

# **HX**

## ***ASSEMBLER***



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***transferenceware for hitek***

***OUTSHORE MULTIMEDIA***

**'NEVER SEEN ANYTHING LIKE IT !' EDITOR, BAKERS MONTHLY**

# [HX] ASSEMBLER SOFTWARE MANUAL

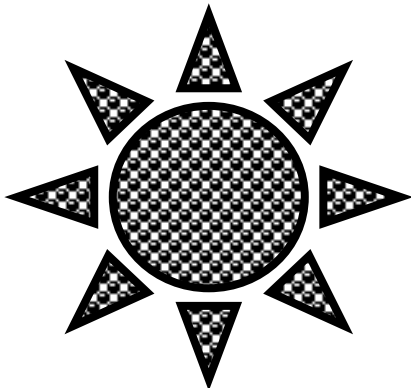
BY ANDREW T HENNESSEY

WHAT REALITY DOES EVERY DAY

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[HX] Assembler from  
Outshore ©2004/7  
is the most advanced  
systems modelling  
language  
on and off the planet.  
Quality Reality  
made in Fife, Scotland  
from Relatives.



## *INTRODUCTION*

*OMM Research ' [HX] ASSEMBLER '*

**HX is the natural and logical language of the Universe. It enables a direct substitution of the Nouns, Verbs and Adjectives of English with empirical descriptions of; Objects, Processes and Qualities at any and every scale. [from atomic to cosmic]**

**The Benefits of HX Assembler are:**

- 1. data and data structures are portable between domains.**
- 2. adaptable, universal model or expert shell for use in many applications.**
- 3. the Knowledge Representation System enables a unified approach to semiotics and artificial consciousness.**

**HX is a High Level, declarative meta language that can describe any event at any scale in the known and unknown Universe.**

**Its central premise is that transfer at any and every scale takes place between two objects through a**

**common medium and relativity. These packets of energy and material move between places of high potential to places of low potential in a process called Transference.**

**The transference event between at least two systems can be described in a Logically Real and ‘*synthetic a priori*’ manner by two logically complete languages –**

**one a new modal logic with a limited number of uncertain states called the language [A], the other by an octal Boolean Logic called [T]**

**These transference events have models in;  
Biology – Osmosis, Electricity – Ohm’s Law, Chemistry – Fajan’s Rules, Psychology – Lewin’s Field Theory’,  
Electromagnetics – Köhler**

**And all can be empirically described and modeled with the one underpinning inverse square power law.**

**Other key components of this metalanguage are the use of Bertrand Russell’s Set Theory to enable the identification of common components in what is essentially unique Chaos events within an assumption of Absolute universal Chaos.**

**If Chemistry is the alphabet of reality and physics the grammar, [HX] ASSEMBLER is the natural language and contextual theme of the never-ending story. HX describes chaos, flux and emergence within a language of archetypal systems, events and transactions.**

**The General Systems Theory that underpins this universal meta language called [HX] Assembler has identified that every event/ object/ material system has; a core, an infrastructure and an outer boundary within the context of some asset.**

**Each of the three zones of a material system are directly related by inverse square power law, and that within**

each zone there is also an endogenous and exogenous component that is also directly related and in competition via an inverse square power law.

Every event and material system in the universe therefore has 6 key components or fulcra upon which the outcome its integrity and continuity is based. This Theory [Hennessey, 2004] is called 6 Keys Systems Theory

Use this stuff to talk to and technologically manipulate every event in the material universe at any scale – a real breakthrough in top down A.I. beyond Turing and his ‘recursion paradox’.

A new Philosophy of Arithmetic called ‘Essential Arithmetic’ also supercedes the Göedel Numbering recursion issues.

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## SECTION 2: GENERAL SYSTEMS THEORY

### INTRODUCTION:

This section will present a semantic model and framework for transference events within a universal context.

- A. ASSUMPTIONS OF THE PHYSICAL THEORY
- B. KNOWLEDGE REPRESENTATION
- C. TRANSFERENCE MODELLING
- D. LOGICAL LANGUAGE AND METALANGUAGE

#### A. ASSUMPTIONS OF THE PHYSICAL THEORY

1. The Cosmos is in a state of flux.
2. A transfer of energy between two points or systems via a common intervening medium is a process called e.g. Osmosis in Biology, Transference in psychology and the electromagnetic [Lewin, Kohler], current in electricity [Ohm], current in Chemistry [Fajans' Rules] . [a Universal state of affairs i.e. some A to some B through some common C with at least the natural intervention of some D]

3. **The most basic and tautologically true of an infinite number of transfers of energy in the Cosmos of 3 dimensions of space and one of time is between two systems.**
  
4. **This basic transfer can be modeled in several ways.**
  - a. **Osmosis. i.e. The diffusion of a high concentration to an area of lower concentration through a semi-permeable membrane also as Fajan's Rules of atomic Chemistry applied to the migration of electrons.**
  
  - b. **As a metaphysically continuous extension of one system into another, where the second system 'Emerges' out of the potential created by the activity of the first. e.g. Morphogenetic Attractor [Langton C], Evolutionary Vacancy [Goodwin B] - as a Field in Psychology [Lewin K] and electricity [Ohm's Law, incorporating potential difference of energies as Voltage and resistance to the passage of energy from high to low potential.] and also in physical Chemistry by Fajan's Rules.**
  
  - c. **The relationship between the two systems can be empirically modeled by an inverse square power law i.e. The more one system increases in magnitude, the more the effect of the other system diminishes in turn. This can be more attenuated and imprecise at increasingly larger scales of relativity of mass.**
  
  - d. **A binary and tripartite arithmetic, can be used to model this transaction, where system A, system B and the**

common medium system C have a holistic relativity which can be represented as integrated or disintegrated in whole or part by 1's or 0's denoting on/off, extant/disabled [Boole G].

e. At any time 1, there can be eight essential states of that Tripartite Relativity. These 'essences' or 'atomic state descriptions' at time 2 can be any of the other eight. The number of possibilities for changes of state is modeled by a closed set of 64.

