Elaborating Linkage Propositions with Linkage Hypotheses based on General Schemas Theory, Special Systems Theory, and Emergent Meta-systems Theory

Len Troncale has produced a draft series of Linkage Propositions to which elaborations have been added in italics based on General Schemas Theory and Special Systems Theory. Kent Palmer developed General Schemas Theory and Special Systems Theory as well as Emergent Meta-systems theory independently. See http://kentpalmer.info This elaboration shows the relation between Troncale's Linkage Propositions and the theories of Kent Palmer expressed as Linkage Hypotheses.

Kent Palmer
2010.10.25
kent@palmer.name

1. Boundary Conditions of Systems

1.1. To be properly defined, Boundary Conditions must consider the full ranges of Inputs/Outputs acting on the bounded system.

1.2. Defining the Boundaries of a system is identical to identifying the included systems as components, entities, elements or subsystems.

1.3. Boundary Conditions must be known to properly define internal versus externally generated Goals/Purposes for the system.

1.4. Restructuring can only be defined if Boundary Conditions are clearly recognized.

1.5. Boundary Conditions must be known to define whether a system is open or closed.

1.6. Intrasystem Coupling contributes to the establishment of Boundary Conditions.

1.7. Life Cycles are a type of Boundary Condition that specifically defines temporal Boundaries.

1.8. Transitions/Phases/Modes are transformations in the predominant types of subsystem interrelationships that in turn change some but not all of the parameters used to define the system's Boundary Conditions.

1.9. Identifiable Boundary Conditions are in part the result of achievement of Steady State, whether this is achieved by static or dynamic Equilibrium.

1.10. Boundary Conditions contribute in part to the cause of the Exclusion Principle.

1.11. Hierarchical relativity is in part the result of applying different Boundary Condition parameters and getting different Bounded systems.

and/or

1.12. Hierarchical relativity is in part the result of applying different Boundary Condition parameters to a set of systems resulting further in differently Coupled subsystems.

1.13. Patterns in Incremental Trends are the partial result of comparing the magnitudes of parameters of Boundary Conditions (and forces acting across the Boundaries) across the levels of modular Hierarchies.

1.14. Temporal Boundaries of a system results from selection by its environment for the most optimal Cycling times. This means that temporal Boundaries and Cycling time are types of externally-generated goals of a system.

1.15. Recognition that a system has Components/Entities/Elements that are sometimes called subsystems is the same as recognizing the system as Decomposable.

1.16. For a Component/Entity/Element to be properly defined it must be placed in the appropriate Hierarchical level.

1.17. For a Component/Entity/Element to be properly defined all of its Linkages/Interrelationships must be documented.

1.18. This Diversification Processes are a partial cause of Transgressive Equilibrium. Systems organization allows a greater variety and higher level of behavior than can be achieved by any of the systems elements alone (paraphrased from Ackoff, 1971).

1.19. Boundary Conditions of a system are in part the result of the strength and duration of the linkages between its subsystems.

1.20. The participation of Entities/Components/Elements as subsystems in a supersystem is in part the cause of their transtemporal stability.

1.21. In cases of Synergy, Boundaries are expanded from tightly drawn around the bounded entity to a much wider Boundary including the other participants in the Synergy.

1.22. Intra-system Coupling contributes to the establishment of Boundary Conditions.

1.23. The mechanics of unity/wholeness is in part the result of Boundary Conditions.

1.24. Boundary Conditions are involved in the distinction between insulated and non-insulated linkages.

1.25. Temporal capture of Energy Flux must occur within the Boundary of a system.

1.26. Concrescence Ratio can lead to the establishment of new stable Boundary Conditions by causing, in part, new levels of Transgressive Equilibrium.

And/or

1.27. Concrescence Ratio can lead to the establishment of new Boundary Conditions as well as the associated features of Transgressive Equilibrium.

1.28. Boundary conditions in part result from the establishment of a Steady State, whether it is the result of either static or dynamic Equilibrium.

2. Linkage and Interrelations of Systems

2.1. Transitions/phases/modes are in part the result of alterations in the Linkages among subsystems of a system.

2.2. Inputs/Outputs are classifications of the broader category of Linkages. These classifications are based on the function they perform in the self-reference space of the system.

2.3. Linkages across levels in different Hierarchies cause three-dimensional, topological Hierarchies.

2.4. Linkages are the medium by which subsystems become systems, and systems become supersystems.

2.5. Periodic Cycles are the result of special types of Linkages, which are deterministic in the sense that the same sequence of States always obtains and the same specific state is always found in the specific time zone of the periodicity

2.6. Temporal capture of Energy Flux is a function of Linkages which results in transtemporal stability

2.7. Similar Linkage strengths, times, and distances (incremental parameter trends) characterize the Entitation within a level of the Hierarchy and help to define the levels empirically and non-humanocentrically.

2.8. Similar Linkage strengths, time, and distance determine what is inside and what is outside a system in applications of the Exclusion Principle.

2.9. Linkage influences what is considered inside and outside a system and so results in recognition of its Boundary Conditions.

2.10. Linkages must be known to define whether or not a system is open or closed.

2.11. The Uncertainty Principle is caused by the number of Linkages being never entirely knowable

2.12. All Linkage Propositions are generic cases of real systems Linkages indicating how the attributes of systems are produced in nature.

2.13. Temporal capture of Energy Flux can only be found in Open Systems.

2.14. Positive And Negative Feedback mechanisms are often found Coupled together.

3. Feedback in relation to Systems

3.1. Goal-seeking Feedback is in part the cause of Teleological/Purposive systems.

3.2. Goal-seeking Feedback is in part the cause of Oscillations.

3.3. Goal-changing Feedback is a characteristic feature of Evolving systems of the biological/sociological type.

3.4. Feedback paths may be within levels of a Hierarchy or between levels.

3.5. Feedback is one of the few types of Linkages that operates across widely separated levels of the Hierarchy.

3.6. Feedback from the environment of the system is in part the cause of shifts in phases and modes.

3.7. Feedback is a special type of Coupling between subsystems of a system.

3.8. Positive Feedback contributes to Growth Processes.

3.9. Negative Feedback contributes to Equilibrium.

3.10. Coupled Positive And Negative Feedback generates the sigmoid curve characteristic of all systems Growth Processes and decay Cycles.

3.11. Coupled positive and negative feedback contributes to transtemporal stability.

3.12. Coupled positive and negative Feedback mechanisms are in part the cause of the Oscillations around the ideal median typical of Cycles.

3.13. There is no Feedback in static regulation.

3.14. Either positive or negative Feedback can be found in dynamic regulation.

3.15. Positive and negative Feedback mechanisms are often found linked together as a partial cause of dynamic Equilibrium.

