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| <b>Aspects<br/>verses Kinds<br/>of Being</b> | <b>Pure<br/>Being<sup>1</sup></b> | <b>Process<br/>Being<sup>2</sup></b> | <b>Hyper<br/>Being<sup>3</sup></b> | <b>Wild<br/>Being<sup>4</sup></b> | <b>Ultra<br/>Existence</b> |
|--|-----------------------------------|--------------------------------------|------------------------------------|-----------------------------------|----------------------------|
| <b>Truth</b>                                 | <b>Pure<br/>Truth</b>             | <b>Process<br/>Truth</b>             | <b>Hyper<br/>Truth</b>             | <b>Wild<br/>Truth</b>             | <b>Ultra<br/>Truth</b>     |
| <b>Identity</b>                              | <b>Pure<br/>Identity</b>          | <b>Process<br/>Identity</b>          | <b>Hyper<br/>Identity</b>          | <b>Wild<br/>Identity</b>          | <b>Ultra<br/>Identity</b>  |
| <b>Reality</b>                               | <b>Pure<br/>Reality</b>           | <b>Process<br/>Reality</b>           | <b>Hyper<br/>Reality</b>           | <b>Wild<br/>Reality</b>           | <b>Ultra<br/>Reality</b>   |
| <b>Presence</b>                              | <b>Pure<br/>Presence</b>          | <b>Process<br/>Presence</b>          | <b>Hyper<br/>Presence</b>          | <b>Wild<br/>Presence</b>          | <b>Ultra<br/>Presence</b>  |

This fact that each aspect transforms as we move to higher and higher meta -levels is little appreciated by most philosophers. It means that Being ultimately presents us with a faceted structure where each facet is like a part of a mobile in which all the facets intersect all the others as they move in the mobile.

For instance, Truth at the level of Pure Truth means verification. But it transforms at the next level up into Process Truth which is the Showing and Hiding of unconcealment that brings forth the truth. At the next level up Hyper Truth is what we see when the Unconscious reveals itself. Hyper Truth is the truth that is never manifested but which haunts the truths that are uncovered. Wild Truth is the final level and that appears when we realize that the revealed truth and the secret truth are ultimately the same. After that there is only the emptiness of existence where truth itself becomes an empty construct. Here ultra-truth becomes an indicator pointing at suchness.

If we were to look instead at identity we would see that Pure Identity is what we get in formal systems that have tautologies at their root. Process Identity is the next meta -level up and it is what Heidegger calls the belonging together of Sameness in Identity and Difference. At the next level up we have Hyper Identity which occurs when the undecidable enters the picture. Suddenly identities are ambiguous and multifarious. This is what Derrida calls differance which he explains by way of differing and deferring. It is embodied ambivalence. The final level up is called Wild Identity. We see that in something like Hegel's 'absolute reason' in which the myriad varieties in their concrete details become identical in a sense, this is to say identity within and though difference, i.e. knowledge of the self though the other. Beyond that there is the identity of the sources of difference themselves in existence. At that point ultra -identity becomes empty itself and points to pure suchness.

If we look instead at reality then we see Pure Reality as the product of testing which like verification needs to be repeated often. Process Reality occurs when there is a continual regime of testing that never ends. We find this in some critical professions where they must continually be retrained to continue to hold their certification. Hyper Reality is a

departure at the next higher level of reality where the simulation or test is more real than 'reality' itself. For instance, some simulation environments allow for scenarios that are very unlikely to occur in reality but we can make them happen as if they were real in order to prepare for them. In Hyper Reality the game becomes more real than normal mundane 'reality'. Finally at the last step up there is Wild Reality in which we can no longer discern what is real and what is not real, what is the game and what is reality. Cyberspace as a new medium which uses the Internet as an infra-structure has the nature of Wild Being which spawns a myriad of virtual realities. Beyond that is the ultra-reality of existence itself. Ultra reality is a pointer toward suchness.