When the 64 transitions of state are tabulated by placing states of change in graded relativity or chaos or non-structure in sequence with time, we end up with a metaphysical model of the activity of elements in the periodic table of chemistry, where top left, the reactive elements, bottom right the most structured, and in the middle, transitional states which are complex.

Mathematical modeling of spontaneous emergence for artificial life experiments [Langton 1992] with the same arithmetic criteria as these essences produce the same Periodic Table of states.

From this metaphysics can be derived an Octal Arithmetic with an unusual concept of zero, for zero in this system has substance i.e. There is no absolute zero.



## **B. KNOWLEDGE REPRESENTATION**

There follows 3 examples [2.1 – 2.3] of the knowledge representation system.

This universal knowledge representation system [KRS] can take any idiom comprised of; nouns, verbs and adjectives as; objects, processes and qualities.

This [KRS] can be used to describe events at any scale and magnitude whether atomic or cosmic.

This set of examples uses small business and their activity classified with this 3 part semantic system and its aspects called; [object] Macro, [process] Meso, [quality] Micro.

**2.1. Arts - Music and Multi-Media**

**2.2 Industrial Manufacturing - Light Engineering**

**2.3 Service - Insurance**

**MACRO. THE PHYSICAL/ATOMIC COMPONENTS OF THESE BUSINESSES ARE AS FOLLOWS.**

e.g. 2.1.- **MACRO/OBJECT.** fiddle, harp, keyboards, studio recording components, sound mixing facility, strings, CD/Tape duplicator, Minidisk, P.A. System, Transport, music stand, instrument case, tuner, lights, lighting desk, compressor, pre-amp, effects processor, microphones, stands, computer, software, peripherals etc.

**e.g. 2.2 – MACRO/OBJECT. lathe, metals, cutter, sweeper, shop floor clothing, gear and boots, tools, bench, drill, workshop, first aid box, lighting, storeroom, drawing/stencil board and printer, oxy-acetylene torch, arc, welding gear, trolleys, coolant, polisher/buffer, chemical solutions etc.**

**e.g. 2.3 – MACRO/OBJECT. car, clothing, suit, PC, mobile phone, hard copy filing system, stationary, photocopier, Office, computer and network peripherals, petrol, audio-visual presentation kit, overhead projector, whiteboard, laptop and modem, office furniture, briefcase, clients, customers, leaflets, potential customers etc.**

**MESO. THE PRODUCT & MEDIA/PROCESSES AND INFRASTRUCTURE OF THESE BUSINESS 'SYSTEMS'/OBJECTS ARE AS FOLLOWS.**

**e.g. 2.1 MESO/PROCESS/INFRASTRUCTURE. - albums Celtic, albums rock, albums dance, albums story, multimedia books on CD on mysticism, hard copy tune books, logic audio recording software, concerts, performance and events supplied and tours done by company bands, new midi instruments invented, ambient and meditational video and audio's, technical papers on new musical theories, interactive CD-ROM and multi-media package on Philosophy for Children, secure website for sale of soundfiles and other product.**

**e.g. 2.2 MESO/ PROCESS/INFRASTRUCTURE. - oil rig parts, ship parts, motor parts, alloy parts to industrial specifications, hard alloy, soft alloy parts, thermophilic alloy, civil infrastructure components turned by spec to order, trawler maintenance, car and lorry structural repair, ad hoc building and roof components designed and manufactured by consultation.**

**e.g. 2.3 MESO/ PROCESS/INFRASTRUCTURE. - domestic surveys, commercial property surveys, domestic and commercial policies, PEP's, Equity Investment, stock brokerage, actuary and risk assessment, bank and investment portfolios, building society and investment house policies and procedure, capital returns for business and client, Leaflets and advertising packages - multi-media, TV, radio, cinema, etc**

**MICRO. QUALITATIVE ASPECTS OF THESE PROCESS DESCRIPTIONS**

**e.g. 2.1 MICRO/QUALITY. - Original music/ various and diverse idioms, original story, cutting edge web site, diverse - one stop catalogue, secure for E-commerce and credit card transactions, high quality international & high tech delivery company used**

**e.g. 2.2 MICRO/QUALITY. - parts to order, small runs - fast turnaround, good service and maintenance backup, high skill level, One-Off's, diverse projects, great experience**

e.g. 2.3 MICRO/QUALITY. - proven track record on investment/stock portfolio, good payout and premium record, speedy and efficient processing of clients needs.

### C. TRANSFERENCE MODELLING

The quality and integrity of each transaction within and between universal objects at any one time can be represented using an Octal Boolean Arithmetic.

The basic 3 part relationship either have or have not structural integrity whenever the underlying function is valid in relation to the context.

i.e. some form of competition may disintegrate the function of the system's 3 new attributes :

i.e. (Sx, Ay, Ez) have structural integrity, and (S,A,E) do not -

The eight essential octal and Boolean states can be generated from synthesis of the '*a priori*' diagrams in relation to the integrity or disintegrity of the 3-part transaction.

**T, (time/context).**

S	S	S	S	Sx	Sx	Sx	Sx
A	A	Ay	Ay	A	A	Ay	Ay
E	Ez	E	Ez	E	Ez	E	Ez

**The following narrative relates the behaviour of the 3 part transaction model in terms of the assimilation of a process or sub-system by a system using osmosis.**

**The algebraic model uses syntax to present some simple exchanges within a biological system.**

**In the next section [HX] will give this three part systems behaviour of; object, process and quality, or; noun, verb and adjective, or neutron, proton and electron etc more detail.**

### **A UNIVERSAL TRANSACTION MODEL USING BIOLOGICAL SYSTEMS THEORY.**

**This presents a simple story to illustrate how events and transactions in the universe can be depicted. There are of course a great many more factors involved within biological and physical complexity. Many of these can also be presented in the form of a logical syllogism of the form e.g. AB, BC, AC**

**With complex processes being modeled by simples at all scales and magnitudes, programmable applications can be developed in; languages such as the logical programming language PROLOG or, within DC electrical design environments with Ohm's Law in e.g. ORCAD**

**1. The niche that provides the context to contain this organism/organisation/system is represented by various factors or groups of letters.**

Those factors directly used by the organism are ASB(E) or food and energy input to the Energy Gathering Mechanism VN.

