

Theoretical Models and Images in Nondual Science

Modern Theories and Ancient Images that Approximate the Model of Nondual Science and the other Open Horizons of Research

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Modern Images of an Ancient Wisdom

It is not just a matter of looking at Mathematical Categories and deducing a Systems Theory with no connection to the Western Tradition as it stands now, rather it is a matter of surveying the currently interesting and cutting edge theories that are available and attempting to find theories that describe each emergent level that the Special Systems along with Systems and Meta-systems Theories describe. We must connect directly into the tradition as it now stands and exploit it by

drawing out the conclusions of nonduality from standing theories that are of consequence within the tradition as we find it. The first move was to identify the most advanced Systems Theory, which is that of George Klir in my opinion, and then extending it by developing a meta-systems theory that has the features described by Bataille or Plotnitsky. But as we can see from George Klir's own work he ends his book where the theory of Autopoiesis begins. So the natural transition is from George Klir's sophisticated theory of Structural Systems to Self-Producing Systems. There are several good explanations of the theory by Maturana and Varela of Autopoiesis¹ such as Minger's book² and that of Capra³. There is also an excellent Website by Randall Whitaker with his Encyclopedia Autopoietica⁴. So it is not necessary to go into detail about the theory here. However, this theory has long been of interest because it represents a sort of structuralist based existential biology theory as opposed to a species based evolutionary theory of life which is the normal approach. At the center of the autopoietic theory is the concept of the viability of the organism in its environment and this closure of the organism. A recent paper has compared Autopoietic Theory to Rosen's MR theory. Rosen's MR theory is noncomputable and this paper attempts to show that Autopoietic theory is also noncomputable as a subset of MR. Autopoietic theory has several features of interest, one is the fact that cognition and behavior of the Autopoietic System cannot be separated. Another is that the Autopoietic System has at least three layers already discussed, one is the structural level where elements are constantly

¹ See Maturana, Humberto R. and Varela, Francisco J. 1980 Autopoiesis and Cognition: The Realization of the Living, D. Reidel, Dordrecht, Holland; Boston, USA, London, England

² See J Mingers, 1995 Self-Producing Systems: The Implications and Applications of Autopoiesis Plenum Press, New York, pp 246, ISBN 0306447975

³

See Fritjof Capra, Ph.D., 1996 and 1997 The Web of Life, Doubleday, New York, 1996 and 1997

⁴ <http://www.enolagaia.com/EASIntro.html>

being exchanged with the environment, while at a higher level there is the organization which forms an impenetrable unity which observers cannot predict the behavior of and then there is some imaginary level where the design of the Autopoietic System lies which is implemented and maintained to make the system self-producing. So Autopoietic systems theory is an excellent place to start to think about a very specific problem that interests me as a reflexive sociologist in the tradition of John O'Malley and Barry Sandywell as well as Alan Blum. That is the problem of how to extend this existential model of the organism to the social level. It is this problem which I was thinking about a lot as one can see by looking at my working papers called Reflexive Autopoietic Systems Theory. The first chapter of this electronic book is the summary of Special Systems Theory which is the most complete to date called "Reflexive Autopoietic Dissipative Special Systems Theory." It is a stand alone presentation of the theory in its most complete form. After that the next most interesting piece I have worked on is "Deep Mathematics and Emergent Meta-systems Theory." Then there are many other attempts like this one to extend or explain the theory on my webpages at <http://archonic.net>. Some of the more recent articles are also at <http://autopoietic.net> at the Journal of Autopoiesis website. The key point that I was exploring at the time that I discovered the Special Systems was how to go from the theory of Autopoiesis up to the social level such that the correct emergent jump could be effected to get a completely different theory that was reflexive at the next level up. That reflexive theory of the social is found in the Sociology of Meaning by John O'Malley, but also in the Logological Investigations of Barry Sandywell. The best exposition of the reflexive system is in Malcolm Ashmore's The Reflexive Thesis. Also the book called Theorizing by Alan Blum captures the spirit of this now almost dead school of social philosophy with which I am enamored which I call Reflexive Theory⁵. Nicholas Luhmann⁶

