Radical Knowledge Discovery and Emergence

Exploring the limits of knowledge

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Introduction

In 1982 I received my Ph.D. from the London School of Economics in Sociology with a dissertation titled "The Structure of Theoretical Systems in relation to Emergence." In that dissertation I was looking at the relationship between the evolution of theoretical systems and discontinuous breaks in the tradition called at the time Paradigm Shifts using a term given to this phenomena by Thomas Kuhn in Structure of Scientific Revolutions which subsequently has become a classic in Philosophy of Science. My own work related to attempting to understand how Emergent Events can occur within our Western Tradition. This name is taken from G.H. Mead who wrote The Philosophy of the Present. He developed a little appreciated work that gave a deeper appreciation of the problem than that given by Kuhn. Emergent events transform our world by opening up new possibilities, causing history to be rewritten, changing the nature of the present and the mythos of our culture. They can happen on many different levels of our scientific culture, from facts, to theories (Blum), to paradigms (Kuhn), to epistemes (Foucault), to ontos (Heidegger), to existence (Sartre), to the absolute (Hegel). That means that emergent events can vary in depth but also in the breadth of their effects. Kuhn was just presenting one case, the case of the Paradigm shift like that between Newtonian and Einsteinian physics. But the deepest emergent event undergone by our culture was the transition effected by Thales and Anaxamander from the Mythopoietic Era to the current Metaphysical Era. That is a shift at the level of the existence because it affected the structure of the ontos within our worldview. It changed the fundamental structure from one in which we were subservient to the gods and immersed in mythic understanding of our world to the present one where men are liberated and self controlled by their own self-made laws in which the gods are retreating or escaping, or fleeing. As Heidegger says this is the era of the fleeing of the gods, and it will be over when the last god has fled. We are awaiting the next transition to a new era, which many have announced but the effects of such a transition has not been noticed as yet, even though it may have already happened. But when it occurs we will look back in nostalgia on this era as we do on the era of the Mythopoietic now. But we will not be able to return to the Metaphysical Era from the new Era, because our inner possibilities, potentials, actualities, and necessities will have changed radically as they did during the last transition more than two thousand years ago. Our Indo-European tradition is prone to such emergent events such as this transition from mythopoietic to metaphysical eras. All the others discussed above are merely smaller seismic quakes in a worldview rocked by radical discontinuous change from the beginning. What we need to do is understand that change, where it comes from in the infrastructure of our tradition and how to recognize it when it occurs. It is like

studying earthquakes or volcanic eruptions, we need to be able to understand them so that their devastating effects can be minimized. We cannot stop the earth from quaking or eruptions from occurring, but we can try to understand that discontinuous process as best we can and prepare ourselves to endure these quakes or eruptions which can be very deep and broad in their effects within the worldview, especially when the worldview is in ascendancy and has global domination and global reach. In effect we are exporting the radical instability of our worldview in relation to every other culture of the world. It is this instability of emergence that many good things in our culture come from, yet it is also linked to nihilism which is one of the worst aspects of our culture. One key idea is that we can only see emergent events on the background of nihilism, and without the generation of nihilism there would be no emergent events visible. We associate emergent events, such as paradigm changes in science with good things, but often after they have taken hold we realize that things have actually gotten worse. This is called the intensification of nihilism. Emergence is a function of the intensification of nihilism. It is a tectonic shift in the mechanism that produces the nihilism in our worldview. The key point is that although we cannot predict and control emergent events, we can have some effect on nihilism by making non-nihilistic distinctions. In a sense emergence is a response of the worldview to the failure to make non-nihilistic distinctions. When we do not make non-nihilistic distinctions then nihilism intensifies and emergent events of various depths and breadths occur as the worldview strains under the intensification of nihilism.

The point here is that Radical Knowledge Discovery in its relation to Knowledge Management has the same relation as Kuhn posits between Radical and Normal Science. Normal Science pursues certain standard problems based on a standard theory of the way that the world works. But as Normal Science does its work it bumps into unexplained anomalies that build up. At some point, there is a radical reorganization, such as

that proposed by Einstein that reorganizes the whole landscape of science, which subsumes the anomalies and produces new standard theories and new horizons of standard research. The old problems vanish, the old assumptions seem passé and science suddenly has new goals. The new paradigm and the old paradigm fight it out until the adherents to the old paradigm die off and the new paradigm becomes the standard by default. The new paradigm never proves itself right and the old paradigm wrong. Rather it merely takes over by default as the absorption of the emergent event of the paradigm shift. By saying that it is an emergent event we admit that it can either come from the inside or outside, rather than just being a change in the way we look at things. Sometimes we discover new phenomena we never saw before, and the explanation of those phenomena that cause an emergent event. Other times phenomena we had always known are seen in a new way and thus we get a paradigm shift. So the terminology of emergent events does not prejudice us against the fact that the new fact, theory, paradigm, episteme, ontos, existent, and absolute can come from the inside or outside. But when it does arrive it changes everything. The upshot of my Ph.D. dissertation was the insight that there is a relation between the meta-levels or kinds of Being and the emergent events. In other words there are different orders of emergent events, some genuine and others not genuine but artificial. Artificial emergent events just contribute to the nihilism in different degrees. Genuine Emergent events clear the stage completely for a new order in our scientific culture. This clearing at first looks like a solution to all the problems before, but eventually we realize that things are actually worse. This phenomena is called the intensification of Nihilism. For instance, the internet looked for a time like it would solve all problems by the introduction of the first interactive media into our culture. But then we had the dot.com bust and now we have spam and proliferation of pornography and we are not sure whether things are better or worse. The advent of the internet as the world wide

web was an emergent event in our recent past. It came out of nowhere and surprised everyone and transformed almost everything in our culture. Our culture is involved in an escalating series of emergent events as technology and science changes at a breakneck pace. But many of these changes are relatively superficial and really only contribute directly to the nihilism. On rare occasions there is a radically emergent event which is genuine that clears the decks for something completely new like the Internet as World Wide Web. One thing we should note is that we are continually producing systems that have emergent properties with greater and greater reach across the globe. When these systems synergize in a system of systems then we might get a rush of emergence as we did with the proliferation of the internet which transformed itself into the world wide web through the advent of browser technology. But the synergy of systems of systems is not enough to explain emergent events. This is because emergent events erase the efficacy of the old order and establish a new order, and that new order is often more than just a synergy of existing systems. In other words the worldview has a life of its own, and that life of its own comes out in the advent of emergent events which go beyond what we can do as individuals or collectively within the worldview.