2. The Meso - processing E (Evolutionary Advantage) for use at Q. ASB takes E - Evolutionary Advantage forward.

3. Paying a toll of (B) at a membrane (P) for the furtherance of AS(E).

4. The toll (B), paid, mechanism P - the site of the toll brings and enables a carrier mechanism RV(T) to bind AS(E) and convey it down pathways that demand it.

5. Part (T) of RV(T) can only take AS(E) forward if it can locate its binary receptor mechanism RV(Y).

T and Y are mutually attracted, however Y is a resource which is only produced when the organism as a whole is competing well with 'exogeny' i.e. the context at factor Q - where Q is a chaotic energy demand that affects the integrity of organism Z.

6. Thus when Z is doing well, Y enables the progress of AS(E).

Y represents the potential ergonomic exhaustion has to debilitate the organism to a state of extinction, making the quality of substance of Z, reserves etc. an important factor in surviving the competitive stress of Q.

Q on the other hand represents the freedom of external factors to interfere with the evolution of a system.

**With Y present, AS(E) is taken to and bonded to mechanism W which further filters out RV.**

**7. The number of exchanges from one mechanism to another represent, here, the increasing complexity which binds and processes, refines and directs food/energy input into the specialised compartment of the Micro which is interphasing with the environmental competition.**

**8. 'Food' factor (AS) is then expended to convey (E) Evolutionary Advantage to the Micro or Assets of the organism - enabling Z to hold its own, And where Z has advantage over Q, it produces Y - its potential for continued survival.**

**This process of natural selection in terms of increased stress on the umbrella of systemic integrity may be illustrated at work within the algebraic model in the story of any organism .. where supported by the body of energies that comprised the atmosphere and its trophic range - under this umbrella it flourished, finding a tolerable equilibrium between air temperature, body temperature and energy consumption, until sudden massive scale changes e.g. pollution take place.**

**The following model illustrates transference modeling using the Biological analogy.**

## ORGANIC TRANSFERENCE MODEL - OSMOSIS





## **An Organic Transference Model.**

**The Plant [P] living in the context of a range of optimal humidity [Y] within Purple temperature range.**

**Uptakes Red and Orange soil water when soil water usually in the seasonal range of [0-11] is between [2-4] but not in the range [6-11]**

**The Brown and Black soil salt is concentrated in the plant structure and more diluted solutions of Orange salt/nutrition water are conveyed in the conveyor belt of physical evaporation or red soil water into the low concentrations of Purple.**

**The Syllogism is of the form:**

**Soil salt Black and Brown plus soil water Red and Orange  
Plant Structure/integrity/atmospheric humidity plus soil water  
Obtains an integrated plant structure with soil salt.**

