

THE ONTOLOGICAL FOUNDATIONS OF AUTOPOIETIC THEORY:

A Tutorial

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Lesson One

1. Introduction

This tutorial will treat the ontological basis of Autopoietic Theory and its extension into the realm of social theory. It will implicitly treat epistemology as well, and will concentrate on the construction of a non-dual basis of theorizing about the phenomena of life, intelligence, social and psychological phenomena. These ontological considerations flow from the developments in this century in Continental philosophy which has had very little impact on scientific theorizing to date but which have a great potential for transforming the Theorizing of Western science especially in the area of the theories concerning life, cognition, and social phenomena. The lack of impact has several sources, one of which is the philosophical blindness of most scientific practice, to the extreme that this defect is generally seen as an advantage. All the while explanatory philosophy within science itself is rampant. Basically anything that cannot be tested, is philosophy. By this definition much of what goes on in science is implicitly philosophy on a naive basis. Philosophizing on the basis of a avowed ignorance of even the rudiments of Western philosophy is common. Another factor is the prevalence of nihilistic and extreme schools of thought within philosophy itself, such as Analytic Philosophy,

Deconstructionism and other related Post-modernist movements. Most of these lines of thought are repugnant to scientists and reinforces their distrust of philosophy. However, without philosophy the meaning of scientific theories and facts remain obscured. And many of the implicit philosophical positions within science are just as nihilistic as the philosophical schools that cause folks that think of themselves as scientists to blanch. In fact the Krisis that Husserl pointed out in Western Science is still in full swing. Science has become detached from the lifeworld and teeters on the abyss of meaninglessness and nihilism through this disconnection from the consideration of meaning and the rise of instrumentalism. What we need to do is bring the best insights of recent Continental philosophy to bear on our scientific practice and use that as a context for understanding the phenomena that are addressed by autopoietic theory and its extension into the social realm. Thereby we will attempt to give a deeper context this important scientific theory which addresses some of the most crucial phenomena that appear within the world, and indeed it is a phenomenon that we are examples of ourselves. Thus in this we strive for self understanding.

2. Caveat

In this treatment we will not be attempting to second guess Maturana or Verela. Instead we will be taking our direction from them but attempting to produce an image of autopoietic theory that is more philosophically sophisticated. Maturana and Verela suffered from the same problem of most scientific theorists in that they did not realize the effects of their ontological suppositions on the interpretation and understanding of their theory. Thus there are many different interpretations of their seemingly paradoxical theoretical constructs. In fact, their theory appears to have a mystical quality from the point of view of traditional scientific theorists. Yet it has gained popularity due to the paradoxical nature of the phenomena that it attempts to understand by placing limits on our ability to know.

Autopoietic Theory is independent of any single author. And we are not attempting to reconstruct the view of any particular author on the subject, but instead attempting to construct another approach to the framing of a coherent autopoietic theory. Our approach is through the realization of the importance of understanding ontological and epistemological assumptions in the framing of autopoietic theory. Thus we start out by attempting to get a clear view of the ontological background for the theory, and then attempt to work out the best way to frame the theory given that context.

Of course, the ontological context of this particular theory applies to everything within our world, but it has special consequences for autopoietic theory, because of the fact that autopoietic theory is in part a description of the one producing the theory. Thus there is an important reflexive moment in autopoietic theory and the theorizing that goes on that culminates in the theory. The ontological context allows us to appreciate this reflexive moment and defuse some of its side effects which are the cause of so much of the misunderstandings surrounding the theory.

3. History

In our view the first systems theorist was Plato, not Aristotle, within the Western Tradition. In The Laws Plato produced a schema for a complete system of a city, and much of what was later thought of as Aristotle's systemizing thought may be seen as an embellishment of what Plato does in The Laws. In fact it is clear that what appears in The Laws is more like what was actually taught in Plato's Academy than what appears in the other Dialogues. What is of interest is that this is in fact a lost book, in the sense that philosophers normally ignore it and place it in the realm of political science. Political scientists tend to mention it in passing but basically think of it as an unworkable utopia with strange characteristics that are extremely unrealistic. So this longest and most systematic of all the dialogues has been essentially ignored by our tradition, even though it is clearly the earliest fully worked out systems theory, albeit a theory of a human system.

I posit that The Laws seems so strange to us, as a political system, because Plato was essentially describing an autopoietic system inhabited by human beings in the form of the city. So the first systems theory was at the same time the first known, well articulated, development of an autopoietic theory. And the irony is that this theory was projected on the human social relations, precisely the field denied as a valid application of the theory by Verela. So the quandary that we find ourselves in today, in which autopoietic theory is haunted by the social dimension, is mirrored in the first known Western example of the theories articulation.

Autopoietic Theory represents a Road not taken within our Western Tradition. Philosophy ignored The Laws and the detailed description of the "second best city" in preference for the enigmas of The Republic that was assumed to be the best city. But as we look at The Republic it is clear that it is an inhabitable city for humans, similar to the comic cities produced by Aristophanes in his comedies. It is a city only fit for the Gods where there is no difference between the city and the

household. In fact The Republic was created by Plato only to show the effects of taking the road of dualism, and to point back toward the non-dual alternative and its efficacy. But the Western tradition missed the import of this lesson and developed an extreme dualistic approach to everything. And so the city of The Laws became a curiosity, which was strange and unfamiliar, and somehow incomprehensible. But this first systems theory we now realize was an accurate image of the autopoietic system projected on the human city.

We realize that The Laws represented an autopoietic systems theory because we now have the theory of Maturana and Verela to compare it to, along with other examples developed by others influenced by the Chilean biologists remarkable work. That work establishes a different paradigm for understanding living and cognitive systems. It was done in response to the baffling nature of certain behavior of higher order dissipative, far from equilibrium, systems when looked at in the light of the normal view of biology. Part of this is the failure of stimulus response explanations of this kind of system. But in spite of this failure there is an aversion to the positing of a special living substance (elan vital ala Bergson), so the question became how do we theorize about a machine that cannot be understood by simple stimulus response explanations. Out of this simple quandary grew a sophisticated theory on a very different pattern than most other theories of the organism. What is interesting is that there are many direct parallels between this biological theory and the systematic view of the city Plato presents in The Laws.

Therefore, we do not see autopoietic theory as stemming from biology in recent times only, but view it as a submerged thread that runs through our tradition, and which surfaces occasionally. For instance, we can see signs of this thread in the Monadology of Leibniz. But it is interesting that there are very few instances where this thread can be seen to be fully manifested in our tradition, yet it appears to lurk as an essential possibility, continually suppressed or ignored, behind all that does manifest within our tradition. The paradoxes of the Animate Machine are continually there behind the extreme mechanistic interpretations of phenomena including organic phenomena. But teasing this strand out and finding clear examples, say in the Phenomenology of the Mind by Hegel, is a very difficult process. Yet ultimately Autopoietic theory must come to terms with its progenitors within the Western Tradition, because it is continually haunted by them.

In this work we will not attempt to tease out these hidden threads of autopoiesis within the tradition, but on the other hand we will not cling overly to the version of

the theory proposed most recently. Instead, we will attempt to show how Western Ontology bears within it the hidden possibility of Autopoiesis and the paradoxes of it's extension to the social. We will do this by delving into the structure of Western ontology, and attempting to understand that as a context for the arising of autopoiesis as the rigorous definition of the nub of paradoxicality within the field of science but against the background of Western meta-physics.

Note:

For more details on the interpretation of the second best city in Plato's Laws as an autopoietic systematic organization of a human city see The Fragmentation Of Being And The Path Beyond The Void by Kent Palmer (Manuscript circa 1994). This manuscript contains a commentary on the first six books of The Laws that demonstrates the autopoietic nature of Plato's first systems theory.

Lesson Two

4. First Approximation

What we need is a crude first approximation to autopoietic theory so we can understand where we are heading as we develop our ontological view of autopoiesis. In that crude first approximation we will consider autopoiesis as an "existentialist biology" which is directed at the question as to whether organisms are reducible to machines or not. The answer to the question that autopoiesis gives is at first satisfying to the reductionist because it affirms that indeed organisms are machines. But then when one looks closer and realizes what kind of machine the answer becomes a bit more unsettling to the traditional theorist. In other words Autopoiesis takes sides in the traditional debate as to whether organisms are "just" machines or not. But it reinterprets the "just" in such a way that the theory itself takes on the paradoxicality of the categorizational problems associated with this dichotomy. It does this by claiming to create a different theoretical stance a lot like existentialism. Existentialism attempted to reaffirm traditional metaphysics by turning the system of metaphysics upside down. Where essence is normally affirmed by either idealists or materialists as being prior to everything else, the question has always been only what kind of essence, instead existentialism affirmed that the existence of things was more primordial than their essences. This preserves the traditional metaphysical structure but appears like a new philosophy.

Autopoietic theory does something similar in that instead of affirming the primary nature of the essences of the species produced in the evolutionary process it affirmed the status of the individual organism as being prior to the species in the sense that it must exist in order for the species to evolve and develop its essence diachronically. It is odd to think that biology had lost track of the actual individual organisms in its study of plants and animals, but this is exactly what autopoietic theory charged. In fact, it said that these organisms had some strange characteristics when considered as individuals outside the panoply of the forces of evolution acting across time to define the essence of the species to which the individual belonged.

This of course brings us directly to the heart of ontology, because what is ontology if not the relation between the Being of essences and the existence of individuals? So the question becomes immediately what is the nature of the essence and existence of individuals and species. We can think of it this way. An individual organism exists first and then develops its essence as a means of participating in the species. Thus is born the distinction between structure and organization. Or we can think of it this way. A species defines the essence of individuals which then only exist to embody those constraints in individual existents. It is clear that the traditional biological viewpoint is the latter. The major subject of study has always been the species not the contribution of the individual that exists in order to make the species possible. Thus autopoiesis fines us for the liberty it allows us to take. What we desperately desire is to have organisms be *only* machines. But what it takes in return is the fact that it imposes the existentialist view of biology that concentrates on the individual existing organism instead of the abstract species.

