyond the octonion are more algebras but in them the bubble of linearity has burst. You can multiply two non-zero numbers and get zero. So that means that there is a cyclical rather than a linearly infinite set of dimensions. Basically this is a major threshold which opens on to an infinite regress of Pascal's triangle of algebraic structures. This infinite regress represents the unbounded sea of interpenetration in which minimal systems of UTMS exchange information and coordination forming cycles of the kind we saw with meta-magician systems. In those cycles swarms of magicians arise and produce themselves only to fade away for their spawn to arise in the next cycle. The infinite regress of non-division algebras is a model for the depths of long term memory whereas the bubble of the internally mirroring tetrahedron is the model for short term memory.

\* \* \*

Manthey uses clifford algebras as his basis for a formalism of exclusion. He excludes consideration of the states of simultaneously empty and simultaneously full. These are the two other truth values of Matrix Logic. We posit that if these were included a Cayley Algebra at the octonion level would be necessary. Manthey says:

... the fact that a co-occurrence and its complement cannot co-occur means that the product of the component vectors is a Clifford product. In other words, the co-exclusion principle is really a statement about 'integrating' change to derive a whole, and the 'action' performed by such a whole is to change the orientation of its boundary! (page 105)

This is a statement about the creation of an autopoietic unity as Manthey himself realizes for he cites the work of Rosen (LIFE ITSELF -- A Comprehensive Inquiry into the Nature, Origin, and Fabrication of Life). The Clifford algebra being based on Quaternions produces wholes with closed filtering (i.e. orientable) boundaries.

Quaternions are a group of three operators that express rotation in three dimensions. Their defining properties are:  $ab = -ba$ ,  $bc = -cb$ ,  $ca = -ac$ ;  $ab = c$ ,  $bc = a$ ,  $ca = b$ ;  $(ab)^2 = (bc)^2 = (ca)^2 = -1$ . They appear as boundaries of the 3-action  $abc$ , i.e.  $\#(abc) = bc - ac + bc$ . Hence the meta-3-action created by co-excluding  $a = s_1 s_2$ ,  $b = s_2 s_3$ ,  $c = s_3 s_1$  implicitly contains, as it were, the ability for the corresponding 3-object to 'understand' 3-dimensional space from its own point of view. Full-blown 3+1 dimensional space-time will presumably require four tetrahedrally-related such 3-objects to appear. (page 106)

This Full-blown version is in fact what appears as the internally mirroring tetrahedron that has quaternions at each vertex and reflections at each midpoint of every face. The full-blown comprehension of four dimensional spacetime/

timespace matrix appears at the level of the octonion. Manthey has not yet considered the significance of this level in this paper.

Causality. Both of the action-composition rules given in the preceding section can be viewed as providing models of causality, i.e. the necessary sequence in which actions can be performed. We prefer the first of them, in that the 'de-composition'  $s_1s_3 \rightarrow s_1s_2 + (s_2)s_3$  models the cascade of requests . . . and allows for the instigation of concurrent and non-deterministic activity. The second of the composition rules is in contrast very sequential and deterministic in its thrust. Howsoever, the arity of the actions involved, which can be viewed as a hierarchical issue, determines whether the causal influence is classical momentum transfer or EPR's more ethereal version.

Causality appears from one perspective but vanishes from another. When we are assuming causality we are we are taking a particular frame of reference within the heterogeneous interactive and interactively heterogeneous (Plotnitsky's term) Matrix of inhabited (embodied) spacetime/timespace.

Space and Time. The availability of these concepts rests on one of the more radical implications of the model being presented here, namely the fact that the usually primitive concepts of 'ordinary time' and 3-dimensional space are neither given nor assumed a priori, but rather emerge as the hierarchical structure expands. The reason why this is so, simply stated, is that to give these concepts semantic content requires a context with sufficient information-carrying capacity to express the required distinctions. Such capacity accrues solely via (cycle-)hierarchical aggregation. The same reasoning applies to charge and mass: they are emergent attributes and hence will appear in due course as the information-carrying capacity of the constantly growing structure evolves. Howsoever, one can loosely identify 'co-occurring' with 'space-like separated, and 'co-excluding' with 'time-like separated.' (page 107)

As we ascend the hierarchy of special systems with their implicit algebras the

carrying capacity increases as multiple timespace strands intertwine and braid. Each level gives an exponential increase in complexity defining thresholds of structure that are unique in mathematics. This is the substrate for any information hierarchy building that might be etched onto its surface. It is inherent in the fragmentation of spacetime/timespace itself into separate timestreams.

Manthey sketches the computational properties of nano-computer architectures (page 107):

*“o Since everything is a process, there are many processes and no ‘data structures’;”*

I take this to mean that everything is dynamic and there are no external data-structures, not that there are no data-structures within processes. Here we would posit that these processes are swarms of magician systems.

*“o These processes exhibit global coherence with no centralized locus of control;”*

But how is this ‘global coherence with no centralized locus control’ realized. I posit it is realized by the fact that at the social level controlled by the octonion the distortions of the social space that encompasses spacetime is the same for everyone. In other words all social beings live in the same virtual/distorted world.

*“o They synchronize (rather than communicate) via a distributed global ‘memory’ a la Linda’s tuple space;”*

Here we see memory as the medium through which communication occurs. This is similar to the idea of tapes as communication channels between processors. The point of a Linda tuple space is that it is a global memory which is independent of any process. This concept of a global memory outside the magician systems is very important. It is like the Akkashic records in the sense that anything placed into the global memory is always there so one can communicate across time between processes. This would solve the problem of perfuming of magicians across temporal discontinuities as the memory of the swarm that comes into existence and is destroyed until the next moment in time would be in the Linda-like Akkashic records of the tuple-memory. So information can be communicated over time without a carrier. This akkashic record is the carrier of the culture of the swarm. It manifests as the always already lost Absolute Past which is embodied by the

infinitely deep network of interpenetration beyond the octonion algebra represented by the non-division algebras.

*“o They execute utterly concurrently and opportunistically”*

It is a swarm -- a distributed artificial intelligent and living system where each node is autonomous. But the functionality of the swarm must also be distributed amongst the nodes. Thus Agha's Actor model is a good way to look at this kind of swarm in action. Magician systems embody autonomy which has the properties of concurrent opportunistic execution.

*“o The execution regime is reversible, non-deterministic and goal-oriented;”*

Reversibility allows time to flow backwards locally and thus allows synchronization between nodes and resonant group behavior. Non-determinism makes this a quantum computational model such as that described by George Kampis. Goal orientation is the distribution of functionality across the swarm. Goal orientation appears in magician systems as the voting that determines which magicians will be around in the next moment. Non-determinism occurs because you do not know what the momentary relations between magicians will be at any point which gives rise to their nomination and voting processes.

*“o Duplicates of a given action or synchronization are no problem;”*

There is a name space associated with the memory spacetime. There may be many copies of a particular kind of magician. The point that Manthey makes is that the synchronization between magicians is just as important as the information flowing between them. These possibly duplicate actions relate to Goertzel's mutual actions between magicians.

*“o Systems with disjoint or compatibly defined bases ('sensor sets') can be combined ('composed') with (discardable) emergent effects;”*

Composition is the same as Goertzel's Gestalt Pattern operator. The opposite of emergence or 'creation' is annihilation that is implied. In our view these magician systems must be defined in relation to both emergence (gestalt patterning) and annihilation. They form annihilation cascades which loop to create seemingly persistent behavior. Within these persistent configuration there is the possibility of combination to create emergent effects.

*“o Conversely, a given system can be ‘encapsulated’ to provide modular ‘black box’ functionality to other systems;”*

Part whole relations exist between nodes. They are in fact holons which are both parts and wholes from different points of view.

*“o An initially ‘blank’ system can be ‘trained’ to provide a given behavior”.*

This says no more than these are universal turing machines which can read tapes and become differently trained automata.

Manthey describes this computational scheme in the following terms:

This temporally-based part-whole hierarchy can - via interpreting resource invariants as stick [semaphore] movement on closed paths - be viewed as a hyper-cyclic hierarchy. The function composition hierarchy has difficulty answering questions like, "But what is (say) a quark made out of?". In our view, the problem here is that such things as quarks are being viewed in terms of what they 'do', their 'doingness'. In contrast, the cycle hierarchy is founded on co-occurrence, whose timeless 'is-ness' effectively grounds such questions by referring to a clearly defined sensory boundary. In this way, the door is kept open to considering, as Leibniz intuited, that everything is ultimately defined by the presence of everything else. Finally, with regard to practical computing, it is worth mentioning that the cycle hierarchy and co-exclusion-based actions together provide a conceptual platform for realizing distributed computations that goes FAR beyond such contemporary technologies as 'servers' and 'remote procedure call'. (page 99)

Manthey goes on to give a brief overview of what he has in mind. But it very much sounds like he is on to the use of the autopoietic hyper-cycle as a computational mechanism. That hyper-cycle operates in all autopoietic systems as the fusion of two no-wheres of component dissipative systems. It is clear that the hyper-cycle can act as a controller which is also a memory because it activates based on deactivation and deactivates based on activation. In short the hyper-cycle is a way for the two

dissipative systems to control each other and create a symbiotic link between themselves. What Manthey seems to be onto is the fact that this lies in the space of coordination that encompasses the autopoietic systems and not in the information flow between them. Thus it is a completely autonomous set of reactions not tied to the functionality of the two systems.

## 9. Non-duality in Learning Organizations and the Stairs to Nowhere

[Note. These sub-sections originated as posts to the Learning Organizations Email list at [majordomo@world.std.com](mailto:majordomo@world.std.com) called [learning-org@world.std.com](mailto:learning-org@world.std.com). The argument is more fragmented than usual due to the origin within the stream of email conversation on that list.]

In our culture there is a split between Logos and Physis. We can follow Bateson (Steps To The Ecology Of The Mind) in positing that there are a series of meta-levels associated with both physis and logos expressed in the concepts of motion with respect to physis and expressed in the concepts of learning with respect to logos. We can also follow Bateson in the realization that for us as an expression of our finitude that we cannot think beyond the fourth meta-level in these two series. Therefore the meta-levels form a logical stairway to nowhere. We interpret the unthinkable as Emptiness or Void in the Buddhist and Taoist senses respectively. At each level there is the differential application of either change or learning and there is the chiasmic relation between these dualistic poles. This structure has been delineated in the author's Advanced Process Architecture tutorial as a way of understanding work and process within our culture. It is an attempt to form a non-dual basis for understanding human processes similar to the work of John S. Hans in The Play Of The World. The difference is that instead of considering play as non-dual activity I consider that there is a chiasmic relation between work and play and that workplay or playwork is the non-dual. It turns out that play characterizes the upper levels of the ladder to nowhere while work characterizes the lower levels of that same ladder. Once the ladder is established then it is used as a means to understand chiasmic non-dual relations with regard to human action and work.

\* \* \*

What is nihilism?

For a good introduction see Stanley Rosen's Nihilism, Crosby's The Specter Of The Absurd, Fandozi's Nihilism And Technology

The nihilism of the Western tradition is a subtle debate really starting with Nietzsche who first pointed out the intrinsic nihilism of our tradition. This is an argument equivalent to that concerning the groundlessness of Being.

This does not just mean something negative but is really a point about the distortion of the Eternal Return that occurs in our culture that renders it a Will to Power.

Nihilism is the destruction of meaning.

There can be either active or passive destruction of meaning. Passive destruction of meaning can be indifference, neglect, ignoring something. Active destruction of meaning can be colonization, political imprisonment, discrimination, assassination, rape, explosion of a drug culture, all the things that destroy people outwardly and devalue their meanings.