**In the Context of optimal temperature and humidity :**

**BB RO**

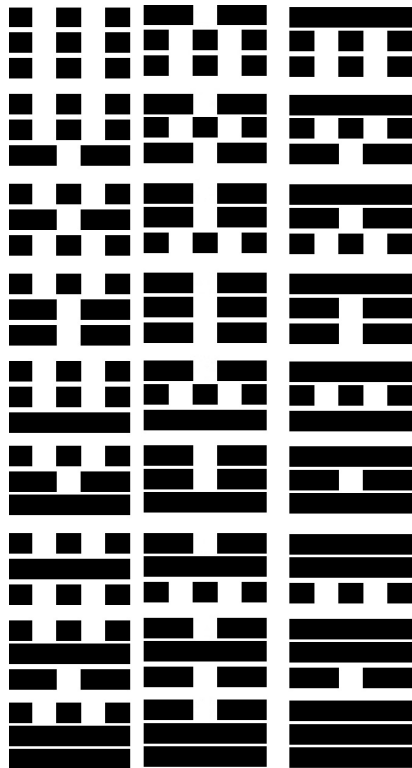
**PY RO**

**BB PY**

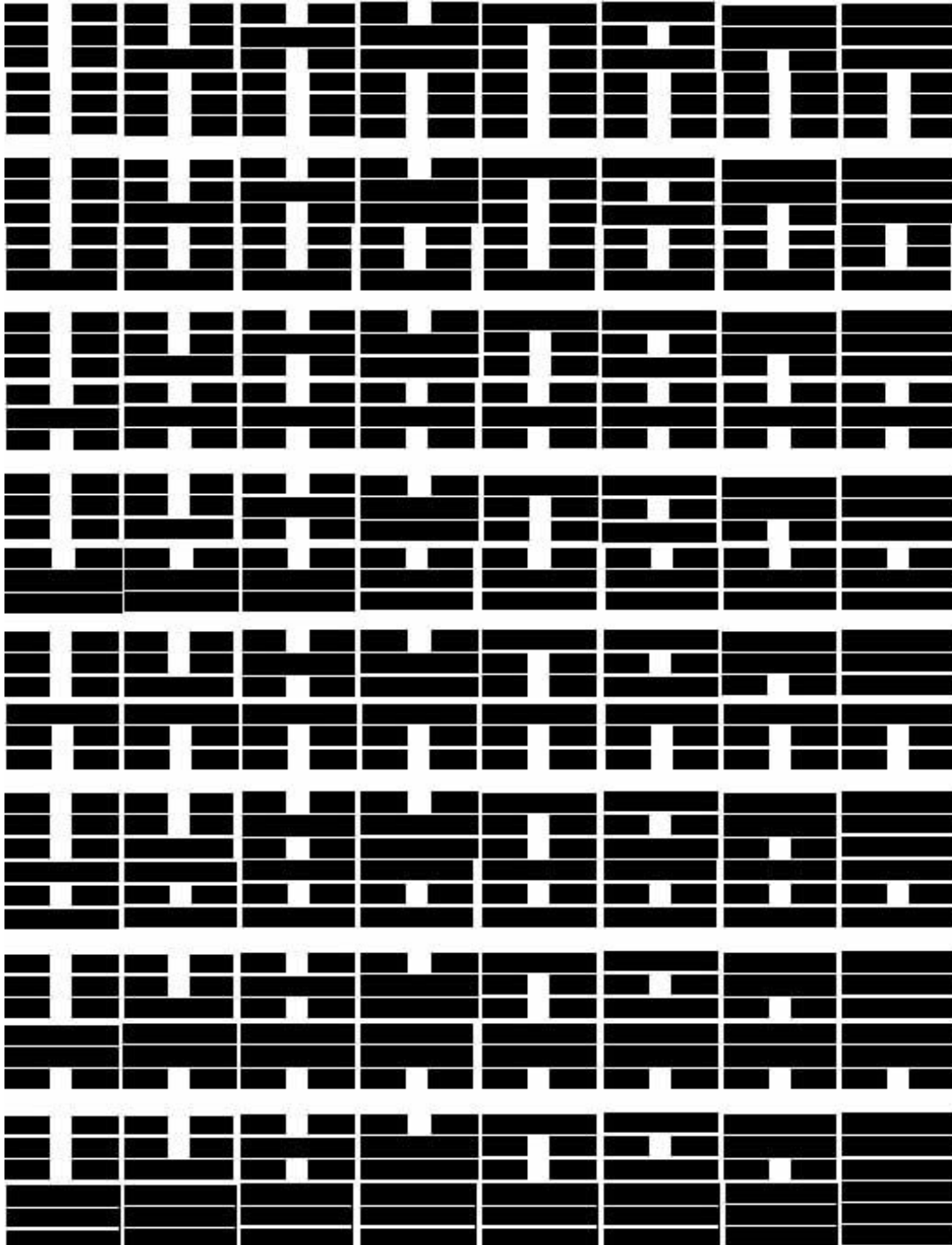
## D. LOGICAL LANGUAGE AND METALANGUAGE

HERE ARE TWO EXAMPLES OF THE BOOLEAN LOGIC.  
FIRSTLY THE LANGUAGE [A] WITH 729 TIME2 MODAL  
LOGIC STATES, THEN THE LANGUAGE [T] WITH 64 TIME2  
LOGICALLY REAL STATES.

### THE LANGUAGE [A] SAMPLE



## THE LANGUAGE [T]



The Language [T] with no Modality

## The Metalanguage [T]

There follows eight process descriptions for the eight tripartite 'Boolean atoms' of the language [T].

**1. MACRO = 0, MESO = 0, MICRO = 0.**

In the system, all is in flux and there is no relativity or congruence between the context, the object and its activities. There is currently no contextual environment for the development, redevelopment or continuation of any system and the qualitative aspects of evolution within this dissonance have no emergent aspect that can be measured at this time according to current empirical process.

**2. MACRO = 0, MESO = 0, MICRO = 1.**

The limited integrity of the past has had the qualitative capacity to emerge an asset, the Micro, but at this time now, (presently at timeX), the system has no systemic integrity. The emerged asset, though, having persisted from a previous time interlude is currently of high quality and integrity.

**3. MACRO = 0, MESO = 1, MICRO = 0.**

The lack of supply of systemic precursors caused by the discontinuity within the context has had no detrimental effect at this time, timeX, on the integrity of the persistent systemic mechanics. The facilitation of systemic growth, though, by the Meso, has ceased because of this lapse in the supply of precursors to the systemic mechanism and therefore no new assets and tools have been produced for the evolution of the system.

**4. MACRO = 0, MESO = 1, MICRO = 1.**

The lack of systemic equilibrium and integrity due to the collapse of the precursor supply to the equilibrium from the aggregates of the context has not interrupted the integrity or persistence of the mechanical attributes within the system at timeX as it continues to emerge asset.

**5. MACRO = 1, MESO = 0, MICRO = 0.**

At timeX, the present, an integrated supply of systemic precursors has emerged as an event, the Macro, but has no telic properties at timeX such that any new mechanical attributes have organised or have had such time that would

have produced a qualitative asset as per conditions of observation.

**6. MACRO = 1, MESO = 0, MICRO = 1.**

At timeX, the present, an integrated supply of systemic precursors [Macro], have emerged a qualitative event [Micro] - though the mechanics that supplied it were transparent to observation.

**7. MACRO = 1, MESO = 1, MICRO = 0.**

At timeX, the present, the contextual supply of systemic precursors to the emergent mechanics of the Meso and its self-regulating equilibrium is of insufficient gradient, velocity and content to produce a measurable qualitative asset of any integrity under the assumed contextual conditions.

**8. MACRO = 1, MESO = 1, MICRO = 1.**

At timeX, the present, a fully emergent, self-regulating system, producing assets of measurable qualities through viable mechanical integrity is observed to conform to the criteria of judgements imposed by the observations and criteria of systemic success.

The eight descriptors, the eight tripartite atoms of the language [T] at time1, describe an event deltaT at time2, producing a set of 64 logically real essential numbers that are unique state descriptions fully describing every change of systemic integrity at time1 and time2.

The one rule of assumption that drives this set of rules of derivation is that in all (universal) cases, a larger system of aggregates, universally and autonomically contributes to a smaller system through a common medium with also the intercession of at least a common other.

**[HX]**

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## SECTION 3: THE OPERANDS

**INTRODUCTION:** These operands are the keys to every natural process in every system. They can be platformed on e.g. C++, PROLOG, and even MIDI programming as list structures, velocity and decay form a vital part of field theory and empiricism or within Dc electrical engineering applications such as ORCAD.

Characters include the Operands of Sentential and Predicate Calculus – the Languages [L] and [P], The Tripartite Languages [T], and [A] and symbols from the Microsoft Western Keyboard Fontset.

## THE LANGUAGE [HX].

01. **Unconditional Declarations** e.g. If M then P1 where M and P and 1 are the alphanumeric Microsoft Western fontset utilising previously known data and previously agreed rules.

02.  $\text{£}$  If M then not Q where not is  $\text{£}$ . i.e.,  $\text{£}Q$  is not Q

03.  $\text{>>}$  if M, then it always follows that P1 is predicated, i.e.  $M \text{>>} P1$ .

04. >= greater than or equal to

05. > greater than

06. <> allegedly not relative [an '*a priori*' false premise]

07. <= less than or equal to

08. < less than

09. V or

10. IF if (always means IF and only IF)

11. + and

12. ( the start of a list of a cluster of arbitrarily labeled processes that have been measured and agreed to be part of a closely interacting system that is an IPO Box.