3.16. Positive Feedback is a partial cause of amplification of rates of Growth Processes and Development Patterns and Laws or Decay Processes.

4. Equilibrium in relation to Systems

4.1. Dynamic Equilibrium is the same as Oscillations around an ideal median of system behaviors, where the limits of behavior which the environment of this system will allow leads to a version of the limit Cycle for the system.

4.2. Transgressive Equilibrium is in part the cause of levels in Hierarchy.

4.3. Transgressive Equilibrium is, in part, the result of the probabilistic, random nature of subsystem Interactions to form systems

4.4. Instability in the form of unsatisfied Counterparity leads, in part, to systemic Evolution.

4.5. Equilibrium is a mechanism for achieving transtemporal stability.

4.6. Static Equilibrium is found in Open Or Closed Systems, while dynamic Equilibrium is found only in Open Systems.

4.7. Restructuring is a mechanism for achieving Equilibrium.

4.8. Temporal capture of Energy Flux contributes to achievement of Equilibrium

4.9. Equilibrium is, in part, the result of dynamic regulation.

4.10. Metastability is destructive of Equilibrium and transtemporal Stability.

4.11. Recycling of systems Components/Entities after systems Lifecycle death contributes to Equilibrium of the next higher level of the Hierarchy.

4.12. Instabilities in small amounts built upon larger magnitudes of stability are the most conducive to systems level Evolution, which, in turn, yields new Transgressive Equilibria and transgressive attributes (new qualities).

4.13. Instability is the opposite of Stability, and their pairing in nature makes them one of the most fundamental of Counterparities.

4.14. Non-Equilibrium Thermodynamics is a necessary condition for Diffusion-Limited Aggregation.

5. Cycles and Oscillations of Systems

5.1. Consonant Cycling is a special case of Synergy.

5.2. Cycling reduces the Energy Flow necessary to maintain a Negentropic, deterministic succession of States in a system.

5.3. Instability to Stability back to Instability is a flow typical of life Cycles and Recycling of Components/Entities/Elements.

5.4. Goal-seeking Feedback is in part the cause of Oscillations.

5.5. Metastability is a partial inhibitor of Recycling of Components/Entities/Elements.

5.6. As Cycling requires continuous Energy Input for its maintenance, it is found most often in Open Systems and is Negentropic in nature.

5.7. Cycling (of the life Cycle variety) is the same as the temporal Boundaries of the system in question.

5.7.1. Life Cycles are a type of Boundary Condition, specifically defining temporal Boundaries.

5.8. Recycling of components of a system is a special type of Linkage between the system and other systems in its environment.

5.9. Cyclic behavior is planned Instability.

5.10. Synergy between systems which are a large number of levels distant from each other in the natural Hierarchy provide for greater Stability on the lower levels. For example, animal life Cycles in alignment with the geological/seasonal Cycles.

5.11. Deterministic sequences of subsystem Transformations lead to periodic Cycling.

5.12. Reductions in required Energy Flow for Cycling are partially dependent on contributions of Recycling of components to Autopoiesis of systems in succeeding Hierarchical levels.

6. Evolution of Systems

6.1. Neutrality Quest causes systems structures to form.

6.2. Neutrality Quest causes a small number of pocket of Negentropy to form, and drives their Evolution.

6.3. Neutrality Quest is caused by the fundamental Dualisms (counterparities) on each level of the Metahierarchy.

6.4. Dichotomies such as Open/Closed, Internal/External, and Input/Output are not Counterparities because though opposite, they are not necessarily always equal or acting in opposition to each other.

6.5. The ability of Feedback to act as a coupling between widely separated levels of the Hierarchy contributes to hierarchical relativity.

6.6. Counterparity (dualism) is in part cause of the Neutrality Quest.

6.7. Counterparity acted upon by Neutrality Quest can sometimes cause Transgressive Equilibrium, or the Origin of a new level of entities and a new portion of the Hierarchy.

6.8. A small amount of unsatisfied Counterparities in a population of Entities with mostly satisfied Counterparities will result in Concrescence.

6.9. Concrescence leads to transtemporal Stability.

6.10. Coupled positive and negative Feedback mechanisms are a generic example of Counterparity.

6.11. Hierarchical organization contributes to the mechanics of unity or wholeness.

6.12. Neutrality Quest is the result of the universal trend toward Entropy death.

6.13. Instability in the form of unsatisfied Counterparity leads, in part, to Systemic Evolution.

7. Hierarchy of Systems

7.1. Hierarchically organized systems, especially of the modular type, are Decomposable.

7.2. Hierarchical organization is highly Negentropic.

7.3. Flatness in a Hierarchy is Stable in static systems, but Unstable in dynamic systems.

7.4. Hierarchical organization increases the probability of transtemporal stability of ever-larger complexes through systemic Evolution and thus causes higher levels of Negentropy.

7.5. Hierarchical organization contributes to systemic Growth and Development and allowable complexity limits.

7.6. The deterministic aspect of hierarchical organization (once probabilistically evolved) enhances the deterministic aspect of Cycling.

7.7. Counterparity and Neutrality Quest acting together cause Transgressive Equilibrium, which is synonymous with genesis of a new level of the Hierarchy. (Systemic Evolution)

7.8. Gaps in Hierarchical levels are the result of the appearance of new magnitudes of Bonding strength, distance, time, and energy due to the appearance of new unsatisfied Counterparities.

7.9. Subsystems are the same as Components/Entities/Elements of a system while the system so formed is a Component/Entity/Element of the next level in the Hierarchy.

7.10. Hierarchical levels determined in part by incremental parameter trends are in part the cause of the exclusion principle.

7.11. The transtemporal Stability of hierarchical organization is enhanced by cross-level Feedback.

7.12. Each new Hierarchical Level achieves a new Transgressive Equilibrium.

7.13. Each new Hierarchical level is in part the result of a new Counterparity.

7.14. Each new Hierarchical Level contributes to the sudden Emergence of a new quality of systems over and above that of the levels below. (Transgressive Equilibrium)

7.15. Transgressive Equilibrium is in part the cause of levels in Hierarchy.

7.16. Symmetry Breaks are a partial cause Hierarchical Structure (Clustering).

7.17. Diffusion Limited Aggregation is a partial cause of Hierarchical Structure.

7.18. Recycling of systems components/entities after systems lifecycle decay contributes to Equilibrium of the next higher level of Hierarchy

8. Fractal Structure

8.1. Non-Equilibrium Thermodynamics is a necessary condition for Fractal Structure.

8.2. Diffusion Limited Aggregation is a partial cause of Fractal Structure.

8.3. Meta-systems tend to have fractal structure and partial dimensions.

9. Energy Flow in Systems

9.1. The systems that get the most energy and use it the most effectively are the systems that are the most likely to survive.