⁵ <http://archonic.net/rst.htm>

⁶ <http://www.unikk.ch/course/Seiten/lesson6.htm>

attempted to directly apply autopoietic theory to the social and what I wanted to construct was a theory that would allow the social to have its own properties at its proper level of emergence which were different from the properties of the autopoietic system. It was more or less by serendipity that I realized that Special Systems Theory was the answer to this quandary. However that answer called into question many of the assumptions of the founders of Autopoietic Theory, especially the more recent work of Maturana. When I talk about autopoietic theory I am really talking about only the earliest work that was done jointly with Varella, and sometimes about the later work of Varella in France. However, it also meant that there had to really be two different levels added to the autopoietic level rather than only one. This lower level than the Autopoietic I called the Dissipative Ordering Level after the work of Prigogine which I incorporate almost unchanged into my schemas of emergence called Special System Theory. Prigogine studied negative entropy in highly unstable systems and showed that such negative entropy pockets could actually appear within an environment that obeyed the law of entropy. The appearance of negative entropy set the threshold for the appearance of the special properties of the special systems. It is reinforced by the work of Stuart Kauffman who talks about spontaneous order out of nowhere through molecular combinations in his books The Origin of Order and At Home in the Universe. Thus there is a trend in recent theory to accept that order might arise out of nonorder in highly unstable nonequilibrium energy flows. Thus if we identify the dissipative ordering structures of Prigogine with the lower level Special System, and then the middle level is related to the organism and is identified with Autopoietic Theory, finally we can relate the higher level order of the reflexive system to the reflexive theory of O'Malley, Sandywell, Blum and Peter McHugh⁷. Special Systems Theory allows us to relate these three emergent levels to the

⁷ Blum, Alan F. and Peter McHugh

(1984) *Self-Reflection in the Arts and Sciences*. New Jersey: Humanities Press.

higher and lower levels of meta/intra-systems and systems in general. This gives us five emergent levels all together with very precise theories to work with at each level. What is interesting is to attempt to work out the implications for the relations between the different organizations of each of these five levels. This produces a very sophisticated meta-theory from which all the various theories are seen in terms of their difference due to the emergent levels that they operate at yet we can also study their supervenience onto the lower levels from the higher emergent levels, because higher levels of emergence must be based on the elements that appear at the next lower level of emergence which create the basis for their possibility of elaboration of emergent effects at the next higher level. What is interesting is that all these levels ultimately entail each other and one can see the ramifications of lower levels on higher levels particularly because of the conjunctive ordering that appears in Special Systems that is very different from normal systems or even meta-systems.

The point is that these theories have been chosen out of the currently available theories that approximate the structures of the special systems. They give us a vocabulary that is unique to each level of emergence. They give us a connection into the tradition, which produced these interesting theories. But like all scientific theories these will eventually become passé. New theories will emerge to take their places, hopefully more interesting. Special Systems theory as such is not tied to these specific theories but is rather interested in using them as modern approximations to the ancient wisdom concerning the special systems, and as a way to give access to special systems theory to modern theorists who are acquainted with this part of the tradition. Unfortunately it alienates those not familiar with this portion of the tradition, and attempts must be made to connect special systems theory with other parts of the tradition where anomalies are being considered and where there are substantive theories about them. This is part of the horizon for the development of