13. ) the end of a list of a cluster of arbitrarily labeled processes that have been measured and agreed to be a part of a closely interacting system that is an IPO Box.

14. @ All, the universal – absolutely all.

15. # some of

16. = equals – is equivalent to

17. & change in e.g. context or time  
delta t ( time 1 ... time 2 )
18. [ X] square brackets enclose an acronym for a previously defined idea.
19. The set of Real numbers (1,2,3,4,5,.....n)
20. The English language letters upper and lower case consisting of (a,b,c,d, ...z + A,B,C,D, .... Z) such that every letter can be considered to be a process called an IPO box and further instantiated with further IPO boxes if necessary.  
[Microsoft Western 'System OS fontset.']
21. \$ is directly proportional to.
22. \$\$ is inversely proportional to.
23. % is a member of the set X  
e.g. red (R) % X, where X = colours  
R % X = R is a member of the set of X
24. +? positive transference gradient for specified system  
e.g. M, at time1, +?(M) such that large amounts of M will flow down a relative and common structural bridge to lower amounts of M in the system context.
25. -? negative transference gradient for specified system  
e.g. P at time1, -?(M) such that changing conditions at time2 have temporarily overwhelmed system activity rendering system bridging activity and feeding input inactive.



26. ? a condition for some transference opportunity that may emerge at an unspecified time, x. because of chaotic context behaviour.

27. ^ a specific temporal qualitative assumption for modeling that specifies at any given time the prevalent and highest values of atomic concentration within the current activity set. It is needed as well as ? because of the interplay and exchange of similar aggregates within the modeling of the object AND the context.

It will denote and identify the potential for component relativity - either in the modeling of the object or its context. The material fact of physical and chemical intercession between similars absolutely always exists such that there is always a highest concentration of similar aggregate made relative to the lowest concentration of similar aggregate at a given time because of this intercession. i.e.  $^Z \gg ?Z$ , the conditions for relativity 'a priori' exist though may not at this time be active.

(with a social agreement on what is 'similar')

In holistic modeling, the Object and the Context have differing concentrations and differing priorities for the same compound. Thus by identifying where the highest concentrations are within the model - the relativity of exchange can be more easily tracked.

28.  $\sim 1X$  where  $\sim 1$  identifies the macro ingredient X

29.  $\sim 2X$  where  $\sim 2$  identifies the meso ingredient X

30.  $\sim 3X$  where  $\sim 3$  identifies the micro ingredient  $X$
31.  $[eT 01.. 64]$  or  $[eA 001.. 729]$  are essential numbers  $e$  for  $[T]$  and  $[A]$ .
32.  $t_1, t_2, t_3, .$  etc where  $t =$  states relative interludes of observation.
33.  $*$  where  $\sim 1X^*$  and  $\sim 2X^*$  identifies the same  $X$  in 2 etc. in continual contexts of e.g. object, environment, transference etc.
34.  $!X$  where transference velocity can be;  $!3$  macro,  $!2$  meso,  $!1$  micro.
35.  $-X$  where conditions of over-sufficiency are being met for the emergence of a new copy or asset of  $X$ .
36. the feeding gradient  $[@f]$  for systemic (object) growth.  $[@g]$   
i.e.  $[@f] \$ [@g] = [+?]$ , a directly related persistent field.
37. the Macro toll gradient.  $[@t]$ , energy for context self-defence.  $[@d]$   
i.e.  $[@t] \$ [@d] = [+?]$ , a directly related persistent field.
38. the system feeding gradient  $[@f]$  and the macro toll gradient  $[@t]$ , however, are inversely proportional and directly competitive to the point of mutual exclusion.  
i.e.  $[@f] \$ \$ [@t] = [+?]$ . (inverse power law).

39. English separators for associative listing 1. the comma (,) and 2. the fullstop (.) as end of list.

40. English semi-colon (;) allows for an antecedent bracketed listing of arbitrary labels from social processes in various object and domain libraries.

41. English inverted commas (" X) signify degrees of structural complexity - where "1 is simple, "2 is medial, and "3 is highly complex.

42. ::= Over-sufficiency, such that (+?X), a positive transference gradient for the feeding of system X is of such persistent abundance as to facilitate the emergence of replication or higher degrees of complexity and emergent systemic behaviour.

43. // # Extraneous, unexpected, migratory, modal competition during: ?, -?, +?,  
e.g. scales of: ~1// #X, ~2// #X, ~3// #X, and, X = (x1, x2, x3 ... xn.)

44. {G}X, {L}X : where {G} is a global context and {L} is a local context relative to some system X.

45. £\$+ : the threshold level for systematic change and consistency in material proportions and behaviour.

46. %%X : where X is a general systemic organic process in which a matrix of osmotic processes of various relative transference velocities interact in various transactions of various scales and complexities.

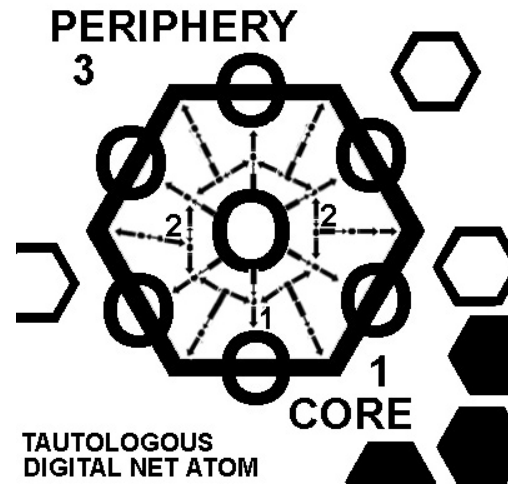
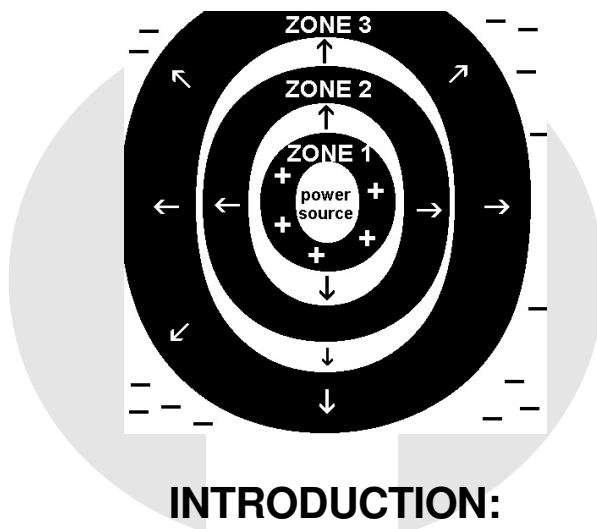
47. =%%X : where X is a systemic process of empirically defined normative tolerances, attributes and values.