9.2. Neutrality Quest is a special case of Energy Flows and provides them with direction.

9.3. Energy flows derive from counterparities seeking their complement to achieve a neutrality balance.

9.4. Meta-systems focus and distribute information, entropy, energy and matter within the networks of systems they contain.

10. Duality in Systems

10.1. Uncoupling of Dualities is a partial cause of Symmetry Breaks.

10.2. Spontaneous breakage of Duality-based Coupling Forces results in Symmetry Breaks and is a partial cause of Phase Transitions.

10.3. Symmetry Breaks are a partial cause of Gap Discontinuities.

10.4. Instability and its opposite Stability are paired in nature as partial cause of one of the most fundamental of Counterparities (dualism).

10.5. A small amount of unsatisfied Counterparities in a population of entities with mostly satisfied Counterparities will result in Concrescence and Emergence of Hierarchical Structure.

10.6. Coupled Positive and Negative Feedback mechanisms are a generic example in Counterparity.

11. Fields

11.1. Field Dynamics neutralizes the consequences of Complexity (Computational Explosion).

11.2. Meta-systems tend to be seen as Fields.

12. Entropy

12.1. For certain types of Open Systems, the rate of Entropy production tends to a minimum. (From Rapoport, in Klir, 1971)

12.2. Closed Systems are characterized as proceeding irreversibly to Entropy and disorder

12.3. Entropy is an expression of the more universal Neutrality Quest.

12.4. Components avoid Entropy death by Restructuring.

12.5. If Entropy death results in a structure, then that structure is Metastable?

12.6. Types of systems such as astronomical, physical, and chemical tend toward Entropy.

12.7. As there is Entropic loss to all Flows (energy, informational, etc.) and Linkages, the Linkages that survive the longest are those that are based on Transformations from a State of great available energy to lesser. This relationship is partly the source of incremental trends across Hierarchical levels such as decreasing numbers and increasing size. It also explains the probabilistic nature of transtemporal Stability.

12.8. Open systems can locally increase their order or Negentropy if energy is constantly supplied for throughput.

12.9. Open Systems can reverse the universal tendency toward Entropy in their local space/time continuum only if energy is constantly supplied.

12.10. Negentropy requires permeable Boundary Conditions.

12.11. Systems with internally derived goals actually design Negentropy in the environment. Systems with externally derived goals cannot although cluster of such systems increase the probability of Negentropy in the local area.

12.12. Restructuring leads to Negentropy.

12.13. Transtemporal Stability is a case of Negentropy.

12.14. Types of systems such as biological, sociological, and man-made tend toward Negentropy in the short-term, but succumb to Entropy in the long-term.

12.15. Temporal capture of Energy Flux, when coupled with Restructuring, increases Negentropy.

12.16. Coupled Feedback favors Negentropy.

12.17. Both dynamic and Transgressive Equilibrium increase Negentropy in a system.

12.18. Energy required for maintenance is proportional to the Negentropy of a system. (Odum and Odum, 1976)

12.19. As Negentropy increases in systems the effectiveness of these systems in utilizing energy increases as well as their ability to exploit a variety of energy sources.

12.20. Entropy Measures are a Dual Opposite Counterparitor to complexity of a system.

12.21. Uncoupling of Dualities is a partial cause of Entropy.

12.22. Symmetry Breaks are a partial cause of Entropy.

12.23. Neutrality Quest is in part the result of the universal trend toward Entropy death.

12.24. Hierarchical organization is highly Negentropic.

13. Synergy of Systems

13.1. Synergy is a special type of positive Feedback characteristic of purposive systems.

13.2. Synergy contributes to Negentropy.

13.3. Synergy sometimes results (cooperates?) in achieving a Transgressive Equilibrium.

13.4. Synergy increases the ability of the cooperating entities to achieve to achieve Restructuring.

13.5. Synergy is a special relationship of Input/Output processes such that the components sharing the relationship have achieved an unusual focusing of their outputs on each other as stimulatory input. (Aspects of inbreeding)

13.6. Synergy is the result of an intensified set of Linkages between a group of entities.

13.7. Does Synergy enhance transtemporal Stability?

13.8. Synergy is a type of Coupling.

13.9. Synergy maximizes temporal capture of energy flux.

13.10. Synergy in Purposive systems disfavors both Instability and Metastability?

13.11. Synergy may result from consonance in Cycles.

13.12. Synergy contributes to Transitions/Phase Shifts/Accelerated modes.

13.13. Synergy may act within or between levels of the natural Metahierarchy.

13.14. Synergy implies directionality of systems Energy Flows when in purposive systems, and also in non-purposive?

13.15. Synergy is favored by Neutrality Quest selection of some ranges of Concrescence Ratio over others.

13.16. Synergy intensifies purposiveness of teleological systems while having no such effect on non-teleological systems.

14. Integrity of Systems

14.1. Systems have internal integrity if they have basic tensegrity structures that organize them against themselves

15. Poise of Systems

15.1. Systems have poise which are oriented toward changes in the environment in which they realize that they interpenetrates all things.

16. Self-Organization of Systems

16.1. Hierarchical Clustering is a partial cause of Self-Organization
16.2. Self-Organization is a partial cause of Hierarchical Clustering
16.3. Entropy is a partial cause of Self-Organization
16.4. Self-Organization is a partial cause of Negative Entropy
16.5. Self-Organization is based on knots that are organized by resistance against themselves.
16.6. Self-Organization (self-design) is the prerequisite to Autopoiesis, i.e. Self-production.
16.7. Self- properties like Autonomic Systems are based on Special Systems organization and properties.*

17. Other

17.1. Non-Equilibrium Thermodynamics is a necessary condition for Diffusion Limited Aggregation.
17.2. Symmetry Breaks are a partial cause of Entropy.
17.3. The four key determiners for any schema is information, energy, entropy, and matter.
17.4. Information and Entropy are opposites and part of the same spectrum.
17.5. Energy and Matter are opposites and part of the same spectrum.
17.6. Anti-matter is very rare in the universe as the universe has a unknown preference for matter over antimatter.
17.7. Negative Energy as the Casmir effect is rare
17.8. Negative Information is not so rare and can appear as camouflage, lies, secrets, hidden facts, etc.
17.9. Negative Entropy is rare but in the scheme of things on Earth quite common as it results in Life which fills every possible niche.
17.10. Negative Entropy lifts the pressure of entropy locally, while increasing it globally, giving an advantage to every enity that is the beneficiary of negative entropy.
17.11. Negative entropy allows for dissipative structures that produce organization within limited and protected pockets in far from equilibrium thermodynamic flows.