Now the question arises what is the relation between these two propositions? To understand this it is necessary to consider the alternative. The alternative is that Bergson is right, there is an *elan vital* or life energy that is different from all other energies that are normally considered by physics. The very thought of this makes biologists blanch because they like all of us desperately want to be scientific by the standard set in physics. If there is some special invisible energy in organisms then it is very difficult to gain the dream of scientific ratification of the foundations of biology by physics. But when autopoiesis gives us this gift of scientific validation of our mechanistic view of organisms it takes away something equally valuable to us. That is it takes away our view of the species being primary and the individual being secondary. It points out that without the living viable individual there would be no species. We can think of Dodos but without actual Dodos alive and kicking the species is nothing. Thus autopoiesis considers what the individual contributes

beyond the species. In other words, normally our biology would just consider an individual an example of a species, and nothing else. But autopoiesis considers that the individual contributes something beyond the constraints of the essence of species. Thus you see we can only have organisms as merely machines as long as the individual existent organism contributes something beyond the species defined by the essence. Autopoietic theory is about defining just what this something more that allows the organisms to be merely a machine is. And that revolves around the traditional question concerning the relation between essence and existence.

At this point we can begin to appreciate the paradoxical nature of autopoiesis. It gives us something but also takes away something in order to be able to decide finally that organisms are just machines. Now let's consider the opposite of autopoiesis. That opposite would decide that an organism was more than a machine and then we could forget the individual and continue to think of the individual as merely an exemplar of the species. And this is exactly how biologists solved the problem in many circles for a long time. They accepted that organisms were an emergent level beyond what was merely given in physics and avoided reductionism. But as physics was more and more successful with their reductionist program this became harder and harder to sustain. So another group of biologists insisted that organisms were completely reducible to physical phenomena. But then their problem was to explain where the strange and different properties of living organisms came from. In fact, it was out of this group that autopoiesis sprang. They accepted that organisms were just machines already but wanted to explain the strange properties that did not reduce to mere physics. Maturana and Varela hit upon the answer, i.e. biological existentialism. In other words, there is a residue left over from the essence imposed by the species which explains the difference between the physical properties and the emergent properties of the organism that is prior to it being any particular species. It is in fact a brilliant theoretical move with deep philosophical import.

One should notice that traditionally the Being of Essence and the Existence of the individual was confused in Greek philosophy. It was the time when the Arabs inherited the Greek tradition that the distinction was produced between the two concepts. This happened primarily because the Arabic language had no term for Being but did have a term for existence. This forced the Arab Aristotelian scholars to make the fine distinction that was translated back into Latin to become the distinction we have today. In fact until the existentialists no one thought to take philosophical advantage of the distinction. Jaspers is probably the first to realize

how Existenz could open a new direction for philosophical exploration. He was also the first to realize that by intentionally leaving a key term undefined in a philosophical system it was possible to generate a surplus of meaning in that term. So in his philosophy he intentionally left Existenz undefined and its meaning was given totally by context. A similar ploy occurs in Autopoietic theory. Here instead of leaving the existence of the individual undefined we confer upon it closure to the external observer. In this way we gain the surplus necessary to explain the emergent difference while at the same time remaining congruent with a reductionist program.

Hopefully it is becoming clear that the relation between existence and essence is not easily pinned down. In fact, it is a major muddle that philosophy attempts to address. When every one poses a difference between existence and essence one is walking straight into philosophical territory whether one declares it or not. The paradoxicality of the difference between the emergent surplus of biology over physics is hidden in the paradoxicality of the relations of existence to essence. Of course, if one accused Maturana and Verela of this sophistic ploy they would deny it. But it is clear, when one considers the situation closely that there is really only this one way out of the conundrum of reduction verses emergence. Maturana and Verela were merely clever enough to think of this possibility of embracing paradoxicality. In fact, where best to place the paradoxicality but in the organism itself. Then it appears as if there is no paradoxicality anywhere, and if we do not look at the object of investigation closely enough we will never discover where all the paradoxicality of the distinction between organism and machine disappeared. However, we must pay for this reductive freedom by having our view of the field of biology turned upside down. Suddenly organisms are closed, external observers stand in uncertain relations to their subjects of study, the attributes of life and cognition become fused within the organism, the distinction between organization and structure must be scrupulously maintained. Our real interest, in species moves to the background, while enigmatic individuals take center stage.

This first approximation will allow us to keep straight what is at stake as we begin to investigate the phenomena of the fragmentation of Being and explore the relation between essence and existence. Essences have Being, but existence is somehow about the limits of Being. Existence gives us visions of life that is nasty, short and brutal. It brings to the fore the difference between necessity and sufficiency. All in all we can say that Being and it's limits play a very significant role in our conception of autopoietic theory. But what is Being anyway? Well it turns out that our conception of Being has been radically transformed in this century, at least for those who do

not reduce everything to word games, and thus are doomed to endlessly play word games without meaning (i.e. Analytic Philosophers).

Lesson Three

5. Sophist-ication

Our crude approximation of autopoietic theory as Existential Biology has given us a beginning point for exploration that shows how ontology intersects with autopoietic theory. In fact, we can if we were unkind attribute the whole theory to a kind of sophism. In other words like the sophist described by Plato, the autopoietic theorist has found a hole that he can go down, which has so many exists that he can never be found. This is because every possible relation between essence and existence in the Western philosophical tradition may be applied as a basis of interpreting the Autopoietic Theory. There is in other words an inexhaustible supply of interpretations of autopoiesis. We will not attempt to rehearse those here. But instead we will attempt to understand what Being IS by introducing some of the insights of contemporary Continental philosophy and hopefully approach some understanding of it's relation to existence in the process.

Consider this. If organisms are just machines then there is something lacking, i.e. an explanation of their emergent properties. But if they are more than machines then we have created some non-reducible substance such as elan vital of Bergson which is mystical and inexplicable. Thus if we answer that they are machines then we have said too little and if we say that they are not machines then we are led to say too much. Autopoiesis picks a point right between these extremes and says that the very existence of the autonomous individual organism carries with it something that allows the emergent properties to be explained by without appealing to the essences of the species forged over time by evolution. But understanding how this may be so means we have to invert the normal relations that exist between the individual and the species in biology. So we get a paradigm shift which leads to fascinating insights into the nature of organisms, but which also throws us back onto the old unresolvable and enigmatic relation between essence and existence.

After all the distinction itself arose out of a clash of cultures. The Greeks were Indo-europeans and had something called Being in their language, while the Semitic Arabs had no such thing as Being in their language but instead had the concept of existence. The Arabs latched onto the Aristotelian texts and became pre-eminent interpreters of them. This caused them to distinguish finely between being

which they translated as Kun (to make) which is active and means more than persistence AND existence (wujud) which was meant something different to them, something more like concrete reality, or what the Buddhists call Thusness or Suchness. Thus the Arabs had to invent a word for Being which is beyond concrete existence in order to compare the Greek ontology to their own natural linguistic interpretation of things in a world without Being. But when all this came back into the Western Philosophical tradition after the dark ages it meant we introduced the Arab concept of existence for which we had no precedent in our language. In other words for the Arabs Kun (Being) is a made up technical term, while for us Indo-europeans existence is a made up technical term. This means that the very quandary and enigma of the relation between essence and existence comes from the clash of cultures with very different ways of looking at things. In other words it is about as deep a distinction as you can get which is not just a difference in terms but a whole difference in the way we look at the world, with and without Being.

The whole question as to whether autopoietic theory is merely sophistry really rests on what we take the difference between essence and existence to amount to in the end. If essence and existence is not taken to be a significant distinction then autopoietic theory collapses into a set of illusory distinctions. If we do take it to be significant but cannot resolve what it means then autopoietic theory becomes an unsolvable enigma. If we instead find a way to understand the relation between essence and existence that reconciles the clash of worldviews then autopoietic theory becomes meaningful and ultimately will allow us to understand things about the nature of the world that remain incomprehensible. But in all this the philosophical underpinnings of autopoiesis are crucial if we are to avoid sophistry.

6. Ontological Difference

So we now begin the climb up the staircase of the meta-levels of Being. Fortunately it is not a long climb. But each step is very important to understand thoroughly. So we start where Heidegger started by explaining the concept of Ontological Difference. In other words in order to understand Being it is necessary to understand the distinction between Being and beings. Being is an attribute of everything that is different from the things themselves in each case. We can understand this when we begin by interpreting Being as presencing. Under this interpretation we see that presencing of something is different from the thing made present. Presence is the basic determinate of Being. But Being may stand under many different interpretations. But if we do not first distinguish Being from the

beings that participate in it then it is impossible to even begin to understand the nature of Being.

7. Pure Presence

The first and most universal interpretation of Being is Pure Presence. This is the interpretation that has been handed down within our tradition as the most prominent. In other words when something is purely present with no absence touching it then it is said to have Being. So for instance, St Augustine talks about the infinitesimal moment of the present and says that only that which exists in the present has Being. This means pure presence is like a snap shot that is frozen because it takes a picture of the infinitesimal moment. This basic idea has stood unchallenged (for the most part) in our tradition up until this century.

It is important to understand pure presence because that is the realm in which scientific theorizing mostly takes place. The theorist attempts to arrange all the facts into a single snap shot that can be used to explain whatever phenomenon he is studying. He assumes that the whole theory is available for mental manipulation at once. He assumes the role of a transcendental subject toward a fully available transcendental object and figures that the coherences between the two are made possible by God. Or at least that is how the story goes in the Kantian model. Different philosophical systems construe the pure availability of what is purely present differently. But science as a whole is firmly rooted in this kind of Being and does not question that in the least.

8. A new kind of Being arises

This picture of a world with only one kind of Being began to dissolve soon after the turn of the century with the work of Husserl and Peirce. Husserl for the first time decided to look at what actually went on in consciousness when we thought about geometry or logic. He developed a method and terminological apparatus based on Transcendental Idealism of Kant and began exploring his own consciousness and what actually occurred as he thought. He found that the phenomenological consciousness was a pretty strange place, but what was most interesting of all he found functions of consciousness that went beyond the workings of induction and deduction. He called this new function eidetic intuition (i.e. essence intuition). He noticed that it was possible, and in fact common to grasp essences directly instead of building them up through the use of induction and deduction. This phenomena had not been noted before and showed a way to solve some of the age old

philosophical conundrums because essence perception pointed toward the existence of a new mode of Being within consciousness that allowed it to grasp the world in a way that was not just logical.