special systems theory in the future to annex other parts of the tradition and to express itself in terms of other sequences of emergent theories. But what is interesting about this set of theories is that they address some of the big questions in such as the nature of Life, Consciousness and the Social. In fact it is in approaching these questions and their emergent relations that special systems theory in its modern guise is so effective. The theories in question give us a vocabulary and a theoretical framework for talking about life, in terms of the existential theory of autopoiesis, the social in terms of reflexive theory, and consciousness in terms of dissipative negentropic structures. If the Ego is a system and the Self in Jungian terms is a Meta-system then these other elements can be seen as archetypal stages instead. So another whole view of the special systems is as a structural model of the collective unconscious. Thus the same basic model can be used for many different theories where there are a series of emergent transitions being posited. It allows us to capture the unique organization of each level, the gaps between the levels and the criterion for the emergence of the various levels in their difference and in their synergetic resonances with each other. All of these relations between these specific theories and other related theories are given in other papers that are available and will not be elaborated here. Suffice it to say that Special System theory is aimed at understanding the big questions of our time which is the relations between awareness, consciousness, life, the social and the unconscious. Many times we use the theory of Deleuze and Guattari in Anti-Oedipus to make these points about the differences between desiring machines, the individual and the socius which are prominent emergent levels in their theory. The ability to see the gaps between emergent levels, to predict the types of order to appear on each level, and to summarize the criterion for the transition between levels is very helpful as a meta-theory when considering the relations between consciousness, life and the social. Most theorists merely deal with one of those topics. Special Systems Theory is unique in its

ability to switch back and forth between these different registers and to see how they reinforce or differ from each other within a single non-homogeneous framework that accepts difference but allows for the discovery of resonances and synergy. By being fully engaged in the big questions of our time through the support of modern theory building exercises we help to participate and advance the issues of the Western Scientific Tradition from a unique perspective forged out of nonduality. In these various images of the special systems theories using modern theories there are many dualistic and monistic concepts that need to be understood and reworked into approximations of nondual understandings. This is a continual struggle in which nonduality has to show how it can solve these problems using tools of the Western Tradition itself as it attempts on the cutting edge to attempt to understand Life, Consciousness and the Social which are deeply telling emergent phenomena which situate the nondual itself. In other words the nondual is deeply implicated in Life, in Consciousness and in the Social, but traditional nondual philosophies normally did not focus on these contextual issues. Rather than focused on descriptions of the world from nondual accessing states, or of how consciousness is modified by these states, and other issues more to do with practice and the view of things from the point of view of the practitioner. So it is a new kind of engagement for the nondual practitioner to attempt to underwrite the attempt to understand and explain these emergent phenomena normally taken for granted by practitioners and scientists alike as well as those engaged in the mundane everyday world. Such an engagement is how nondual science transforms itself into the science of the nondual which must change in terms of our understanding once we engage science fully. Although nonduality itself does not change, our view of it can change. That is what happens when we go up through the orthogonal levels of nonduality as we mentioned in the last chapter.

Delving into the Past

Perhaps the most interesting thing to do is to look in the past and try to discern the signature of the special systems in nondual spiritual practices and their associated philosophies. Because the special systems are so odd in form it is normally very easy to tell if something is a genuine image of the special systems. And this has been my major endeavor since discovering the Special Systems around 1994 (ten years ago this year). The point of this exercise was to try to learn more about the Special Systems or the Emergent Meta-system through the images from other nondual traditions or their associated traditional sciences. What is wonderful about this theory is that it produces a bridge between foreign nondual traditions and their sciences and Western Science itself. The key is that these anomalous structures arise spontaneously whenever the nondual is touched by any sort of practice, or serendipity. Everything else is fabrication and these fabrications do not have the signature of the nondual nature of the special systems. This is to say that the nondual has a particular schematization (for instance form or pattern) associated with it that is the stamp of authenticity. Because it is a stamp of authenticity nondual spiritual traditions tend to display these forms in conspicuous manners. For instance, the set of mudras of the Buddha can be seen as a system that indicates the relations between the special systems. Or in another case the Egyptian Gods in relation to each other shows a striking similarity to the special systems. Or again the fundamental structure of the precepts of rDzog chen (Ati Yoga) has the form of the special systems. The list of these similarities has become quite long over the past ten years of looking for these similarities. They appear in interesting places like in Jung's Aion in the quadrate of quadrates of Moses marriage, which has a structure similar to that found by a structural analysis of the Epic of Gilgamesh. Also we find this structure in Alchemy in the work of Bolos the Democritean of Mendes with his formula "one nature is charmed by another nature, one nature overcomes another nature, one nature dominates another nature".