17.12. While perpetual motion machines are impossible, perpetual information machines called strange attractors are not rare, and are regularly produced in far from equilibrium thermodynamic flows that are at the edge of chaos.
17.13. Edge of Chaos is the point where variety production is most likely in any system or meta-system.

18. Schema Duality

18.1. Systems and Processes are duals of each other. Systems look at forms on the background of the system defined by the boundary of the system, while processes use external reference points, to look at streams of information, matter, entropy, and energy.
18.2. The System and Meta-System are inverse dual schemas.
18.3. Within the System Schema are the Form, Pattern, Monad and Facet Schemas at separate micro-scopes.
18.4. Outside the Meta-system are the Domain, World, Kosmos, and Pluriverse Schemas that are separate macro-Scapes
18.5. Every Scape has a dual starting with the duality with the central duality between System and Meta-system.
18.6. Meta-means "beyond" not "other" in this usage related to inverse dual of the system.
18.7. Other names of the Meta-system are context, environment, ecosystem, episystem, medium, situation, open-scape, etc.
18.8. For every feature of a System there is an inverse dual aspect of a Meta-system.
18.9. Every System has at least a hypothetical dual System called the Anti-System.
18.10. Every System has at least a hypothetical inverse System called the Non-System.
18.11. Facets are at least negative one and zero dimensional
18.12. Monads are at least zero and one dimensional
18.13. Patterns are at least one and two dimensional
18.14. Forms are at least two and three dimensional
18.15. Systems are at least three and four dimensional.
18.16. Meta-systems are at least four and five dimensional
18.17. Domains are at least five and six dimensional
18.18. Worlds are at least six and seven dimensional
18.19. Kosmoi are at least seven and eight dimensional
18.20. Pluriverses are at least eight and nine dimensional
18.21. String Theory is at least ten dimensional
18.22. M Theory is at least eleven dimensional
18.23. F theory is at least twelve dimensional
18.24. F theory has two orthogonal time lines.
18.25. Forms are the duals of domains
18.26. Patterns are the duals of worlds
18.27. Monads are the duals of Kosmoi

18.28. Facets are the duals of Pluriveses
18.29. Each Schema has a wider scope than the lower schema
18.30. Each higher schema acts as a meta-system for the next lower adjacent schema
18.31. Two schemas adjacent on either side of a given schema are together the definition of the intervening schema.

19. Meta-System (Environment, Ecosystem, EpiSystem)

19.1. The inverse dual of the System is the Meta-system (OpenScape, EpiSystem, EcoSystem)
19.2. The Meta-system acts as a filter on the Systems it contains.
19.3. Where the System is a Turing Machine the Meta-system is a Universal Turing Machine.
19.4. The medium of the meta-system contains signaling protocols that are used by the System.
19.5. Where the System is a restricted economy the Meta-system is a general economy in the sense of the term used by G. Batille in Accursed Share.
19.6. Meta-systems are composed of complementarities not unities or totalities.
19.7. Meta-systems are detotalized and disunified.
19.8. Where the System is a Whole greater than the Sum of its parts the Meta-system is a whole less than the sum of its parts
19.9. Meta-systems contain Domain Walls, Vortices, Singularities.
19.10. Meta-systems have a predominance of positive feedback in a negative or positive direction over negative feedback.
19.11. Meta-systems provide resources for Systems that they contain.
19.12. Meta-systems are inversely nested with Systems. This is to say where systems are like Russian Dolls, the meta-systems are the gaps between these Russian dolls.
19.13. Meta-systems have their own organization that is different but complementary to the organization of the meta-systems that they contain.
19.14. Systems do not stand on blank plena but are fitted into their meta-system environments unless the environments change rapidly due to external causes.
19.15. Systems are adapted to their meta-system environments.
19.16. Systems exhibit differing amounts of resilience, flexibility, and adaptability to changes in their meta-system environments.
19.17. Systems have niches which they occupy in their meta-system environments.
19.18. Competition between systems may be for resources offered by the meta-system environment, or niches within that meta-system environment.
19.19. Where Systems are Emergent, Meta-systems are de-emergent.

19.20. All Minimal Methods that can be used to design the information structure of a System can also be used to design the information structure of the meta-system.
19.21. Minimal Methods are abstractions that are slices of Turing Machines.
19.22. A Universal Turing Machine is itself a Turing Machine that serves as an operating system that runs other Turing Machines.
19.23. All Linkages between Systems are though the medium of the Meta-system and must be facilitated by that medium in order to make contact.
19.24. All SubSystems and SuperSystems are separated from the System by the medium of the Meta-system, and without that support not contact can be made between hierarchical levels of recursive instances of the System Schema.
19.25. Recursive Instances of the Meta-system schema are separated by System schema boundaries.
19.26. All features of the System have their complement in some Meta-system feature.
19.27. If the system has a boundary then the meta-system has a horizon. That horizon is seen from a particular point in the landscape as far as can be seen without moving.

20. Forms

20.1. Components of Systems are Forms or Objects.
20.2. The organizational principles of forms or objects is different from the organization of Systems.
20.3. Forms or Objects are different schemas than sub-systems. Both are Entities.
20.4. The System is a Dynamic Gestalt dependent on recognizing the forms or objects it contains and their relations.
20.5. The Forms or Objects within a System can be bounded by subsystems in different ways depending on the functional view of the objects and forms within the overall designated system boundary.
20.6. Objects or Forms have relations/linkages between themselves and each other, which are different from sub-system relations/linkages in some cases.
20.7. The form schema is the most fundamental schema that is at the core of the Western worldview, so both Systems and Patterns are schemas of secondary importance in the worldview.
20.8. Forms and Objects lend themselves to reductionistic analysis that is context free.
20.9. Systems provide the context for Forms and Objects which work together to accomplish functions in concert with each other.
20.10. Forms are Figures on the Ground of the System.
20.11. Gestalts can be either static or dynamic, synchronic or diachronic.
20.12. Diachronic and Dynamic Gestalts are temporal gestalts.

20.13. Forms and objects are relatively stable in vision by systems are dynamic gestalts that take time to be what they are.
20.14. A static gestalt on a system focuses on one form as figure and sees the rest of the system as the background of that figure.
20.15. To see the whole system there must be a series of gestalts that focuses on each form in the system until all are surveyed.
20.16. It takes time to survey a system, while a form or object can be taken in in one visual moment.
20.17. Forms are shapes.
20.18. Objects are functions and encapsulated data.
20.19. Forms are the external synchronic vision of an Object.
20.20. Objects are context free the internal information and functional content of a form.
20.21. Objects may exist in an inheritance hierarchy as potentials until instantiated.
20.22. Objects have templates that connect methods to encapsulated data objects.
20.23. Objects may simulate forms.
20.24. Objects may be imputed as the functional and informational equivalent of Forms.
20.25. Objects combine algorithms and data in encapsulated forms that appear within an inheritance hierarchy.