Peirce discovered something similar when he isolated abduction as a mode of reasoning that produces hypotheses and also discovered the strata of Signs that existed beneath the surface of formalisms. But the insights of Peirce were not developed because he did not gain tenure as a professor and influence students as Husserl did. Out of Husserl's teaching work came the school of phenomenology and as his ideas spread engendered the movement of existentialism. In other words there were some, like Sartre who saw this new mode of Being as existence. But others within the school stuck to the basic phenomenological line that saw this new philosophical discipline as the study of essences.

It was Heidegger that first used the new mode of Consciousness as the basis of a philosophy. He sharply distinguished between the present-at-hand and ready-to-hand modes of Being-in-the-world in his book Being And Time. He took the argument out of the realm of consciousness and firmly placed it where it belonged in the realm of ontology. He in effect showed that this new kind of Being was very old, and in fact could be found in the Greek texts under the gloss of Aleithia (Uncovering), which was the Greek concept of Truth.

And it was realized that the new kind of Being related to Heraclitus' view of the world as continuous flow as opposed to the view of Parmenides that was taken up by Plato and Aristotle that the world was a static plenum. Thus we can call the new kind of Being **Process Being**, as it means that everything in the world is a process of unfolding. As we look back on the history of philosophy we can now see that many times philosophers attempted to point toward this realm of unfolding, as Hegel did, with his dialectics. but the problem was that all the theories that indicated it were couched in the mode of pure presence, so that the indications did not capture the actual phenomena of continuous unfolding.

Here we will use the idea of the temporal gestalt as a means of understanding Process Being. A tree starts as a seed and grows to its full height, if all goes well, and then eventually declines and dies. The whole gestalt of the process of that unfolding is its Process Being. Snapshots of each moment of growth show it as it is purely present in that moment. Thus we can take this series of snapshots and make a film, but the film does not do justice to the whole of the temporal gestalt that lies

behind the film. The film is an illusory continuity that we produce out of purely present moments. But beneath the illusory continuity there is the actual organization of the phenomena in time based on its genesis.

Merleau-Ponty in The Phenomenology Of Perception attempted to translate Heidegger's ontological argument into psychological terms and found that pure-presence or the present-at-hand correlates with pointing and process being or the ready-to-hand correlates with grasping. Already Heidegger had pointed out that our technological infrastructure has the kind of Being called Ready-to-hand. We do not notice it until it breaks down. Take the example of writing with a pencil. As we write we do not notice the pencil (or keyboard) but our mind is on the ideas (illusory continuities) that we want to convey in our writing. But when the pencil breaks (computer crashes) then our attention is brought back abruptly to the technological infrastructure of our projects within the world.

Thus Husserl (and perhaps Peirce) ushered in a new era in philosophy by the discovery of a different mode of consciousness through their phenomenological methods. Heidegger and then Merleau-Ponty expanded upon this hard won ground by creating philosophies and psychological interpretations of the new ways of being-in-the-world. But of course besides giving us new realms to explore in philosophy, this expanded our view of the world and how it works, and also opened up the possibility that Being had several or perhaps infinite different modes. So the gold rush was on attempting to find and define these new modes philosophically. It turned out in retrospect that this unfolding of the different modes of Being occurred like a symmetry breaking, so that each new mode was at a higher meta-level than the last, and the series of symmetry breakings was not infinite but ceased after the fourth because it hit a fundamental human limitation to think beyond the fourth meta-level.

9. Biology and Physics in a new world.

Biological processes are all temporal gestalts. Therefore you would think that biologists would embrace the new kind of Being immediately and begin to weave it into their theories as the means by which the difference between biology and physics may be understood. Physics in the Newtonian era gave us the model that defined the universe and its constituents as purely present particles that developed under the equations of the dynamical laws. Thermodynamics because it was messy was pushed to the background. But what we find is that even though Physics has

moved on to the quantum era that has realized its own version of the temporal gestalts underlying phenomena, biologists are still trying to conform to an old version of science rooted in pure presence. So we do not see many theories in biology that present biological processes as rooted in process being. In fact most of the progress in this regard has been had in Physics where quantum processes have caused physicists to rethink the Newtonian models based on pure presence radically in order to have any comprehension of what is going on at the quantum micro-level. In fact, Whitehead's Process In Reality was the first major step in the direction of a purely process oriented philosophy. Unfortunately, this philosophy was embodied in a formulation that was purely present and so it undercut itself. But we find that physics has given rise to the work of several formulations that understand things in terms of processes at a fundamental level, and so biology is left in a position where it needs to catch up. The rise of autopoietic theory is a step in that direction. It imagines the creature in fundamentally different terms where the process of living and the process of evolution intersect somehow.

However, are we to follow Sartre and understand the new mode of Being as an embodiment of existence. If we were we could imagine the Biological Existentialism of Autopoiesis as being directly related to the Existentialism of Sartre. But the problem with this is that once we discovered a new modality of Being-in-the-world, the door was opened to finding more, which is exactly what happened. Identifying the new mode of Being with existence slams that door on further kinds of Being. Instead we must wait for the door to close itself. Then that is where we are likely to find the basis of existence as opposed to essence. As it was Husserl identified the new modality with essences, and so Sartre was merely reversing Husserl applying Hegel's viewpoint. But as we see from later developments both of these views are wrong. As we move up the meta-levels of Being our views of essence and existence change. At each level the pair take on a new relationship. For instance, until we discovered process being essences were static constraints on the individual thing that made it what it was. But once we discover that the genesis of the thing in its temporal gestalt is important then we see that the essence is no longer static. Now we have to speak of the thing essencing forth as it unfolds into existence. The unfolding of the essence makes it necessary to see the existent thing as dynamic as well. Instead we are forced to look at it as an eventuality which exists simultaneously in space and time and is dynamic. So at the level of Process Being we find that we have eventualities essencing forth as they unfold and then fade from existence. When we apply this to biology we see that the species is not just the culmination of the development of the creature but is also a

conferring of a whole genetic process from birth till death of a creature that lives in four dimensional spacetime.

Lesson Four

10. Dynamism

One might say that we knew the world was dynamic all along, so what is the big discovery that Husserl and his school made that we did not all ready know? Trying to make that clear we might look at the difference between a film and a growing thing. In a film we see dynamism. But that dynamism is made up of separate slides that are frozen pictures of the dynamic thing. If that thing is a tree growing then we contrast the tree itself and its genetic development with the succession of frozen slides that capture the externality of its dynamic. Similarly philosophy always before produced frozen abstracted snapshots called ideas and projected them on an illusory continuity in order to represent the world. What Husserl managed to see through his rigorous introspection technique was that this was only one way we construed the world, there was actually another completely different way we construe the world which is inherently dynamic. This inherent dynamism may be used just like the series of frozen snapshots flashed on the screen in rapid succession to imitate the world. We use it when ever we look at the whole temporal gestalt of something from its arising to its passing away. The moment of completion when it reaches the height of its development is only a moment which the snapshots attempt to hold onto. One of the best examples of this way of looking at things is the studies of Piaget [cf Structuralism] who really tried to find out how children reasoned, or experienced time, or thought of the world. He found that it was very different from adults and that they were definitely not little adults. This line of investigation has revealed many interesting things about development and its relation to behavior and the child's construction of its world. In this view the essence of the human changes as it goes through various stages of its development. This essencing was never really noticed before. In Husserl the essencing was seen as the process of the grasping of the essence of things which was independent of induction and deduction. As Husserl says if you never saw a Lion before and did not know what it was and one jumped out at you, you would immediately perceive the essence of "lion-ness". This ability to grasp what a lions essence is despite never seeing one before nor having the abstraction to work from is a faculty that is different from the reasoning between known individuals and known abstractions. Peirce called it abduction.

Peirce made a fundamental contribution when he connected the abduction that gives us hypotheses with sign making. He invented thereby the discipline of semiotics. Saussure was the co-founder of this discipline. It is a discipline that is made possible by the understanding of the process that underlies all formalisms. In fact, we can see from the point of view of semiotics that all forms are made up entirely of signs. The signs appear as diacritical marks. These marks show us the difference in repetitions of individuals of the same kind. The changes of the forms through discontinuous transformations may be explained by structuralist semi-formalisms. These kinds of formalisms have become prevalent within the Western tradition. A good example of such formalism appears in the General Systems Problem Solver of George Klir as appears in Architecture Of Systems Problem Solving. In such a formal-structural system the discontinuous changes in forms are understood by creating a micro-formalism of content (signs) which manages the transformation from one form to the other. Thus we see that structuralism and semiotics are closely related and are dependent on the positing of the Process Being meta-level. Structuralism studies the meta-constraints on the evolution of essences. Semiotics looks at the pointing that occurs at the level of pure presence which cannot be seen until the level of process being has been revealed. Signs indicate. The fundamental psychological motif of the present-at-hand is indication. But until the Process Being level has been identified all we see is the forms on the background of illusory continuity. What we do not realize is that those forms are composed of a content of signs, or indicators. The flow of the signs, and the discontinuous transformation of the forms only appears when the process substrata is identified. By the identification of the process substrata it became clear that we could talk about the transformation of essences through time and the embedding of eventities in timespace without resorting to frozen forms and illusory continuities that repressed the natural flowing and transforming of things.

11. Next Step Up -- Segmentation

Once it was clearly seen that there was a natural flow beneath the filmstrip produced by ideation, the next step was to realize that this flow was segmented. The realization that this segmentation indicated another kind of Being was not as straight forward. In our tradition we are used to moving back and forth between nouns and verbs. We have in our language words like Pattern, Form, Shape, Trace which can be used as either nouns or verbs. So the realization of a verbal substrata to the formalized nouns was not a big step. Within our history there were always philosophers such as Heraclitus and Hegel that pointed back toward the undertow of

action beneath the facade of stable forms. But stepping beyond this to the next meta-level of Being was a difficult and tortuous advance. Now we can look back and see that it is clear that if you divide your approach to things into nouns and verbs that the next meta-level up must look at the site of the discontinuous distinction between them. Thus it is clear now that the discontinuity between Verb and Noun is itself “no-thing” that must have a different ontological basis from the things that it divides. In the provision of an ontological basis for this discontinuity and those that appear in the flowing stream of transformations of essences that show up as segmentations arises what is now called Hyper Being.