Alchemy in general is an interesting example of what may be a holonomic scientific tradition applying the special systems to the understanding of nature. However, it is difficult to make the nonnihilist distinction between genuine and artificial alchemy as it became a seriously muddled over time as different people appropriated it for their own purposes. So disentangling the fragments of Alchemy as a special systems science from the other more bizarre elements of the tradition will be a long and involved process. However, the work of Ripley in England is an excellent clue, and the Alchemical work of Newton would probably help if it were published. What needs to happen is for the alchemical processes to be related back to Greek Mythological Paradigms and the Epics. For instance, I have found that there is a deep structure in the Mahabharata and the Iliad/Odyssey which can be found both in Ripley and in the myth of Hercules. Thus it appears that certain aspects of the Alchemical tradition is rooted in the myths of ancient Greece and if we could understand that then perhaps the connection to the special Systems might become clearer. The twelve transformations of Ripley that appears in the epics and mythology is perhaps an image of the Emergent Meta-system. All this is part of an open horizon of research that is very fruitful which looks for the signature of the special systems in nondual religions texts, and in mythology, epics, and within alchemical texts as well as the texts of Sufism, Taoism, Buddhism, and in Nondual Hindu texts, etc. Each time a parallel is found we learn more about the special systems because each tradition or source treats it differently which it produces its image of the special systems. But because we have a model of the special systems based on mathematics and physics which is very precise it is fairly easy to make the match and see what meanings and senses that the parallels bring with them which were not available before. Our model of the special systems produced from mathematical anomalies is very precise, and that precision allows us to understand the defocusing, and transformation that appears in the various texts from other sources. What is good is that the

special systems are so odd that for the most part it is unlikely that this work is a matter of projection, although in some cases it might be possible if the elements of the text are too vague. Since we are dealing with anomalies they have an odd structure and that odd structure is either present in some transformed manner or not. However, we must continually criticize our selves to make sure we are not just seeing the same thing everywhere as a projection. One of the key points is whether the discovery of an isomorphism between the model and the given image yields any new knowledge about the special systems we did not know before. Normally if it yields new and interesting information about the use of the model within a given context of a nondual tradition or science then it is more likely to be genuine.

Here as an example, I will present one of the most interesting cases, which is that of the game of Go, Wu Chi which is played in Japan and China and other places in the Far East but has begun to make inroads in Europe as well. This game is very sophisticated and much more complex than Chess. Whereas computers can beat Chess Champions we are no where close to a computer beating a Go champion. The game is just too complex and subtle being based on pattern recognition. It is a very simple game played on a 19x19 line square board with white to black stones which when placed on the intersections of the board to not move unless they are taken by the other player. The idea of the game is to take territory, which are unoccupied intersections on the board by surrounding them with strong walls. One particular formation is impossible to take which is called a double eye, but all other structures are vulnerable to attack both from inside and outside. One takes another piece by surrounding it completely on all its adjacent intersections. Whole groups of pieces can be taken in this manner.

I had always wondered about the structure of the game of Go, but for a long time could not understand any structural reasons for it to have the formal qualities that it had. But once I