If we look at the next aspect then we need to consider Pure Presence. Pure Presence is static and fixed presentation of a product with illusory continuity. Process Presence is the underlying mechanism behind the showing and hiding of the presentation. The process of presentation is called appearance. Hyper Presence is the appearing of the always already hidden as a disruptive force within the presentational process which distorts the final product which is held within the illusory persistence. Wild Presence is when we cannot tell the difference between the things hidden and presencing behind the appearances and the appearances themselves. Beyond that is the realm that is never presented but merely is found lying around ignored which is called existence. Ultra presence is a pointer toward suchness.

All of these facets taken together give us a picture of Being in its totality which is utterly fragmented. We look at these facets as if for the first time and wonder at the complexity of the paradox of Being that our Indo-European ancestors forged. It is this mobile of facets that we find ourselves caught within. The ones that exhibit this encompassing the best are the Analytic Philosophers who are realists obsessed with Truth and Identity because they think reality can be formalized, or at least wish it could. They, of course, reject introspection and phenomenology which concentrated instead on presences. Thus philosophy is divided against itself. Phenomenology develops into ontology of the kinds of Being while Analytic Philosophy stays within the realm of the more orthodox concentration of philosophy on aspects. The kinds of Being are hidden behind the veil of illusory continuity of Pure Identity, Pure Presence, Pure Reality, Pure Truth. It is the heirs of Husserl that break through this veil mostly by way of his recognition of the fundamental difference between simple ideas and essences. By doing that they reveal the transformation of the aspects at the various deeper meta-levels of Being.

It is this new ontology of the fragmentation of Being that we now have to work with in our approach genuine spirituality. This is a theory like the theory of the unconscious which gives us deep insight into the structure of the world. It turns out that the Western world has conserved this underlying structure for thousands of years. If we look back at the Vedas we find it in the differences between the Vedic gods. We find it in various Indo-European mythic traditions. In fact once we start looking for it, through the practice of onto-mythology, it seems to appear everywhere. This is because these four different meta-levels of Being synergize to produce the face of our world to us in concrete phenomena. We can look at these faces of the world in various disciplines and even in our selves as we consider how the facets of Being fragment our lives and the lives of

others. This has to do with manifestation and that effects all disciplines. Manifestation as a whole is fragmented in the Western Worldview. We experience this in our lives and see it in the nihilism all around us. Genuine Spirituality needs to see these structures in the world and in the subjects surrounding us within the world and use this knowledge to help the subjects unify themselves and gain totality and gain wholeness within this fragmented world they inhabit. This basic theory is explicit and well formed. It contains within it something like the unconscious that appears on the third meta-level of Being. But this unconscious is the Essence of Manifestation<sup>142</sup> within Being, not the unconscious of an individual nor society but the unconscious of manifestation within Being itself. The unconscious is basically split between psychological and social unconsciousnesses as has been pointed out in The Production of Desire. But this split unconscious that mutually mirrors each other has an origin in the unconscious of manifestation which is always already lost. We see it in the primal scenes like that of the Well and the Tree of the Indo-Europeans. But more than just a theory similar to that of the unconscious that founded psychology or a theory of alienation from sociology we have a contextual structure that gives the concept of the unconscious of manifestation a structurally articulated situation within which it is expressed. Thus the theory of the fragmentation of the mobile of Being is a much richer and more profound notion than the amorphousness of the unconscious which is a mere absence made present by indications. The theory of kinds and aspects of Being that combine into the facets of Being shows how the Essence of Manifestation plays off of and ultimately becomes an integral part of manifestation at the higher level of Wild Being.

We need to take the divided line through all of the various levels of Being until we reach the bedrock of Existence at meta-level five where we go beyond Being into the unthinkable. The unthinkable is interpreted as Emptiness by the Buddhists and Void by the Taoists. These two sound the same but in actuality they are different since the Buddhist emptiness refers to inward existence and the Taoist Void refers to outward existence. Both effectively reduce the inner B and C phase space of the ego to nothing within the total line divided ABCD. If we want to get to manifestation, i.e. the deeper non-dual which is the object of Sufic practice then we merely need to think of the dualism between Inward and Outward Existence and take that down through the meta-levels as well. Thus instead of dualistically having a separation between these two kinds of existence we begin to see existence as a process, i.e. the process of actualization. Then we note that there is a undecidability between emptiness or void, a hiatus at which we are neither empty nor void. Finally we note the chiasmic reversibility of the "empty void" and the "void emptiness." There is a slight difference in meaning between these reversed phases. This slight difference defines the pocket of complete nonduality between them in their mutual intaglio. That pocket of nonduality is manifestation which is the non-dual between inward and outward existence. The way the Sufis understand this is by switching from creation to the attributes of the creator. If we consider the realm of otherness which is the mutual alienation and anomie between selves then the realm of manifestation is non-otherness. It is not self and it is not otherness but it is a unique and singular non-other. In this sense God alone has no dual, i.e. is singular and unique. Existence has to do with the creation as seen beyond Being. That is to say Existence is neither true nor false,