The way that ontologists approached Hyper Being had more circumlocutions. What occurred is that Sartre posited Nothingness as the opposite of Process Being and reasoning from Hegel posited the association of Process Being with the existent. Thus ensued a fight over what existentialism meant. Heidegger disclaimed any relation to the existentialism of Sartre. For him existence could be traced back to ex-stasis or ecstasy of the projection of the world by Dasein. In other words existence was just a moment in the cycle of the self projection of Being by humans reduced to their ontological roots. Sartre on the other hand used the more traditional understanding of existence as other than Being. This allowed him to posit that there was an opposite to Process Being in existence which was called nothingness. This reproduced the split between physis and logos that is a traditional dualism. By devaluing existence Heidegger was attempting to do away with this split in his philosophy just as he had also done away with the spit between subject and object. However, the split between logos and physis was more difficult to discard. Sartre’s brilliant move was to place Nothingness at the center of consciousness while Process Being was given external reality. This meant that existence and essence intertransformed producing a closed loop like a Klienian Bottle. Existence appeared at the center of consciousness (logos) and essencing at the center of the what there is externally (physis).

It was quickly realized that Process Being and Nothingness were antinomic opposites and so they canceled. This cancellation was called by Heidegger -B-e-i-n-g- (crossed out) [pretend the lines go through the letters]. By writing under erasure then cancellation of Process Being and Nothingness was indicated. This went hand in hand with Michael Henry’s critique of Heidegger in The Essence Of Manifestation in which the underlying assumption of his philosophy was called Ontological Monism. That is the idea that Being as a process Grounds itself as a Formal Residue. In other words the Verbal nature of things grounds the Noun-like nature of

things. To counter this basic assumption Henry pointed out that there must be something that does not ever appear which he called the Essence of Manifestation. This was the ontological equivalent to the Unconscious of Freud, Jung, Adler, and others. It was a moment of the process of manifestation that never appeared but effected everything that did appear. One could only see it through circumspection in the distortions and displacements of what did appear. Derrida capitalized on the definition of Hyper Being and called it DifferAnce which he defined as differing and deferring. One could think of it this way. There is not just a verb and a noun but also an anti-verb. The verb relates to logos and the anti-verb relates to physis. These two cancel producing the discontinuity “|” between the noun|verb. But the very existence of an anti-verb signals the existence of something prior to both the verb and the anti-verb. That “something” never actually appears in the showing and hiding relationships of presencing that underlies what is made present. That “something” Henry calls the essence! And so we find that suddenly the term essence has a different meaning. It is something that is always hidden behind the scenes controlling the unfolding of the essencing of eventities and segmenting that flow.

Another way to look at this is through the theory proposed in physics by David Bohm who talks about the implicate order. The implicate order is an underlying order that never appears but that controls the ordering of what does appear. It is based on this theory that Bohm proposed the concept of hidden variables to explain quantum phenomena. If we think of the forms as figures on a ground that appears as a gestalt then the implicate order must be a kind of proto-gestalt which lies behind the apparent ordering but which occasionally shows through by changing that apparent ordering. Similarly the essence behind manifestation controls the discontinuities that fragment the essencing of eventities in the flows of development. It appears just as the human psychological unconscious as something behind the scenes that orders things on a basis we do not understand, that we never see but whose presence we cannot deny as it appears everywhere.

Derrida’s early philosophy is an exploration of this Hyper Being level. The name actually comes from Merleau Ponty in The Visible And The Invisible who summarized the development of Western Continental ontology that led to the positing of this third meta-level of Being. Derrida talks about writing under erasure, and talks about writing crossed out, and generally realizes that within our tradition this kind of Being has been symbolized from the beginning by writing as opposed to the flow of speech. He characterizes our tradition as Logocentric and as one that has

denied and suppressed writing since Plato in spite of the fact that the tradition itself needs writing to be passed down. Derrida points to the substrata of the sign as being made up of traces. He posits that just as the content of forms are signs so to the content of the sign is traces. A trace is an indentation or impression left upon the writing surface by the writing instrument. If you write with a pencil on a tablet and then tear off the top sheet of the tablet and then shade in the surface with the side of the pencil then one sees the trace. This level of traces beneath the sign is very significant and it's isolation is a major achievement. It allows us a fundamentally different view of our cultural heritage. This is why deconstruction has been so popular in spite of its degeneration into nihilism. Derrida calls the study of traces Grammatology. These are the distortions and deferrals that are left by the process of writing that underlies the process of speech that in turn underlies the illusory continuities that support forms. With each meta-level of Being that opens out we are exploring the substrata of ideation and out projection and construction of the world.

In my series of papers on Software Engineering Foundations I show that software is one of the few objects that exists almost wholly at the level of traces and thus is a cultural artifact that embodies Hyper Being. I posit that software represents a meta-technology as it ties together and integrates other technological systems. And I look at the points in Fandozi's Nihilism And Technology and contrast the attributes of a meta-technology with those of a technology. Once we realize that software embodies almost all the attributes of Hyper Being traces then it is possible to see its profound effects on our culture as software becomes more prevalent. The characteristics of software are that it is a kind of writing that is animated. The type of process of animated writing is very different from the kind of process that governs speech. Speech is the ultimate embodiment of essencing forth of the event. In other words in speech grammar controls transformations of words (forms) according to a fixed grammar. The words depend on their context for their meaning. Thus as sentences put the words in different contexts their essence continually changes. But when we get to the next meta-level we realize that the grammar and the words are themselves emerging within the conversational process and are not themselves fixed. The process by which the grammar and words emerge are different from the process by which words change their essential meaning within speech. These two processes identified by Derrida with speech and writing form the warp and woof upon which all cultural objects are formed. So we can look at anything and see the traces and signs of these two processes at work beneath the surface of the illusory continuity and the forms that float upon that surface.

12. Back to Biology

In Biology we have the punctuated equilibrium model of evolution. It has become clear that species appear in spurts and that evolution is not a smooth continuous process by which the essences of species are forged but instead a fragmented process that is difficult to understand. But in order to try to understand it we must look at the traces in the form of fossils of long gone species. What is strange is that there seems to be a regularity in the renewal of the species over the vast periods of evolutionary development. Some have tried to say that this occurs like the death of the Dinosaurs by the destructive appearance of comets and some have gone so far as to posit that there is a dwarf star that intersects with the Ort cloud to free these comets causing the landfall and subsequent destruction of all manner of forms of life, and thus giving others a chance in the next period of evolution. But no such twin Sun has been found. But the concept of Nemesis is a precise analog to the Essence of Manifestation. There is something that is causing the periods of destruction of species and their regeneration which is hidden and never seen like the Essence of Manifestation. If it is not a twin sun then it is some other phenomena that lurks behind the scenes and causes manifestation to be segmented and creating the traces left in the fossil record. This seems to have little to do with the organism itself except when the die off occurs. We see the effects in the traces in the fossil record not in the species except by the fact that this species is present and the others have become extinct.

But similar segmentation occurs in the development of the organism. The organism during it's development goes through a series of stages that gives us the phrase "ontogeny recapitulates phylogeny." In other words the actual development of the species does leave its imprint on the developing embryo in the series of stages it goes through as it develops. These traces of the earlier stages of the development of life appear as discontinuous steps or stages. The stages itself are controlled by the DNA strand that exists in every cell. Those DNA strands act like software controlling the development process. They are written trances that produce discontinuous changes in the flow of development. The life processes of the organism by which it maintains its viability are like level of Process Being, but Hyper Being is instead like the discontinuous changes of the essence of the organism in the process of development. The forms of the animals stuffed on the walls of natural history museums capture the frozen likeness. When we place them in Zoos then we have the living process instead of a frozen likeness. When we create habitats in which the animals are free to roam and interact with other animals

such as at the wild animal parks then we begin to see the behavior similar to those of wild animals. Animals that are in such habitats mate on the basis of the traces that they naturally produce rather than on the basis of being caged together. The only thing better than that is if we observe and study the animals in their actual habitat after we have controlled ourselves and resisted destroying it. So the stages by which Zoos have developed back toward the direct encounter with the wild are similar to the stages of the unfolding of the meta-levels of Being. That stage has a point where we allow the animals enough room to produce their natural traces and roam landscapes the size of their natural territories. This stage allows the natural discontinuities in the herds of animals behavior to appear. This is similar to the discontinuities in the development of the organism as it recapitulates evolution, and it is also similar to the discontinuities that appear in evolution itself.

The basis of Hyper Being is the discontinuities that pattern the flows. These discontinuities have a different kind of Being than the flows themselves. Derrida has gone the furthest in the direction of defining this level of culture through his psychotherapy of philosophy. But others have also explored it like Martin Heidegger, Michael Henry, Emmanuel Levinas, Maurice Merleau-Ponty. From those pioneers many other cultural analyses based on the level of traces have emerged. In fact, most of post-modern deconstructionist analysis attempts to elucidate this level of cultural artifacts. Once this level has been exposed then essence and existence takes on yet another meaning. Essence becomes the hidden, never appearing enigma that distorts what does appear. Existence becomes the trace itself rather than the signs and forms that are built up from the trace. Also we find that we no longer think of the essencing of the eventivity but instead our attention is drawn to the epochs within which the patterning of the essence remains fairly constant in its essencing. Then out of the discontinuities between these essences there is the sudden appearance of the emergent eventivity that changes everything. I call this sudden appearance of the emergent eventivity out of the discontinuity between epochs the novum. Now we see how the arising of the novum creates the epochs in terms of the phenomena of emergence, the arising of the genuinely new that transforms the tradition. This subject was first adequately framed by G.H. Mead who describes the phenomena of emergence and relates it to the social.