Knowledge Management is the organization and presentation of knowledge that already exists about the world. Knowledge Discovery is a proactive leaning out toward the emergent events that must happen in our culture. Radical Knowledge Discovery has to do with the attempt to understand how to make non-nihilistic distinctions within our scientific culture so that we recognize genuine emergent events when they occur. And this is why Radical Knowledge Discovery is caught up in ontology, because for a genuine emergent event to arise it must pass through all four meta-levels of Being from the highest to the lowest. This is the major result from my 1982 dissertation at LSE. Emergent events are connected to the fragmentation of Being which is an essential phenomena in the Western worldview. The emergent event is a face of the world that includes all the kinds of Being in one synoptic picture related to a single phenomena, and when we see a face of the world then we see many times a trace of a complete reorganization of that world.

Knowledge Management, Knowledge Re-discovery, and Radical Knowledge Discovery

Knowledge Management is transformed into radical science when conceived as moving beyond Knowledge Re-discovery, we must consider Radical Knowledge Discovery as the proactive leaning out toward emergent events that we know are eventually coming. There is a spectrum from data to information to knowledge management which then extends to knowledge re-discovery and then to radical knowledge discovery at the upper end. In this paper we will consider knowledge re-discovery, or what is normally called knowledge discovery in the literature, to be part of knowledge management. Calling knowledge re-discovery "knowledge discovery" masks the existence of Radical Knowledge Discovery. Our point here is to draw attention to Radical Knowledge Discovery which is a deeper challenge which has been overlooked in the literature on knowledge management and discovery up till now. This spectrum from information management to knowledge management to knowledge re-discovery to Radical Knowledge Discovery represents the barriers that are in our way with respect to understanding the emergent event. Our current technology for knowledge management, rediscovery and knowledge discovery have inherent limitations. For instance, mobile agent technology, i.e. software technology, and artificial intelligence have inherent limitations in as much as they do not provide a means for radical knowledge discovery of the emergent. This has been expressed by me in earlier papers in the realization that Software is the only artifact that embodies what is called Hyper Being and that Artificial Intelligence relates to Wild Being both of which are above Pure Being and Process Being in the hierarchy of the kinds of Being. There is a boundary at the limits of

Wild Being which has some very strange properties. In general Hyper and Wild Being are pretty strange themselves but when we reach the fifth meta-level of Being extremely strange things occur because there is a phase transition at this meta-level from Being to Existence. This phase transition is very important for our understanding of radical Knowledge Discovery of emergent events because it is out of existence that the emergent events come as Ultra Being. Ultra Being is *Being* seen from the outside as an externality, as an existent. But in general Ultra Being is a distinction between the two interpretations of Existence as either Void or Emptiness which are images of the Nondual. Meaning comes out of this nondual arena beyond Being. And in general Knowledge continues to comprehend the nondual in terms of what Plato calls non-representable intelligibles. Radical Knowledge Discovery and Knowledge Management together end at the point where meaning arises from the void, or from emptiness of existence. And that is the point where radical knowledge discover occurs. In many traditions the knowledge beyond the limit where meaning emerges is called Gnosis, which means knowledge of the nondual itself. Thus beyond Knowledge Management and Knowledge re-discovery, is Radical Knowledge Discovery which is not something that can be fully controlled or managed. It is clear from philosophy of science that there is no logic of discovery as Popper had once hoped, but that instead Feyerabend in Against Method is right that in terms of Method, *Anything Goes*. So Radical Knowledge Discovery must be a continual looking out for new ways to gain knowledge. A good model is that of Gregory Bateson in Steps to an Ecology of the Mind where he talks about the meta-levels of learning. He notes that he can only conceive of four meta-levels of learning and cannot conceive of the fifth meta-level and he gives an analogy of the meta-levels of movement in physics which also has no fifth meta-level. The meta-levels of learning correspond to the meta-levels of Being and thus the meta-levels of knowledge that come from learning. These also correspond the *n-category theory* meta-

levels in mathematics. As we move up the stairs to nowhere then it becomes increasingly hard to think. Different philosophers have tried to build philosophies at the different meta-levels of Being. For instance, Derrida has attempted to build his philosophy at the level of Hyper Being, called differance. Deleuze on the other hand has attempted to build a philosophy at the level of Wild Being with some understanding of Ultra Being as well, but this is not well separated in his articulation of the limits of thought. Understanding these philosophies that are built on the upper reaches of the thinkable are crucial to making our Knowledge Discovery process more radical and sophisticated. By extending these philosophies we can then attempt to extend our repertory of ways of learning, and thus kinds of knowledge that we can absorb and hold onto, and thus we can be ready for the extreme shifts in knowledge that occurs with emergent events, especially the deeper emergent events which we cannot control but which happen like earth quakes or volcano eruptions within our worldview, unexpectedly. But even though we cannot predict these knowledge-quakes or knowledge-outbursts within our worldview we can have ready responses to them. Just as we do for national disasters, we have teams in place and we undergo training before hand, and we respond to the emergency quickly in order to save as many lives as possible. Of course, sometimes the responders are overwhelmed too as in the case of Hurricane Katrina. Similarly there is an aspect related to Radical Knowledge Discovery that should be like emergency response in which we engage in the emergent event as it is occurring in order to learn as much about it as possible, because it is a phenomena like the nova of stars but it is so close to us that we do not see it, because we are like fish swimming in the water of our worldview, or birds flying high the air of our worldview, we are totally encompassed by it. But when these profound changes come, then it alters who we are radically, and who everyone is within the worldview, and we become radically different without notice. So we are almost always overwhelmed as first responders but this time by an invisible event

which changes our very Being and our knowledge even our knowledge of who we are ourselves. So it would be better if we had the presence of mind to see the emergent events arising, follow their course, and attempt to learn as much as possible what is happening at the core of our worldview, just like we study earthquakes or volcanoes to understand what is happening at the core of our earth. Or we study stars to understand what causes novas to occur. For instance, we are 500 years into a change of the Poles from north to south and we only found out about that recently. That shift can last 5000 years and during that the pole can flip several times and also it can split into multiple poles in the transition. All our compasses and maps will be effected by this change that we are in, but which we did not even know, which is based on the dynamics at the core of our earth. Similarly we might be in the midst of a flip to another Era of our worldview, the one after the Metaphysical dominated by Science. But we do not know because we have not studied the emergent events and their relation to the structure of the worldview which might lead to an Emergent event of such magnitude that we flip into a new Era where science as we know it will be a thing of the past. It could be that nondual science[1] will take its place, but at this time we do not know. We need to develop our Radical Knowledge Discovery and Knowledge Management (including Knowledge Re-discovery) expertise and systems so we can analyze the data and information and knowledge that exists in order know what we do know, as well as what we can know within the worldview as configured now, in order to understand what we do not know and cannot know when we see it arising. By paying close attention to emergent events perhaps we can try to discover whether our worldview is in the midst of a new change at the depth of that transition from the mythopoietic to the metaphysical. I have called this transformation of our worldview one in which we go from the metaphysical to the heterochronic, i.e. a

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[1] See http://nondual.net

worldview in which there are multiple orthogonal timelines rather than merely a single or multiple parallel timelines such as we normally imagine. This is one possibility for the looming transformation from one era to the next which I have been exploring. This process began with J. W. Dunne in about 1926 when he imagined infinite dimensions of time in his books An Experiment in Time and The Serial Universe. Another possibility which Heidegger explores in his Contributions to Philosophy is that Nietzsche discovered the end of the Metaphysical Era. Various philosophers have different theories of the end of the Metaphysical era. But when ever it comes and in what ever form it comes it will be the biggest shift in our worldview that can be imagined because it goes all the way down to the roots of Being in Existence. It will change the configuration of the face of the world.