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<sup>142</sup> Michael Henry

real nor illusory, identical or different, present nor absent. Existence is the opposite of the the quintessence which is both true and false, real and illusory, identical and different, present and absent. The quintessence is the amalgam of all the various moments of the aspects of being which produce the Holoidal which is true, real, identical and present to the Ephemeron which is false, unreal, different and absent with all the combinations in between. There are sixteen moments of Being which are all summed together in the paradoxicality of the quintessence which point toward the wholeness of the Atman. Quintessence is paradoxical while Existence is supra-rational. What is rational is between these extremes. In the West we are obsessed with paradox. Note the celebration of paradox in Hoffstadter's Godel, Escher and Bach. But the supra-rationality of existence is hidden from us by the underlying assumption of excluded middle. Indian Buddhist logic violates this taboo and establishes with Nagarjuna that Emptiness is the unthinkability of the difference between the neither ...nor and the both ...and. Thus Manifestation is the midpoint between paradox and empty/void existence, and more deeply it is the non-dual between emptiness and the void as well. We zero in on manifestation by following the chain of nonduality between the duals. It is the interspace and barrier between Existence and Being but it is further the interspace and barrier between Emptiness as Inward Existence and the void of Outward Existence. It can be thought of as the rare Platinum which is beyond Gold and Silver, the royal metals. Some alchemists hypothesized that there was a metal beyond gold which was the basis of raising the other base metals to the level of Gold. Platinum is so rare that it was not known until very recently. It is heavier than gold and of silverish hue and thus it is in some sense between them. It acts as a catalyst. Similarly Jade is a very special kind of crystalline structure that has beautiful patterning and will hold a carving. But diamond is the ultimate crystal lattice which is the hardest of all substances. Manifestation is like Diamond in relation to the Jade crystals, and like Platinum in relation to the royal metals of Silver and Gold. At the point of manifestation one changes one's gaze from the found creatures to the attributes of the creator who is non-other<sup>143</sup>. From those attributes one seeks also to understand the non-dual core which is called the Godhead<sup>144</sup>, which is a desert of namelessness and attributelessness that Meister Eckhart talks about so eloquently.

If we want to look for examples we find the poetry of Stonehouse compelling. He was a Zen monk with taoist inclinations. He says:

*There's a road to the west that nobody takes  
people want out but hell has no gate  
jeweled pavilions and terraces are empty  
cauldrons and ovens are full*

*Look for the real and it becomes more distant  
try to end delusions and they just increase  
followers of the way have a place that stays serene  
when the moon is in the sky its reflection is in the waves*

*Trying to become a Buddha is easy  
but ending delusions is hard*

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<sup>143</sup> "There is no god, only Allah" is the axiom of Islam.

<sup>144</sup> In Arabic 'Dhat.'

*how many frosty moonlit nights  
have i sat and felt the cold before dawn*

*Stripped of conditions my mind is blank  
emptied of existence my nature is bare  
often at night my windows turn white  
the moon and the stream visit my door*

*Work with no mind and all works stops  
no more passion or sorrow  
but don't think no mind means you're done  
the thought of no-mind still remains*

*No mind in my work the wind through the trees  
no work in my mind the moon through space  
windsound and moonlight wear away  
one layer then another*

*The new year comes and the old year goes  
the fourth tomorrow the third today  
still unenlightened i have aged in vain  
where in the world can I express my shame<sup>145</sup>*

Here Stonehouse expresses his attainment of the Gold and the Jade together in conjunction. And still he does not count that as enlightenment, because he senses that there may be an even deeper non-dual.