discovered the Emergent Meta-system I realized that Go is an image of the Emergent Meta-system, a very precise image. But seeing that image was difficult because the image is not within a single game but across games. Once I realized that the game of Go was an image of the model of the Emergent Meta-system I began an analysis of the game and what is interesting is that it gave a much more detailed picture of the structural formation of the Emergent Meta-system than what I knew from the mathematics at that time. So for instance we find that in go there are two kinds of holes and two kinds of pieces. There are the pieces that are placed on the board as handicap stones at the beginning of the game and there are the stones that are played during the game itself. There are also two kinds of empty intersections one is the double eye and the other is the normal empty spaces that are counted for points at the end of the game as surrounded territory. The Emergent Meta-system has a form very similar to nature in as much as it forms a cycle that moves from seeds to monads to viewpoints to candidates and then back to seeds. This is very much like the cycle of vegetation which starts from a seed and produces the monads of the leaves that sustain the plant by photosynthesis, then the plant produces flowers to attract the insects which facilitate reproduction which then allows fruits to be produced that in turn yield seeds. In Go the four kinds of stones and holes exemplify this cycle. The handicap stones are like the seeds that are planted before the game and allow players at very different levels to play an interesting game with each other. Then the normal stones put in play during the game by being placed on an intersection are the monads. The double eye structure which is the only stable structure in the game is the viewpoint. And then the counted empty intersections that are the territory that is won by either side is the candidates, because any of them could be played. Games end by agreement not by a checkmate final move. All empty intersections are open for play at any time. So it is the relation between the empty intersections or holes and the occupied intersections where stones lie that represent the

various phases of the EMS cycle. Notice that they are in the right order within the normal play of the game. At the end of the game the winner's points are divided by nine to give the number of handicap stones for the next game. Nine for the Chinese is the number of Yang. On the other hand the formation of the stones on the board is what is considered Yin. What happens naturally over many games is that the board tends to look like a swirling yin in yang and yang in yin Taoist symbol so that you get a feeling looking at the rearranged positions of the stones for counting at the end of the game that you are witnessing the yin/yang interaction that is occurring on the surface of the Go Board. The nine by which the final stones are counted represents the unseen yang cause that is beyond and above the plane of the game and its two players. Across games of Go there is an Emergent Meta-system cycle that is enacted. The structure of the game is so precise a model of the Emergent Meta-system that each element of the game has a meaning within the overall structure of the Emergent Meta-system schematization.

What is fascinating is that the Chinese had such a precise model of the Emergent Meta-system and that they were wise enough to encode it into a game so that it would be passed down through time from generation to generation as a pastime, but that this pastime has the heuristic value of acquainting people unconsciously with the form of the Emergent Meta-system which has been long forgotten by the Chinese themselves on a conscious level. This type of cultural artifact that embodies the patterning and formation of the Emergent Meta-system is a great gift to us because it makes clear that the formation has been known very precisely in the past and the knowledge has been passed down in a long tradition, all be it in a form that most people had no idea what they were passing down, however the interaction with the game itself would be a learning device on an unconscious level so that people would come to know the workings of the Emergent Meta-system through their playing and observing the game. Those who encoded the Emergent Meta-system into a

game were very wise indeed, because we have a much harder time finding it in the texts that have survived. But once we know that the Chinese had a precise model of the Emergent Meta-system in remote history then we can look at the existing text in a new light. This is a prime example of the value of doing the sort of cultural archeology looking for remnants of the Special Systems and the Emergent Meta-system. As in the case of Go or Wu Chi we find out more about the form of the Emergent Meta-system than the mathematics can tell us by itself. Because it is a game, it gives us a formal model to work from similar to the model that we have from the mathematics, rather than just a vague image. Thus finds like this advance the knowledge of Special Systems and Emergent Meta-systems immensely. And there may be many other examples out there waiting to be found that are the fruit of previous nondual traditions who had a clear idea of the nature of the Special Systems and the Emergent Meta-systems which we have somehow never known with such a degree of precision or lost in our own tradition.

So nondual science goes in two directions. It moves toward the past searching for the archeological remains of cultural artifacts or myths or rituals that embody the form of the Special Systems. And it also goes outward in modern science attempting to understand based on the Special Systems the big problems like the emergent differences between Consciousness, Life and Society. By working in these two directions at once we derive a very sophisticated knowledge based on the anomalies of math and physics but generalized in terms of special systems theory. As Gregory Bateson says in Mind and Nature you get a much richer and better set of information if you study two subjects at the same time. Nondual science applies this insight constantly by looking at nondual practices and their associated philosophies and traditional sciences at the same time as using modern theories to approach crucial scientific problems like the nature of Consciousness, Life and Society. Both of these horizons of research are mutually informing elucidating. We are open