21. Patterns

21.1. Forms have patterns on their surfaces
21.2. Objects have data patterns within their encapsulation.
21.3. One dimensional patterns are information streams
21.4. Two dimensional patterns are information visualization media
21.5. Outlines in two dimensional patterns can suggest the shape of forms
21.6. The texture of the surface of forms may suggest a pattern.
21.7. The organizational principles of patterns are different from the organization of forms or objects.
21.8. Patterns are composed of flux, value, sign, and structure.
21.9. Patterns are produced by dissipative structuring practices which are desiring, avoiding, disseminating, or absorbing.
21.10. Patterns are formed by rules, and some rule sets are Turing complete like the game of life, so the patterning itself is computational even though there is no central processor.
21.11. Patterns can be recognized and generated using neural nets and other algorithms, such as genetic algorithms.
21.12. Patterns may store information and used as a computational basis to generate results from algorithms.
21.13. Patterns may exhibit coding, or algorithmic compression.

22. Monads

22.1. Patterns are composed of monads, normally bits with value.

22.2. The simplest information infrastructure is generated by the Pascal Triangle.
22.3. Monads are the lowest level identifiable entity at the furthest reach of analysis.
22.4. An excellent example of Monads is in Leibniz Monadology.
22.5. The actual scale of monads may be set at different levels for different disciplines.
22.6. Monads are composed of facets that cannot be broken apart by the level of analysis performed by a given discipline.
22.7. The differences between monads are the basis of structure.
22.8. Temporal monads give the lowest level time unit considered by a discipline.
22.9. Monads take together can have composite value and be taken as signs by someone in some respect.

23. Domains

23.1. Domains appear when we add movement to perspectives that survey meta-systemic openscapes.
23.2. When systems can take different places in a landscape and look at where they were themselves recently from a different standpoint then one has the reflexive quality of the domain established.
23.3. Domains are studied by disciplines.
23.4. Disciplines bring rigor to the study of domains.
23.5. Discipline bring critical reasoning to the study of domains.
23.6. Each Doman has its subject matter which is different from other domains.
23.7. Each Domain can express what is within its purview by domain specific languages
23.8. Domains are organizations of perspectives on a subject matter which is designated as being of interest in a domain.
23.9. Other Schemas are represented differently from the organized viewpoint of a given domain.
23.10. Some schemas are not relevant if their scope is too wide or too narrow in relation to the subject of a domain.

24. Worlds

24.1. Worlds are the general economy of all possible perspectives and all possible domains.
24.2. Worlds contain all possible observers of any given phenomena
24.3. World are designated by languages that are natural rather than artificial.
24.4. The Worphian hypothesis applies to subjects within worlds.

25. Kosmos

25.1. The Kosmos is the ultimate physical stage upon which everything occurs within the universe.

25.2. The physical laws of the universe is the organizing principle of the Komos.

25.3. However, the Kosmos may not recognize the ultimately correct objective physical laws of the universe. The Kosmos is ultimately still a human construct

25.4. The Kosmos is subject to the Antropomophic Principle.

25.5. The Theory of Everything applies to the physical nature of the kosmos viewed by physics that collapses by symmetry breaking all the forces and particles onto one fabric of existence.

25.6. The Other Theory of Everything proposed by Troncale says that processes that operate at the ultimate theory of everything need the System of Systems Processes to produce their effect and the unity of all forces and physical entities into a single fabric.

25.7. The Weak Form of the Other Theory of Everything says that we cannot understand emergent processes at other levels of existence of ontic differentiation without the System of Systems Processes.

25.8. The System of Systems Processes make possible both the emergence of anything, and the emergence of everything.

25.9. Various Systems of Systems Processes operate across schema scopes and thus can be thought of as a System of Schema Processes. This means every isomorphy has a span of the Schemas that it covers and they are different in this respect. More than half cross all the scopes of all the schemas.

25.10. Ontological and Ontic Emergence needs to be discriminated clearly. Ontic Emergent levels are levels of phenomena that independently exist in nature that can be recognized by humans and studied by a discipline by specifying its domain. Ontological Emergence is the projection of the Schema Levels of Scope by Human Beings as their a priori organization of phenomena regardless of its subject matter or empirical scope.

26. Pluriverse

26.1. The Pluriverse is a hypothesis that there are Kosmoi beyond that which we know from experience from the vantage point of our worldview and its articulation of the sciences especially physics.

26.2. David Deutsch proposes that it is possible to do computations at the quantum level across other universes and that quantum interference is how the multiple universes appear within our universe.

26.3. David Lewis proposes that all possible worlds that can exist do exist logically.

26.4. Hugh Everett Proposes Multiple Worlds as a simpler assumption for Quantum Mechanics than the Copenhagen agreement that sets a limit on the relation of Quantum micro-phenomena and Newtonian macro-phenomena.

26.5. Multiple Worlds theory is in concert with the ideas of string theory and the concept of supersymmetries.

26.6. We posit that the macro world is inherently quantum mechanical and the Newtonian world is an illusion.

26.7. The contradiction between the Relativistic General Theory and Quantum Mechanics at the Plank level, and the fact that the fourth dimension has no inherent topology according to Donaldson, produces the need for a radical paradigm shift a the level of physical science. Perhaps the Large Hadron Collider will help.

26.8. Dark Matter, Dark Energy, the idea that we are in low dimensions of a higher dimensional space and other concepts and anomalies to the standard model calls for a new Copernican Revolution where our Universe is no longer the center of the Pluriverse.

26.9. In Essence Dark Energy is not Energy because it is not conserved, and it makes the entire universe a far from Equilibrium system, and that means that lower level far from equilibrium systems such as those that give rise to life, consciousness and the social are not alien to the structure of the universe but are a possibility from the very beginning.

27. Special Systems

27.1. Systems are wholes greater than the sum of their parts, and Meta-systems are wholes less than the sum of their parts, which means there is an alternative not covered which are wholes exactly equal to the sum of its parts.

27.2. There are three different kinds of Special System called: Dissipative Ordering Special Systems, Autopoietic Symbiotic Special Systems, and Reflexive Social Special Systems.

27.3. Dissipative Ordering Special Systems are specified in the work of I. Prigogine.

27.4. Autopoietic Symbiotic Special Systems are approximated by the work of Maturana and Varella, with the caveat that they thought these systems were unities rather than disunities.

27.5. Reflexive Social Special Systems is represented by the work of John O'Malley, Barry Sandywell, Alan Blum, McHugh, and other reflexive sociologists.

27.6. These three special systems are thresholds that are partial systems and partial meta-systems between the extremes of the system and meta-system schemas.