## THE INNER STRUCTURE OF EXISTENCE AND SPECIAL SYSTEMS THEORY

All this talk of the spiritual, i.e. what is beyond schemas, beyond the splitting of the dualisms that underlie the world, beyond the aspects and kinds of Being, beyond even the non-duals at the heart of our worldview prepares us to think more clearly about the schemas themselves. What we have noted before and will note again is that there is a crucial difference between the meta -system schema and the system schema. The system is a gestalt or a flow or a combination thereof. A meta -system is a proto-gestalt or proto-flow or a combination thereof. The proto -gestalt is the background of the gestalt just as the proto -flow is the background of the flow. The proto -gestalt or proto -flow has what David Bohm calls Implicate Order which is the dual of the Explicit order of the system. What we note is that a systemic gestalt is a whole greater than the sum of its parts while the meta-systemic proto-gestalt is a whole less than the sum of its parts. This brings us to wonder if there is any kind of whole that is precisely the same as the sum of its parts with no surplus or deficit. It turns out that such wholes exist and we call them holons after the usage established by Koestler. Holons are both wholes and parts simultaneously like our organs with our bodies. It turns out that there are three holonic special systems which are called Dissipative Ordering, Autopoietic Self-organizing, and Reflexive Social. These are defined in terms of the Hyper Complex Algebras where the System is related to the real algebra, the Dissipative System is related to the complex algebra which adds conjunction, the Autopoietic System is related to the quaternion algebra which loses the commutative

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<sup>145</sup> The Zen Works of Stonehouse by Red Pine (Mercury House San Francisco 1999) pages 51-53

property, the Reflexive System is related to the octonion algebra which loses the associative property and the Meta -system is related to the sedenion non -division algebra and those above it. Holonic Special Systems are at the same time partial systems and partial meta -systemic fields. Meta -systems can be called environments, ecosystems, ecologies, situations, contexts or milieus. They are the dual of the super -system which is a nested hierarchy of systems within systems within systems, or what is called a system of systems. The meta -system is a deconstruction of the super -system into the field that supports the sub-systems within the super-system.

We posit that the nature of the holonic special systems is a model of existence rather than Being. However, we note that the kinds of Being delineate these kinds of existence.

| <b>Kinds of Being</b> | <b>Emergent Systemic Levels</b>                      |
|-----------------------|--|
|                       | System = thermodynamic-living-social gestalt or flow |
| Pure Being            |  |
|                       | Holonic Dissipative Special System = Thermodynamic   |
| Process Being         |  |
|                       | Holonic Autopoietic Special System = Living          |
| Hyper Being           |  |
|                       | Holonic Reflexive Special System = Social            |
| Wild Being            |  |
|                       | Meta-system = proto-gestalt or proto-flow            |

This is the way that Existence defines Being and vice versa. The meta -levels of Being define the special systems and the special systems define the meta-levels of Being. In this way duality and nonduality define each other as we see in mobius strips and kleinian bottles the anomalous non -orientable surfaces in topology. Existence and Being are complementary duals of each other while manifestation is Self dual. Existence is supra -rational comprehended only by the heart while Being is Paradoxical pushing reason into chaos. Existence is non -dual while Being is dualistic. But there is a deeper non -dual beyond Inward and Outward existence called manifestation. In manifestation reason is maintained neither going to the extreme of paradoxicality or the extreme of supra -rationality. This is similar to the position of Dzong Ka Ba, the Tibetan Buddhist philosopher, who maintains that emptiness and reason are compatible even within the bounds of the acceptance of excluded middle.

When the Buddha achieved enlightenment we posit that he discovered the ground of Existence beyond Being. His discovery was powerful because he exited from the Indo -European worldview which is saturated with Being into the realm of Empty Existence. However due to the idealistic prejudices of the Indian culture this resolution was different from the Void discovered by the Chinese Taoists. In China the indigenous view of existence as Void came into contact with the Buddhist concept of Emptiness. At first the Chinese thought that Buddhism and Taoism were the same. But eventually their appreciation of the difference of Buddhism and Taoism was refined until with

Stonehouse we see both of them at the same time held in conjunction as *empty void or void emptiness*.