though colonialization to the nondual traditions of the world who have all be imported one way or another into the Western world. Works from these traditions are continually being translated making it possible to study translations of the original texts themselves. In those texts and their analysis sometimes it is possible to find an image of either the Special Systems or the Emergent Meta-system. Sometimes these images are obvious and other times very subtle within the textual tradition in question. The good examples of images tell us new information about the forms that the Emergent Meta-system or Special Systems can take. Then we look at our own theory building based on the constraints of Western Science and we formulate theories of Consciousness, Life and the Social within the context of what we have discovered from the myriad nondual traditions we have studied looking for these images. Our modern theories are thus informed with the knowledge gleaned from the nondual traditions of the world and reformulated in a way that fits into the mold of Western Science theorizing about these crucial questions of current science, which are not understood. Nondual sources have insight into these problems based on practices and long traditions of nondual realization and philosophical encoding of the results of those realizations. We can apply those results to our own orientation toward the phenomena that modern science studies. But also we can critique the older images of nonduality, and see how they are vague and amorphous in many instances and could be sharpened and made more incisive in the context of the models of nondual science, and to the extent we can improve our understanding of nonduality itself we can say that we are engaged in a science of nonduality that helps us understand nonduality better by looking at its interface with the dual and monist nihilistic images that abound in normal Western science which is not informed by an understanding of the role of nonduality in our comprehension of the world and our place within it.

It is the Science of the Nondual that is going to

take us into the future. While looking at the archeology of past cultural artifacts with an eye to how they exemplify the Special Systems or Emergent Meta-systems or even Autogenesis we can learn from the past, sometimes even from dead traditions that are mute leaving no specific written record about the Special Systems but by finding the unique signature of the form or pattern or system relations of the special systems we can infer that they knew about those special systems and had encoded it into their knowledge. But other times we have very sophisticated texts like those of Plato or even Leibniz which gives us sophisticated formulations of the structure of the Emergent Meta-system or Special Systems, and we wonder where they got that from, as it is difficult to see the line of transmission within our own tradition. The point is that we can learn from the past both by inference and directly and that can inform our attempt to come to terms with the problems of modern science in the present for instance in trying to understand consciousness, life and the social. But it is only when the tables are turned and we move from a Nondual Science, i.e. a science based on the knowledge of the existence of the nondual, to a Science of the Nondual, which sharpens our understanding of the nondual beyond what has existed in the past, that we see how we might move into the future by giving better and better exemplifications of the nondual, drawing on all past nondual traditions, struggling with the big emergent scientific issues of our time, but also looking into the future by trying to find ways to exemplify the nondual even better in the future. We really have a gold mine in our own tradition and the fact that it is shunned nondual ways of looking at the world. That is because enlightenment comes from the study of nonenlightenment. The Western tradition is about as non-enlightened as any culture can get. With the exception of Meister Eckhart and a few other lights this is a tradition of darkness as far as understanding nonduality is concerned. Perhaps Blake is another exception in a dark history. Blythe has collected Zen Koan like sayings from literature of our tradition so we can see that there are lights

sprinkled within the darkness but overwhelmingly this is a culture that does not understand in the least nonduality and its intrinsic value. But that is good because it is by studying the extremes of nonenlightenment that you come to understand the fundamental nature of enlightenment itself. Nonenlightenment and Enlightenment are two sides of the same vajra sword. Enlightenment is seen within nonenlightenment. It is out of nonenlightenment that nonduality as a necessity arises. So one resource we have in creating a science of nonduality for the future is the very darkness of our own tradition. Out of extremes of darkness come extremes of light, and there is a chance that this tradition could turn over and become its opposite. It has clung to nonenlightenment for so long and so hard it could be ready to flip over to its other extreme. And because it is such an extreme case that could outline the nature of nonduality even more precisely than it has ever been profiled in the past. Thus I predict that there is a possibility that there is going to be a nondual renaissance in this tradition the likes of which have never been seen before. One reason is that we have access to many nondual traditions in the past though the terror and destruction of colonialism. So all those other traditions around the world need to be evoked in our own understanding of nonduality, once we get beyond the need to pick one over the others. I am not suggesting Perennialism which says that all spiritual roads lead to the same ultimate place. This is obviously false and nihilistic. Rather nondual traditions need to enter into a dialogue and conversation which appreciates their differences yet understandings what they have in common, i.e. nonduality itself as seen from various different viewpoints. Once we begin this dialogue and then augment it with a dialogue with science and about science then we set the stage for a very big turn of the ship of this tradition away from the destination of global domination toward the appreciation of the sea of nonduality itself that supports all the ships that venture into the ocean.