Our Western tradition and worldview has a fundamental dualistic ambivalence that we need to recognize. We are obsessed with productivity and profit. An excellent metaphor for our basic Will to Power is the Conquistadors that came to the new world for GOLD and THE FOUNTAIN OF YOUTH and in the process destroyed everything in sight in order to be able to take back ships full of gold to Europe. Gold was not as important to the people of the Americas that had it and from which they took it by force. They had other meanings that organized their lives but they were reduced to the inhuman possessors of something the Conquistadors craved.

The obsession with production is haunted by anti-production which is basically the destruction of meaning of the Other. Hollywood has a major problem with Europe because they insist that there is a certain amount of local European television available to preserve their traditions. Hollywood is concerned with increased profits a large part of which are come from foreign sales. Ossie and Harriot in Sudan or Maturana makes perfect sense, right? They do not like to be locked out of foreign markets. But their ignoring local markets destroys the cultural meanings that are not supported by the programs they produce. These are examples of active and passive nihilism.

In our society as we pursue our Will to Power through economic war there is a

constant emphasis on profit and productivity that has the effects of destroying communities and neighborhoods through the corollary anti-production that destroys meaning. Our organizations are for the most part built to further these anti-productive ends by first colonizing the workers within them and alienating them from their own labor. Taylorism treats the workers as objects that are subject to management control. Both the workers and the managers are dehumanized by this master-slave dialectic. Then these organizations act as corporations -- imaginary inhuman fictitious persons and pursue unethical courses of actions motivated only by profit and efficiency. They are in fact social monstrosities that roam the landscape reeking destruction where ever they go. This is why we have the split between profit and non-profit organizations. Non-profit organizations have motivations other than profit. Why MUST these two organizational charters be incompatible? Because it is a fundamental split recognized in law between the organizations engaged in economic war realizing our Will to Power and those organizations that do not engage in the economic war. Those that engage in economic war pay a tax by giving a certain amount of their profits to the non-profits to do good works. This is where the ambivalence comes in. Rather than taking local issues, ethical issues, environmental issues into account within the organizations they ignore them and then assuage their guilt by giving money to organizations that attempt to pick up the pieces later. Thus a facade of concern is created for publicity purposes but the concern is displaced from the fictitious (inhuman) corporate person. As actors within the organization we say to our selves that we are forced to do unethical or inhumane anti-productive things by the corporation. The corporation not being human is not bound by ethics and human concerns with meaning. Thus we allow ourselves to do things that objectify and destroy the meaning of others in the name of the corporation. We allow ourselves to contribute to the obsession with productivity and profitability and participate in the anti-production that destroys meaning that this entails. This is a fundamental split in our organizations and in our selves.

This is a split that goes very deep in our culture. It is expressed by our ambivalence toward Christianity and militarism. Often the rhetoric is peace as we pursue the ends of war. A Dutch man said to the Shogun of Japan when Christian priests first appeared in Japan "First they send their priests and then they send their army." The Shogun exiled all the priests immediately and killed what ever Japanese Christians had been converted. That one act saved Japan from the fate of China that was basically eaten alive by the European powers who sold Drugs into that society and intentionally destroyed it in order to gain economic advantage. Japan remained

closed and safe for 200 years until the Americans got worried about missing out on the action and Perry sailed a Gun Boat into Tokyo harbor.

It is little known that the roots of this problem go back to a now little known religion called Mithraism. It turns out that the Mithraists were the only country that the Romans just could not beat. In fact the Mithraists took over the entire Mediterranean Sea from the Romans at one point. They were called pirates by the Romans. But they were invincible. It turns out that they were invincible because of their religion which was a Greek/Persian mystery religion. Eventually the Romans learned about Mithraism and the whole of the Roman Army converted to this religion. Then they were able to beat the Mithraists --- Mithra was the leader of the forces of light against the forces of darkness in the Zoroastrian dualistic religion in which the TWO gods that rule the universe (Ahura Mazda and Ahriman) wage eternal war.

Mithraism was the first universal religion because it existed everywhere the Roman Army was stationed. In fact it was the only example of a universal religion when Paul of Tarsus was trying to figure out how to make an insignificant Judaic Messianic cult into a world religion. Tarsus was the heart of the Mithraic lands. So Paul modeled his version of the Messianic cult called Christianity on Mithraism. This brilliant but flawed concept of marrying a male oriented mystery religion bent on war that was the only example of a universal religion with a pacifistic Messianic offshoot of Judaism has had profound effects producing incredible confusion in ethics and morals for almost 2000 years. It is this confusion that appears everywhere in our organizations as the mysterious knot of paradoxicality that the various dualisms define and elaborate.

The parallels between Christianity and Mithraism are too numerous to enumerate in this post. See [Mithra: The Fellow In The Cap](#) by Esme Wynn-Tyson for a summary. [There are more interesting points to be made here but I will control myself. Suffice it to say that until I learned about Mithraism I really did not understand Christianity or its important paradoxical relation to our militaristic culture. Another way to get at this is by studying heresies as Morris Berman does in [Coming To Our Senses](#).]

Anyway from those humble origins we inherited a fundamental ambivalence that exists in Christianity as the relation between *Turn The Other Cheek* and Paul's exhortation for us to *Put On The Armor Of Christ*. We have this Dr. Jeckel and Mr.

Hyde schizophrenic personality that the Dutch man clued the Shogun into and which saved Japan. For those 200 years Japan would only trade with the Dutch and then only on a small island once a year. But that was their favor for saving Japan from the ravages of Western imperialism. Now we are more sophisticated --- we do the same things with economic means that we used to be so crude to do with military means. But the ambivalence between our nonprofit side and our “profit is everything” side is still there as a deep divide in our cultural psyche.

So there is a split between anti-production and production which mutually entail each other. There is also a split between profit oriented and nonprofit organizations. These splits have the effect of destroying meaning in the world. In other words we concentrate on one criteria -- short term profitability and efficiency of production and become blind to all other humanly important criteria. We can do this because we band together as a fictitious legal person (corporation) by which we objectify ourselves as a vehicle for objectifying everything else. But by narrowing our perspective there is a side effect of destroying other meanings in the world which is the anti-production that is the corollary to our production obsession. Then there must be other organizations that do not engage in the economic war who pick up the pieces from the social destruction reeked by the anti-productive side effects. This is a perfect example of our alienation from ourselves and this self-alienation has been a feature of the Western traditions Will-to-power for quite some time.

Now within this process of economic war (we have substituted economic war for military war in this era) there appear novel things that give economic and technological (as well as military) advantage. Learning-organizations are one of those new things. We think at first that they will solve all our problems and unite the dichotomies that bind anti-production to production while absenting real concern into nonprofit organizations. If we could just learn then maybe some of our endemic problems would be resolved. But like all the other fads we will eventually become bored with Learning-Organizations because in the end we will learn that this fad like all the others before it in the Taylorist and anti-Taylorist rationalization of industry merely destroy meaning in new ways. Right now Learning organizations are new and shiny and we think it will solve our problems but how will we feel in ten years? We will be on to something else by then that we are as excited about. There is a whole succession of these gimmicks which only have superficial impacts on the way we do business. The very process of generating new things all the time has to make them suspect. We are engaged in the illusion of progress that arises from the fundamental projections of our Will to Power. Nothing new can ever

address fundamental problems. This is the secret of Plato's talking about knowledge as remembering. Only by accessing the absolute past beneath the surface of relative past/future can we effect the deep dualities that organize our actions and thoughts. It is in the absolute past that these dualities are rooted. In thought/action we inhabit the incomplete realm where we experience the chiasm/chasm of the dualities. The process of projecting the dualities out of the chiasm creates the events in the relative past and relative future. But the dualities themselves arise from the absolute past which we have to access through intersubjective and mythic memories.

Originally the term Being has two fundamental senses STATIC persistence or "Being" in the sense that Parmenides (Kant) uses the term and DYNAMIC unfolding or "becoming" which is the sense in which Heraclitus (Hegel) uses the term. These are two faces of the same thing. They are represented in the original Indo-European languages as the Complete (peterite; absolute past) and the Incomplete (chiasmic) present. Philosophies (and physical theories) tend to go to one extreme or the other in this continuum. Whitehead proposed a process philosophy, for instance. But most philosophies are Parmenidian and Platonic believing there are static Forms that we can rely upon outside the flux of time. For us the dualities are the cultural equivalent to the Platonic Forms. They persist in the absolute past or the mythic realm that never changes. And we continue to project them in our actions that arise out of the process flux. Part of that projection is our productivity and part of it is out anti-productivity that destroys meaning. The fact that we insist on remaining alienated from ourselves is the basis for our destructive actions toward others. Only by remembering this absolute past and seeing ourselves projecting it -- and only by stopping that projection before it arises is it possible to change this situation. As the Tao Te Ching teaches you must change things when they are small not when they are large and already grown too big to alter. By understanding the dualities and changing our behavior in the heat of battle (the fog of war) we can change what we project on the world. Part of that needs to be through a broadening of our horizon from pure profit and productivity blinders that provide our main motivation now. If we can stop ourselves from anti-production and bring ethical concerns within the compass of our organizational charters then every profit organization could become partially nonprofit oriented. We see many organizations like this springing up here and there. But as yet the sea change has not occurred where every organization realizes that it cannot continue to exploit the world due to the fact that in a complexity interrelated meta-system what is taken out as profit one place must be compensated for by some loss some where else.

Discovering that systems are embedded in meta-systems is at least one step in this direction. Realizing that the corporation is nothing other than its people -- not an abstract transcendental subject is another. There are many strategic and tactical moves we need to make to address the inherent nihilism in our cultural system. But at the philosophical level one of the things we need to understand is “What is meaning?” When we understand that then perhaps we can figure out how to stop destroying it.

\* \* \*

The best book on thinking is Heidegger’s book What Is Called Thinking. In that book Heidegger says what I think is his deepest insight. He points out that the Old English word for thinking also means Thanking. So let me define thinking and what I mean by it just so we all know what I mean. Thinking is Thanking. In fact in Old English there is a word “Orthanc.” The “Or” is the same root that is in the word origin. It means the primal or primordial source. Thanc means either Thinking or Thanking. To me thinking is an attempt to go to the origins of things -- to their primordial sources -- by a process that is not just chatter in our heads but which involves our entire beings -- both the logos and the physus -- in which we reveal those sources and show are thanks to those sources. Thinking is the unveiling of the sources and Thanking is the harkening back to those sources. Unveiling is part of manifestation -- the deepest part of manifestation as it shows us what lies hidden within manifestation. But once we recognize what is hidden within manifestation we need to harken back to it continuously -- i.e. it becomes manifest in us and outside as actions. If we engage in non-dual thinking, perceiving, and action (as described by LOY in Non-duality) then when we uncover hidden sources of things they must reveal themselves in our thoughts, perceptions, and actions -- In other words we are fundamentally changed --- we have learned something and have been transformed by it. Conceptualization is an important tool in this process. Wild and persistent conceptualization is philosophy.

Breathing and experiencing the environment, etc is important but that alone will only leave us on the surface of things. Thinking is looking for the coherences in manifestation. It is the coherences and the discontinuities that point to the hidden sources of things. We represent these as concepts. That is the way we capture what we have thought so we can share it and retain it. We make networks of concepts

embodied in statements and diagrams. But the thinking itself is the uncovering of the intrinsic nature of the world to our intellects.