48. [SV] : shuttle value, where an organismic packet of defined ergonomic value (niche) is driven and empowered by large-scale changes of state and energy.



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## SECTION 4: HX LANGUAGE MODELLING



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A three part strategy for system design from the basic transaction of object1 core to object 2 periphery across a common medium has been previously illustrated.

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Physical modeling can take place utilizing non-arbitrary constructs and numbers within the Three part metaphysics that have been outlined.

A story about the events taking place can be assembled by drawing up a syllogism to represent issues within the event and by looking at the relativity of function within and between components at an empirical level.

# [HX]

## The [HX] Tautological Syllogism And Biological Analog.

The Systemic backbone of Macro M components, that drive the Meso comprised of M and also in regulatory equilibrium with S introduce an equilibrium component, P to the Meso such that the Meso MS drives the emergence of a qualitative asset SP.

### The [HX] Syllogism.

MACRO	MP
MESO	MS
MICRO	SP

This singular tautology is non-arbitrary and is not one of the many styles and forms of tautology derived by Leibnitz. This is because the ordering and precedence of the lettering is deemed irrational in terms of [T]. As a language of function, [T] does not attend to e.g. banana or orange, or, orange and banana, both being fruiting bodies of biological systems within the botanical class of angiospermae. [Vines and Rees, 'Plant and Animal Biology, vol. 1.', edn.4, pub. Pitman, 1972, ISBN 0-273-25222-4]

The underlying common process is both are fruit, one of a tree, the other of a herb (banana). The process description is the same in both cases however.

The fruit content is divergent also, as neither generic oranges, nor generic bananas, are actually absolutely identical in any logical way.

M in this simplified analogy is the predominantly Carbon backbone of the plant systems Macro, where P is contextual Oxygen, and S is systemic Meso Water. The evolved asset driven by metabolic oxygen is the predominantly water based asset of the plant metabolic system.

i.e. Major Premis MP, Minor Premis MS, Outcome SP.

The order of precedence for lettering and other arbitrary labels is entirely unimportant in [T] descriptions.

In [T] and its transaction model, the properties of electrovalence - the movement of energy by Fajan's Rules extends across the electromagnetic spectrum from

approximately 10 to the 21 hertz to 0 hertz - including in order of decreasing frequency; gamma rays, X rays, ultraviolet, visible, infrared radiation, microwaves and radio-waves. The interaction or inter-conversion of electric and chemical phenomena produces an effect called electromotive force, or EMF. This energy can be converted reversibly from; chemical, mechanical or other forms of energy into electrical energy in some mechanism or Meso.

There are two transaction types in any given context that has a system under observation. These common and relative transactions can be modeled using the [HX] syllogism.

Z = Water, M = Specific Ions, S = Plant System,  
Q = Physical Context,  
P = System Product and Emerged Asset of Scaling  
Exploitation.

In the aggregate context where: [Z, M, S, P] % Q + [t1 ... tn.]

[HXmicro]	[HXmeso]	[HXmacro]
<i>SYSTEM PRODUCT</i>	<i>OBJECT SYSTEM</i>	<i>CONTEXT (Q~3S = 10)</i>
~2"MS ~3"MZ, t3	~1Z ~2M	~1Q ~1Z
~2"MS ~3"MP	~2!3Z ~2+?#~S, t1	~2Q ~2M
~3"ZP + (?~3S), ~3"!3MS, tn	~3M~1S, t2	~3M ~3Z, t2

The common process being exploited by piggy-back between the object system S (plant) and the context is the fact that in the evaporation of massive ground waters Z percolating through the geochemistry, from relatively large scales within the geophysical context there is a set of necessary ionic ingredients M, making progress from greater to lesser scales of magnitude. This is driven by osmosis within the soil and atmospheric conditions for evaporation.

i.e. ~2M >> ~3M at time 2

The niche for plant growth can be described in terms of the [HX] syllogistic forms as; ~1Z + (~2Z + ~2MS >> ~3MS) >> ~3Z

The evolutionary assets of the context system, e.g. its; soils, physical chemistry, geology, seasons, temperature, pressure, light levels, altitude, solar activity, ecological global dependence, sunspot activity, relative ocean currents, orbital irregularities, planetary tilt, albedo, tectonics etc.

In the context of relative scales of interactivity within and between the object system and the context system, the object

system is always embedded and nested within the scales of transaction in the context.

Persistent over-supply ( $t_1 \dots t_n$ ) of the aggregates Q, necessary to emerge and replicate complexity within the system S, will produce the emergent product e.g. seed, at  $t_3$ . ( $t_3 = ? \rightarrow S$ ) to be regrown at context time  $Q = t_4$ . (where  $t_4 = t_0$ ).

The object system must attenuate and defend itself from the greater scales of similar aggregate and their activities within the context.

It must pay a systemic toll to do this whilst converting meso quantities of context into structural assets such that the system becomes viable and macro.

The molecular version of [TREES] - 'Tripartite Relativity Expert System', can use processes such as electro-kinetics. These are the electro-dynamics of heating effects and of current distribution in; electric network electrolysis, chemical change and decomposition produced in an electrolyte by an electric current.

Also, electro-kinetics come from electromagnetic interaction - a form of interaction between particles and or fields.

Analogical reading of the emissions at the CPU by e.g. a photonic array and, or, the crystal can be interpreted to produce a tautological outcome in whatever context.

## THE BIOLOGICAL ANALOG.

This model is built around the use of atmospheric pressure to deliver water to the plant biology using the transpiration stream up the xylem caused by leaf metabolism and the osmotic uptake of (biologically) necessary ion aggregates from the soil by centripetal ion activity in shoots and roots.