*Stripped of conditions my mind is blank  
emptied of existence my nature is bare  
often at night my windows turn white  
the moon and the stream visit my door*

*Work with no mind and all works stops  
no more passion or sorrow  
but don't think no mind means you're done  
the thought of no-mind still remains*

*No mind in my work the wind through the trees  
no work in my mind the moon through space  
windsound and moonlight wear away  
one layer then another*

If we look at Buddhism and Taoism as well as Sufism for evidence of knowledge of the Special Systems we find it in the insistence on achieving balance between surplus and deficit. Under the Bodhi tree the Buddha discovered the bedrock of existence which is structured in terms of the holonomic special systems. The Taoists as well discovered these special forms which are embedded in the void. The void or emptiness is not completely empty of schemas, but instead has the schemas of the special systems embedded within it. It is because of that embedding of this special kind of ordering that normal schemas can spring spontaneously from the emptiness or void. If we look at Buddhism then the three jewels are Dharma Buddha and Sahgha. These correspond to the special systems where the Dharma is a Dissipative Order that is expressed as a doctrine. The Buddha is that doctrine embodied and thus is Autopoietic, i.e. he becomes impervious to the chain of causation called Samsara and achieves nirvana. The Sangha is the brotherhood of monks who have left home and reflect each other providing the continuity of teaching in the Buddhist tradition. Thus the three jewels are the embodiment of the Holonic special systems formations by human beings which live in the emptiness of existence. If we look at Taoism the picture is less clear, but we note that there is a relation between Yin and Yang which together form the Great Ultimate. That relation between Yin and Yang is produced based on their conjunction as we see in the trigrams and hexagrams of the I Ching. We can think of this progressive bisection of the yin/yang combinations at the various heuristic levels as an image of the bifurcation of the Hyper Complex Algebras via the Cayley-Dickson process. At each heuristic level the differentiation of Yin and Yang is merely a mirror of the Great Ultimate which is their source. In Taoism one is engulfed by nature as it expresses the dance of yin and yang in creation. The Confucian sage sits at the middle of the human world and contemplates how he is determined by it but is inwardly non-determinate. The Taoist sage sits in the middle of nature as a whole and realizes his unity with it, i.e. how he is determined by it even though he is himself indeterminate. The sufic practitioner who has his eye on the attributes of God does the same thing with respect to the Creator who goes beyond creation yet is closer to one than creation. In Islam the structure of the sunnah and sharia

of the Prophet Muhammad <sup>146</sup> has this same holonic structuring based on the special systems. In fact there is a belief in Islam that all the Prophets pointed to this same ground in different ways when they established their individual Sharias (i.e. presence and identity, good and order) as opposed to the Haqqiqat (i.e. the reality and truth, right and fate or debt) which is the same for all the prophets. It is fascinating that the aspects and non-duals are mixed together in the meanings of Sharia and Haqqiqat<sup>147</sup>. The point is that the sunnah and sharia of the Prophet Muhammad <sup>148</sup> is the most complete embodiment of the special systems formations of either of the other traditions. However, we can recognize in both Buddhism and Taoism previous embodiments which maybe have some sort of prophetic origin. In China the prophet might have been Fu Hsi who might be Dhul Karnin in the Quran. Whether the Buddha was a prophet or not is unknown as he was silent on any of the meta-physical antinomies that he was asked, and thus was silent on the existence of God. The point is not so much that they were perhaps prophets, but more that each of these spiritual disciplines have different endpoints, i.e. goals, but all of them in one way or another exemplify the special systems formation which is the structure of empty or void existence and beyond that of the deeper non-dual of manifestation.