Holonomics

We have been talking about the horizons of research with respect to the present, past and future which are all open and which have hardly been mined for the wisdom they may contain. And this whole venture can be talked about under the term holonomics. We have mentioned images of the Special Systems, of the Emergent Meta-system, and Autogenesis. We encapsulate all that under the term holonomics which is the order of the holons using Arthur Koestlers term. Holonomics is a new discipline which would study the holons in nature and their intrinsic anomalous order. All fields are open for the search for holonomic structures and as this science enters the various disciplines it will find I am sure many different embodiments of these structures that are now invisible due to our blindness to the meta-system. If you cannot differentiate the meta-system it is not possible to see the special systems. Instead right now we really only see the systems, and for our scientific and technological culture right now everything is seen as a system. But this blots out all the other projected schemas that we could use other than the system and drains the term system of its meaning and sense. So another horizon is to apply these special systems theories to as many disciplines as possible to look for the embodiments that appear within those various disciplines. This is also a very large open horizon for future research in various fields. If nonduality is the basis for everything that exists then we should find examples of holonomic schematization everywhere in nature, in culture, and in ourselves. It is just a matter of knowing what to look for and our model based on mathematics and physics gives us something very specific to look for.

Schemas

Another question that needs to be answered is the nature of the projection process of Being itself in relation to existence. In other words there are many schemas other than the Form, Pattern and System schemas, such as World, Openscape, Domain, Pluriverse, Kosmos, Monad and Facet. In order for the term system

to have meaning we must relate it to other schemas. And what we find when we look at those other schemas is that they themselves have interesting and non-intuitive relations to each other that seems to be based on the holonomic structures that we have been exploring. Thus I have started another research project that is aimed at understanding what a schema might be. See <http://holonomic.net> for the working papers of this research project. To ultimately understand what a Special System is or a Meta-system is we need to understand what all schemas are and how they related to existence itself. This means understanding the projection process of schematization that is prior to the comprehension of kinds of things or the unique features of individual things. Umberto Eco in his *Kant and the Platypus* gives an overview of this field and identifies the Geometrical and Mathematical schemas as a specific kind of schema which we find in the *Timaeus* of Plato and in the *Critique of Pure Reason* of Kant. Part of this study is a genealogy of the concept of the schema within our tradition. But this deeper understanding of the meaning of the schema is part of the grounding of understanding of what kind of thing holonomics is. Holonomics is an image of existence. But existence is intertwined with projective Being in a way that cannot be disentangled, so that without understanding the projection process we cannot understand the images of existence that underlie the projection process of Being. The special systems appear in the interstices between the schemas. It is an open question as to whether they appear in the interstice between each schema or not. But there is a good chance that this is so. In that case we need to understand the ring of the schemas which are created by conjunction, i.e. anyone schema is the result of a juxtaposition of the two adjacent schemas. We also need to understand the relation of the schemas to dimensionality because it appears that there are two dimensions per schema and two schemas per dimension. But generally if we do not understand the schemas and their relation to each other within the hierarchy of schemas, then we cannot understand the interstices in which the special systems appear. There may

be special forms, special domains, special worlds if the special systems appear between each level of the hierarchy of schemas, so this is a large open question now that may have profound effects on our understanding of the nature of holonomics in the future as the interplay between Being and Existence.