Meta-levels of Knowledge

Gregory Bateson used the theory of Logical Types of Russell and Whitehead in Principia Mathematica (cf Copi) to define the meta-levels of learning in his book Steps to the Ecology of the Mind. Here we will attempt to outline a theory of the Meta-levels of Knowledge drawing upon the theory of the Meta-levels of Being developed by the author in several works. The meta-levels of Being concern Fundamental Ontology while the meta-levels of Knowledge might be said to concern a Fundamental Epistemology. Ontology and Epistemology are the two sub-disciplines of Meta-physics within Philosophy. Ontological Engineering has become a discipline in its own right and Knowledge Engineering is fast following suit. Ontology concerns what things have Being within our worldview, while Epistemology concerns what may be known of those beings. Ontological Engineering concerns how our engineered information systems identify those things that have being within specific domains within our socio-technical culture. Knowledge Engineering has to do with what we know about those things and how they relate to each other and how they can be manipulated. Ontological and Knowledge Engineering go

together like hand in glove and cannot be separated without doing violence to both.

Thus, we can expect that the meta-levels of Knowledge are related to the meta-levels of Being. What is important about knowledge is that it is the most persistent thing in our world. Try forgetting something you know. It is also the core of our social world because we have a theory of mind that allows us to believe we know what others are thinking and we act on those beliefs and that is what guides our social action. So knowledge is something that acts as a social glue and also it is what gives our world persistence. Thus, when an emergent event at the episteme level occurs as Foucault describes in The Order of Things then it has profound effects on the structure of our worldview, but its effects are nothing compared to the sort of emergent event that changes the ontos itself such as the move from the mythopoietic to the metaphysical era. This is a quake at the level of existence that ripples though the ontological and knowledge layers both. Being means the persistence of things of substance in our world. But strangely knowledge is even more persistent than any substance, because substances change with entropy or decay over time, but information coded as knowledge lasts indefinitely and is transmitted as culture. So actually Being draws its stability from Knowledge rather than the other way around even though Being is more basic than Knowledge. In fact, we might say that Being, is Knowledge of Becoming. In other words Knowledge confers on the Becoming of our Experience the appearance of persistence which we experience as Being, and which we project onto Existence. This is a speculation but it is difficult to understand where the seeming persistence of Being comes from if it does not come from Knowledge.

So let us see if we can transfer some of our understanding of the meta-levels of Being to an understanding of the meta-levels of Knowledge. The meta-levels of Being are as follows:

Ultra Being
Wild Being

Hyper Being
Process Being
Pure Being

And the aspects of Being are identity, truth, reality and presence. We are pretty sure there are only five meta-levels of Being, although in the past we thought there was only four meta-levels of Being and so it may be that there are higher meta-levels that will be discovered in the future. The discovery of each meta-level of Being expands our world into higher dimensions of Being. Can we take this hierarchy that is known and explained in many of the authors work and transform it into the following hierarchy:

Ultra Knowledge
Wild Knowledge
Hyper Knowledge
Process Knowledge
Pure Knowledge

In other words can we comprehend Knowledge Management and Discovery from this perspective of the meta-levels of Being? Pure Knowledge is what we are certain we know. It is what Science tells us are solid facts which all our textbooks agree upon and which scientists no longer question. It is Pure Knowledge that we intend to manage in our Knowledge Management systems. It is very persistent, in that it is continually reaffirmed as being reliable knowledge that we can count on. We approach it by learning, i.e. by taking classes, reading books, watching television programs about science, reading peer reviewed journals. But when we move to Process Knowledge we are already beginning to climb Bateson's stairs to nowhere of the meta-levels of learning. In order to acquire Process Knowledge we must learn to learn. Process knowledge is the first level of Knowledge Discovery, it is no longer a matter of managing this knowledge and packaging it for consumption in the educational system, instead we must learn how to learn and this shows us that knowledge, despite its persistence has a becoming nature to it. Process Knowledge is seen in the growth of knowledge which is an aggregation over time, and it is also seen in the

fact that we are continually learning new ways of learning and thus of processing knowledge. This is in fact a new frontier, for instance the peer review process is under challenge by scholarly articles and non-peer-reviewed journals posted on the Worldwide web. Scientists cannot wait for the peer review process to grind away and thus there is an insatiable appetite for preprints. This is an example of our learning how to learn, in the sense that we are having to learn how to do without peer review, getting rid of peer review as good and bad effects. Sometimes peer review stifles innovation, other times lack of peer review allows false facts or theories to become like rumors that in the short term can drive science without any checks and balances. But it is pretty clear that peer reviewed journals are fast on their way to becoming dinosaurs and that preprint archives are the wave of the future. But we will have to learn how these effect our learning and make appropriate compensations. Learning is a continual process of changing how we learn and learning from our lessons observed. But Process Knowledge is about how we learn to learn and we solidify the gains made in that process. Processing Knowledge are knowledge workers. Knowledge work has become a huge part of our economy, and is growing steadily as Information Technology is beginning to become ubiquitous. But the question is no longer how to deliver the data to the user, no longer how to make that data into something that informs the user, but the question is now how the user can learn from the information he or she is presented in such a way to build upon the knowledge that they already have to develop deeper knowledge of their areas of expertise or to cross train in other domains of expertise.