27.7. They are analogous to the three aliquot numbers: amicable, perfect and sociable.

27.8. They are analogous to the three hypercomplex algebras: complexnion, quaternion, and octonion.

27.9. They are analogous to the three cities of Plato: republic/ancient Athens, Megara, Atlantis

27.10. Together with the normal system the three special systems form the Emergent Meta-system cycle.

27.11. The origin of this cycle is autogenetic, i.e. it bootstraps itself into existence out of nothing.
27.12. The core of the System of Systems Processes that operate across schemas is the Special Systems.
27.13. Special Systems are hyper-efficient and hyper-effective and together they are ultra-efficacious.
27.14. The structure of much of the System of Systems Processes can be derived from the mathematics underlying the Special Systems in relation to the Emergent Meta-system within the context of the difference between Systems and Meta-systems.
27.15. Where ever there is an interaction between Systems and Meta-systems the possibility for the emergence of the Special Systems is there giving specific organizational possibilities not otherwise possible, and lifting the pressure of entropy slightly.
27.16. Dissipative Ordering Special Systems are analogous to Solitons
27.17. Autopoietic Symbiotic Special Systems are analogues to Breathers
27.18. Reflexive Social Special Systems are analogous to Super-Breathers.
27.19. Dissipative Ordering Special Systems are analogous to Mobius Strips
27.20. Autopoietic Symbiotic Special Systems are analogous to Kleinian Bottles
27.21. Reflexive Social Special Systems are analogous to Hyper-Kleinian Bottles.
27.22. Multiple Mathematical Analogies for the Special Systems combine to specify them very exactly from different types of mathematical and physical phenomena.
27.23. Autopoietic Symbiotic Special Systems are analogous to the cooper pairs of Super-conductivity.
27.24. Reflexive Social Special Systems are analogous to Bose-Einstein Condensates.

28. Principles

28.1. The trans-Peircian Categories are as follows
28.1.1. Isolata
28.1.2. Relata
28.1.3. Continua
28.1.4. Synergy
28.1.5. Integrity
28.1.6. Poise
28.2. The current System of Systems Processes considers Isolata, Relata, and Synergy and deemphasizes Continua, Integrity, and Poise.
28.3. Continuity has to do with mediation and not just digital verses continuous variables.
28.4. Synergy means the multiple use of the same parts for different structures and functions
28.5. Integrity is like Tensegrity where there is an internal dynamic that gives structural integrity to the Architecture of the System (cf. Fuller)

28.6. Poise is the principle which turns outward to consider the Holoidal nature of existence which is its interpenetration.

28.7. Peirce discriminates precision in Analysis and precission in Synthesis as two different modes of approaching a system.

28.8. Precission sees the parts of the synthetic whole within their context without taking them apart analytically to apply precision.

28.9. So even though we are talking about Systems there is still a residual reductionism in the System of Systems Processes that does not recognize the precission of synthesis as well as the precision of analysis.

28.10. Precission looks at the Synthesis of the Whole System in terms of a lattice rather than a hierarchy.

28.11. Thus juxtaposed to the Hierarchy section there should be a complementary Lattice view of the System that emphasizes precission of the Synthesis rather than analysis.

28.12. Set and Mass ways of looking at the System are not distinguished and considered as separate views.

28.13. Sets and Mass both have their own logics that can be applied to understanding the structure of the System

28.14. Quality and Quantity are not dealt with effectively in the model which should recognize that Quality is 2^n and Quantity is N^2 in their relations. Higher Venn Diagrams are not consistent and so there is a problem with quality differentiation beyond the separation of quantative measures.

28.15. Topological Analogies are not used to structure the relation between aspects of the system.

28.16. Klir's Architecture of Systems Problem Solving could be used as the infrastructure for modeling the Linkage propositions and a basis for producing abstract simulations of systems based on the Isomorphies and Linkage Propositions.

28.17. Some Terms are not defined within the linkage propositions are not found in Wikipedia.

28.18. The relation between the isomorphism and linkage propositions is not clear. Linkage propositions appear to be giving a core model of the system rather than connecting all Isomorphies.

29. Horizonal Characteristics and External Meta-systemic Views of System Boundary Conditions

29.1. To be properly defined, System Boundary Conditions must consider the full ranges of Inputs/Outputs emanating from the Meta-system. Defining the Boundaries of a system is identical to identifying the threshold or domain wall between nested meta-systems.

29.2. System Boundary Conditions must be known to properly differentiate Goals/Purposes/Functions internal to the System versus those overriding

Constraints/Imperatives resident in the meta-system. externally generated Goals/Purposes for the system.

29.3. Restructuring can either be internal organization or externally imposed by the meta-system and these can be distinguished only if Boundary Conditions are separating System and Meta-system are clearly recognized.

29.4. System Boundary Conditions must be known to define whether a system is open or closed to influence from the Meta-system

29.5. Intrasystem Coupling within a Meta-system context contributes to the establishment of System Boundary Conditions of each participating coupled system.

29.6. Life Cycles are a type of System Boundary Condition that specifically defines temporal Boundaries and is based on underlying Meta-system cycles.

29.7. Transitions/Phases/Modes are transformations in the predominant types of system interrelationships that in turn change some but not all of the parameters used to define the system's Boundary Conditions and are based on predominant Meta-system Transitions/Phases/Modes.

29.8. Identifiable System Boundary Conditions are in part the result of achievement of Steady State of the System within the Meta-system, whether this is achieved by static or dynamic Equilibrium. Meta-systems will tend to have dynamic equilibrium even if system equilibriums are static. Meta-systems tend to be meta-stable if systems have dynamic equilibriums.

29.9. System Boundary Conditions contribute in part to the cause of the Exclusion Principle. The source of the exclusion principle is filtering by the Meta-system. Meta-systems define all boundaries of systems within them fro the outside as discrete in relation to the indeterminate horizon of the meta-system.

29.10. Hierarchical relativity is in part the result of applying different System Boundary Condition parameters by the Meta-system and getting different Bounded systems within the Meta-system as a result.

and/or

29.11. Hierarchical relativity is in part the result of applying different System Boundary Condition parameters to a set of systems within the meta-system resulting further in differently Coupled subsystems within the medium of the meta-system.

29.12. Patterns in Incremental Trends are the partial result of comparing the magnitudes of parameters of System Boundary Conditions (and forces acting across the System Boundaries) across the levels of modular Hierarchies within the System.

29.13. Meta-systems tend to have heterarchies or rhizomes within them rather than Hierarchies.

29.14. If a system is composed of holons then they may form a holarchy.

29.15. Temporal Boundaries of a system results from selection by its meta-systemic environment for the most optimal Cycling times for attunement with the meta-system cycles. This means that temporal Boundaries and Cycling time are types of externally-generated goals of a system.