From Chapter 2 where we first looked at the Biological transference Model – we have a framework example with which to now operate a more complex description at the level of a systems theory.

01. If the context aggregates Q and their changing attributes with time & Q are available as Q to the DNA script propagating to exploit them, then the evolutionary driver from Q that is Z will arrive in the plant system S at time1.

With systemic structures, macro aggregate defences and enforced adaptive tolerances against usual macrotic chaos, and bridging activities with which to exploit the macro intact, the water transport system conveys the ionic packets to the plant envelope and its metabolism.



where (?-S) is the plant seed system and Q = environment aggregates

$$1a. @ Q \gg \#Q = \sim 1S, t1$$

$$1d. \&t, t2 \gg (\sim 1Z = (=:Z) + ("3Z + !3Z))$$

$$1c. t2 = Q[@t]Z \$ Q[@d]Z$$

$$1d. \&t, t3 \gg ((?-S) + (+?-S) = (=:S))$$

02. The plant system S uses and mutates transport system Z and has successfully incorporated and exploited ?Z in this environmental context. Successful self-assembling aggregate S has enfolded and maintained a Z supply vacuum that exploits the process of evaporation from the tolerances within the soil and vegetation types and the changes in air temperature and pressure. S has embedded itself in a persistent opportunity between massive scalar differences in the macro aggregates.

Low S in the macro aggregates is feeding the assembly and emergence of high S within the plant because it is being pulled and transported by the greater and more physically abundant and reactive high Z in the macro aggregates across a massive scalar divide to massively low Z (atmosphere) in Q.

$$2a. \&t, t4 = ((\sim 1Z + ? + \&Z) \% (Q + \&Q)) \gg$$

$$2b. \gg ( Z \gg (+?S(\&Z)) + (+?S(-?Z)))$$

$$2c. \sim 1QZ = (\sim !3QZ^* + \sim 1SZ^*!2) = (+?SZ)$$

$$2d. [@f] \$ [@g]$$

03. IF context C (atmosphere activity prevalent), where C % Q, and is greater than or equal to biological and physical plant tolerances - Optimum O, then some water Z plus other ion attributes M will be moved into the plant cytoplasm L in the plant system S at time1.

$$3a. S \% (C \% Q), t4,$$

$$3b. Q = !3Z = ?Z$$

$$3c. ((C \geq O^*) \gg \sim 1+?Z + (\sim 3^*!2ZM = L) \sim 2S^* + !3ZS ) \gg$$

$$3d. \gg (+?(\#Z + \# \sim 2M) \gg \sim 2L) \gg \sim 2S^*$$

$$3e. \gg (\&\sim 1Z \% !\sim 3SQ, t4)$$

04. Piggy-backed on the massive scalar processes (e.g. physics and physical energies) interchanging in the groundwater, hydrosphere and aeosphere, ionic components essential for plant growth and over-sufficiency create the possibility of evolutionary asset or fruit.

e.g. Plant metabolism:  $\sim 1S \gg \sim 3S$ , where  $-S$  in  $\sim 3S$  is the process replication description called biological DNA, M = migrating ions, L = cytoplasmic envelope at time n.

i.e. the central systemic manufacturing process of S that creates the subset (s1 .. s3) in order of; macro, meso, micro and also of scale is: S = (s1, s2, s3).

In plants, these processes have primary components of operational capacity that is predicated upon structures utilizing: s1 = protein base, s2 = sugars, s3 = phosphate predicated.

4a. Q = :=MZ, t1

4b. S = (s1, s2, s3)

4c. S + t2 + +?Q~2M = (L = (#~3M + ~S) + Z) = ~3S = (?~S)

4d. (?~S) = [@f] \$ [@g]

05. In the ground G, in good conditions, the seeds start to sprout. The emergence of the external structure of the plant, E, where E % S, and includes the superstructure of the foliage F, and xylem X: - is driven by aeolian A, and phototrophic P, dictates.

Persistence of temperature and light and moisture and low air pressure and low turbulence will produce an over-sufficiency O, (:=), of growth and therefore fruit. (?~S).

5a. IF ~1S + (?~S) % G + (+?~1Z^ + (+?P^ + (+?A^), t1 >>

5b. >> (?~S) + ~2S + ~2Z + (+?S) + ("1S) = t2.

5c. t2 = ((L = (#M + #~S) + ~2Z)) \$\$

5d. \$\$ = (E = (#A + #P + ~2Z^ + F + #M) + ~3Z)) = t2.

5e. t2, IF (+?~1Z) >> ( (L = [@f]) \$\$ (E = [@t]) = t3)

5f. t3 >> (+?S = (+?~2Z) + (+?~3Z)) =

5g. = (#~2MFs\* + #~2MXs\* + (#~S(#s1, #s2, #s2), t2) + #"2S) + ~3Z.

5h. membranes roots and leaves and relative seasonal velocity

5h. t4 = +?S (~s1 >> s2 + #s3) + (#"1SFX + #"2SFX) + // #

5i. t5 = +?S(~s1 + ~s2 >> s3) + (#"2SFX + #"3SFX) + // #

5j. t6 = +?S(~s1 + ~s2 + ~s3) >> ("3SFX >> (?~3S) + IF£ // #)

5k. t7 = -?S( £:=:(s1 .. s3)) +V (// #)

#### THE SCALING RELATIVITY MODEL [SRM]

06. At the boundaries of various membranes and other transitional zones used in 'osmosis' by aggregates, there is a relatively normative systemic toll to be paid falling within the usual tolerances of the self-regulating and self-replicating physical system.

e.g. A to B through some common C with the intercession of at least some common D.

However, migratory aspects of adjacent chaos can introduce other modalities and scaling conflicts into the object - context relationship.

i.e. A to B through some common C with the intercession of some D that causes destructive distortion in the systemic structure, t1. Although the systemic resistance exists, depending on the degree of physical impact on the systemic defences and tolerances there will be a gradual shutdown until cessation and de-contextualisation ensues, t3.

e.g. drought. (S = Plant System, Z = Pluvial and Fluvial Water)

6a.  $t1 = (+?~3//\#~2S) + (-?!1~1Z)$

6b.  $t2 = (?~2//\#~1S) + (-?!1~1Z)$

6c.  $t3 = (~1//\#\text{£}S) + (-?!1~1Z)$

07. The Plant System suffers context disruption in its feeding gradient and its metabolic bridging activities and transference gradient are compromised.