The next level of Hyper Knowledge is where we *learn to learn to learn* according to Bateson. Notice as we go up the stairs to nowhere it gets harder to think what each emergent level is really about. We know what learning to learn is, it means learning new ways of learning, i.e. new ways of processing knowledge for our benefit. But when we say learning *to learn to learn* then we seem to hit a wall in our comprehension. Learning *to learn to learn* is something the beginnings of the advent of the emergent event. We are not just changing our ways of learning but ourselves as well. We ourselves are adapting to the learning process and it is this that takes us into the realm of Hyper Knowledge. Hyper Being is what Derrida calls Difference, i.e. differing and deferring. Hyper Knowledge is our understanding of Hyper Being. And the best way to understand that is in terms of Godel's proof of undecidablity. In other words, with Godel we learned that if we have consistency then we will lack completeness and vice versa. No system will ever be both complete and consistent at the same time. If we take the undecidable statements and combine them with the system we get emergence, if we combine them with the meta-system, beyond the system, we get de-emergence. But if we hover within the undecidability then we see the horizon of emergent possibilities laid out before us. Hyper Knowledge is the knowledge of the possibilities that are offered by emergence within our worldview at the various levels that emergence can emerge. Hyper knowledge is our knowledge that we don't know what will emerge next within the unfolding of our worldview. If we activate some possibilities then we will get one path to a possible future with its unique past and if we activate other possibilities then we will get another past to another possible future with its unique different past. It is with Hyper Being that we begin to see emergence occurring within our worldview and we think we can manage it by actualizing certain possibilities and suppressing others. Hyper Being hovers between Knowledge Management and Radical Knowledge Discovery as the boundary between them. If we add the undecidable statement to the Knowledge Management System then we get de-emergence. But if we add the undecidable statement to the environment of the Knowledge Management system then we get emergence as an uncontrollable event either from the inside or outside.

The next level is Wild Knowledge, which is the fourth meta-level of learning. At this level

Bateson becomes unsure of what this kind of learning is because it suddenly calls not just for a change in ourselves but instead for a change in kind in ourselves, and this is the real threat of Emergence, it changes us essentially in ourselves, in ways that we cannot control. We are different people after 9/11. That was an emergent event within our national history which changed us in essential ways in our attitudes toward the world and our isolationism. Many things remained the same but who we are as a country, as a superpower changed essentially in one very short period when the completely unexpected came from an unexpected direction. And it is this Wild Knowledge, the kind of Radical Knowledge Discovery that leans out toward the emergent event that needs to be developed by our country. My guess is that bureaucracies vying for power without recognizing new realities is no longer going to be tolerated by the American people. They are going to demand that someone in the Government has a bead on the changes that are taking place that will shake our world to its core and threaten our security. And this is going to take a kind of Wild Knowledge, a knowledge that is no longer tamed by the Bureaucratic mindset and the Peter Principle[2]. How will our Government develop the capacity to contain within itself a Wild Knowledge, i.e. a seeking after the Emergent which is uncertain as to where and when it will occur but which is only certain in that it will occur. This is the fundamental problem of our Society in this in what could well become a twilight struggle of the war on terror. We need to learn how to become different in our essence in order to even contemplate how we would pursue this Wild Knowledge on the fourth meta-level of Learning. But this is our fundamental problem set by us though the unfolding of unexpected world events. Being Wild in our Knowledge may mean something like recognizing the episteme change that allows us to se meta-systems beyond systems and thus overcome the blindspot to meta-systems in our culture.

Finally we talk about Ultra Knowledge. It is related to Ultra Being. This is a kind of Being which occurs at the fifth meta-level of Being where the transition between Being and Existence takes place. Ultra Being is Being seen as an externality of the projection process itself. Being is a projection process. We project Being on things in the world, we project upon the world a certain intelligibility. And it is by the comprehension of the world through that intelligibility that we glean knowledge. But knowledge comes to us from the anomalies that stand out from our projections and negate those projections. Bateson could not imagine a fifth meta-level of Being. If it existed he said it would be some form of enlightenment. We could say a realization of nonduality. That is to say some other perspective beyond One and Many. At the level of existence we find that there are two main interpretations, either of Void or Emptiness. Void is null extension and Emptiness is nil temporality. Between them is the hinge of Ultra Being or the Externality of Being as an existent among other existents. We have suggested in our essays on Nondual Science[3] that there might be some possibility for rapprochement between nonduality and science. If this is the case then the realization of the nondual position might be what Bateson was looking for when he tried to think the radical departure at the fifth meta-level of Being. Ultra Knowledge would be a knowledge of the relation between nonduality and science. Emptiness and Void are two views of nonduality that are non-nihilistically distinguished by Ultra Being. Ultra Knowledge would then be the knowledge of how to make non-nihilistic distinctions within our worldview. This is of course the knowledge of the emergent event itself as it erases the nihilistic landscape to reorder it at some level within our worldview. Ultra Knowledge recognizes the Emergent Events. It is that knowledge that knows these events from the inside, not merely from the outside, but knows how they transform us when they occur within us making us utterly different. Ultra

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[2] http://pespmc1.vub.ac.be/PETERPR.html

[3] See http://holonomic.net

Knowledge is the ultimate limit of Radical Knowledge Discovery, i.e. discovery of who we are through how we change radically when emergent events occur to us. For instance, the transformation of normal science within our tradition into a nondual science would be such an event, an event of such proportions that it would transform the whole worldview at a level of profundity rivaling that of the change from the mythopoietic era to the metaphysical era. This is because Nondual Science challenges the fundamental assumption of the Law of Non-contradiction and Excluded Middle promulgated by Aristotle within our tradition. This assumption brings us directly into contact with existence and produces a change in the worldview at the level of existence and thus changes the nature of Being itself as we know it.

Applications

Once we recognize that there are meta-levels of Knowledge that go along with the meta-levels of Being and the meta-levels of Learning as articulated by Bateson, then we begin to understand the importance of Radical Knowledge Discovery beyond Knowledge Management. Radical Knowledge Discovery teaches us that Knowledge is fundamentally out of control in our tradition. It is growing at an exponential rate and is changing our culture so radically how can we even think we could control it, we will be lucky if we can just see where it is all heading. Our tradition is Out of Control as Kevin Kelsey says, and if we allow it to be out of control we will be better off than if we try to rein it in and attempt to control what has already gotten loose and has a wild life of its own. Radical Knowledge Discovery is the sort of dynamic clinging that is needed to ride this bucking bronco. It develops applications and approaches for handling each type of Knowledge in the hierarchy of the kinds of knowledge. It pays close attention to the trends in Emergent Events and tries to glean as much from the series of these events at the various levels of the worldview as possible. Although the events are uncontrollable and unpredictable it seeks to set up an emergency response to these emergent

events like we do to national disasters, rapid response teams that assess the changes as they become evident and like tornado chasers try to get as close to the event as possible as soon as possible in order to assess the changes that it is bringing. We do rapid response to all kinds of events, why do we leave emergent events from the core of the culture to an arbitrary and ill informed response. Natural disasters do harm, but these knowledge disasters are invisible and hit us were we least expect it when we least expect it and do even more damage ultimately because they change who we are into something else without our knowing what hit us or that it was coming. Many civilizations have been destroyed in just this way in history. Note how colonialization of the Western powers destroyed so many civilizations, which did not know how to respond, or what hit them when it occurred. In that case it was technological advantage that made the difference between worldwide victory or defeat. But it does not have to be technology that is decisive; it could be the lack of control of our own technology, which is parasitically taken over by others. It could be in effect anti-technology, like we see in the work of hackers, cyber-criminals and terrorists who turn the wonders of our culture and civilization against us. Will we be caught unaware? Perhaps. But we can reduce the risk if we mount a ready response from a standing reserve to look for the implications of emergent events, which use an understanding of the higher meta-levels of knowledge and Being to understand what is happening in these rapid and discontinuous changes in real-time. No information system will do that. No knowledge management system will do that. Only a set of applications and approaches for dealing with the various meta-levels of Knowledge and Being will be effective in this new arena where knowledge is not just power, it is survival, it is the power to continue to Become in the face of a rapidly changing global environment, where our globalized worldview given to emergent change is just as much as a threat to our survival and any enemy we might imagine.