Lesson Five

13. The final step

You may have noticed that each step gets harder to think about as we scale the

ladder of ontological meta-levels. And one might even wonder if it is possible to go any higher. In fact, it was Merleau-Ponty that first reasoned that after Nothingness and Process Being cancel each other out by annihilation of these antinomies into Hyper-Being that there must be something else beyond the cancellation. He called this possibility Wild Being, as he was influenced by the work of Levi Strauss' The Savage Mind. What he was referring to was something similar to what the American philosopher Ballard more recently called the 'archaic'. In other words, there must be a 'primitive' or 'archaic' state prior to or more primordial than the antinomies that cancel, because the self-destruction of the ideational antinomies do not destroy the world. There is still the perceptual world that continues to function beneath the self-destructing ideational canopy. Merleau-Ponty in The Visible And The Invisible called this 'Flesh.' And he was the first to explore the strange characteristics of this highest meta-level of Being. He pointed out that the major attribute of this level is that what appears as dualisms in the ideational canopy that exists before cancellation within Wild Being appear as chiasms or nexus of reversibility. A chiasm is a point where dualities join and become one, like the chiasm of the nerves of the eye that meld and then split to go to each side of the brain. The chiasms of dualities give us our first hint of the existence of non-duality beneath all the manifest dualities of our culture.

One way to understand the chiasms is to look at the interval that is fundamental to relativity theory. In relativity theory multiple observers depending on their inertial frames will see different proportions of space and time within an spatiotemporal interval. Relativity theory give us an absolute means of translating between these different inertial viewpoints. So in the interval there can be different proportions of the space and time phases with a reversibility between those phases that can appear differently to different observers in different inertial frames. This is an excellent picture of what is meant by the chiasm. The dualities that appear in the ideational canopy above the point of antinomic collapse are the limits of the interval. Those limits encapsulate phases associated with each of the limit dualities and between those phases there is a point of reversibility that can appear different depending on one's point of view. The flesh is the pair of phases and nexus of reversibility. Just prior to collapse into complete non-duality there is this chiasmic point where the difference between the dualities begins to separate but have not yet gained the necessary escape velocity to tear apart. It is this thin space between the collapse of the antinomic opposites and the arrival at complete non-duality that Wild Being directs our attention toward.

Wild Being is as strange to us of the Western Tradition as Quantum Mechanics and Relativity were to those who inhabited the Newtonian world. We are so used to thinking in terms of dualities that it is almost impossible for us to think of the chiasmic fusion of dualities just prior to their entry into complete non-duality. When we speak of complete non-duality we have in mind what David Loy calls Nonduality in his book on the relation between Asian philosophies and Western philosophies. Non-dual states of thought, perception, and action are the ground from which Asian religion and philosophy begins. In the Western Tradition we have done our best to ignore and repudiate these non-dual states, except in some forms of mysticism which we subsequently devalued. Therefore we do not have the tools in our culture to talk about these non-dual states that have been so important to other cultures. Thus when the meta-levels of Being lead us back toward this common ground it is difficult think about the implications of the unthinkability of the fifth meta-level of Being and it is even more difficult in some ways to think about the partial non-duality of Wild Being (the fourth meta-level of Being).

However, recently there have been some attempts to enter this arena and construct a philosophical system at this level. The most famous of these is the Nihilistic philosophy of Deleuze and Guattari expressed in Anti-oedipus and A Thousand Plateaus. That book solves one of the fundamental problems standing in the way of anyone philosophizing at the level of Wild Being. The problem is that all antinomies cancel, and it is difficult to talk when all of your concepts have canceled out. Deleuze and Guattari solve this problems by picking two disciplines they do not care about like Marxist Economics and Psychoanalysis and allow these two antinomic disciplines cancel leaving them the realm of philosophy in which to continue to attempt to talk non-dually. Their way of signifying this non-duality is by identifying man with the machine. In this way they make the same choice of reduction of the organism to the machine as autopoietic theory. They go on to deny the reality of the individual. The individual is reduced to sub-individual level called desiring machines which appear in the field of the social. One of the great advances of this theory is the realization that any truly unconscious material must in fact be orthogonal within consciousness. In other words if material within consciousness has any relations to each other then it cannot have come from the unconscious. Desiring machines are seen as manifestations directly from the unconscious that arises in consciousness. Since they have no relation to each other it is impossible to ask what they mean in relation to each other. Thus one is reduced to asking only how they work together. Thus desiring machines are very similar to the nodes of the autopoietic system. Desiring machines form a network called a rhizome by Deleuze

and Guattari. The network exists in the social field called the socius. The unity of the individual is an illusion. The individual is an artificial boundary set up within the social field by cultural convention. Deleuze and Guattari propose that the ground state of culture is schizophrenia. They call their discipline schizoanalysis because it attempts to look at the tremendous variety that is produced as desiring machines well up within the field of the socius which has an underlying schizophrenic character. Society attempts suppress this this schizophrenic welling up of variety that underlies all social forms. Part of that suppression is the social construction of the individual as the locus of repression. In Anti-oedipus the history of this repression is given in the arising of three eras in the development of the dominate western culture. These are called the savage, barbaric, and capitalistic phases. These phases represent the movement through the other meta-levels of Being. For instance in the savage era there is writing on the body as a means of social domination. This represents the movement through the third meta-level of Being where writing of traces dominate. Then in the Barbaric era tyrants set themselves up as the center of society. The social body becomes the same as the body of the tyrant. In this era there is a domination of the flows of resources in the name of the tyrant. Here we get a parody of the name of the Father from Lacan. But the emphasis is on the control of flows of processes which indicate a connection to Process Being. Finally we get the creation of capitalism that reorganizes the flows controlled centrally in the Barbaric era so that everything is coded and reinscribed in terms of the values projected by Capitalism. This recording of everything is the sign of the entry into Pure Presence. In that first meta-level the sign of the thing substitutes for the thing. Instead of real wealth we have only signs of wealth which are manipulated and reconfigured by the capitalist system. Deleuze and Guattari do not talk about what comes before the Savage. But what is prior to the savage is the idyllic form of pure upwelling, pure schizophrenia. This is their image of Wild Being where the desiring machines appear upon the body-without-organs and organize themselves according the the field of the socius without being controlled by the writing of Savage society. This vision is very similar to the self-organization of the autopoietic system, but is much more vibrant a vision than that of autopoietic theory because it has tremendous social and psychological implications that autopoietic theory lacks. However, the nihilism of the theory of Deleuze and Guattari is almost overwhelming. By discarding the what and focusing only on the level of “how they work” Deleuze and Guattari’s philosophy becomes utterly nihilistic. In other words anything that works is ok, values mean nothing.

A less nihilistic philosophy posed at the level of Wild Being is that of John S. Hans

in the Play Of The World. He begins with the viewpoint of Deleuze and Guattari but concentrates on Play as a non-dual activity prior to all other activities and introduces values via aesthetics. This book is an excellent example of what a non-dual philosophy posed at the fourth meta-level of being might be like. Another completely different attempt to build a philosophy at this level appears in the work of Arkady Plotnitsky. His books Complementarity, In The Shadow Of Hegel, and Reconfigurations take a completely different tact which builds upon the work of the physicist Bohr as well as Derrida and Bataille. But he cites Deleuze and Guattari and shows the weakness of their attempt to build a philosophy of Wild Being. His attempt is much stronger as it begins to redress the dualism inscribed in our tradition between Logos and Physis by building a philosophy based on complementarities such as those found in quantum physics and relativity theory.

These philosophies posed at the fourth meta-level of Being are very important to us since they attempt in various ways to think what is almost unthinkable. The difficulty of posing a philosophy at this level is extreme, because all our normal conceptual tools are disarmed, and because such a philosophy goes against the predominate dualistic trends in our culture. However, it is very valuable to have examples of such philosophies because it is precisely at this level that we need to think if we are going to have any deep ontology of phenomena such as that we try to describe in autopoietic theory. At this level we discover that there is something beyond the essencing and the eventivity. At the last level our attention was turned to a particular kind of essencing forth of the eventivity called emergence of the novum that produces the epochs within our tradition. Now at this level we discover the integra beyond the essence and we discover the holon which is simultaneously whole and part between the extremes of the epoch and the eventivity. The essence is a series of constraints upon noematic nuclei (the appearing things) which make them the same despite the changes that occur with different viewpoints on them. But by establishing the kinds of things we tend to overlook individual differences. The integra is the inner coherence of the individual thing within the constraints laid down by the essence that establishes kind. The holonic nature of the thing is a chiasm between the view of the thing from the outside as eventivity and from the inside as epoch. We can think of the holon as establishing the chiasm between inside and outside and the integra as establishing the reversibility between different viewpoints on the same thing. These two approaches toward the thing together establish the 'flesh,' or 'play,' or 'schizoid,' or the 'interactive heterogeneity and heterogeneous interactivity' by which the various philosophies of Wild Being describe the world.

At this fourth meta-level of Being essence and existence again transmute. The essence becomes the integra of the holon as we go beyond outer coherences that indicate kindness to the inner coherences of the individual. The existent becomes the holon that has integrity. In other words essence goes beyond the kindness to discover the thing within the constraints of kindness. And the thing that is existent with its inward and outward horizons becomes the balance between these horizons as the holon that has integrity. So at this level it is difficult to tell existence from essence because they become chiasmic like all other dualisms. It is precisely at this level that we must pose our autopoietic theory for it to have what Plotnitsky calls 'efficacy' (the peculiar kind of efficacy that appears at the level of Wild Being). It is at this level we realize what the melding of the cognitive and the living that is implicit in autopoietic theory must mean. From the outside the autopoietic unity is seen by observers from various viewpoints. They cannot tell what is happening with the operationally closed autopoietic system because the different viewpoints view the reversibility of the phases within the autopoietic system as having different strengths. Therefore the autopoietic system cannot be understood by an outside observer, and at the same time we cannot separate the living nature of the system from its inherent intelligence. Life and cognition becomes fused within the closed autopoietic system. This fusion is the non-duality of the reversible phases of life and cognition. The autopoietic system is a holon which is balanced between its closed inward and its open outward horizon. The autopoietic system is an individual organism with its own particular homeostatic balance which is integral to it. This integrity that gives viability to the autopoietic system is specific to the individual organism and goes beyond the constraints set up by the species and its evolution.

But merely characterizing the autopoietic system at the level of Wild Being is not enough. It is necessary to realize that the autopoietic system functions within the whole context of the kinds of Being, not just at one level. But it draws its ability to transcend paradoxes that arise at the level of theoretical ideation from this highest level of Being. In order to understand the ontological foundations of autopoietic theory it is not enough to merely peg it to a particular meta-level of Being but we must more generally understand how posing the theory at that level functions in relation to all the other meta-levels, especially the fifth meta-level that points toward the emptiness of all things.