Look at the old English word Mood. Mood to us means a pervasive feeling. But in Old English it meant the unity of heart and mind and body expressing a particular state. We say state of mind. But really we mean a state that encompasses our whole being. Heidegger uses mood as his essential tool for the analysis of Dasein (Being there) or being-in-the world. When you just breath you are discovering what mood you are in. But mood in the sense of Old English is a deep thing. It is the pervasive state of the whole self (including the mind). Moods do not just happen when we concentrate on our breathing -- they pervade everything we do. But in that silence our tacit knowledge of the world becomes apparent. We do not have to be thinking to know myriad things about the world and use them to guide our behavior. But the tacit knowledge alone is not enough. We need explicit knowledge as well and the process of uncovering that knowledge in order to guide our actions and be effective in a complex and changing world.

The Mood that goes with thinking is exhilaration. Once we have formulated our thoughts to ourselves we need to continually harken back to them as we go about our business of changing/learning as we are transformed by and transform our environment and ourselves.

\* \* \*

What is memory? What is happening when we share our memories?

I think the spiral that takes us down toward deeptime which is also out toward the highest meta-level of learning.

It is an interesting point that we all think in terms of Past, Present and Future. It was St Augustine that framed our concept of time in this way. We have memories of the Past, Work in the Present toward goals in the future. But we can call this surface time. It is not the time of our Indo-European heritage. In the Indo-European heritage time had a completely different aspect. Languages did not have a past or a future tense. It had two tenses complete and incomplete. Future in surface time is an unfolding from the past or complete time projected forward instead of back. Thus

the split between future and past is wholly artificial. Yet it is a split that serves to organize our whole lives and the way we perceive the world. Deep time is organized according to the Complete/Incomplete dichotomy which is another dualism like the logos/physus and wild/tame dichotomies -- fundamental distinctions that organize all our knowledge. The future is merely a completion projected forward instead of backward. For us now the direction of projection is important but it was not always so important within the development of our worldview. This distinction tends to make us live in a split world in which there are myriads of unfulfilled goals and many lessons learned chalked up to experience. Sharing visions of the future and memories of the past we move though life locked into the unfolding myth of progress. But deep time has an altogether different visage. In deep time there is a discontinuity between past/future (complete) and present (incomplete). The past is the mythic space that is accessible from every point within the world. The world is full of incomplete actions that occasionally reach completion and become part of the catalog of heroic deeds sung by the bards.

To the extent that we live in surface time we do not delve into deep time with its discontinuous past. We have lost track of our connection to the discontinuous past and now only have contact with the past and future that is part of a continuum.

When we differentiate wild/tame and learning/changing we are trapped in this surface of life. When we begin to explore the chiasm/chasm of learning/changing and the chiasm of wild/tame then we begin to explore the realm in which deeptime manifests. We are continuously living in the deeper time that is discontinuous but we construct together organizations that continually talk about surface time. In deep time the chiasmas of wild/tame and learning/changing appear because these chiasmas are rooted in the incomplete real of the present. It is the discontinuous past (basis of the experienced past and the utopian future) which splits to give rise to the dualisms of wild/tame and learning/changing.

In the moment when we are acting/thinking we do not differentiate logos and physus nor the wild and the tame. These are culturally conditioned reifications which arise to be projected on the surface of artificial time. In the moment of action/thinking we are too caught up in what we are doing to differentiate the physical from the cognitive or the controllable from the uncontrollable. We are embedded in the flux of manifestation at that point and the dualities are not considered. Thus we say that in the moment the dualities collapse except to the extent that they condition

the action we are performing and the thoughts we are having in that moment. Normally those actions unconsciously perpetuate the cultural distinctions we have been affirming since our early years.

But the unfolding or split of the absolute past into relative past and relative future serves to hide the realm of the always already complete. In that realm the dualities have their origin. They arise from the realm of the always already distinguished. Just as paranoia is being always already afraid, so the distinctions between relative past and relative future is always already made for us. The distinction between logos and physis is always already organizing our world. The distinction between wild and tame (uncontrollable and controllable) is always already there differentiating things within our world. The absolute past is the origin we spoke of when we considered the ORthanc -- the primordial source of all the epistemic distinctions. The chiasm of thinking and thanking appears in the moment -- in our act of thinking and harkening back to the sources. But in surface time we split the thinking and the thanking in a similar way as we split the relative past (which is like the *ijk*) from the relative future (which is like the *IJK*). In surface time we stop harkening back to the sources (thanking) and we turn thinking into a self-sufficient mode of cognition. Thinking is no longer receiving the sources and harkening back to them as they arise into the incomplete stream of chiasmic action/thought.

Where does the things that emerge come from. Plato tells us. They come from memory -- from the absolute past that is disconnected from the incomplete present. The things that arise at the margin of our capacity to think -- the unthinkable appear out of our memory of the mythic origins -- that is why they have an uncanny resemblance to something we once dreamed.

Organizations have as one of their prime directives the repression of the mythic absolute past. Their whole purpose is to project surface time so people can remain oblivious to the absolute past. But as we reach the limits of what we can learn we come face to face with the the void and out of that void emerges what we always already knew. The deep mythic memories that are so unsettling. We worship the new in our plight -- locked into the myth of progress. But what are we running from in our flight? Is it not the absolute past and the mythic reality of the mythopoietic era prior to our present metaphysical era within which progress first raised its head as a possibility.

This raises the possibility that the learning organization should not be forward

looking but should instead explore the always already lost territory of the absolute mythic past instead of the ever more glossy image of a future.

Time enters the picture of our static model of higher logical types of learning and changing stretching as a bridge between the tame and the wild. But the wild is not necessarily what is the novel or newist but may be what is the most ancient -- the hidden and deeply buried realm of the collective unconscious.

When we add the distinction between deep and surface time to our model we find an unexpected dynamic that reverses the direction of history causing us to question one of our most deeply held assumptions -- Progress -- what Ernst Block calls The Philosophy Of Hope.

What is myth but a meta-narrative on human experience? What are the gods but a meta-meta-narrative on the heroic myths within which they participate. What is the creation of the gods but a meta-meta-meta narrative on the emergence of things within the world.

The leaning organization must explore the social and personal archetypes with meta-narratives designed to make a connection with deeptime in which the epistemic categories are established. Ceasing to repress is to allow the deep temporal currents to well up in our lives today.

\* \* \*

In English it is difficult to talk about things non-dualistically. I tend to use mindbody or wildtame to talk about the chiasm of wild to tame and reverse it to talk about its reversible aspect. So there is also bodymind and tamewild. In a chiasm one of the joined aspects always predominates over the other. If they are equal the distinction vanishes. I would refer you to the theory of spacetime which is  $x+y+z-t$ . It has an opposite theory of timespace that Heidegger talks about in TIME AND BEING. In that the opposite past-present-future+nowhere is posited. That is called Minkowski Spacetime in physics that emphasizes causality over position. Notice that spacetime is a four dimensional block in which perspectives create three dimensional slices that unfold for us as movement in time. From different inertial frames the relations of reversibility between timelike aspects and spacelike aspects

appears different for different observers. A similar effect appears in any chiasmic nonduality. There are different perspectives on the reversibility between the aspects of the duality. So *logosphysus* and *physuslogos* is a single nondual “matter” where the reversibility is a matter of point of view. Now there is a way to understand this relation using a geometrical analogy. Baudrillard in *The Mirror Of Production* in a footnote uses the Mobius strip as an analogy for the chiasmic relation between dualities. On a Mobius strip there is local division into two sides and two faces of the strip but globally there is only one line and one face. So there is a global/local reversibility that shows how the reversibility between any two aspects of a chiasm relate. So consider mind as one side of the Mobius strip and body as the other side. Globally they are the same but locally they are different. Furthermore where ever we were to cut the strip the distinction would be slightly different to the extent that as we move round the strip we move our cut a complete 360 degrees. Thus the point of reversibility may be seen at any point in a circle. This is why there is so much controversy over simple definitions of opposite terms. Different people will make the cut differently across the Mobius strip -- they are all right and what we need to do is recognize the transformability between different ways of making cuts or distinctions in the world by reference to the global sameness of the things being cut. If we got used to talking about *wildtame* and *tamewild* and noticed that the actual distinction between the two varied on ones perspective then it would solve a lot of terminological bickering as well as provide us with a way to think about things non-dually as we have learned to do in spacetime physics. It is nice when we have a word for the global sameness which encompasses interdependent dual aspects of things. Unfortunately we normally have to make up those words in English because it goes against the historical grain of the language. I might suggest the phrase *globally wildtame* for that Sameness. A good work on this very question is Heidegger’s *Identity And Difference*. Heidegger talks of the belonging together of opposites that are Globally the Same rather than identical. For instance, he says that Poetry and Philosophy belong together. You can get at some things in each that you cannot get at with the other and vice versa. Similarly we can say this for philosophy (*logos*) and the practical or pragmatic (*physus*). That is why constructivism exists which says we can learn things we cannot theorize about properly by just putting things together. That is why Peirce developed Pragmatism as a philosophy for America (the land of thoughtlessness). We cannot escape philosophy by just not thinking.

Philosophy is love of wisdom. Wisdom is the chiasm of knowledge and experience. Love is the Global sameness of knowledge-experience. Plato points out the crucial

role of Love or Desire in philosophy in many of his dialogues. A wonderful book about this is Anne Carson's Eros: The Bittersweet. In fact this book is perhaps the deepest philosophy book ever written.

But the question arises . . . What is Knowledge? What is this matter we are aspiring for organizations and people to learn?

\* \* \*

What is the stuff of learning? What is knowledge?

Has anyone reflected on the nature of knowledge? Has anyone noticed that it is unlike anything else in existence? What is unique about knowledge is that once you attain it it is indelibly imprinted on your being and over time it matures and transforms but you never lose it once you have it. Think of every other aspect of experience. It is all fleeting. When you eat, have sex, or have any other experience it vanishes in an instant with little trace but fleeting memories. But when you actually learn knowledge it stays with you and not only that it ripens over time so that if you keep harkening back to that knowledge it unfolds deeper and deeper levels of understanding to you. Now by knowledge here I do not mean facts that are learned by rote. I do not distinguish tacit knowledge from explicitly linguistically represented knowledge. I am talking about knowledge about things within the world as experienced -- i.e. phenomenological knowledge. It is knowledge that allows the epistemic level to appear in the emergent series:

fact	---	things known in relation to theories
theory (blum)	---	coherent statements based on paradigm
paradigm (kuhn)	---	assumptions based on an episteme
episteme (foucault)	---	knowledge based on categories within a worldview
worldview (heidegger)	---	all encompassing interpretation of Being

is made possible first and foremost by our categories. Category theory is a neglected branch of philosophy. I would refer you to Igvor Johansson's Ontological Investigations for the best most recent treatment. Also you should have a look at

Foucault's The Order Of Things and The Archeology Of Knowledge in order to understand the idea of Epistemes. Categories are put forward by Aristotle, Kant, Hegel, and others. They are our most general concepts before the collapse into Being. Categories appear at a certain threshold of coherence in our comprehension of the world. It is because there are categories that we can have knowledge because all knowledge ultimately depend on the differentiation of the categories and all distinctions unfold from them. This categorical level of the differentiation of the most general concepts supports the whole superstructure of knowledge. And knowledge is the thing that persists within the world more than anything else.