Quantum Mechanical Limit

In the development of the meta-levels of knowledge what we find is that there is an existential limit to knowledge. When we reach that limit knowledge, nb Jhana, turns into wisdom, nb Prajna. That is to stay that Wisdom itself goes though a phase transition just as does Being. Wisdom is knowledge of Existence under the interpretation of emptiness or void. Also there is a type of Wisdom specific to the Western worldview concerning the nature of Being as the projection of intelligibility which comes from viewing the projection from the outside, i.e. through the escape from Plato's cave. We identify existence with Quantum Mechanics at the macro level. This is to say that we accept the MultiWorld hypothesis instead of the Copenhagen conjecture which would artificially separate the micro from the macro world and we point to the work of Jahn and Dunne in the Margins of Reality as a confirmation that observer effects occur at the macro level. We do not see these effects because they are obscured in the Western Tradition by the projection of Being onto Existence. So Quantum Mechanics exists as the limit case. If David Deutsch is right in his conjecture that quantum effects are the interference of multiple worlds and that we will be able to compute across those multiple worlds with quantum computers as he says in Fabric of Reality, then quantum computing will utterly change our computing paradigm and we should be ready for that. One way to get ready for that is to make use of the various meta-levels of knowledge that exist before the phase transition to wisdom which is the realization of the quantum organization of the world at the macro level. We do not yet understand how Quantum Mechanics and Relativity Theory fit together, but we think that it might have something to do with multi-dimensionality used in String Theory and M-Brane theory. So even our most recent science has not been able to breach this barrier to understanding the level of existence which is expressed as the fusion between Quantum Mechanics and Relativity theory. However, Heidegger has offered a solution in Being and Time to this conundrum at the human level,

and this is what caused him to hypothesize that there were different meta-levels of Being. As explained elsewhere in my works the difference between the modes of being-in-the-world of present-at-hand and ready-to-hand are images at the human level between the difference between curved and flat space in Riemann spacetime geometry, and the difference between Quantum effects of superimposition of the probability waves prior to observation and the breakdown into specific probability distributions after observation. In other words, the modes of Being in the world are ways of understanding how the large scale discontinuities discovered by physics are manifest on the human level, i.e. in modalities of Being, which in turn lead to an understanding of differences in meta-levels of knowledge as well. The point is that these modalities proliferate up to a finite limit within a possible infinite series defined by existence. The finite modes of being-in-the-world need to be understood as a bridge to the understanding of existence which is embodied by Quantum Existentiality. The Quantum Mechanical Limit has been approached on the human scale by many traditions and is talked about in many Non-western spiritual traditions as Nonduality as discussed by David Loy. If Quantum computation exists then our relation to what is now non-computable may change. There are those such as Penrose that think that the human brain already takes advantage of quantum computation in order to raise above what is capable by computation by neural nets or von Neumann machines in Artificial Intelligence today. It is certain that intelligibility is not computable or representable and that this is a fundamental limit of our productions of devices that manipulate knowledge. If this limit were to be breached by quantum computing then we would have a new horizon of computational power open to us. But we will not know that until there exits a quantum computer to run the programs that David Deutsch and his colleagues have devised to compute non-computable answers in order to prove their multi-world hypothesis. Until that time what we need to do is explore the upper reaches of the meta-levels of knowledge that to

date have not been explored very well by our culture. It is the advent of these levels that cause emergent events in our tradition. Most of what happens in our culture occurs at the two lowest meta-levels of Being and Knowledge. We hardly ever explore the Meta-levels three thru five. So there is plenty of work to be done to explore these higher meta-levels in the context of knowledge management and discovery in order to prepare for the age of quantum computing which is an emergent event that will change everything if David Deutsch is right about quantum effects being the residue of multiple worlds, i.e. the Pluriverse.

However, if we were to try to explore the Quantum Mechanical Limit prior to the development of the Quantum Computer then the work in the Theory of Weak Measures developed by Yakir Aharonov is the best starting point that I know of. I have applied this theory to Autopoietic Systems in my paper "Reflexive Autopoiesis and Weak Measures.[4]"

One of the things that needs to be done is to understand the structure of the projection process and its schematization of things in the world through the multiple levels of schematization that include:

- Pluriverse
- Kosmos
- World
- Domain
- Openscape (meta-system)
- System
- Form
- Pattern
- Monad
- Facet

Schematization is an important phenomena which determines how knowledge is processed. When we encounter the unfamiliar thing we first schematize it, then we determine

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[4] http://archonic.net/wm01a05.pdf

its kind, then we see its individual properties, then we assign meaning. It is schematization that occurs first and it has the nature of Ultra Being or Ultra Knowledge. If we understand our own schematization process then we will understand the interaction between our projections and the anomalies that occur with respect to the interaction between our projections and the noumena, i.e. the unknown objects of our experience. It is by the understanding of the generation of anomalies that we learn unexpected and hither to unknown things about the world.

We have difficulty understanding the spooky action at a distance between objects that Bells Theorem postulates which has been confirmed. But it is clear that there is also spooky action at a distance between human beings within the quantum mechanical or nondual universe of existence in which we live. We see this in what are called Theory of Mind experiments which show that at a certain age children start understanding what others know or do not know and act on that basis. This is also called mind reading, but it is not meant to suggest ESP effects, but rather our ability to guess what others are thinking. Experiments have shown that we are capable of reasoning efficiently about meta-sequences that occur in human relations like "he thinks that she thinks that he thinks that she thinks" up to about the fourth meta-level, i.e. just about as far as the meta-levels of Being and Knowledge extend up to the phase transition to existence. This ability is called the "Theory Theory" which means that it is assumed that our folk theory of mind of others is itself a projection of a theory onto others. However, if we follow the Jahn and Dunne analogy that uses the atom as a model for consciousness then we might say that there does exist a kind of quantum tunneling effect between consciousnesses that we call ESP phenomena. However, it is not clear how this interaction of our minds with the nondual works, because at that level all difference between our individual minds have broken down and we have entered into a social field which is itself conscious. I have discussed this effect in my paper on Reflexive

Sociology[5]. We can posit such a formless field of nonduality that the Quantum Observer implies. And we may get access to that field when have quantum computers that work. But this is merely a limit at this point which may open up as a horizon though the emergent event of the advent of working quantum computers and other very advanced technology related to Bose-Einstein Condensates in the future. However, at this time, until that horizon opens up there is still something to be gained by exploring the use of the higher levels of knowledge in radical knowledge discovery that we have access to now.