Understanding the non-dual holons and their structure allows us to comprehend the schemas that the interpenetration of all things in the empty void takes. The special systems when combined with the system gives rise to the Emergent Meta-system which is a model of the dynamic by which the meta-system arises from the combination of the holons with the system. With the Emergent Meta-system systems arise from the void emptiness and return to the empty void. The meta-system as described by the non-dual division hyper complex algebras gives us a picture of the jeweled net of interpenetration. Out of that jeweled net because of its internal ordering based on the special systems there arises gestlts or systems through the mediation of the Holonic special systems. This is the dynamism of Existence which is normally suppressed beneath the projection of Being. These traditions use this structure as the basis of their modeling of the relation between emptiness or void and creation. As the Taoists say in the Tao Te Ching all things spring from the gateway of the mysterious female. The mysterious female is the Void achieved through non-action. That void gives rise to everything. You do not have to do anything or produce anything, all things are already produced out of the void spontaneously without our intervention. The Buddhists go so far as to deny production or destruction. In other words they deny that anything other than the emptiness actually exists because they are intent on focusing on inward existence which does not need the production or destruction of the outward world. Taoists on the other hand find their home embedded in the void of the Outward Existence. Islamic Sufism concentrates on the non-dual between these two non-duals of void and emptiness. Manifestation is a fullness that fills the void emptiness or the empty void. As Sidi Ali al-Jamal says in his book *The Meaning of Man* . . .

*Know that existence is filled. It is never empty. Whoever wants to empty it or says that it is empty, he is ignorant. Allah made its filling vary between senses and meaning. What increases the senses, decreases the meaning. What increases the meaning decreases the senses. Existence is always filled by the sense and the meaning. Had you scrutinized all existence, you would not find the weight of a mustard-seed empty of*

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<sup>146</sup> Peace and Blessings of Allah be upon him

<sup>147</sup> See Lane's Lexicon of the Arabic Language

<sup>148</sup> Peace and Blessings of Allah be upon him

*senses or meaning. This analogy is only understood by the one who plunges into the sea of meanings. May Allah have mercy on ash-Shitri when he said:*

*Do not look at the vessels.  
Dive into the sea of meanings.  
Perhaps you will see Me  
In the company of the Sufis.*

*Whoever wants the meanings must destroy the senses. Whoever wants the senses, must destroy the meanings. The senses are separation and the meanings are gatheredness. The meaning does not come to the senses, except by that the senses leave, and the senses do not come to the meaning, but that the meaning leaves. Existence is filled between them always either by this one or that one. Emptiness is impossible.<sup>149</sup>*

## CONCLUSION

The holonic schema nestled as the non-dual between the System and the Meta-system is the model for existence which is the complementary opposite of Being. Unless we recognize the nature of Being and find our way out of its fragmentation into Existence we can never know of the deeper non-dual between them of manifestation. Special Systems Theory and the Theory of the Emergent Meta-systems is a route toward this understanding which allows us to appreciate the nature of genuine spirituality. Genuine spirituality goes beyond all the schemas, but there are also special hidden schemas that point directly to the nature of existence which is structured differently than Being. Between these two structures one implicit in the emptiness or void and the other explicit in Being we get a glimpse of the truly non-dual formlessness of manifestation.

## ACKNOWLEDGEMENTS

Would like to thank my mentor Ian Dallas, as well as Ben Goertzel, Onar Aam, Bob Cummings and Owen Ware.

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Kent Palmer is a Principle Systems Engineer at a major Aerospace Systems Company. He has a Ph.D. in Sociology concentrating on Philosophy of Science from the London School of Economics and a B.Sc. in Sociology from the University of Kansas. His dissertation on The Structure of Theoretical Systems in Relation to Emergence<sup>150</sup> focused on how new things come into existence within the Western Philosophical and Scientific worldview. He has written extensively on the roots of the Western Worldview in his electronic book The Fragmentation of Being and the Path Beyond the Void<sup>151</sup>. He had at least seventeen years experience<sup>152</sup> in Software Engineering and Systems Engineering disciplines at major aerospace companies based in Orange County CA. He served several

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<sup>149</sup> The Meaning of Man by Sidi Ali Al Jamal (Diwan Press 1977) page 93

<sup>150</sup> <http://server.snni.com:80/~palmer/disab.html> You may also try <http://dialog.net:85/homepage/> or <http://think.net/homepage/> for any of the web related material.