29.16. Autopoietic Systems are closed and thus internal cycling times are independent of external stimuli from the meta-system.

29.17. Recognition that a system has Components/Entities/Elements that are sometimes within envelopes of subsystems is the same as recognizing the system reclusively as Decomposable.

29.18. Analysis identifies forms and objects within the system which may be different from projected subsystem boundaries within the system.

29.19. For a Component/Entity/Element to be properly defined it must be placed in the appropriate Hierarchical level within appropriate hierarchies within the system.

29.20. Hierarchies can form a Grid of multiple orthogonal hierarchies.

29.21. For a Component/Entity/Element to be properly defined all of its Linkages/Interrelationships within the system must be documented.

29.22. For a system to be properly defined all its linkages and relations with other systems and entities within the meta-system should be defined.

29.23. This Diversification Processes within the meta-system imposed on its in dwelling systems are a partial cause of Transgressive Systems Equilibrium. Higher Systems organization allows a greater variety and higher level of behavior systems than can be achieved by any of the systems elements alone (paraphrased from Ackoff, 1971).

29.24. Systems Variety matches Meta-system variety, and is selected down to a system niche within the meta-system because meta-system variety is always richer than meta-systems variety

29.25. Systems Boundary Conditions are in part the result of the strength and duration of the linkages between other systems in the meta-system.

29.26. The participation of Entities/Components/Elements as subsystems in a supersystem is in part the cause of their transtemporal stability within the system.

29.27. The participation of Entities/Components/Elements as sub-meta-systems in a super-meta-system is in part the cause of their transtemporal stability within the meta-system.

29.28. In cases of Synergy, System Boundaries may be expanded from tightly drawn around the bounded entity to a much wider Boundary allowed by the Meta-system including the other System level participants in the Synergy.

29.29. Intra-system Coupling contributes to the establishment of Boundary Conditions allowed by the meta-system

29.30. Intra-meta-system Coupling contributes to the establishment of the organization of the Meta-system. For instance coupling systems to their needed resources.

29.31. Filtering within a meta-system prevents intra-meta-system coupling.

29.32. The mechanics of unity and totality is in part the result of System Boundary Conditions.

29.33. Meta-systems are detotalized and disunited fundamentally.

29.34. Systems are Emergent and Meta-systems are de-emergent fundamentally.

29.35. Wholeness is nondual between unity and totality.

29.36. Wholeness is a synthesis.

29.37. The synthesis is represented by a lattice not a hierarchy.

29.38. Analysis produces hierarchies, and Precission of a Synthesis produces a lattice view of the System.

29.39. A system is fundamentally emergent as a whole greater than the sum of its parts

29.40. A meta-system is fundamentally de-emergent as a whole less than the sum of its parts.

29.41. A meta-system is a field unfolded from the deconstructed system.

29.42. System Boundary Conditions are involved in the distinction between insulated and non-insulated linkages.

29.43. The meta-system determines what linkages are insulated verses non-insulated between the system and the meta-system.

29.44. Temporal capture of Energy Flux must occur within the Boundary of a system.

29.45. The temporal facilitation of Energy, Information, Entropy, and Matter flux must occur through the medium of the Meta-system in order for the system to have inputs and outputs.

29.46. Concrescence Ratio can lead to the establishment of new stable System Boundary Conditions by causing, in part, new levels of System Transgressive Equilibrium.

29.47. De-Concresence Ratios can lead to the destabilization and deteriorization of System Boundary Conditions by causing, in part, levels of Transgressive Equlibrium to evaporate within the Meta-system.

And/or

29.48. Concrescence Ratio can lead to the establishment of new System Boundary Conditions as well as the associated features of System Transgressive Equilibrium.

De-Concresence Ratios can lead to the destabilization and deteriorization of System Boundary Conditions as well as the associated features of System Transgressive Equlibrium to evaporate within the Meta-system.

29.49. System Boundary conditions in part result from the establishment of a System Steady State, whether it is the result of either static or dynamic System Equilibrium.

29.50. System Boundary conditions are determined by meta-system conditions and those conditions are always more dynamic than the system state which may be forced out of steady state by changes in the meta-systemic environment

29.51. All of these Linkage Propositions on Boundaries are considering the Boundary Conditions from the Outside from the Viewpoint of the Meta-system.

29.52. The meta-system also has a fuzzy outer horizon which is the dual of the discrete envelope of the system boundaries it contains.

29.53. Meta-system Horizonal Conditions are the dual of System Boundary conditions.

29.54. While System Boundary conditions are discrete and set like, Meta-system Horizonal Conditions are continuous and mass like.

29.55. Horizons are seen from a static point in the landscape with a panorama that reaches to the limits of what is visible. This is the meaning of the word Open-Scape.

29.56. System Boundaries are discrete bubbles, while Meta-system horizons are infinitely explorable.

29.57. The meta-system transports resources from the horizon to be given to the system to use.

29.58. Meta-systems have a fundamental cycle that underlies all cycles of the systems within it.

29.59. Meta-systems organize the systems that it contains as well as its own necessary parts that deliver resources to the contained systems and filters that are applied to the contained systems.

29.60. Meta-systems act as markets for systems that act as firms that operate in markets.

29.61. Meta-systems always contain some fungible elementary controller of transactions, like money in a market by which coordination takes place.

29.62. Meta-systems always contain elementary protocols by which the systems they contain can exchange signals to coordinate their actions.

30. Meta-system Linkage and Interrelations

30.1. Transitions/phases/modes are in part the result of alterations in the Linkages among systems of a meta-system.

30.2. Inputs/Outputs are classifications of the broader category of Linkages that exist in the Meta-system. These classifications are based on the function they perform in the other-reference space of the meta-system.

30.3. Linkages across levels in different Heterarchies and Rhizomes and between different Hierarchies within Systems allow meta-systems to have richer and more complex structures than the systems they contain.

30.4. Linkages are the medium by which sub-meta-systems become meta-systems, and meta-systems become super-meta-systems.

30.5. Linkages between recursive layers of the meta-system permeate the system envelope.

30.6. Meta-systemic Periodic Cycles are the result of special types of Meta-system Linkages, which are probabilistic in the sense that statistically the same sequence of States regularly obtains and a similar specific state is probabilistically found in a specific timespan of the periodicity

30.7. Periodicity of the meta-system is the base cycle for all periods of the systems it contains.

30.8. Temporal transport of Energy Flux is a function of Linkages within the meta-system which results in transtemporal in-stability within the meta-system

30.9. Similar Linkage strengths, times, and distances (incremental parameter trends) within the meta-system characterize the Entitation within a level of the Heterarchy or Rhizome and help to define the levels, layers, tiers, partitions, and strata empirically.