If we say that the most general concept Being is persistence as such then one step away from it at the point where our most general concepts differentiate appears the thing that persists more than anything else. Metaphysics deals with these two levels of existence. Ontology asks the question what is Being. Epistemology asks the question what is Knowledge. These are the two branches of metaphysics. Everything below that is "physics" or specific to a specialized discipline. Paradigms are the assumptions of a discipline. Theories are the explicit conceptual networks that allow us to do science and facts are independently confirmable implications of disprovable theories. No fact exists without a theory and no theory exists without a paradigm. But all sciences are dependent on the epistemes that are universal and which connect the sciences together. Foucault describes how these epistemes have changed over time within our tradition. Even interpretations of Being change over time and Heidegger describes that. At each level there are discontinuous changes within our tradition. The most famous of these is the paradigm shift but the same kind of discontinuous/continuous changes occur at each level.

There is considerable disagreement over what the categories (the most general concepts) are. Different philosophers have taken stabs at defining them. But the global/local Mobius effect works here too so that multiple distinctions that are all right can be made. The global Sameness of the categories is Being. Instead of having a single distinction one has instead a cluster or constellation of distinctions that all interfere with each other. Here are Iqvar Johansson's categories:

*Figure 133:*

Spacetime  
State of affairs  
Quality  
Grounded and External Relations  
Existential Dependence

## Inertia and Spontaneity Tendency

Notice that this series of categories starts with a chiasm of Spacetime. Within spacetime there are states of affairs which have qualities. Relations between states of affairs can be in terms of grounded or external kinds of relations -- i.e. the different qualities may be intrinsic or extrinsic to each other. Existential dependence determines whether something actually exists or not by its depending on other things. All things display inertia and spontaneity. And what causes things to occur as they do is their inherent tendencies. Now once we have these categories (or some other set) we can begin framing our knowledge of the world in these and derivative concepts. This framing in terms of concepts is our knowledge. Notice that all these categorical concepts could be just implicit in our tacit knowledge. Concepts get represented as ideas via the process of ideation. But the concepts themselves are not necessarily tied to a particular representation by ideas. Ideas are historical products of the production of illusory continuities. Concepts are the elements of knowledge itself that can be artificially separated from their expression in ideas or language. Because we grasp concepts it is possible to translate from language to language or have completely different ideational structures pointing at the same concept. Concept comes from conception -- to become pregnant. The concept is the germ of knowledge within the theoretical structure expressed in language that does not really need language to exist. It is more like a vision of how things fit together that later is expressed in language and theories. Concepts are emergent Firsts which become clothed in ideas as we attempt to come to terms with them.

For instance we have the concept of a number. That concept is expressed in many different ways in many different cultures but the concept itself is identical regardless of its various representations. When we get the picture what a “number” is then we have knowledge of it and it is extremely persistent within us. We don’t just lose it even if we forget about the details of the representation. Concepts are deep patterns in the way the world manifests to us. Categories are the fundamental building blocks of these concepts. They are in fact usually meta-concepts of some kind.

Learning is the process of uncovering these deep coherences within experience which is normally facilitated by language. From this we get the relation between the teacher and learner. The teacher has a concept in mind the vision of which he wishes to impart to his student who does not have the vision. This is sometimes a

painful process which is restrained considerably by the cultural barriers called academia and educational institutions. But once you learn how to learn (by accident and trial and error as you bumble through the academic maze) then you can go on to pursue knowledge by your self or with others of like mind. In that case you might run into genuine teacher/learner situations. In those situations the teacher is actually the learner and the learner is actually the teacher. They in fact form together a chiasmic relation. In these genuine relations of teacher/learner where exhilaration of learning which benefits and enriches both occur there is no master/slave dialectic as described by Hegel but instead mutual exploration in which the roles of teacher and learner are continually being reversed between the participants. And at times it is possible to attain an even higher level or resonance in which both the teacher and the learner become the TAUGHT. This is to say that the global chiasmic relation between the two become such that both learn things neither knew before. This is the definition of the Platonic dialectic and is a rare and wonderful possibility built into the heart of our human existence together. This is the ultimate level of the wild learning/change organization. It is wild because it experiences and receives emergent events as a social process of learning and change within the world. As G.H. Mead (that most neglected of American Philosophers) says the essence of the social is the process of emergence.

The learning-change organization participates in meta-change and meta-learning up to the fourth and highest possible meta-levels of learning change where emergence occurs. What is emerging are new patternings within the unfolding of the logos and physis: New theories followed by discoveries of aspects of existence that had always been there but never noticed before or if noticed not understood; New kinds of things in the world that cause us to rethink our theories. By attempting to understand these emergent patterns we are engaging in the Orthanc. And the result is knowledge. Much of it uncommon knowledge or perhaps KNOWLEDGE PAINFULLY ACQUIRED such as that of Lo Ch'in-shun the Neo-confucianist who wrote one of the deepest books ever written.

Knowledge is a strange thing -- it is not something well understood. So when we speak of the Learning organization we must always remember that it is not just learning but also unlearning by reformulating its knowledge and it is also relearning as it remembers what it once knew but had forgotten by ceasing to harken back to what it had known before. Plato says that all knowledge acquisition is remembering what we innately knew. The primordial sources of knowledge are there embedded within manifestation. It is through the orthanc that we access them and once they

appear they become very persistent. In order to forget what we know we have to learn something else. If we do not access what we know it goes dormant but is almost never completely forgotten because it is embedded in our experience is a deep and lasting -- indelible trace.

\* \* \*

As noted before the basis of this view is Bateson's article in Steps To An Ecology Of Mind on meta-levels of learning. He notes that in physics we can only think a few meta-levels up in relation to the concept of movement in physics and posits that the same is true of learning. He goes on to describe the meta-levels of learning which he says are inherently limited to four. I will not review his argument here. But will instead outline the meta-levels of change and learning in relation to a social organization.

### **Level Zero -- The practico-inert.**

This level is that of rote learning or rote action or unconsidered insignificant changes. Everything that we call inert has practice from the past embedded in it. Anthropologists call it Culture. Foucault in the introduction to Deleuze and Guattari's Anti-oedipus would call it FASCISM. It might be called Bureaucracy -- reified social structures into a frozen ossified organization. We are literally surrounded everywhere by the artificial practico-inert artificial world created by others and imposed on us without our consent. Emanuel Levinas talks about this imposition by the other of the world already created in his works Totality And Infinity and Beyond Being.

The practico-inert represents unconsciousness and stasis within our world. The practico-inert is defined in Sartre's Critique Of Dialectical Reason.

### **Level One -- Process**

Meta-level one Change (physis) and Meta-level one Learning (logos) combine into the chiasm of Process and when these two are applied differentially to the practico-inert it is work.

Meta-level one Change is production, transformation, “just doing it”

Meta-level one Learning is the application of consciousness in the process of work usually via a method or technique.

When both are applied together there is learning change, transformational theory, conscious production.

### **Level Two -- Improvement**

Meta-level two Change is management, control, and guidance.

Meta-level two Learning is education, self-consciousness, theory, and methodology.

The chiasm of Change Two and Learning Two is management education or cybernetics.

When Change Two and Learning Two are applied differentially then there is Process Engineering of Work Processes.

### **Level Three -- Innovation**

Meta-level three Change is Adaptation.

Meta-level three Learning is Research.

The chiasm of Change Three and Learning Three is adaptive research which entails innovation.

When Change Three and Learning Three are applied differentially we have Process Science that lays the groundwork for Process Improvement of Work Processes.

### **Level Four --- Emergence**

Meta-level four Change is Flexibility.

Meta-level four Learning is Discovery.

The chiasm of Change Four and Learning Four is flexible discovery or discovered flexibility.

When Change Four and Learning Four are applied differentially we have Process Creativity that creates and destroys work based on changing goals and visions of what needs to be done in the New situation. Emergence is the arising of the utterly new and novel that we did not expect and could never even guess would arise.

### **Level Five --- Unthinkable**

Meta-level five Change is unthinkable.

Meta-level five Learning is unthinkable.

This claim of unthinkability makes this theory empirical in the sense that everyone can try to think the fifth meta-level. The disproving of this postulate will expand our conception of the world moving the challenge to the next higher meta-level.

What is unthinkable is fundamentally Empty as in the Buddhist use of the word Emptiness “Sunyata”. The whole point of this series is not that it merely ends but that it makes visible the Emptiness of all things which we experience as unthinkable. This is where thought stops. This is the Void out of which things arise when they emerge from nothing.

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At each meta-level of the learning/change organization there is a chiasm(a) between physis and logos. When the different aspects of that chiasm is applied differentially to the next lower level there arises fundamental changes in that lower level. Each level has its own language which is a meta-language to the immediately lower level. The levels describe the path by which new things enter and fundamentally change our world. All routine work in an organization is practico-inert if they are completely unconscious and entail no significant changes. Most manual and low skilled work requires some degree of learning and change. A lot of

even highly skilled work does not go beyond the first meta-level. What goes beyond that meta-level are the non-routine work that people do as they solve problems that causes changes in the way we work due to the process of learning applied to what we are doing.

Another point of interest is that each meta-level of learning contains a chiasm between logos and physis. That chiasm has a point of reversibility which in each case is wisdom. We are merely moving to deeper and deeper strata of wisdom. Wisdom is knowledge (the result of learning) and experience (the result of baring up under changes). So the inner point of reversibility in process between learning and change is wisdom. That wisdom guides work which differentially applies change and learning to the practico-inert. The same is true of each meta-level. At each level there is that point of reversibility between change level two and learning level two for instance which is a more refined level of wisdom which gets applied as we improve the way we work. Each meta-level entails a refinement of wisdom.

This means that wisdom is the interface between learning and change within the chiasm between logos and physis. Wisdom is at the heart of work from the most simple kinds of work to the most sophisticated work of flexible discovery. These chiasms between learning and change are like the Mobius strip in that they are locally different and globally the same. You can make the distinction between learning and change from multiple angles differently but ultimately no distinction between them will stand out instead they are constantly shifting. Philosophy is the love of wisdom. The love is the global sameness of learning and change. By love we mean desire. Desire is what drives production. Desire is the wellspring from which our learning and our changes arise. Production fulfills our desires and necessitates the differential application of learning and change in order to produce the things that fulfill our desire. But beyond that we desire wisdom which is the inner balance of the logos and the physis which is non-dual. Love of wisdom itself comes when we realize that experience and knowledge, change and learning are really the same thing and that our actions, thoughts and perceptions are really non-dual, that is to say that there is a level of behavior before the split between logos and physis and knowledge and experience to which we all have access in every thing we do. There must be philosophy in the midst of action and action in the midst of philosophy. Our culture has spilt these two things off and driven them to extremes producing rampant and deep nihilism. By loving the wisdom embedded in the heart of all work we free ourselves from that inherent nihilism in our tradition.

The learning/changing organization is also wild rather than tame. It is wild because it is directly connected to emergence of the novel. The extreme of tameness is embodied in the practico-inert which is pure habit (i.e. where mimickers rule). The meta-levels of learning/changing bridges the gap between the wildest and the tameist that human beings can attain. In this way we see that these two deep dualisms frame the definition of the wild/tame learning/changing organization. What we are trying to indicate is the non-dual source prior to the arising of the dualities. The fused group of Sartre and the hunting pack of Cannetti lie at the wild extreme at which all social organizations arise and the reified organization that operates like an unconscious machine with no learning and no changes operates at the other extreme. But actually both of these extremes are nihilistic caricatures just like extreme distinctions between logos (consciousness) and physus (matter). What we are trying to indicate is a state of affairs that lies prior to the arising of these interlocking distinctions which conditions and pre-comprehends everything we do within our organizations whether they be learning or unlearning.

\* \* \*

What is meaning? Where does it come from? What is the relation of meaning and knowledge?

If we are expected to learn in a learning organization --- that means to acquire knowledge. We have already discussed the persistent nature of knowledge.