<sup>151</sup> <http://server.snni.com:80/~palmer/fbpath.htm>

<sup>152</sup> <http://server.snni.com:80/~palmer/resume.html>

years as the chairman of a Software Engineering Process Group and is now engaged in Systems Engineering Process improvement based on EIA 731 and CMMI. He has presented a tutorial on “Advanced Process Architectures<sup>153</sup>” which concerned engineering wide process improvement including both software and systems engineering. Besides process experience, he has recently been a software team lead on a Satellite Payload project and a systems engineer on a Satellite Ground System project. He has also engaged in independent research in Systems Theory which has resulted in a book of working papers called Reflexive Autopoietic Systems Theory<sup>154</sup>. A new introduction to this work now exists called Reflexive Autopoietic Dissipative Special Systems Theory<sup>155</sup>. He has given a tutorial<sup>156</sup> on “Meta-systems Engineering” to the INCOSE Principles working group. He has written a series on Software Engineering Foundations which are contained in the book Wild Software Meta -systems<sup>157</sup>. He now teaches a course in “Software Requirements and Design Methodologies ” at the University California Irvine Extension. He may be reached at palmer@think.net.

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<sup>153</sup> <http://server.snni.com:80/~palmer/advanced.htm>

<sup>154</sup> <http://server.snni.com:80/~palmer/refauto2.htm>

<sup>155</sup> <http://server.snni.com:80/~palmer/autopoiesis.html>

<sup>156</sup> <http://dialog.net:85/homepage/incosewg/index.htm>

<sup>157</sup> <http://server.snni.com:80/~palmer/wsms.htm>

## **SIG: Living Systems Analysis**

ABSTRACT

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**PAPER TITLE: Not Written**

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Special Systems theory is the first mathematically based theory of life. Briefly it distinguishes between Systems and Meta-systems (ecosystems or environments) and then identifies hidden between them three special systems called dissipative (Prigogine), autopoietic (Maturana & Varela) and reflexive (O'Malley, Sandywell). These three special systems are neg-entropic and ultra-efficacious (ultra-efficient and ultra-effective). Living systems are a composite of these three special systems the middle of which gives static balance by a maintenance of organization by self-production while the other two give dynamic balance. This combination of static and dynamic balance gives living social systems their adaptability and resilience within changing meta-systemic environments. This theory is based on the mathematics of HyperComplex Algebras and has several physical examples of anomalous phenomena to substantiate that such special systems actually exist in nature even at the non-living levels. The existence of Special Systems as holons which exist non-dually between systems and meta-systems gives a completely new theory of living social systems of a classical scientific nature but with many strange and unexpected correlations due to the nature of the underlying mathematical model. Hypercomplex numbers have been known since about 1850 but have never before been articulated as a systems theory and applied to understanding phenomena like neg-entropy, life and sociality. Due to the interesting structure of the mathematical underpinnings of the theory, it is necessary to rethink the structural basis of these phenomena. For instance, Maturana and Varela's theory of autopoiesis has to be completely rethought on the basis of this new mathematical model. The model allows us to understand the emergent steps from anomalous dissipative structures of Prigogine, to living things which are a symbiotic conjunction of two dissipative special systems, and on to the understanding of reflexive special systems which are inherently social as a conjunction of four dissipative special systems or two autopoietic special systems. The combination of these three kinds of special systems with normal open systems give us various formations one of which is the Emergent Meta-system which is an interesting variation on the Genetic Algorithm. The emergent meta-system gives us a dynamic picture of how the special systems interoperate with normal systems to give us a model of meta-systems. This in turn gives us a mathematically founded image of Gaia which is a interpenetrating and dynamic model of various autopoietic social species cooperating together to form a rich environment which is produced by the organisms that it contains. The paper that describes fully these results is at See <http://server.snni.com:80/~palmer/autopoiesis.html>. The paper I would write for your session would be a summary of the argument of this longer paper.

**PAPER TITLE: Not Written**

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SUMMARY

See Abstract.

Keywords Life Ontology, Holonomics, Meta-Systems, Special Systems

INTRODUCTION

**THIS PAPER WAS NOT BE WRITTEN DUE TO LIMITATIONS SET BY THE  
PROGRAM CHAIR.**