For instance, it is possible to use programs like Leximancer that provide access to the conceptual objects in texts and thus give us a glimpse of the unconscious of texts. See my article on Intratextuality[6]. These give us access to the internal semantics of texts that the authors themselves synthesize unconsciously in the process of writing. We can look at the unconscious conceptual infrastructure within a single text, within an author's entire works, or within the texts of a group or organization. By using Leximancer it is possible to identify conceptual clusters within texts that the authors of those texts do not know exist. And then we can access those texts themselves in order to see exactly what instances in the texts have been identified as corresponding to those concepts. Even if words for concepts do not appear themselves, a cluster of related words can point to a place within the text where the concept is implied. So with Leximancer there is a bridge to the semantic level based on analysis of total context within the text of concepts. What is needed is more research into the application of Leximancer and other means that might make it possible to identify emergent events sooner. For instance, in the analysis of the texts of an organization one could be notified when new concepts appear. The uses of multiple analysis methods of texts using computer methods may allow us to understand not only the unconscious conceptual infrastructure, but eventually to understand the conscious development of these concepts in the texts themselves through diagrammatic relations between the concepts of the type suggested by C. S. Peirce. Now texts must be carefully read to develop diagrammatic understanding of the evolution of the conceptual relations between concepts within the text. It would be interesting to see if a discipline of artificial semantics could be developed that identified the diagrammatic changes in concepts throughout the text and between texts. Thus we might be able to complement the work of Leximancer which gives us the unconscious relations between concepts in the text with the conscious relations actually sculpted by the author in the process of writing. In writing we discover things we never knew we knew before. This act of discovery in writing is a manifestation of process level knowledge, because when we know something new for the first time, then we have the experience of realization, knowing that we know and many times this happens when we manipulate ideas at the surface level of texts. So if we had a means of diagramming these evolutions of conceptual relations in texts on the background of the unconscious infrastructural relations between concepts in texts provided by Leximancer, then we might be able to construct a simulation of the flow of significance in a text, and that would give us some insight into the intention of the author, as well as his unconscious unintended awareness of concepts that manifests though the synthesis of the text as a whole. An example of this sort of analysis can be seen in the work of Fauconnier and Turner on Conceptual Blending or Conceptual Integration[7]. Texts are bigger than authors can control and synthesize consciously. This is what Derrida studies, i.e. the breakdown in the authors ability to control the text as a whole, which sometimes shows up in the author's use of metaphor or in the discontinuities in the text itself, which is a manifestation of meta-level three knowledge or

[5] Palmer, K. "Possible Grounds For A Reflexive Sociology" SocalTheory.org 2003

[6] See http://archonic.net

[7] http://markturner.org/blending.html

Hyper Being. But Leximancer allows us to push beyond Hyper Being into Wild Being/Knowledge which is the outer limit of what is conceptualizeable. The philosopher Deleuze talks about this meta-level of Being/Knowledge in his works, especially Anti-Oedipus and Thousand Plateaus. Wild Being is the first level that a new discovery or a new knowable matter arises. It is the level where the first conceptualization is made. It is at this level that a concept first appears in the text as a deflection of the understanding or intelligibility. Leximancer can give us some insight into this level of Being/Knowledge by alerting us to the appearance of a new concept in an organization, or an authors texts, but also in the way that Leximancer organizes the texts hierarchically and also gives us a multi-dimensional picture of the relation of the texts to each other. An excellent introduction to the way of looking at concepts from the point of view of Wild Being is contained in the book What is Philosophy? by Deleuze and Guattari. What a concept is changes as we move up though the meta-levels of knowledge. At the level of Pure Knowledge it is the Idea, i.e. the abstract gloss which is based on illusory continuity of use across contexts of a word. At the level of Process Knowledge it is the realization which can give rise to a new idea once that idea has stabilized but which is forged out of the flux of thought through understanding and the application of intelligibility and by the creation of representations of concepts that are frozen into ideas. Concepts at this level are like essences of things, they are constraints on the modification of the realization. At the level of Hyper Knowledge concepts are the boundaries between possibilities and the identification of hinge points between possibilities in understanding or intelligibility. At the level of Wild Knowledge concepts are as Deleuze describes them as being extremely evanescent insights in continual flux. At the level of Ultra Knowledge concepts are themselves non-conceptualizeable and they represent the entire projection process of intelligibility itself externally. When we move beyond Ultra Knowledge to the wisdom (prajna) concerning

existence as either void or emptiness, or beyond that some deeper nondual like manifestation, we are outside the realm of concepts and into a realm of what is nondual, or purely non-conceptual or non-experientialable. This is what we run up against in Quantum Mechanics. We cannot conceive of what state can be simultaneously different and the same prior to the breaking of the probability wave by an observation. In quantum computing we do not understand how the medium can keep these different values of one and zero superimposed yet different when observed finally to yield a meaningful computation. Yet Quantum Mechanics tells us that this state of superimposition of states in the unbroken probability wave does exists and does useful things everyday in our electrical devices and in the world of microscopic particles. If Quantum computing can make use of the nondual state in order to allow us to overcome limits to computation then perhaps we can approach having intelligent machines which normal Turing computable machines working on representations do not give us. Some how we would have to breach the boundary of non-representability and non-intelligibility in order to have machines that think like us. The only boundary that might give us that which we have not crossed in that of quantum computation, but it is unknown what the relation between information and quantum computation might be. In our understanding there is data, and information is the juxtaposition of relevant data and its presentation to us, while knowledge is the result of our intelligibility and understanding being applied to the information and the distillation of the aspects of the world that perdure. Knowledge perdures over time and is very difficult to get rid of after we have gained it. Wisdom is a combination of knowledge and experience. Experience sometimes modifies in non-rational ways what pure knowledge would judge to be the case. Experience brings us in to existential relations within things and the unintended results of their interactions. That is to stay that Experience of things somehow gives us intimations in the anomalies that are exceptions to the rules we have formulated as

knowledge about experience. We understand these anomalies via concepts, and we pack concepts into ideas for their transfer to other humans who we believe have minds like ourselves but different experiences.