We have already noted that all the different meta-levels of learning all increase our knowledge -- there is no meta-knowledge. Research and Discovery reveal more or different knowledge not something different from knowledge.

We apply that knowledge to invoke the different meta-levels of change. All change is flux. There is no meta-flux. When we change changes (i.e. exert control) we change the flux but we do not transform it into something other than flux or flow we only change the direction of the flow. The same is true of adaptivity and flexibility. These meta-levels of change do not produce something other than a flux or flow they merely make it more adaptable and flexible. Flexible here means supporting multiple adaptations simultaneously.

We experience flux or flow and within that we do learning and derive the most persistent thing --- knowledge which we use as a basis of modifying the flux and

flow. There are feed back and feed forward loops within this interaction. When the two are in harmony we have wisdom. Wisdom is the SAMENESS or belonging together of experience and knowledge. Now this flux or flow of experience that engulfs us can be defined as Primary Process. Primary process is manifestation. Everything that manifests to us is part of the primary process. Beyond primary processes exist only the unmanifest void.

Secondary process exists within the flow of manifestation as locuses of organization and coherence. For the most part secondary processes are vortices of active ordering within manifestation. People that are doing things are secondary processes. They are manifesting things within the overall encompassing process of manifestation. A bird building a nest is a secondary process. A volcano erupting is a secondary process. All dissipative processes are secondary processes.

Tertiary processes are shepherded flows that do not organize themselves. That is to say they are what is ordered by the secondary processes. The stuff we use when we build things are the tertiary processes. The chemical plant is made up of tertiary processes that secondary processes set in motion and guide. The nest and the lava flows that result from birds building or volcano's erupting are tertiary processes. Bird nests fall apart when not constantly tended and lava flows erode. They are still processes -- normally very slow entropic processes of some kind.

On top of the tertiary processes is a level of reification of the world into things. Things are frozen abstractions of flows of events. We take these and construct illusory continuities through the process of ideation. The process of ideation takes things and makes ideational representations of them that attempt to approach the concepts we have of those things.

So you can see that the flux of experience has real depth in that we can look at that flux in terms of Tertiary, Secondary, or Primary processes.

Now what exists on the side of knowledge that is like the differentiation into different layers of process?

Figure 134:

VOID - Unmanifest (limit)	Meaning
Primary Process - Manifestation	Significance
Secondary Process - Living Beings	Relevance
Tertiary Process - Physical Processes	Bateson's Differences

## Reflexive Autopoietic Systems Theory

Reifications of Things - Nouns	that make a difference
Illusory Continuity - Simple Ideas	Differences
Ideational connections between things	Identities
Concepts - Complex Ideas (limit)	KNOWLEDGE

What we notice here is that knowledge is not simple but is in fact a very complex cultural object that is socially constructed. The sociology of knowledge addresses how this complex cultural artifact is produced. But there is no doubt that it is composed of concepts approached through integrated representations. When we start to apply knowledge to the world what we see first is that there are identities or isomorphisms that need to be drawn between the pieces of knowledge and things in the world. But as soon as we try to isolate the isomorphisms we notice differences that militate against the direct application of our knowledge in any given instance. Some of these differences as Bateson says make a difference or form a threshold which might cause a different reaction if crossed than might exist otherwise. How we react depends on our system of relevances applied in a specific situation that might change our response despite thresholds being breached. Out of that tailoring to a specific situation we go on to recognize significances which appear from the relations of one state of affairs to another within a situation. Significances are ultimately diacritical --- occur because of the relations between relevant things within a context based on the recognition of differences that make a difference. So the application of knowledge is very subtle in any given situation.

But the key point is that meaning is different from significance and arises out of the void or the unmanifest. Meaning is not a relation of significance between known things. Meaning is in fact an infinite horizon of discovery of the inner depths of things beyond their significances. We need knowledge as a prerequisite to seeing meaning. We need to recognize the differences between our knowledge and a given state of affairs. We need to recognize the important thresholds of response. We need to know what is relevant in any given situation. We need to understand what is significant. But meaning opens out to an infinite horizon of discovery.

I call this theory of meaning the GEODE theory. This is because all things are like Geodes. Geodes look like rocks. They are in fact formed as water seeps through bubbles in rocks leaving mineral deposits. Thus under the surface of the rock there is a structural lattice of crystals that is very beautiful -- the significances -- which frame an empty space. It is the empty space within each thing that makes meaning possible. If things were not intrinsically empty there would be no meaning in the

world. Meaning is our opening out on emptiness.

Our structure of meta-levels of learning/change in the wild learning organization is the crystalline structure of the geode. The practico-inert is the rock like exterior of the geode. The unthinkable is the inner emptiness of the geode. Through the realization of our ignorance it is possible for us to continue to learn indefinitely. As we learn we build up knowledge -- which is only valuable to the extent it opens new questions and makes us realize how little we really know. We take that knowledge and apply it to situations that are embedded in the universal flux of existence. In doing so we open ourselves up to recognizing significance at the deepest levels of the flux -- at the level of manifestation. But beyond that because we are intrinsically empty we open ourselves to the infinite horizon of meaning which is the jeweled net of Indra in which everything interpenetrates with everything else through the inherent emptiness of all things.

Think about meanings. Some of what we call meanings are significances of one thing's external relation to another thing. But there is a level at which we reach real meaning in which the internal relations between things become apparent and that can only occur because things are inherently empty and that emptiness is itself empty (i.e. a Void in the sense that the Tao Te Ching uses the word).

For instance, given my situation I am trying to make a significant intervention in this working paper by trying to get people to think more deeply about the concept of learning organizations. However, as I do so I reveal my own weaknesses and manifest myself with all my foibles. Beyond the significances of the concepts and how they relate to learning organizations you can see the horizon of meaning as one applies these concepts to other branches of learning or disciplines or interdisciplinary studies. Since we are talking at the level of epistemes and especially when we talk at the level of ontology it will become clear that if you try looking at the world through the lens of the things I am saying you will view the world in a completely different light. In fact you will uncover myriad meanings from the inner coherences of things you discover from this point of view, hopefully. Those myriad meanings are not limited by the significances that appear from the interaction of these ideas to the concepts of the learning organization.

**VOID - Unmanifest**

**Meaning**

- o The infinite meanings derived from applying these insights to all aspects of our lives. As human beings we are open to many many aspects of existence simultaneously and we can apply what we learn in discourse to any aspect of that existence.
- o Specifically it is unmanifest because we are not talking about these other things but everything we say can be related by us to everything else we know within ourselves as meanings.
- o At this level our discourses intertwine with the rest of our lives.

**Primary Process - Manifestation      Significance**

- o The facticity of the discourse itself as it develops historically on this list and within our culture. We are in fact encompassed by the discourse as a raw facticity of our existential situation as human beings.
- o At this level all the different discourses we are participating in is one single interleaved discourse which we multi-task to split into separate threads. But the separation is in fact artificial in our own experience.

**Secondary Process - Living Beings      Relevance**

- o The significant strands of argument and the coherences of these categories made by individuals who partake in the universe of discourse. By living within the discourse and experiencing their structures we are engaged in Heuristic Research in which we try to understand completely what the relevance of these categories are to us.
- o At this level there are different threads associated with each of the discourses we are participating in.

**Tertiary Process - Physical Processes      Differences that make a difference**

- o The ways in which these categories are used in discourse. They are continuously being invoked in multiple ways. We approach their appearances via humanistic methods such as Hermeneutics, Dialectics, Structuralism, Phenomenology and other humanistic methodologies.
- o At this level we have ongoing images of our interlocutors that we build up based on their messages to us.

**Reifications of Things - Nouns      Differences**

- o Epistemic categories like logos/physus or wild/tame that appear within our talk.
- o Ideally we would engage in multiple strands of talk at the same time in order to see the cross-currents.

- o At this level we are dealing with our reified images of issues, individuals, arguments, computer mediated communication etc.

Illusory Continuity - Simple Ideas      Identities

- o the written/oral talk about philosophy and learning organizations that attempts to use that knowledge that appears as cultural artifacts.
- o At this level we are projecting the argument from message to message in the stream of responses.

**Concepts - Complex Ideas                      KNOWLEDGE**

- o philosophy and learning organization as historical subjects and disciplines with a body of knowledge associated with both.
- o At this level we have our concept of communication via computer aided communication devices such as elists.

So to answer the questions posed here:

What is meaning? The interpenetration of all things.

Where does it come from? Out of the Emptiness of the Void at the heart of each thing including ourselves.

What is the relation between knowledge and meaning? They are opposite limits to human understanding of experience.

What we really need is an organization that is geared to the receptivity of meanings.

Learning in an organization is not enough. We must apply what we learn to garner wisdom and that wisdom naturally leads to the uncovering of an infinite horizon of the emergence of meanings within our lives and the lives of others we associate with.

The primary goal of modern organizations is the repression of the upwellings of meanings in our lives.

Why is it Business seeks to keep us busy? So we will not have time to stop thinking about significances and to reflect on meanings that arise continually from the void.

Thinking deals with significances. When we stop thinking and reflect we encounter myriad meanings pouring in on us from the void. If we keep thinking about this and that we can effectively repress these meanings --- to the point that for many it is as if they do not exist.

Our schools teach knowledge but the history of Western Culture is one of a suppression of meanings. If you look at Foucault's THE ORDER OF THINGS you will see that the Medieval Episteme was geared to seeing meaning in the world and we have progressively changed our epistemes in ways that exclude meaning. Now we have gone to the extreme in the intensification of nihilism (active and passive destruction of meaning) and it is time to reverse this trend and learn to see meanings again.

Many traditional cultures use knowledge as a spring board for the uncovering of meanings. Our culture uses knowledge as a means of suppressing meanings. One way this is done is by not recognizing levels of process below the reification of things.

\* \* \*

Heidegger has the idea of the They (Das Mann) and the fact that when we fall into inauthenticity we are immersed in the They. It is a kind of collusion in which everyone is caught up in the turmoil of things and no one really confronts their "ownmost possibilities" i.e. the possibility of Death. I mean something similar to this when I say we are kept busy I mean by ourselves in collusion with everyone else. However, instead of death itself I would substitute the Void. We are authentic to the extent we reflect on the Void -- the emptiness inside everything. And going beyond Heidegger I would say that when we turn toward the void and become authentic that is because we are focused on the meanings that are pouring out of the void when we do not suppress them by significances (i.e. diacriticalities). I draw a sharp distinction between:

significance  
relevance  
values  
aesthetics

AND

meaning.

Significance, relevance, values, and aesthetics are all diacritical in the sense that Sussaire (sp?) (Course on General Linguistics) uses the term meaning the relation of everything to everything else synchronically and diachronically. This means we see something as significant in terms of its differences with all other things and through drawing what Bateson calls differences that make a difference we prioritize these significances and create threshold values of what is significant to us, or relevant, or valuable, or aesthetically pleasing etc.

But meaning is different from these diacritical characteristics that weave a web by which we are trapped in the They. For instance, I saw an old Indian on TV once who said that when he was a child everything in the world had meaning but by living the life of the dominant culture he had lost that sense that was still alive in his people when he was a child. Hearing this and other similar Indian testimony we can clearly distinguish meaning from the nihilistic artificial illusory continuities projected by our culture through the process of ideation. Most people within our culture do not know how to become authentic again and access meaning except when it floods in on their lives through tragedy of the death of a loved one or some other similar catastrophic event that breaks the web of our comfortable existence within the security of the They.