Open Horizons of Research

As we have seen there are many open horizons of research in Nondual Science and the associated Science of the Nondual including those related to Past, Present and Future applications of the theoretical perspective that has been founded with the opening up of a concrete theoretical model of holonomics. These open models of research can take advantage of the research of many others in the various fields who do not even know they are contributing, because nonduality is everywhere organizing everything according to its own inherent structures in unexpected ways. Wisdom always appears from an unexpected tradition, so that many researchers are working on facets of the problem of Nondual science without even knowing it. For instance we have the work of N. Hellerstein and A. Stern in deviant Logics. All the work of Nagarjuna showing that emptiness is at the core of logic needs to be updated with respect to advances in the study of logic that have occurred in the last century. There is the work of Godel that has killed the program of Hilbert and made it impossible to produce a system that is completely decidable, which is itself an image of the relation between the system and meta-system. There is the work in Quantum Mechanics and Relativity Theory as well as String or M-brane theory, which sometimes give us interesting models of parts of the problem of nondual science or unexpected images of the special systems. In other words there are continually results and theories in many fields that have a bearing on nondual science. It is as if unknown to themselves researchers are all being driven to produce results that have a bearing on the question of the nondual basis of science, and that is because nonduality is at the root of the

manifestation of the world, and cannot help but be exemplified everywhere, if we only had eyes to see it. Science is no exception, it is another fabricated thing, but even fabricated things are fabricated on the basis of the spontaneity of nonduality, fabrication itself arises spontaneously as the exemplification of nonenlightenment. So ultimately Science in its unenlightened form is itself an open horizon for nondual science which would make sense out of the heterogeneous data produced by myriad researchers working independently on esoteric problems but running into and codifying nondual related results. It is just a matter of cherry picking these results and putting them into a context of nondual interpretation in order to build the case of the ordinary nondual basis of science. But this does not mean that nondual scientists should merely be a parasite on normal science. Rather guided by the holonomic theories we are in a position to look at new phenomena that normal science is blind to and to conduct experiments that dualists cannot conceive. It is this work that will make nondual science a real science. And that reality will eventually overturn normal western science because nondual science is a more sophisticated understanding of the phenomena than dualist/monist science. Since the ultimate truth as so many religious traditions and spiritual traditions have found is nondual, the pursuit of nondual science will allow that meta-truth to become self-evident within the darkest corner of the darkest tradition as well as within the inherently nondual traditions themselves. If nonduality is the universal ground based on the bedrock of existence as empty/void then it must be true of the Western Tradition itself in its extreme nihilism and dualism, and its core Western Science that worships progress but produces nihilism as the opposite side of emergence.

As we would expect there are nothing but open horizons for directions of research in the nondual science. Many forms of that research are already taking place unknown to the scientists themselves, or known by way of practice of a spiritual tradition that delves into nonduality as an avocation. But will

nonduality become a open practice in relation to science rather than just a subjective belief of a few scientist or an orientation of some interested lay people who read books on science. Nondual science must prove itself just as capable in terms of our ability to pursue scientific research as any Western researcher, but with a different type of orientation and discrimination which renders that research more sophisticated and more grounded in existence rather than the mere projections of Being. Whether there are those who are capable and willing to do this hard work is open to question. Here we can only lay out the possibility of a nondual renaissance within our Western Tradition and within Western Science in particular. It is for the future to see whether there are brave souls who are willing to do the hard work to make this vision a reality. But all fundamental transformations must start with a vision. And our vision sees myriad open research horizons with regard to the practice of nondual science. Whether anyone will hike through or stroll among those uncharted territories or not is still unknown.

But even the vision of a possibility of a nondual future for Western Science and thus the Western Tradition has its own rewards in the present when that future is unrealized. That is because nonduality itself is the underlying nature of existence which calls to us in every way possible. And when we respond to that call we actualize ourselves in our highest potential as human beings. So just the vision of a nondual future for the darkest part of the human races experience and conceptualization is itself seeing the possibility of enlightenment in nonenlightenment and THAT is enlightenment.