30.10. Similar Linkage strengths, time, and distance determine what is inside and what is outside a meta-system in applications of the Exclusion Principle to the systems within the meta-system.

30.11. System Linkage influences what is considered inside and outside a system within a meta-system and so results in recognition of its System Boundary Conditions.

30.12. Meta-system Linkage influences what is considered inside and outside the meta-system, and so results in recognition of Meta-system Horizonal Conditions.

30.13. System and Meta-system Linkages must be known to define whether or not a system is open or closed.

30.14. Meta-systems are always open, as they are the context and thus can never be contextless.

30.15. The Uncertainty Principle is caused by the number of Linkages being never entirely knowable. Part of this unknowabity is the linkages within the meta-system that are not inter-systemic. Part of this unknowablity is the linkages that are intra-meta-systemic and are not seen by the System.

30.16. All Linkage Propositions are generic cases of real meta-systems Linkages indicating how the attributes of meta-systems are produced in ecosystems and environments of nature. (Meta-statement)

30.17. Temporal capture of Energy Flux can only be found in Open Systems or Meta-systems. All Meta-systems are open.

30.18. Positive And Negative Feedback mechanisms are often found Coupled together. Meta-systems contain more positive feedback in the positive and negative directions than negative feedback. Negative feedback is the means by which Systems maintain their balance within the meta-system environment.

31. Meta-systemic Cycles and Oscillations

31.1. Consonant Cycling is a special case of Synergy.

31.2. Meta-system Cycling reduces the Energy Flow necessary to maintain a Negentropic, deterministic succession of States in a system given a meta-system context.

31.3. The meta-system provides system niches within in which Negentropy can be protected.

31.4. Meta-systems dissipate entropy from the systems they contain.

31.5. Instability to Stability back to Instability is a flow typical of life Cycles and Recycling of Components/Entities/Elements.

31.6. Lifecyles of Systems are determined by Meta-systems that make resources available and determine filtering.

31.7. Meta-systems recycle systemic components after system collapse.

31.8. Meta-systems are the origin and sinks of systems within the meta-system.

31.9. Goal-seeking Feedback is in part the cause of Oscillations within Systems.

31.10. Meta-systemic feedback to systems is probabilistic.

31.11. Metastability is a partial inhibitor of Recycling of Components/Entities/Elements within the meta-system.

31.12. Meta-systems tend to be meta-stable.

31.13. As Cycling requires continuous Energy, Information, Entropy, or Matter Input to the system for its maintenance, it is found most often in Open Systems and is Negentropic in nature. The continuous input comes from the meta-system via linkages from reservoirs or sources of Energy, Information, Entropy, or Matter.

31.14. Meta-system Cycling (of the meta-life Cycle variety) determines the temporal Boundaries of the system in question.

31.14.1. Meta-system Life Cycles are a type of Horizonal Condition, specifically defining temporal Boundaries of the systems it contains.

31.15. Recycling of components of a meta-system is a special type of Linkage between the system and the meta-systemic environment.

31.16. Cyclic behavior is planned Instability. Meta-systems are inherently unstable and this instability is the source of variety in the systems that attempt to adapt, be resilient, and evolve within a meta-systemic environment.

31.17. Synergy between systems within meta-systems which are a large number of heterarchical or rhizomic levels distant from each other in the artificial Hierarchy imposed on the meta-system provides for greater Stability for systems within the meta-system.

31.18. Deterministic sequences of system Transformations within meta-system probabilistic periodic Cycling leads to fuzzy meta-systemic transformations that affect all the systems within the meta-system.

31.19. Reductions in required Energy Flow for Meta-system Cycling are partially dependent on contributions of Recycling of components of subsystems due to Apoptosis of systems in succeeding Hierarchical levels.

32. Meta-system Complementarities

32.1. All meta-systems are composed of complementarities.

32.2. System Boundaries fit into Meta-system Horizons

32.3. Meta-systems exist like non-Euclidian geometry complementarities to the System of Euclidian Geometry

32.4. Meta-systems exist as non-standard algebras like Lie and Jordan algebras to the System of normal algebra.

About Linkage Propositions

A linkage proposition is a semantic description on a theoretical level of a relationship between two or more principal systems concepts [isomorphies] that tentatively holds for all known observational entities in real systems that correspond to the theoretical concepts. *(From Dr. Troncale's Link. Prop. Article)*

Association Classes of L.P.'s (p. 41 of "L.P.'s between principal systems concepts" article)

Congruence/commonality relationship: "can substitute for;" "is analogous/homologous to;" "is isomorphic to;" "is the same as;" "is identical to."

Linear or conventional ordering relationship: "is in part, the cause of;" "is, in part the result of;" "contributes to;" "is a partial function of;" "acts among/or/within;" "is a condition necessary for;" "probabilistic influence on."

Inversion/or/reciprocality relationship: "negates;" "opposes;" "enhances;" "inhibits;" "increases;" "decreases."

Dual opposite relationship: "is a counterparitor to;" "is a symmetrical counter to;" (note the duality aspect of several entries in the other relationship categories; for example, increase/vs./decrease, or cause/effect).

General/ specific/ grouping relationship: "is a type of;" "sub/super;" "micro/macro;"

The following are examples of linkage propositions relating cycles, cycling and oscillations to other systems concepts and processes:

An example of "tracking" or "tracing" one systems concept to the complete set of concepts to allow for fuller explanation and understanding of that one systems concept.

- Temporal Boundaries in a system result from selection by its environment for the most optimal Cycling time. This means that temporal Boundaries and Cycling time are types of externally-generated goals of the system.

Some L.P.'s describe conditions that must be realized either (i) for an appropriate and rigorous formulation of another P.S.C. [isomorphy] or (ii) as a condition for a systems feature.

- Metastability inhibits recycling of elements/components/entities

Some l.p.'s are useful for recognizing close correspondence between two P.S.C.'s often used by somewhat isolated groups of the 23 fields impinging on GST.

- Cycling of a system (Life Cycle type) is the same as temporal Boundaries of the system in question.

Some involve new ideas and/or linkages that would require much discussion and testing before acceptance.

- Recycling of systems components/entities after systems lifecycle decay contributes to Equilibrium of the next higher level of Hierarchy.

- Cycling reduces the Energy Flow necessary to maintain a Negentropic deterministic succession of States or Modes in a system. Cycling is a special case of Synergy.

THE ABOVE ARE EXAMPLES OF EARLY VERSIONS OF LINKAGE PROPOSITIONS GROUPED BY ONE OF THE SYSTEMS PROCESSES THEY EFFECT

All added elaborations added by Kent Palmer are hypothetical only.