Fusion of Aspects of Being in Knowledge

A key point not mentioned earlier is the fact that Being has four aspects which are identity, presence, truth, and reality along with their opposites. When we go up the meta-levels these aspects of Being change radically at each meta-level, so the nature of truth is different at each meta-level of Being. So at the level of Pure Being Pure Truth is verification, however, at the second meta-level Process Truth is uncovering. It is a conjecture worth exploring that knowledge at the various meta-levels are a fusion of the aspects of Being. Thus at the level of Pure Being, Pure Knowledge is the fusion of Pure Identity, Pure Presence, Pure Reality and Pure Truth. It could be that this fusion is what makes Knowledge so that it perdures when all other things in experience are effervescent. In other words the fusion of the aspects of Being gives stability to knowledge. So in our understanding at the level of Pure Being we have Ideas which are glosses that have illusory continuity. The continuity of the ideas is their identity over time. These ideas are made present to us by their presentation in books which preserve the intellectual heritage of our culture. Ideas are real in the sense that they capture something that can be tested against the world. Ideas are truthful to the extent that they can be verified, i.e. checked against other ideas and descriptions of things. Truth has its proof in a comparison with other documents that encapsulate other ideas, while Reality has its proof in a testing against the world. Identity has its proof in the comparison of uses of the idea in various contexts. Presence has its proof in the definition of an idea and its intellectual history, i.e. the history of an idea. What we posit and what must be explored further is whether this fusion exists at the higher meta-levels of knowledge. For instance, at the level of Process Knowledge, i.e. knowledge of knowledge itself, we would expect to find a fusion of Process Identity, Process Presence, Process Reality and Process Truth. Process Presence is showing and hiding, and so at this level we would see how concepts, not ideas, are generated and appear and disappear under different interpretations. Process Identity has to do with what Heidegger calls Belonging Together, or Sameness of concepts, in other words concepts have family resemblances with each other, and the same words can mean completely different things to different authors depending on their understanding and the way the concepts have been related to each other in their thought. Process Truth has to do with uncovering, and thus there is a process by which concepts uncover things about the world by our exploration of them and our development of them. Process Reality as to do with the fact that new concepts when they appear change our understanding of reality and this can lead to emergent events which are a reordering of some region of reality. The fusion of the aspects of Being gives us Process Knowledge which is the process of creating and producing knowledge, i.e. using our ability to conceptualize to produce ideas that can be transferred to others in order to create a common intellectual culture based on our assumptions of the theory of mind in others of like mind to ourselves. In the process of producing knowledge we realize things we did not know before, but perhaps were known by others before us, or perhaps are new. By our realizations we come to know how to know and in effect apply what Bateson calls learning to learn, i.e. we have to learn how to learn in new ways, so knowing knowledge means the necessity of the continually renewal of knowledge and knowing differently.

It is speculated that at the even higher meta-levels of knowledge that knowledge is always a fusion of the aspects of Being at that meta-level. So Hyper Knowledge is a fusion of the aspects of Hyper Being, Wild Knowledge is a fusion of the aspects of Wild Being, and finally Ultra Knowledge is a fusion of the aspects of Ultra Knowledge. But it is harder and harder to think these higher meta-levels of Knowledge and Being. It is an open question as to the precise nature of these higher meta-

levels and their nature needs to be worked out further based on the fusion of the aspects at each of those levels. But note here that fusion is not giving us paradox, nor is it supra-rational. Knowledge is in fact something like a manifestation, its unusual features of perdurance signals to us that it is something based in manifestation, i.e. the deeper nonduality beyond emptiness and void. Another very strange thing is light which has equally mystifying properties. When we talk about enlightenment we are talking about an even greater fusion between two manifestations at an even deeper level of nonduality which we have described as wisdom. Knowledge and Light are identified in our culture at some very deep level, but both have very strange properties that are inexplicable and anomalous.

So if we go on we can see that Hyper Knowledge is a fusion of Hyper Presence, Hyper Identity, Hyper Truth and Hyper Reality. Hyper Presence is hard to describe but it has to do with possibilities and their being made actualizable and our hovering over these possibilities in indecision. Hyper Identity has to do with all the quandaries of identity between self and other and the development of our sense of ego and self from out of the social milieu and especially in relation to our parents that Lacan talks about. Hyper Truth has to do with the relation between the unconscious and consciousness. Many times the truth of the unconscious or from the Self is different from that of the consciousness or the ego. Sometimes truth is stranger than fiction. Many times we use fiction to tell the truth that cannot be told otherwise. Hyper Reality has to do with what is called the surreal, i.e. extensions of reality into the virtual. Sometimes as in paintings that give us unreal visions such as those of Dali, and others we learn more about our sense of reality than we do interacting with real things or even with ordinary illusions. For instance, dreams can seem very real, more real than real when we are embedded in them as virtual worlds. Thus reality itself is called into question by Hyper reality, just as is the case for the other aspects at this level. Identity is called into question by Hyper Identity,

Presence is called into question by Hyper Presence, and Truth is called into question by Hyper Truth. But all these aspects together give us some insight into the meaning of Hyper Knowledge, which means *knowing how to know how to know*. It is associated with *learning how to learn how to learn* which Bateson thought about in Steps to the Ecology of the Mind. If we know how to know, then this hyper knowledge takes a step back from that and understands that. That has to be something like finding out a new fact that changes everything, or switching theories completely concerning some phenomena, or engaging in a paradigm shift, or experiencing an episteme shift, or reinterpreting Being, or discovering a new sort of existence, or finding a new type of absolute. Knowing in this sense is knowing more than just different ways to know, but it is more about knowing something about knowledge itself. It is as if the nature of knowledge itself changes. What is the nature of knowledge changes as we undergo emergent events. This type of Hyper Knowledge calls into question our understanding of knowledge itself despite its unusual perdurance.