Lesson Six

14. Breakup of the Monolith

Now we have the full set of kinds of Being in view, it is time to turn to some more basic questions in order to put them in perspective.

The fundamental assertion that we are making here is that anything that has any deep significance must be thought about in terms of all four of the different kinds of Being. We are postulating that Autopoiesis has deep significance because it is a description of the essence of life by indicating what life gets from the structures that assure it's viability. Thus we need to look at it in the context of all four different kinds of Being. And when we do so we find that Autopoietic Theory is transformed by that context. Here we wish to trace some aspects of that transformation that takes us well beyond what is normally thought about in terms of autopoietic theory. In other words autopoietic theorists normally take as given the present-at-hand formulation theories that all science strives for and never question the process of ideation that lies behind those representations. By questioning that ground and placing it in a broader philosophical context we are going deeply into the horizon of possible significance of autopoiesis.

This deepening of context is particularly relevant to autopoiesis because it is about the self-production of living beings. But that makes us wonder about the self-production of the ideational process that produces the theories that we expose about living beings. In a sense autopoiesis always implicitly calls for it's theory to understand the grounds of the production of the theory itself. In fact, we find ourselves enacting the process of theorizing autopoietic phenomena. The nub of paradox that is autopoietic theory has the same characteristics of the autopoietic system itself. That is to say an external theorist cannot understand the outcome of an autopoietic theorists thoughts about phenomena, because it does not fit into the traditional cause and effect framework. The autopoietic theorist somehow becomes fused with his theory within the magical circle around the paradoxicality. The autopoietic theorist has entered this circle and has taken up a different relation to his theory than the normal theorist. This is like the fusion of the living and the cognitive within the autopoietic system. The fact that the traditional theorist cannot understand the results of the autopoietic theorizing is like the closure of the autopoietic system to the external observer. This essential change of status of the autopoietic theorist stems from the fact that autopoietic theorizing is essentially rooted in Process Being not in the pretense of stasis of normal Theory that seeks to produce knowledge relationships that will not change. Instead autopoietic theory is a lot like the other humanistic disciplines developed in this century: namely Phenomenology, Dialectics, Hermeneutics and Structuralism.

Each of these disciplines that have been developed by the Humanities to attempt to establish themselves as sciences introduce distance between the humanistic observer of culture and his subject. But each of them are marked by an essential process that is recognized to be an unending exploration of horizons rather than the production of a fixed result. Phenomenology has the horizons of noema (endless content of consciousness) and noesis (endless realms of significance of things within consciousness) to explore. Hermeneutics has endless configurations of texts to interpret. Dialectics has endless movements through contradiction to resolution that occurs in History. Structuralism has endless cultural distinctions to dissect. But the important difference with normal science is that as each of these disciplines explore their respective territories they continually introduce changes that they themselves must take into account so that the task is never-ending. Similarly Autopoiesis has set itself an endless task of understanding how the existential nature of organisms contributes to their essential viability. In that process the autopoietic theorist gets lost in the endless process of unfolding the theory. A theorist that assumes that theories must be static and lead to frozen results that stand forever will never understand either the constructivist method nor the enactive practice of autopoietic theory.

So we see in autopoietic theory an essential change in the process of theorizing. And it is important to understand that to get the right perspective on this new approach to things. It is like quantum mechanics or relativity theory in that it fuses the theorist (observer) to the theorized about (observed) in some strange way. It is a means of understanding the implications of this fusion in a field other than physics for a change. We can understand this as an intersection of Pure Presence and Process Being within the theory in a way similar to that posited by Heidegger in his definition of Ontological Monism as a way of comprehending Being. Ontological Monism says that Being is a closed system that produces and grounds itself. It posits a closure of Being that has not need of God. Michael Henry breaks up this picture of Heidegger's by positing the possibility of Ontological Dualism which in turn opens up the possibility of ontological Multiplicity. In Ontological Dualism there is 'some?ness' beyond the the closure of Process Being and Pure Presence. Think of this as being like the perturbations of the autopoietic system. The Essence of Manifestation never shows itself (it is like the unconscious) except in the distortions in what does appear. The difference between the autopoietic metaphor and Ontological Monism is that in autopoiesis the perturbations or distortions come from the outside environment but in Ontological Monism they come from 'within' manifestation itself, from an incomprehensible direction. We have a situation kind

of like that of the inhabitants of Abbott's Flatland for whom the motions of higher dimensional creatures is incomprehensible. Ontological Dualism that appears with Hyper Being tells us that the Plenum of Being as static and the Flows of Being that is dynamic are shot through and through with these discontinuities across inexplicable transformations occur as if from another dimension. But with the opening up of the possibility of a third dimension of Being there comes the possibility of an even higher dimensions. So we could go on to posit Ontological Multiplicity. What is interesting is that this step only brings us one further dimension. It essentially fragments the plenum of Pure Presence and the Flow of Process Being in Time into a shattered chaotic morass. There is nothing in autopoietic theory as it stands that can be taken as a metaphor for this explosion. We must in fact extend autopoietic theory into the reflexive social realm to have a model of what is happening in this case. But it is clear that autopoiesis can be seen as a metaphor for the relations between the differentiation of the first three kinds of Being.

In order to understand this we must go back to Kant. Kant posited that understanding must be a mixture of experience and reason and denied that reason on its own was capable of knowledge. This was in contradistinction to the dogmatic philosophers through out the history of philosophy up till then who claimed to know things based on reason alone. But Kant showed that Reason always produces Antinomies that cancel so that Reason alone leads only to annihilation of ideas. Thus did Kant establish the fundamental limits of metaphysics. But metaphysics always wanted to have its cake and eat it to. It always wanted to maintain the limits established by Kant and yet also go beyond them. It was Husserl and his discovery of Essence perception that showed finally how this was possible. Husserl showed that there was an invisible substrate of process under the representations of transcendental philosophy. In that way he substantiated Hegel's claim that dialectical interactions between the categories were more fundamental than the frozen non-interacting categories that Kant posited. But Husserl did it from within Transcendental Idealism instead of by turing it upside down as Hegel did. Husserl found a process at the heart of ideation that made induction and deduction possible. This was like discovering another dimension to the idealist world. Heidegger quickly took advantage of this other dimension to show that indeed we can have our cake and eat it too. We can maintain the limits that Kant posits but the we can escape those limits by entering the dimension of Process Being in order to penetrate those limits without actually crossing the lines Kant drew. We just go around them in another dimension analogous to exiting a sphere in four dimensional space

without crossing its boundary. Heidegger goes on to show that we can use this other dimension to ground static Being by a transformation by which it produces itself. We can achieve what Nietzsche calls the Eternal Return of the Same within our representational system that represents our Will to Power. Heidegger's philosophy in Being And Time shows how to construct this ontological monism out of the two kinds of being, essentially fusing Parmedian Being with Heraclitian Flux into a single monolithic model of Manifestation.

The problem arises when it is shown that Process Being has the antinomy of Nothingness. In that difference the possibility of a trace difference arises that makes us have to talk of Being under erasure or canceled out. Thus Being suffers from the same problem that Kant saw in all the products of ideation. Within this process of unfolding in time there is a more fundamental trace process of cancellation or annihilation. This is like the discovery of virtual particles underlying conserved particles in quantum physics. There is a substrate of cancellation within the process Being grounding itself. Putting this in terms of the autopoietic metaphor we can say that within the closed autopoietic system there is found to be an essential instability, something that throws us out into a heterodynamic relation with the external world rather than just passively accepting perturbations. This thing that causes the autopoietic system to invert is the dual of the perturbations hidden within the autopoietic system itself and not seen except in certain circumstances, i.e. it is only seen when the autopoietic system breaks through to the next emergent level and becomes socially reflexive, that is mirroring other autopoietic systems.

This problem that arises in the discovery of Hyper Being quickly becomes a catastrophe when we enter into the phase of Ontological Multiplicity. Just like in Chaos theory when a third thing arises it brings with it Complete Chaos, so to when the first crack appears in the edifice of Monolithic manifestation then all hell breaks loose. The monolith produced from the first two kinds of Being by Heidegger explodes into a myriad of metaphysical principles so that order and disorder, continuity and discontinuity, presence hiddenness become thoroughly mixed. This is the meaning of Wild Being. Wild Being is in a way just the culmination of the process that was set off by the discovery of Hyper Being. What were merely cracks in the edifice that appeared in Hyper Being become the entire involution of the monolith of Ontological Monism and its breaking apart into chaos. But the cracks in the facade and the chaotic rubble of the destroyed edifice have a different character and thus represent different kinds of Being.

So we eluded Kant's limits but had to pay the price of annihilation of the antinomies of Process Being and Nothingness which resulted in an utter destruction of the edifice of Modernism resulting in what we now call Post-modernism. Modernism was a closed system modeled on Newton's physics by Kant. Kant laid down uncrossable limits. But Husserl found a way to cross them from within inside Transcendental Idealism. Heidegger used this as a way to construct the monolith of Being that produces itself which weds Transcendental Idealism to Dialectics of the Hegelian variety. Heidegger went on to show that this possibility existed within Kant's own philosophy and was erased in the second edition of the Critique. Then Heidegger showed that in the Greek roots of Western philosophy there as always an understanding of the process of manifestation as Un-covering or showing and hiding. This should have been the end of the matter. But like the cracks that appeared in Heidegger's image due to his involvement in Nazism so to cracks appeared in the edifice of the Noun and Verb fused into a monolith. Heidegger himself was the first to recognize this with his image of Being (crossed out) in the essay for Junger called "On the Line." Subsequently Derrida went on to explore the cracks in the idol of ontological monism as a kind of endless psychotherapy of philosophy showing how the unconscious of Hyper Being (called DifferAnce) intrudes into Manifestation and seeing the traces of this intrusion everywhere. Later our vision inverts itself and we see that the traces of intrusion are everywhere and that Manifestation is shot through and through with fissures of the non-manifest. Then we realize the umpiquity of Wild Being. And that subsequently takes us beyond the metaphor of Autopoiesis and causes us to explore the realm that lies beyond Autopoiesis at the level where the social arises as an emergent phenomena.