One way to begin is to look at the concept of Fate. Within the Indo-European worldview fate used to be a key concept -- in old English it was called the WYRD. Fate is our absolute determination out of the Absolute Past (which can never be made present). This absolute past is always already lost. But it appears to us in allusions and many times as a primal scene by which our worldview coheres. When we begin to explore our own fatedness (part of which is our birth and death) then the realm of meanings begins to open up within us. In other words it does not open up by considering relations between ourselves and all the other things in the world. But instead it opens up by considering our relation to the aspect of the world that never appears. That is a deep source within ourselves that is seldom tapped by artificial or superficial time. It is only deep time (mythic time) that taps that source.

In Heidegger, the concept is that by constantly confronting ones finitude one can

become authentic. But just thinking about death all the time is not enough. Instead one should think about one's fatedness and one's connection to the absolute past from out of which future and past unfold which is distinguished from the becoming of the unfinished present. When something is finished (completed) then it is possible to see the meaning in as opposed to the diacritical significances (relevances, values, and aesthetics.)

My model of the learning/changing within an organization is like steps that go up toward the attic but actually just end suddenly at a void. As we work within an organization everyone is looking downward toward the lower meta-levels concentrating on the BUSYness at hand. However, at any point the individual or the whole organization could look upwards toward the void (emptiness) that informs everything they do. As soon as you introduce emptiness into activity and realize that things and processes are inherently empty, then the first question is WHY are we DOING THIS???? The first question is what is the meaning of what we are doing? How many of us have an answer to that question? When you orient yourself toward that question and make your actions and products a means to coming to terms with meaning then everything changes for that person or that group of people. Suddenly the nihilistic bonds that hamstring us fall away and each instant we are in a state of wonder at the manifestation of everything out of the void. It all just wells up unbeckoned from the void and is full of unfathomable meanings that are awesome.

This is the difference between organizations that are drenched in their own darkness and those that bask in the light of wonder. One looks down toward the practico-inert and the other orients itself by looking up through the meta-levels toward the void at the end of the stair case of meta-levels. What is wonder but the inability to think about something. At meta-level five we hit that barrier. It is similar to the barrier in mathematics created by the Group A5 that do not allow degrees of five or higher to be solved except by analysis. It is a fundamental limitation built into our beings. Many people talk about the finitude of man -- but seldom do people say exactly where that finitude occurs in us. The claim here is that it occurs at this fifth meta-level of learning-changing.

This is the point. The ontology presented here is empirical. Try to think the fifth meta-level of learning change. Bateson bets you cannot do it. If you cannot do it then what is this unthinkability? I interpret it as emptiness or void. Once you see that there is a direct bridge to Buddhist theory of existence which says that there is

no self (atman). The self of the worker and the organization is hollow -- is founded on nothing, is groundless. Since Nietzsche it has been clear that our world view is groundless, founded on an abyss. This means every organization and every self in each organization is essentially empty, and this emptiness is ungraspable because the emptiness is itself empty.

But what happens when you reverse the viewpoint and accept this void as the starting point rather than a bad end where all our systems fail? What happens is that you see that the world does not disappear but it becomes split into two different visions. These visions are discussed by Plato in the parable of the cave in the REPUBLIC. Our organizations are like the cave where we all labor inauthentically under the delusions that we collude to project together as a means of avoiding facing the groundlessness of our existence. But occasionally one of us gets pulled out of this cave out through the opening of the void. When we enter that void we realize that forms do not disappear but instead that everything becomes crystalline, like the inside of the geode that we can only see because of the empty center. That pure and crystalline nature of things is the realization that everything is empty and because of that emptiness everything in existence interpenetrates. In Buddhism this is called the Tathagata Gharba or sometimes the Dharmadatu. The point is that the person that is taken out of the cave, when they re-enter the cave realizes that the inside of the cave and the outside of the cave are the same reality not some transcendental reality. Understanding how these two could be the same took hundreds of years within the Buddhist tradition.

We don't have to be Buddhists to appreciate how the structure of our worldview has these very mysterious qualities of finitude and absolute limitation that effect every thing we do.

Consider this. It is only by moving up meta-levels that we can exert control over change in our organizations or selves. But we can only move up four meta-levels so there is a clear and fundamental limitation to our possibilities of exerting control within the world over ourselves or our organizations. Also looked at from the point of view of learning there are just four meta-levels of learning so we are limited fundamentally in our comprehension of things. Between not being able to control deeply or understand deeply we are caught in what is really a very tenuous situation as our organizational and self structures are not just groundless but we are pushed up close to that groundlessness all the time.

From this perspective it is easy to see how the real problems of existence revolve around the void and emptiness of all things and that our tradition is very short sighted in its total immersion in things and events that it gives mundane designated-as-real status. Up till this point there was no real connection between our worldview and that of the Buddhists and Chinese. However, with the realization of the Fragmentation of Being within modern ontology and the conceptualization of the finitude of meta-levels suggested by Bateson we are suddenly thrown into a more sophisticated and subtle realm of philosophical exploration that encompasses everything we do as organizations or selves as we unfold from the abyss and infold back into the abyss-- that groundlessness that subverts all our actions and renders all our viewpoints nihilistic when they suppress the meaning that overflows from the void.

### **Summary:**

We have been advancing a theory of learning organizations based on some philosophical considerations.

We have identified a level of explanation between theory and worldview called the episteme. This level was first proposed by Foucault in THE ORDER OF THINGS and ARCHAEOLOGY OF KNOWLEDGE.

The level of the episteme is an emergent level at which knowledge arises. Knowledge is the most persistent thing in our experience.

The heuristic levels so far identified are as follows:

FACT

THEORY

PARADIGM (mindset) (assumptions)

EPISTEME (highest categories and fundamental categorizations)

WORLDVIEW

So far several phenomena have be focused on at the epistemic level:

1) the Philosophical Categories (highest concepts) (Igvar Johansson, Kant, Aristotle)

2) Dualities

## Reflexive Autopoietic Systems Theory

a) physus / logos  
matter      consciousness  
practical impractical  
material    ideal  
facts        theory

b) tame            / wild  
controllable uncontrollable  
apollonian    dionysian  
vishnu        shiva  
etc. (there are many more than these)

### 3) Temporality

Linear time of Augustine with Past/Present/Future is the  
everyday guise of surface time  
This unfolds into the time of physics

Surface timespace = Past + Present + Future - nowhere

This is Minkowski spacetime;

See also Heidegger's TIME AND BEING

Surface spacetime =  $x + y + z - t$

Einstein's relativity theory

To produce deep time relative past and relative future  
collapse together to form the absolute past which the dual  
of which is the present flux which Wm. James called the  
Specious Present.

Deep time = absolute past (completion) / presence (incomplete)

frozen static Being                      flux

Parmenides                                      Heraclitus

source of dualities                          chiasm

Utterly deep time = chiasm of stasis and dynamism

In Plato's SOPHIST the sophist says what we really want is  
"change and changelessness at the same time"

### 4) Nihilistic dilemma

Will to Power toward productivity and profit ONLY leads to a  
destruction of meaning as a side effect of perspectivalism.  
Split between the nonprofit and profit oriented motivations.  
Ambivalence in our self-perception as pacifists and  
militarists.

## Reflexive Autopoietic Systems Theory

5) Chiasma (anti-chasm) -- prior to the arising of dualities  
Orthanc - the chiasm of thinking and thanking  
Spacetime/timespace  
learningchange/changinglearn = wisdom  
tamewild/wildtame

6) Wisdom

The point of reversibility between learning/changing is viewed as wisdom. Wisdom is experience (physus) plus knowledge (logos). In the heart of practice is wisdom embedded as an intrinsic part. The love of wisdom comes from the realization of the global Sameness of practical experience and theoretical knowledge.

7) Mobius Distinctions

Dualistic distinctions cannot be made once and for all. But in fact the dualities are like the Mobius strip which has local duality but global sameness. See Heidegger IDENTITY AND DIFFERENCE. At different points along the Mobius strip the distinction is drawn differently. So there are multiple perspectives on every distinction.

We have used Bateson's hierarchies of meta-levels of learning derived from Russell's Higher Logical Types as the basis for positing that there are four meta-levels to the learning organization.

We are concerned not only with the logos of learning but also the physus of change. We posit that at every meta-level there is a chiasm between learning and change. The effect of one meta-level on a lower meta-level is through the differential application of either change or learning. The chiasm of the two cannot effect the lower meta-level but is a way of looking at the inner coherence of things at that meta-level. Each meta-level is expressed as a meta-language that is used to talk about the lower meta-level.

The bottom of the hierarchy of meta-levels is posited to be what Sartre calls the practico-inert. It is congealed habitual unconscious thing-practice-theory.

The top of the hierarchy of meta-levels is the unthinkable. We interpret the unthinkable in terms of the Buddhist "sunyata" or emptiness that is itself empty. Emergent things arise out of this emptiness and are accepted within the organization

in stages where the different meta-narratives are constructed in order to understand the novel thing that arises. The level of emergent things is by definition wild or Dionysian. The level of the practico-inert is by definition tame or Apollonian. Thus the wild/tame duality becomes the two ends of the ladder of meta-levels of change/learning.

The purpose of this model is not to be just another model of a learning organization but instead is a point of departure for understanding all possible learning organization models. We have attempted to use the epistemic level to allow us to see what the possible structures of dualities allow us to posit as the basis for a learning organization. This is possible because what we derive from learning is knowledge. Therefore it is the epistemic level that constrains the possible forms of the learning organization.

This is a point of departure for a deeper study of the worldview that encompasses this model. This will be the next subject that will be breached in these notes.

As we begin to explore the ramifications of these hints it is important to keep in mind that none of us know anything at this level. To know about knowledge would be meta-knowledge which is not available to anyone. Notice that all the levels of learning only produce knowledge. None of them produce what might be called meta-knowledge. Meta-knowledge would be knowing about knowledge (ie concerning its ultimate status with regard to Truth, Reality, or Identity). Likewise each meta-level of change/learning only has wisdom as its chiasm not meta-wisdom (what ever that might be). Similarly each level of change produces impermanence or flux (the least persistent thing) --- none of the meta-levels produces any meta-flux (changes of change is still a fluctuation). There is nothing beyond knowledge (the most persistent) and flux (the most impermanent) and wisdom (the inner coherence of these two). This is why the series of meta-levels end in the unthinkable. Heightening learning can create more sophisticated knowledge but since there is nothing beyond knowledge as a higher meta-level there is an intrinsic limit to this sophistication. In the same way going up the meta-levels of change only gives us a deeper understanding of the flux of things in existence. It does not introduce us to any thing beyond change itself. As is said the only thing that does not change is change itself. As for wisdom it is clear that this too is a limiting concept. What would be beyond wisdom to attempt to obtain? Only a god like status. Only our images of gods have attributes that go beyond knowledge, change and wisdom. Human beings are limited to these as defining attributes. This is why

we are called rational animals. The rational part is connected to knowledge and the animal part is connected to change. Beyond rationality our only further goal is to obtain wisdom. Wisdom is something that if you claim to have it you lose it by that very act. It is the understanding that the Tao remains forever nameless. What we have instead of meta-knowledge is an intrinsic ignorance and we need to stick with that ignorance and explore its ramifications.

One of the things that quickly happens is that we start wondering about the context of the episteme which is the worldview. How does that work and what relation does it have to the episteme. Can we really understand our knowledge separate from the world in which it appears?