When we get to the level of Wild Knowledge then we can say that it is a fusion of Wild Presence, Wild Identity, Wild Truth and Wild Reality. This means learning[4] or knolwege[4] and is right on the limit of what is intelligible or understandable. The best analogy for this level is the Mandelbrot Set and Fractal geometry. First of all like the complex plane this level is just a surface. There is no depth for thought and conceptualization. There are no relations between concepts at this level, but each one is a unique instance, like what Peirce calls a First. The Mandelbrot set is created by taking the points on the complex plane and iterating them and giving them colors based on their acceleration to infinity. We can think of this as a model of Wild Being. But in the model we can discern an analogy for each of the aspects of Being. So for instance Wild Identity has to do with each point in the plane and its intrinsic propensity to fly off to infinity which is measured by the recursive algorithm that produces our vision of the Mandelbrot set. Within itself it has this propensity as an

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intrinsic element related to that point alone. So Wild Identity has something to do with potentiality and the realization of the propensities within the concept itself. Wild Presence is like the pattern we see when we look across the colored complex plane and see the pattern of the Mandelbrot set at some level of magnification. Wild Presence has to do with the presence of all the points that are disconnected from each other at the same time in a global view that we have, but which none of the points in the plane have. Our view looks down on the plane but in Wild Being itself there is only pure immanence and there is no view outside the plane down on it from a headland above the world, so the wild pattern is there but is hidden by the fact that there is no room to get above the plane to look down on it. Wild Truth has to do with the fact that the complex plane is infinitely deep and that the Mandelbrot set can be looked at with different magnifications with those magnifications going on to infinity. So Wild Truth is like the internal coherence of the plane itself that has the Mandelbrot patterning at what ever magnification that you want to look at and the pattern is always continued at each level despite the fact that there is no continuity between the points. Wild Reality is the fact that the Mandelbrot Set is fractal and the world itself is fractal and so looking at the Mandelbrot set gives us some idea about the infinite nature of complexity of the fractal world which gives us infinite horizons for exploration and the discovery of more detail. Wild Reality fills in and composes more detail at what ever level we want to look at it just like the Mandelbrot set does as a mathematical object with infinite detail. Wild Knowledge somehow takes us beyond the shifts in knowledge to the generation of unheard of and unexpected changes that occur in emergent events. Wild Knowledge changes the nature of knowledge completely, not just incrementally and puts us into a new era of our worldview. It is with Wild Knowledge that we are able to conceive of the Emergent Event, which combines all the levels of Knowledge Change into the next higher level of Ultra Knowledge which is the knowledge of the emergent event

itself. Wild Knowledge takes another step back into a deeper understanding which does not just realize that knowledge itself changes but changes radically with the emergent event, and this change is from within the nature of the thing known and is generated by anomalies we detect contrary to our projections of the schemas. Wild Knowledge is the knowledge of the fringes of our science, that detects the inexplicable phenomena that science does not want to deal with at all. Wild Knowledge is a knowledge of what lies beyond the borders of our current worldview that are just appearing and may overturn our entire worldview. Wild knowledge has not yet been tamed by Science and Academia.

Ultra Knowledge is the knowledge of the genuine Emergent Event itself. The nihilistic landscape is cleared and a new order put in place at some level within our worldview. It is thought to be a combination of the aspects of Ultra Being: Ultra Presence, Ultra Identity, Ultra Truth and Ultra Reality. Delving deeply into this level is beyond the limits of this essay. Another set of Essays about the "Metaphysics of Emergence[8]" attempts to describe the possibility of Ultra Being. This is the cutting edge of Fundamental Ontology and it has not been established fully that this level of Being or Knowledge exists. Its nature is not fully known at this time. Ultra Being is the externality of the projection process considered as an existent. Ultra Being is the non-nihilistic distinction between emptiness and void at the level of Existence after the phase transition out of Being. Ultra Being is an impurity in Existence. It is unexpected that Existence should have such an impurity, but it comes out of the fact that Being and Existence are complements of each other and that Being has existence in it as the difference between the kinds of Being, so to Existence has Being in it as the distinction between the two interpretations of existence as void or emptiness. But we might venture that Ultra Identity is the Pascal Point from which the Pascal line, Pascal triangle, and Pascal

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[8] http://archonic.net

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simplicies are generated. It is the paradoxical nature of oneness that caused the Platonists to consider One as being above Being. Oneness is something very difficult to understand. Ultra Identity is this strange nature of oneness between emptiness (even zero, null sets) and void (odd zero, nil masses). Ultra Presence has to do with the projection process itself which can be modeled as the Pascal Simplicies that produce the minimal differentiation of information at each Boolean system logical level (2^n). The Pascal Triangle generates dimensionality by producing at each level of unfolding the minimal solid for each dimension. But the complement of the infinite dimensions is the finite number of schemas (ten) that support projection by finite humans. Ultra Presence is the strangeness of projection. So Ultra Presence is the strangeness that we learn about the world by projecting schemas from within us onto the world and that the world answers back with anomalies which violate our schemas so that we eventually learn something about the noumena that are out there beyond our experience even though we cannot experience the noumena directly. Ultra Presence is the presence of the noumena in experience without them ever appearing in experience. Similarly Ultra Identity was when the One is given a status beyond Being even though it organizes the differences between unity, totality and multiplicity not to mention wholeness. So the One appears as categories within experience as a prioris even though it is prior to experience yet as quantity and quality it organizes all experience we see a posteriori. Ultra Reality is something like the appearance of radical singularities in experience that Deleuze talks about. Deleuze points out that Leibniz has the concept of the C.S. Periceian Categoires of First, Second and Third to which we add B. Fullerian Fourths as synergies. Firsts are naked and isolated facts, Seconds are relations between things, and Thirds are continuities. Fourths are synergies and these synergies are organized around the singularities that appear in Ultra Being. Ultra Reality is the unpredictable nature of the singularity which is unexpected, unheard of and impossible to predict. Ultra Reality gives rise to what Deleuze calls the Event, ruptures in time. Ultra Truth has to do with the interrelation between Ultra Being and the interpretations of existence as emptiness or void and the fact that at this level Ultra Being represents a non-nihilistic distinction between emptiness and void. Ultra truth mediates our interaction with existence as emptiness or void though the projection process seen as an existent itself, i.e. externally rather than internally as we normally experience it. These four aspects of Ultra Being appear to us fused in Ultra Knowledge. That is our knowledge of the relation between Existence and Being, and the relation between the projection process and what is there in the world as noumena beyond our projections, but which is what is just found in existence when we do not project. Ultra Knowledge is the ultimate level of knowledge which is our knowledge of the possibility of emergent events that may radically transform our worldview.

Pertinence

A key problem that has been brought up by the 9/11 commission is how knowledge was trapped in organizations which could have prevented the attack which occurred due to the fact that the government could not coordinate what it knew and act on what it knew of the Terrorist threat. I have written a paper called "Anti-Terror Meta-systems Engineering" and a companion paper about "Vajra Logics" which were presented at INCOSE in 2002 concerning the sorts of changes that are necessary in order to counter this sort of terrorist threat. But one application of the understanding of the meta-levels of knowledge is to attempt to reengineer how knowledge flows between organizations within the government. In order to do this type of radical knowledge discovery we need to know what we know and what we don't know so we can imagine what emergent events are possible that might transform our knowledge radically. This means exploring the meta-level of knowledge and thus not just a matter of knowledge management, or knowledge rediscover, but radical knowledge discovery of the transformative emergent event.

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