Lesson Seven

15. The Monolith Revisited

In the last lesson we saw hints that some of the characteristics of the monolithic ontology of Heidegger are rehearsed under the rubric of autopoietic theory. In particular we noted that Heidegger came up with a way of treating the noun and verb as if it were one thing "nounverb" similar to the way physics treats the particle and wave as if they were one thing beyond the necessity that we see one or the other. Heidegger achieved this fusion of nounverb by moving to a place prior to the subject/object dichotomy, out into the new dimension discovered by his teacher Husserl. We may think of Kant as delimiting the metaphysical realm and postulating that it must be only the intersection of reason and experience. What inhabited that intersection was representations. These representations were present-

at-hand and essentially frozen. Husserl basically accepted Transcendental Idealism with its Transcendental subject, object and God (the source of coherence between the other two transcendentals). Also he accepted the limits that Kant placed on metaphysics. To Husserl his new dimension that appeared in essence perception was just a new way to connect the representations to experience. In other words the things had kindness that were constraints on them that we directly perceived in a different mode than our production of ideas via induction and deduction. By identifying essence perception Husserl gave us a new way to connect between reason and experience along the lines of what Polanyi calls Tacit Knowledge. Husserl was outraged when his student Heidegger took this opportunity to turn transcendental idealism inside out and bring back all that was forbidden previously by critical philosophy. Suddenly Being becomes central to philosophy again. This is because Heidegger imagined Being producing itself and thus grounding itself without need of god. Suddenly the realm of the transcendental ideals (subject, object, and God) were unnecessary. Instead that realm became the verb like aspect of Being whereby Being produced itself. A whole series of monoliths such as Form forming, Pattern patterning, Shape shaping where the nounverb prior to the split of noun and verb were summarized by "Is is". Being grounding itself was the act of transcendence. Transcendence became a process. So Representations representing were caught up in a monolith that was both Parmenidian and Heraclitian at the same time because it came before the split between the static and dynamic views of things. Heidegger's misuse of Husserl's discovery (from Husserl's viewpoint) was one of the most brilliant moves ever made in the Western Philosophical tradition. It was similar to the critical move of Kant in that it changed forever the terms in which philosophical arguments had to be framed from that point forward. This is why all post-war French philosophy was dominated by answers to Heidegger in spite of the taint of Nazism. Heidegger took Husserl's discovery and made a challenge out of it that no philosopher that understood it could ignore. (It does not say much for the Analytic strain of philosophy that they could not understand this new move nor its significance.) Basically a new realm was opened up to philosophy that no one knew existed before. It was like the revolution that had occurred with Relativity Theory and Quantum Mechanics in physics. A new paradigm for what constituted a deep philosophy was inaugurated and everyone joined the gold rush.

Going back to Autopoiesis we see almost precisely the same configuration of ideas revisited in a different guise. It is as if biologists have discovered the equivalent to Ontological Monism in their specialty all over again. We have systems that are ordering themselves which is the equivalent in a special science like biology of the

self-grounding of Being in ontology. We have closure just like the closure of the ontological monolith that does not need god. We have an emphasis on action or operations rather than on static and frozen representations like species. We have an emphasis on the individual organism which harkens back to the Heideggarian type of existentialism which rests on the individual. Action is fused to Representations within such a system so that externally we are unsure what the results of any input will be and on the inside we cannot differentiate between the realm of representations (cognition) and the realm of action (living processes). And finally there is the 'problem' of perturbations from the outside in the autopoietic system against which a homeostatic movement is launched whereas in ontological monism there is the problem of distortions like those of the unconscious coming from the inside of manifestation. The eternal return of the Same within the ontological monolith of nounverb, where the verbal moment is the reassertion of the representation of the noun, occurs despite internally generated distortions that seem to come from nowhere within the manifold of manifestation, i.e. showing and hiding. These distortions pose exactly the same kind of problem for the monolith of showing and hiding as the external perturbations have for the autopoietic system.

Once we recognize that there is a functor between significant elements of the dream of Ontological Monism and Autopoietic theory, then suddenly the importance of the subject of this tutorial becomes more apparent. We realize that Autopoiesis is merely an image within a specific discipline of a more widespread trend in our tradition. Because the ontological model is more general we can use that to bridge to other disciplines and it is possible to see this same trend elsewhere. In Physics for instance it appears as the hidden variable model for understanding quantum mechanics. The hidden variables if accepted would turn quantum theory into a similar monolith in which the complementary opposites are made the Same through some action behind the scenes that produces a hidden transformation of one into the other. In fact, there are many connections between the growth of probability theory and Heidegger's philosophy, and quantum mechanics which were all happening about the same time. Heidegger studied physics of that time intensely and wanted to do physics at one point in his career after he failed to find a place in Theology. Philosophy was really a third choice for him. Heidegger's philosophy was keyed into Quantum Physics in a way similar to the way Kant's philosophy was keyed into Newtonian Physics.

The kind of math that shows us best Heidegger's view of the world is probabilities. Probabilities are in fact representations mediated by actions, in which the

representations essentially cannot be separated from the actions that produce them. Probabilities measure actualities of repetitions that are scattered by the actions that produce those actualities. Thus in the mean and standard deviations of the actualization there is a trace of the action within the representation itself. Probabilities have always been seen as playing a role in evolution. Look at Monod's teleonomic model in Chance And Necessity for instance in which order and disorder are layered to produce a 'path' that encodes the action of reaching the end. In Monod's view of evolution you do not know where you are going until you get there. But it was left to autopoiesis to show what this view of things meant for the organism itself. In the organism the representations of order encode the action of imposing that order on itself. So the structural substrate is probabilistic beneath the representations of organization imposed upon itself. The organization is determinate. It floats upon the probabilistic structural substrate. So within the autopoietic system there are two levels brought together one determinate and the other probabilistic. But the autopoietic system is engaged in an action of organizing itself. Thus it is moving through a moment of probabilistic action in order to reassert homeostatically its determinate organization. Since this is continual the action of reaffirmation is fused or welded to the representation of order. Disorder and order are layered precisely like Monod's teleonomic filter but now within the self-producing organism itself. In Monod's evolutionary picture chance and necessity are welded together in this formal-structural middle ground just like life and cognition are melded together in the autopoietic system. These two models are inversions of the same basic structure. Both attempt to build models that give us a sense that it is possible to construct an ordered system of evolution or an ordered organism that could produce order out of randomness.

The problem of course is that punctuated equilibrium theory of evolution raises it's ugly head. We do not need only to show that order can arise out of disorder, as Monod tried to do and which Stuart Kauffman in The Origin Or Order is trying again to do in even more sophisticated ways. The problem is that evolution is segmented by spates of arising and dying off species and we need to explain those punctuations as well. Similarly the autopoietic organism is part of an environment that is producing perturbations and we need to explain the meta-system of the milieu, ecology, or environment in which those perturbations make sense as well. That larger viable meta-system is segmented into interacting and symbiotic species and so we need to explain the the larger segmented existent context of the natural complex of co-existing co-evolving organisms, not just the single solitary individual organism that is maintaining itself homeostatically. This brings us to the bigger

picture in which we can see all of manifestation as grounding itself and the distortions that are generated seemingly out of no-where that perturb that self-grounding process. Those distortions open up Pandora's box, for once the noun-verb, wave-particle, living-cognitive, chance-necessity monolith breaks up it is difficult to say where that opening up of higher and higher meta-levels of explanation will end.

We can think of the production of the meta-levels of Being as a kind of symmetry breaking. As long as we can deny change then we can live in a realm of pure representation as do the Transcendental Idealists. However, when we find that change is not just something external but is right at the heart of the edifice of Transcendental Idealism as Husserl did then it is almost impossible to keep the symmetry breaking that distinguishes noun from verb from occurring. The verb is a supplement on the noun or vice versa. This gives us a new stable point that Henry has called ontological monism. But soon it breaks again as it is realized that the very act of distinguishing verb from noun brings discontinuity into play and disturbs the continuity we have posited between the noun and verb phases of our interval. This now opens up a new realm. Merleau Ponty in The Visible And Invisible talks about this under the rubric of a Hyperdialectic between Process Being and its Antinomy Nothingness. When these antinomies cancel or annihilate then the final symmetry breaking occurs which gives us Wild Being. That is the chaotic mixture of order and disorder, continuity and discontinuity, noun and verb, subject and object, and all the other distinguishing marks of dualism. Wild Being is almost but not quite non-dual. When we reach the non-dual limit our ability to think about and express what is happening is severely restricted. In fact, Wild Being itself is almost impossible to talk about, yet ingenious philosophers, like Deleuze, Guattari, Hans, and Plotnitsky find a way.

We can think of these meta-levels of Being as something like the phase changes of Matter. We all know that there is solid, liquid, gas, plasma, and now Bose-Einstein Condensate. These are the phases and sure enough the different kinds of Being are kinda like these phases. Pure Presence is frozen and static like a Solid. We think of Parmenidian Being like we do 'blocks' of spacetime, i.e. frozen and unchanging. Here there is a pure pointing at something separate from the self is still possible and we can distinguish subject from object. Then there is the phase change to liquid, and we have a metaphor for process in the Heraclitian stream we cannot step into twice. At this level there is a grasping of what is close at hand that allows us to make transformations as we navigate through the world. But then the liquid breaks up

when the space between atoms become too great and becomes a gas. The deconstruction of the nounverb monolith is kind of like it's dispersion into a gas with large discontinuities between the atoms of matter. Here we begin to feel the bearing up of the system under pressure. Traces are left in the Monolith by an unknown source. Manifestation bears the marks of distortion as the distinction between the noun and verb phases of the monolith begin to show cracks and fissures. Under more pressure and at a higher temperature matter becomes a plasma in which the electrons are striped away from the nucleus. This extreme pressure is like the encompassing of Wild Being in which ideation is striped away and the perceptual substrate revealed because in reason the annihilation of antinomic opposites (the hyperdialectic) has occurred. Basically in Plasma the structure of the atom has been broken by the extremes of pressure. The Bose-Einstein condensate is more or less the opposite of Plasma. It occurs at the other extreme of cold where the quantum particles meld together to form a single super particle under just the right conditions. We might argue that this is a model of perfect interpenetration that occurs only in the near perfect vacuum of complete emptiness.