## 10. The Logical Nature of the Social

In this final section I intend to discuss the answer to the problem of intersubjectivity. Husserl posed the problem in his *Cartesian Mediations and Logical Investigations*. And Ivar Johansson takes this problem very seriously in his *Ontological Investigations*. Basically the answer that he and others, like Goertzel, have come up with is the idea that there is a ramification of mirrorings within each person of the persons around them. This takes the form of a kind of infinite regress of thought “If I do this, and They do that, then I could do something else. . .” We can see this as the infinite regress within the tetrahedral magical mirrorhouse. But there is another way of looking at this problem which takes into account non-duality. Say that my experience is made up of knowledge and flux. Knowledge being the result of the learning at all the four meta-levels of learning. Flux being the result of changes at all the four meta-levels of change. The non-dual relation between learning and change is Wisdom. But the dual relation between them is Knowledge and Flux.

Now suppose that I get married. So I can look at the relation between my knowledge and flux and contrast that to the knowledge and flux of my spouse. Or within the autopoietic system of marriage I can look at my knowledge in relation to the flux of my spouse OR I can look at my spouses knowledge in relation to my experience. Thus in an autopoietic system there are four ways to combine knowledge and flux. As they exist in each of us or as we compare our knowledge to the others flux. There is not just the wisdom of each of us but something deeper that we can share. This is Gnosis. It is the Knowledge we have of each other from within. How can we have knowledge from within? Because we can look at the pair

not as a couple of individuals with their own flux and knowledge but also can look at the couple as a crosswise --chiasmic -- paring of the knowledge of one related to the experience of the other. If these knowledges and experiences are completely different then this greater contrast will cause an even deeper level of understanding of each other's knowledge and experience. This is why traditional cultures attempted to segregate the lives of women and men. A good example is the radical segregation evidenced in classical Greek society.

Now we have described the quaternion level where we compare knowledge and wisdom between different people within the autopoietic symbiotic dyad rather than considering them as individuals. We can do this because we are thinking them chiasmically or non-dually instead as organisms that are separate. We are considering the reversible field between the two organisms that are symbiotically related to each other. But we can move up a level to the reflexive social level by considering that each of those engaged in the symbiotic relation have different points of view on it that occur simultaneously. Thus each of us repeats the assessment of our flux based on our knowledge, our knowledge based on the others flux, our flux based on the others knowledge and the projection of Otherness in which we try to imagine their knowledge based on their flux. Each of the two are considering this at the same time and so they project the octonion and its distortion of the social field. These distortions occur because at the octonion level it matters how things are associated. So when we compare knowledges and fluxes we cannot merely revolve the rubric's of the cells of our knowledge and flux at will. Instead the movements are not commutative and beyond that are not associative. So different rotations give completely different views of the states of affairs between the two and their world. When we realize that each married couple generates a similar closed system then we see that the world can be modeled as autopoietic and reflexive systems. The autopoietic nodes are analogous to the  $ijk$  of the quaternion. It acts as an externally mirroring surface that reflects all the other autopoietic nodes in the autopoietic network. The octonion nodes are like closed minimal systems and can be thought of as tetrahedrons with mirror surfaces on the inside. They generate a pattern of eight quaternions. The autopoietic system is opaque in that each of its parts can act as if it were the whole containing the other parts as its own parts. The octonion is opaque on the outside of the mirrored tetrahedron. The mirrored tetrahedron creates the projection of itself which can be seen as an example of the 'belonging together' of Sameness spoken of by Heidegger in Identity And Difference. It is the difference between what Onar Aam calls the Magical Mirrorhouse and the normal non-magical Mirrorhouse. The former is one pretending to be two and the other is two

pretending to be one. The octonion is the external mirroring of the quaternion. It produces the minimal system that can be seen as tetrahedron, Mobius strip, knot, and torus. But beyond that is the infinite depths of interpenetration that represents the rest of society composed of other families that likewise engage in autopoietic and reflexive mirroring.

Each couple at the experience level forms an autopoietic symbiotic system where each has access to the other's knowledge and experience. But at the reflexive level the otherness of the Other in the relationship is brought to the fore as each approximates the otherness of the Other by triangulating via non-dual relations. Since this is happening from both sides of the symbiotic relation we get the octonionic reflexive structure that appears as the mirroring reflections within the minimal system.

Figure 135:

His Knowledge and His Experience	An autopoietic relation
Her Knowledge and Her Experience	within marriage
His Knowledge and Her Experience	
Her Knowledge and His Experience	

These relations are not commutative and are described by the quaternion.

\* \* \*

Figure 136:

His Knowledge and His Experience	A reflexive relation
His Knowledge and the other's Experience	within marriage
The other's Knowledge and His Experience	
The other's Knowledge and the other's Experience ==>	THE OTHER
Her Knowledge and Her Experience	
Her Knowledge and the other's Experience	
The other's Knowledge and Her Experience	
The other's Knowledge and the other's Experience ==>	THE OTHER

These relations are also non-associative and are described by the octonion.

Note here there is an infinite regress but it is contained by a finite structure that contains the distorting reflective structure discovered within the mirrored inwardly reflecting tetrahedron. It is like there are four mirrors facing each other and reflecting. There is no higher structure because of the closure of the tetrahedron.

In the case of the quaternion there is a reflection of everything beyond the dyad of

resonating organisms locked into the non-nihilistic marriage relation. The inside of the dyad is opaque to us. The only thing we know is that each part can be the whole containing the other parts. We also know that the pair gives rise to three as occurs with the birth of the child from the symbiotic couple.

In the case of the octonion there is an inward reflection that produces the appearance of the Other (as the synthesis). The couple gives rise to the child -- a new synthesis beyond themselves -- by the action of the dialectic. They form a meta-system for the creation of new individuals that will later form reproductive (autopoietic) and social (reflexive) dyads. Within that meta-system there is a mutual mirroring that allows otherness to appear diffused as myriad reflections within the minimal system. That pairing is opaque from the outside. Thus we can posit that the quaternion which is outwardly reflective and inwardly opaque and the octonion which is inwardly mirroring and outwardly opaque form an interval that we can associate with the Clearing of Being of Heidegger within which the Fourfold of the world comes into existence.

The positive fourfold and the negative fourfold together form the octonion and we can see it as the mirror of the ogdad of ancient Egyptian religion. In that religion Atum (Atom) appears manifest from the ogdad which is the ordinary eightfold before creation. The ogdad forms a mound upon which rests the Atum. The Atum is quaternionic outwardly reflective side of the clearing in Being whereas the Ogdad itself appears as the eightfold octonion that can be also considered as the fourfold quaternion. The surface of the mound that arises out of the primeval waters is the inward reflectivity of the tetrahedral minimal system while the outwardly reflective atum is the view of the quaternion from the outside as it appears as a Leibnizian Monad. In our tradition the negative and positive fourfolds have been dualistically separated and associated with male and female (See The Fragmentation Of Being And The Path Beyond The Void). But when we take the lost metaphysical principle of the negative fourfold and combine it with the positive fourfold enunciated by Socrates in the Gorgias and developed by Heidegger as the structure of the world the we get a non-dualistic view of the infinite regress of the social reflectivity within the closure of the minimal system generated out of the autopoietic dyad. The infinite regress is not an infinitely extensible hierarchy of moves and counter moves projected by the two people locked in the resonating social relationship. Instead the regress is a mirroring within the closure of the minimal system that creates patterns of reflection that allows us make closure on the Otherness of the other within the non-nihilistic symbiotic relation of marriage. Marriages are supported by the culture

which is made up of a mirroring of the marriage state. We see nodes of autopoietic pairing that are sites of reflexive mirroring that all mirror each other as separate households within the city. There are degrees of meta-systems. The city and the household are both partial meta-systems within the wilderness. As we transition between the wilderness and the system of the individual male who is the focus of the positive fourfold we see these shadows of the family and the city that ameliorate the harshness of the raw wilderness of pure complementarity. These intermediary stages appear as manifestations of the negative fourfold that haunts the positive fourfold. They appear because the male householder can enter into autopoietic relations with his wife and others within the city so that the household and the city become meta-systemic shadows of the property owner. Today we might think of the corporations and their destructive relation to families and neighborhoods. The corporations or the governmental bureaucracy feed off of the social fabric and the families yet they work to destroy them in many cases. The shadows of the corporate destruction of the social fabric continually haunts the corporate system. It cannot escape these shadows of our finitude upon which the corporate system preys. Families and neighborhoods are inefficient. But they are the social fabric out of which the corporate structures spring and on which they must continue to feed in order to exist.

So this is another solution to the problem of intersubjectivity that sees not an infinite tree of game moves within each other's heads he or she contemplates the Other, but instead a regress of infinite fractal reflections within the closed space of the minimal system that can be 'taken in' as a single reflective pattern. I believe this is a unique solution to the phenomenological problem of intersubjectivity. It is possible because we take the social as fundamental instead of the individual like most of the existentialists. Then we appeal to the mathematical analogy of the octonion reflection within the tetrahedral minimal system for a model of infinite reflection within a finite space. And finally we see the octonion as the embodiment of this reflective pattern at the level of the reflexive system that is the embodiment of the socius (the living social field). With this argument we have finally attained the threshold of the social.

## **11. Our Finitude**

The non-dual is not a mystical state but a very common state. We are continually going into micro-trances when we read or fall into conversation or we concentrate on things. These micro-trances are manifestations of the non-dual. In them we can

explore possibilities but cannot realize those possibilities until we emerge into a dualistic way of looking at things that separates ourselves from them so we can manipulate them. Thus we need both the dual and the non-dual approaches to existence and we use them naturally all the time without realizing the transitions between the micro-trance states and dualistic states where subject and object are dualistically separated. All these states of micro-trance are associated with the aspects of our finitude that make us human; like eating, sex, presenting ourselves to others, work, and play. Think of all the variety produced by us in foods and eating situations. How about all the variety in erotic situations and materials. The whole fashion industry operates merely on the fact that we want variety in how we appear to others. This is because when we look at another we go into a micro-trance as we size them up and they size us up. So it is with reading, watching media, and engaging in conversation. All of these states allow us to explore the possibilities of things and manifest infinite variety. These are all social nexes. So in the variety we are seeing the action of the infinite reflexivity of the distorting octonion structures. It is this distortion that allows the difference to appear. And in fact the mandelbrot and its meta-mandelbrot and meta-meta-mandelbrot higher level fractal structures are the basis of this explosion of complexity and difference that appears at the levels of complex, quaternionic, and octonionic systems. When we look at the fashion industry, food industry, pornography industry, media industry we see whole segments of our economy based on the infinite distortion and variety production related to our finitude. Because we are finite we desire the infinite mirroring of desire in these social nexes. And we desire desire first before any one particular desire (cf. Anne Carson Eros The Bittersweet). We do not prefer to eat alone, we have sex with others (for the most part) and wear clothes for others. We work and play with others. We are in our finitude social creatures and that sociality leads to infinite variety. Notice the finite aspect associated with sleep. There is not nearly the explosion of variety production associated with sleep as an industry as the others that were mentioned because that is something we do on our own. But when we sleep we even dream of the others and our dreams produced the same infinite variety that we see outwardly in the other fields associated with our human finitude.