If we look at Being as collapsing under pressure and undergoing emergent changes of character as we increase the pressure just like matter does with phase transitions between modes with very different characteristics then I think we come closer to understanding what has occurred with the fragmentation of Being in this Century in continental philosophy which is mirrored in many of our more progressive disciplines such as Physics and Biology. Autopoietic Theory is part of this trend and as we have seen only takes us part way down the series of transformations that occur with the symmetry breakings. We need to look at autopoietic theory in this wider cultural context and look into the future in order to see how we can transform autopoietic theory itself in order to take us further down this road. Autopoietic theory needs an essential supplement in order to realize it's full potential within Biology, and other disciplines, when we view it from this perspective. What it needs is an extension that will explain the contested realm of the Social. Verela has warned us against applying autopoietic theory to the social. He distinguishes autopoietic from autonomous systems. And if we heed this warning then we need to start thinking what would need to happen to move autopoietic theory up to the next emergent level in which the isolated individual autopoietic organism becomes part of a meta-systemic socially grounded milieu. It is hoped that in the course of this series we can begin to lay the groundwork for understanding how this transformation of autopoietic theory may occur in a natural way that brings us to a higher emergent tier without sacrificing the organization of the autopoietic theory

that exists now.

Lesson Eight

16. Functor

In the last section we suggested that there was a functor between the meta-levels of Being and the structure of autopoietic theory. This hopefully established the fundamental value of an ontological investigation of the foundations of Autopoietic Theory. This will free us to begin a deeper and more far reaching investigation of the ontological implications of the fragmentation of Being. It has been suggested that perhaps the terminology of Modern Ontology is somewhat cryptic and we need to make it more plain. Every discipline has its special vocabulary and modern ontology is no different. We stick to the vocabulary of the philosophers who have inaugurated this discipline because we wish to remain attached to that tradition. We are merely extending their momentous discoveries by finding a way to move from one kind of Being to the next in a progression that encompasses all the kinds of Being. And in fact I believe that their terminology is quite clear and very precise to those who wish to explore this highest frontier. To summarize the steps of the meta-levels are seen as follows:

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:.....:
meta-level zero = beings, things, entities, stuff

-----ontological-difference-----

meta-level one   = Pure Presence - present-at-hand - pointing      I
                                                           D
meta-level two   = Process Being - ready-to-hand   - grasping      E
                                                           A
meta-level three = Hyper Being   - in-hand         - bearing      T
                                                           I
meta-level four  = Wild Being    - out-of-hand     - encompassing O
                                                           N
-----emptiness-void-unthinkable-----

Endless Illusion generated by ideational processes

:.....:

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If we just speak in terms of meta-levels then once we have established ontological difference then it is possible to move through the meta-levels of Being despending

with any other terminological distinctions. This is recommended to those who want the pleasure of rediscovering the levels of Being for themselves. Each level has its own emergent qualities as the unity of Being bifurcates through the symmetry breaking process. Anyone should be able to verify those properties on their own. Once Being has been established as it is in all the Indo-European languages to some degree it is possible to track the process of its fragmentation into meta-levels quite easily. Merely take Being which means persistence of things and begin thinking what each meta-level might be. It is clear that if Being is persistence then the first symmetry breaking must mean becoming which is the mixture of Being with Time in the way Heidegger imagined. In other words at the meta-level it takes time for Being itself to Be. As soon as we add Being and Becoming together then we have what Henry called Ontological Monism and the two fused together have been called the Monolith because they seem to include everything that is both static and dynamic and it presents us with a self-grounding whole. But if we attempt to move from here to the next meta-level then it is necessary to realize that The Being of Beings own Becoming is very different from the Monolith. In fact, what we see is that it must be whatever establishes the difference between Static Being and Dynamic Becoming. Whatever is establishing that difference never appears itself. And we recognize it in the sedimentation of the process of becoming and in the discontinuities in the differentiation of Static Being. This has been called Hyper Being following Merleau-Ponty's recognition of the Hyperdialectic between Process Being and Nothingness. It has been called DifferAnce by Derrida who talks about the differing and deferring of the distortion that appears in manifestation at the level of traces. It has been called ~~-B-E-I-N-G-~~ (crossed out) by Heidegger in his essay "On the Line" written for Ernst Junger. In that essay Heidegger tells us we must strive to dwell in the line itself, where Junger has told us that we must cross over the line in "The Worker." The line could be thought of as the distinction between the static and dynamic aspects of Being. It is the point where Levinas talks about Ethics and Metaphysics collapses together and in which we need to bear the ministrations of the Other. Finally if we move to the next meta-level we see that on the one hand there is the monolith that is both static and dynamic and on the other hand there is the difference that allows us to distinguish the static from the dynamic. This difference between differAnce and the Monolith is a meta-difference. If we move to this final meta-level we begin to explore the Being of the ~~-B-E-I-N-G-~~ and the Monolith taken together. This is what Merleau-Ponty called Wild Being. It is what Deleuze and Guattari called the desiring machines upon the body-without-organs and embedded in the socius in Anti-Oedipus. It is what John S. Hans called the Play Of The World. It is what Plotnitsky has called heterogeneous interaction and

interactive heterogeneity of the meta-complementarities in Complementarity. This rarified form of Being distinguishes between what Henry calls The Essence Of Manifestation and manifestation itself. Where Hyper Being was a difference between things at the trace level, Wild Being is a lack of difference due to the fact that discontinuity and continuity have become chaotically mixed as has order and disorder and all other fundamental distinctions due to the fact that they are verging on non-dualistic fusion. But still at this level there are phases that separate the limits of the dualisms and these phases are reversible with each other and form a chiasmic bridge between the dualities. Plotnitsky's phrase "interactively heterogeneous and heterogeneous interactivity" is a sign of this reversibility.

Hopefully it is clear from this line of reasoning that anyone can think through the meta-levels of Being once they know that they exist. So it is not necessary to have a specialized ontological vocabulary for them, but it sure helps to have the shoulders of the masters to stand upon. Thus we may instead look at the kinds of Being in terms of modalities of our being-in-the-world as Heidegger did. We have four fundamental ways of relating to the world. The present-at-hand mode is when we take a frozen picture of the world of some kind such as when we gloss it in the ideational process. The ready-to-hand as Heidegger has shown us is the modality of technology which is hidden beneath our projection of the present-at-hand. So for instance when we are writing a letter with a pencil our mind is on what we are saying, the ideas flowing onto the paper not on the pencil. But when the pencil breaks then our attention shifts suddenly to the instrument of writing and away from what we were trying to say. This ability to ignore the technological infrastructure is based on a completely different mode that we have by which we relate to the technological mechanisms that underly what we are doing. The in-hand mode is described by Merleau-Ponty at the end of The Phenomenology Of Perception as the expansion of being-in-the-world. In that book Merleau-Ponty showed that the psychological counterparts of the present-at-hand was pointing and of the ready-to-hand was grasping. Similarly Levinas showed that the psychological counterpart of the in-hand is bearing, as in bearing up under the burden placed on us by the Other, as seen in the ministrations of our mothers when we are too little to resist or know anything other than what ever is done to us by our parents. We must note the slightly passive tone of the phrase "ready-to-hand" and contrast that with the more active tone of the phrase "in-hand." When the tools are in our hand they are transformed by need and necessity. Thus the hammer might be called upon to act as a screw driver or a wrench in some special situations. When the tools are in-hand they are liable to transform due to the exigencies of the situation. We can think of

the in-hand as the transformation of the tools under our grasp as we bear down on them and as they bear us up within the world. When the tools are in-hand the walking stick may transform into the reigns of a horse, which may transform into the reigns of a chariot, which might transform into the steering wheel of an automobile, which might transform into the throttle of a train, which might transform into the instruments of a plane, which might transform into the controls of a rocket ship. In other words tools in-hand continually transform as our being-in-the-world expands. Merleau-Ponty gives the example of the guitarist who's instrument becomes part of him or the blind man whose stick becomes an extension of his senses. Tools in-hand become the means of expanding our ability to explore and master our worlds. This capacity for being-in-the-world to expand is a different modality from that of the mere ready-to-hand. The ready-to-hand technologies support the present- at-hand work without changing either themselves or that work. The most that can happen is that they break down. But the in-hand allows us to achieve continuously new capacities by ever new technologies that are continually changing in our hands. Software is an example of the kind of meta-technology that appears with the in-hand modality of being-in-the-world. Software allows us to integrate other technologies together and make them more than any of them could be separately. Finally we realize that technologies do not just change in predictable ways as when we add together known technologies to gain some new capability greater than either of them could provide. But there are actually emergent events that discontinuously transform technologies. These moments of spontaneous generation or radical emergence indicate the existence of one final mode of being-in-the-world I call the out-of-hand. When things get out-of-hand then we know we have entered into Wild Being. Catastrophic changes occur to the technological base that are impossible to predict before hand and cause us to rewrite history afterward. These discontinuous changes may occur at any of the levels of our cultural tradition:

facts

theories (Feyerabend Against Method)

paradigms (Kuhn The Structure Of Scientific Revolutions)

epistemes (Foucault The Order Of Things)

epochs of Being (Heidegger) existence

Genuine emergence is more than just combining things that already exist together. Radical emergence has been described by G.H.Mead in The Philosophy Of The Present as discontinuous transformations of the tradition which cannot be predicted in which something completely new comes into existence for the first time and which causes us to rewrite history. He notes that this capacity to produce and sustain genuine emergence is the hallmark of the social. When the novum that inaugurates a new epoch occurs then things are completely out-of-hand and a catastrophic transformation of the world in which we live occurs sweeping across everything at the level of the tradition that it effects.

We can in fact identify three kinds of emergence:

Artificial emergence which is when things that already exist are recombined to yield something new.

Chiasmic emergence which is when a combination occurs that is unexpected between things that already exist and that this is combined with random events in such a way that something unprecedented is created that goes beyond the pre-existent ingredients.

Genuine emergence which is a spontaneous generation of something that has never existed before out of nothing. It may be based on the existence of things that already exist but moves beyond everything that exists by opening up a new dimension of novelty that is orthogonal to everything that exists prior to the radical emergent event.

The out-of-hand is the modality that makes possible the radical emergence of spontaneous generation. The in-hand tools recombine in our hands to give us new capacity but when things get out-of-hand is when there are catastrophic changes to the whole technological base of the tradition. One example is the technological singularity that Venor Vinge believes will occur when machines get smarter than us. This is a hypothetical example but a potent one.

[unfinished]

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