Our finitude as creatures leads from the social expression of that finitude to an infinite distorted reflectivity and variety production. This is because our human finitude comes out of the social situation of reproductive symbiotic organic relation between us as creatures and the non-nihilistic distinctions that we socially construct such as marriage. The point is that within the infinite iteration of the mirroring there are frieze patterns such as those discussed by Stuart Kaufmann in his developments

of Spencer-Brown's Laws Of Form. As he notes there are often several points of view on every iterative frieze pattern of distinctions. Out of that he develops the rudiments of the special theory of relativity which we have seen is a mathematical formulation of the interval structure of the chiasm whose reversible phases look different from the points of view of different observers. We can use Jamarie's Subjectivity Information And System formulation of relativistic information theory to understand how this chiasma plays itself out in relation to the information patterns that appear within the social sphere. We go beyond this to attempt to understand the next levels up that are associated with the quaternion and the octonion. Systems theory needs a relativistic information theory to posit chiasmic difference between the different viewpoints of observers which after all represent orderings from no-where that co-determine each other's experience and co-evolve with each other constituting a single social field. But we cannot understand this fully without seeing that these observers form autopoietic symbiotic cognitive/living unities and go on to reflect on each other's Otherness at the reflexive level. Within this mirroring there are patterns within the reflection that are stable friezes and the generator of these stable patterns are non-nihilistic distinctions -- that is the distinctions that our social structures are founded upon. Marriage is a pertinent example of such a distinction. You cannot tell a married person from a non-married person by looking at them -- if they are not wearing a ring. But you can only figure out that they are marriage by knowing their history within the social contexts of which they have been apart. This non-nihilistic distinction is invisible within society but has profound implications for every act performed by the married person that defines them over against the non-married person. These invisible vertexes within the reflective patterns indicated by them but still invisible are the stuff of the social. All the reflections within the social fabric define and point to the non-nihilistic distinctions within society that are recognized and acted in relation to by everyone whether they transgress the distinctions or preserve them. The continual transgression of the non-nihilistic distinctions and the active and passive nihilism of members of society reflect the blindness of those who consider themselves independent individuals who ignore and destroy the social sphere. The production of nihilism is intimately related to the maintenance of the visibility of the non-nihilistic distinctions. Our society produces nihilism as a by product of the maintenance of manifestation of persistent things within the world. Within the nihilistic profusion there are maintained the invisible non-nihilistic distinctions that allows us to navigate the social field. Beneath the relation between nihilism and non-nihilistic distinctions there is the production of the profusion of variety related to our finitude in its infinite social reflection within the closed nexus of the minimal

**Reflexive Autopoietic Systems Theory**

system. Beneath the relation of finitude to infinitude is the relation of the negative fourfold to the positive fourfold -- the ultimate showing and hiding regime within our world.

Here is my model of the Worldview:

*Figure 137:*

```

ontic --- beings, things, entities, stuff within the world
-----
ontological difference between beings in world and Being of World
-----
W -- ontology --- Being --- Pure Presence--- Form
O -- ontological monism --- Is is. --- Process Being--- Sign
R -- ontological dualism --- Is isn't.--- Hyper Being --- Trace
L -- ontological multiplicity --- ' --- Wild Being --- No-trace
D -- unthinkable, impossible, absolute ignorance, utter Otherness
-----
emptiness --- VOID --- interpenetration- antidote for Being
The realm of non-nihilistic invisible distinctions
-----
meta-ontology -- ABYSS --- Groundlessness--- fragmentation of Being
end of metaphysics
meta-illusion
The realm of the endless production of illusion and
nihilistic distinctions.

The meta-levels of Being separate the special systems as we move from
system to meta-system
SYSTEM Individual Whole unifying Parts
pure presence
DISSIPATIVE SPECIAL SYSTEM Will to power (Father) Reality (Full Order)
process Being
AUTOPOIETIC SPECIAL SYSTEM Household* Duality (LO-D/PO+D)
hyper Being
REFLEXIVE SPECIAL SYSTEM City* Partiality (PO)
wild Being
META-SYSTEM Wilderness Firsts appear in
Void
Full Meta-System No order

```

\* Partial Meta-system

In order to realize autopoietic resonance we must first have duality. Duality is a prerequisite for resonance. We might associate that with what Lacan calls the sign of the Father. The autopoietic symbiotic relation between the mother and child comes first. Then the Self of the child appears with the advent of the mirror stage and after that the symbolic relation with the father that is intrinsically Oedipal manifests. So we see in Lacan the three stages are recognized but the genetic order is not the same as the mathematically motivated order.

Our finitude is based on our historical place within the socially constructed world founded upon the basis of intersubjective non-dual relations between people. We rise out of that primordial social soup to assert ourselves as individuals. We maintain that illusion of our independence though the production of ideational illusions that repress the variety production and the meta-systemic relation in which we must engage to survive. If we looked through a glass bottomed boat down into the sea of the social we would see the non-dual social fabric below the socially constructed dualistic superstructure. We need to ground ourselves again in that fabric by founding a non-dual social phenomenology that is the basis for exploring autopoietic and reflexive sociology. Because these social relations can be simulated it is possible to construct a computational sociology that produces the virtual hyper-reality that Baudrillard speaks of as a Virtual Reality that mirrors the human social formations in the opaque mirror of alien artificial intelligences. The computational sociology refines the dualism that the social phenomenology attempts to go beyond with its non-dualistic theorizing and social analysis. Between dualism and non-dualism there lies the autopoietic and reflexive sociology which concentrates on understanding the ultra-efficient special systems. This is the study of holonomics, the ordering that is non-dualistically shared between logos and physis that is poised between system and meta-system.

## 12. Epilogue

This series of working papers along with the companion pieces from the series On The Social Construction Of Emergent Worlds records a wild ride and an intellectual adventure. Ben Goertzel has called them “conceptual sculptures” differentiating them from rigorous science. I think of them as the result of wild speculative inquiry based on Heuristic Research. Here the form of working papers embody all the four

kinds of Being in the process of the emergence of knowledge of the special systems into our worldview. The working papers represent the tenuousness (of Process Being), the discontinuities (or Hyper Being) and the wild eccentricities (or Wild Being) within the frozen narrative (Pure Presence). Both series are the spin-offs of my book project called The Fragmentation Of Being And The Path Beyond The Void. Basically that book establishes the philosophical ancestry of autopoietic systems theory in the Laws of Plato. Many autopoietically structured myths are explored and interpreted in the light of the basic tenets of autopoietic theory. Through this work I discovered a lost possibility within the Western Philosophical tradition that was lost when scholars and others concentrated on the Republic instead of the Laws. the republic is the best city and the city of the Laws is said to be the second best city. But the best city in which pure Communism reigns is impossible for humans to live in and was fit only for the gods. In the second best city Plato outlines how to build a city that will last as long as the Egyptian empires and that city is based on the form of the autopoietic system. By learning about the autopoietic system in its social form I became interested in the problem of extending the autopoietic theory formally to encompass the social. These two series of papers are that attempt which ended up with the analogies with the mathematical objects as the means of understanding the difference between autopoietic and socially reflexive special systems. Then when I returned to the mythological work I found the stories leading up to the epic of Jason and the Argonauts had the same structure differentiating between the purely autopoietic system (Aeolian Isle) and the reflexive autopoietic system (Argos the talking ship). The genealogical lines between the earlier nexus and the later mythic nexus show the breakup of the autopoietic system and the reinstatement of the higher level reflexive autopoietic system. But these myths, being brutally honest do not paint a completely rosy picture of this process of breakup and renewal nor the aftermath of the marriage of Jason and Medea.

Besides discovering that autopoietic and reflexive systems are a hidden possibility within our own tradition I also discovered that these special systems can be a bridge to the Chinese traditional scientific disciplines such as Acupuncture. The Chinese looked on all phenomena as reflecting their own social structure and so thought of them as autopoietic and reflexive first before all other models are applied. Thus a clear bridge can be built which allows us to understand traditional Chinese science on the basis of the anomalous autopoietic theoretical position.

Having bridges for autopoietic theory back into our own tradition and also into the

Chinese tradition helps us appreciate the lost sophistication of these traditional cultures and their understanding of the world. Our crude misreadings that place us highest on the scale of cultural evolution may have to be radically considered as we realize that the point of view we are just now approaching of a non-dual way of looking at the world is something that other cultures have long had and which they have developed into a highly sophisticated way of looking at the things and states of affairs in the world.

But beyond that we now see that there is an alternative way to construct a sociological/psychological theory based on mathematical analogies like those used by physics and other hard sciences. One part of mathematics for which little use was found to hold the key to this analogy. And through the power of the analogy we can predict many counter intuitive aspects of social and psychological theory that we would have not expected before. We have shown that there is an emergent ontological hierarchy that parallels the ontic phenomenal hierarchy. We have seen that the difference between system and meta-system is very important. We have located the dissipative, autopoietic, and reflexive systems as holons poised between system and meta-system. We have recognized the ultra efficacy of the special systems and their other strange characteristics. We have recognized the mathematical analogies between these special systems and the series hyper-complex algebras. We have explored these analogies in many directions and are still finding them giving rise to unexpected theoretical vistas. For instance, we see that there is an analogy between superconductivity and the autopoietic special system and that this has further analogies on the social level with what Sartre called the fused group and what Cannetti called the pack but which today we call the workteam that 'clicks'. I have produced a tutorial on Work Process Engineering that lays out the implication of non-dual theory and the ultra efficiency of the autopoietic special systems for human teamwork.

I am in the process of trying to cover this ground again and make it more accessible in a book called Holonomics: Between System And Meta-system. In that book essentially the same territory will be covered but in a way that more people can relate to. These working papers were meant to be flights of fantasy that would take us to a new way of looking at things. They succeeded in that beyond my wildest dreams. It has been an intellectual adventure of a life time and the culmination of many years of study and research. I am very pleased that my studies on ontology have paid off so handsomely with not just a new kind of philosophical ontological position but a deeper understanding of the structuring of the way new things come

into existence. They do not only pass the stages of the meta-levels of being on their path of emerging from the void as I found in my Ph.D. dissertation (The Structure Of Theoretical Systems In Relation To Emergence), but also those stages are separated by the three special systems which give an important new understanding to the structure of our world view. Those special systems allow the impossible to occur in very special circumstances within our world. That impossibility is the ultra-efficiency of superconductivity which is realized at the social level in resonant states of the social fabric. It is the possibility of that impossibility as a rare actually occurring event in existence that makes all the other relations between more normal states of affairs possible. Thus our worldview is structured by the states that it forces new things to pass through as they come into existence. And they are forced into liminal states that are ultra efficient that only occur rarely but whose possibility structures all of our normal existence. And exactly these same structures appear in the earliest myths of the Greeks that inaugurate our worldview, so that their rediscovery is also approach to the most ancient and fundamental essence of our worldview through an understanding of the fragmentation of Being in the context of the special systems that arises as the hinge between the system and the meta-system.

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intellectual adventure. It is similar to the adventure of Watson and Crick who discovered the structure of DNA. Here we are looking at a theory about the inner structure of the social/psychological realm based on mathematical analogies which if they pan out will be no less important. Today we do not know the structure of the social from any mathematical perspective. But on the basis of this work we have discovered that one structure that has had little luck being applied to physical phenomena may hold a promise for helping us to understand the structure of the social and the living/cognitive or autopoietic. This discovery has been exciting and I am looking forward to working with others to unfold its implications and attempt to find ways to demonstrate its efficacy for comprehending the social emergent level of existence. It has been a pleasure to work with Onar Aam, Ben Goertzel and Tony Smith in the development of the different aspects of the ideas presented in these papers and hope our collaboration will continue in the future.

Would like to thank Robert Wellman for his questions and comments on this paper and my long book. Also I would like to thank Ian Dallas, my teacher and mentor. Private conversations with Ben Goertzel contributed significantly to the thinking behind this paper. Bob Cummings and Bruce Deitrich listened to the ideas contained here many times, I appreciate their interest.

This is the fourth paper in a series of papers called STEPS TO THE THRESHOLD OF THE SOCIAL. The other papers are available on request. For more information see the DialogNet homepage <ftp://ftp.std.com/obi/Zines/Thinknet/info.html>

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