Where S = (f1 .. f5), and f1;XXX and Q = (t1 .. t6) and t1;XXX are numeric values; 001 - 999. for the purposes of empirically measuring relative wavelength and frequency for the construction of social information and artifacts.

7a.  $+?QS, t1$

7b.  $t1 = S([\text{@f}] \$ [\text{@p}]) \$\$ Q([\text{@t}] \$ [\text{@d}]) = [\text{@f}] \$\$ [\text{@t}]$

7c.  $t2 = ~2//\#S \gg S(f1;075, f2;153, f3;125, f4;092, f5;085) + (\text{£}f2;153)$

7d.  $t3 = (?~2//\#~1S) + (-?!2~3Z)$

7e.  $t2 = S(f;)(075, 000, 125, 092, 085)$

7f.  $t4 = ?Q[\text{@t}] \gg Q(t;)(t1; 150, t2;112, t3; 000, t4; 000, t5; 017, t6; 443)$

7g.  $t5 = IF "3~3S \gg (~3//\#S \vee ~2//\#S) = (-?~3S)$

7h.  $t5 = IF "1!1~1S \gg (~1//\#\text{£}S)$

7i.  $t5 = "3~3S \gg (f1 + f2 + f3) \text{£}\$ (t1 + t2 + t3 + t6) = (\&t\text{£}:=)$

7j.  $t5 = f;(075 + 000 + 125) = f;200, \$\$t;1:2 = (//\#~1!S) = (f;red)$

7k.  $t6 = ~1S(f;red) \gg (f; tripartite biology domain, massive heating)$

7l.  $t6 = //\#~1S(f; geo-drought, dehydration rupture, red distortion)$

7l.  $t0 = f;(075 + 153 + 125) = f;353, \$\$t;1:3 = (+?~3"3!3S) = (f;blue)$

7m.  $t0 = f;(blue, UV) \gg$

7m.  $t0 \gg (f; tripartite physics domain, diffuse atmospheric, less plant red into photosynthesis, more blue/yellow and less red/green, greater xanthophyll and less chlorophyll).$

7n.  $t7 = IF (+?~3"3!1S) = t1 = (\text{£}f2;000) \gg$

7o.  $t7 \gg //\#S = //\#f(~1f + ~2f + ~3f) = \% Q$

7p.  $t_8 = ("2\sim 2f_2;000) + //\#f \gg (\sim 1"1f_2;160) = ?S$

7n. The scale of  $f_2$  needed by  $S$  is nested in the larger ecosystem  $Q$ , which feeds (+?) the metabolic meso ( $\sim 2S$ ) through various layers of filtration and transportation mechanisms (" $3 V "2$ ). These eventually substantiate (=:=) the emergence of fruit or other replications, ( $\sim 3S$ ). e.g. [HX] syllogism.

7q.  $t_9 = //\#-?\text{£}f_2[@d] + //\#f(\sim 1f + \sim 2f + \sim 3f) + (//\#"2!1Q) \gg \text{£}S V \text{£}\#S$

7r.  $t_9, \text{IF } //\#f;XXX = t;XXX + \sim 3"3!1S + \text{£}f_2 \gg ?S V +?S$

08. The system having been breached by migratory chaos if sufficiently sturdy, complex, well stored and developed may be able to cope with variable distresses within the new orientations of the context.

If it does or does not, however, is entirely unpredictable and arbitrary, as physical conditions accrue and emerge and de-merge with time and with the influence of more global activities. Some examples of systemic states for  $S$  are given below at time $_{13}$  and intimations for what may or may not be possible.  $t_{13}$ , (8g. - 8x.) for example massive scale velocity transference on massively complex, massively storing systems versus relative damage on similar systems in low scale velocity transference on simple and relatively unfortified systems. A few examples iterate the possibility of complexity and detail within the [HX] ASSEMBLER.

8a.  $SQ = S([@f] \$ [@p]) \$\$ Q([@t] \$ [@d]) = [@f] \$\$ [@t]$

8b.  $t_9 = \sim 2//\#S \gg S(f_1;075, f_2;153, f_3;125, f_4;092, f_5;085) + (\text{£}f_2;153)$

8c.  $t_9 = (? \sim 2//\#\sim 1S) + (- !3\sim 3Z) + (\sim 3//\#+? \sim 1!"3Q)$

8d.  $t_{10} = S(f;)(075, 000, 125, 092, 085)$

8e.  $t_{11} = //\#-?\text{£}f_2[@d] + //\#f(\sim 1f + \sim 2f + \sim 3f) \gg (\text{£}\#S) + (?S) + (+?S)$

8f.  $t_{12} = \#S \% \sim 1[@t]"3!3\sim 1S + (\sim 3//\#+? \sim 1!"3Q) + //\#f(\sim 1f + \sim 2f + \sim 3f)$

8g.  $t_{13} = \#S + //\#f;(\sim 1f) \gg \sim 1!1"1-?\text{£}S + (?S) = S \text{ at timeN}$

8h.  $t_{13} = \#S + //\#f;(\sim 1f) \gg \sim 1!1"2-?\text{£}S + (?S) = S \text{ at timeN}$

8i.  $t_{13} = \#S + //\#f;(\sim 1f) \gg \sim 1!1"3-?\text{£}S + (?S) = S \text{ at timeN}$

8j.  $t_{13} = \#S + //\#f;(\sim 1f) \gg \sim 1!2"1-?\text{£}S + (?S) = S \text{ at timeN}$

8k.  $t_{13} = \#S + //\#f;(\sim 1f) \gg \sim 1!2"2S + (?S) V (+?S) V (\text{£}S) = S \text{ at timeN}$

8l.  $t_{13} = \#S + //\#f;(\sim 1f) \gg \sim 1!2"3S + (?S) V (+?S) V (\text{£}S) = S \text{ at timeN}$

8m.  $t_{13} = \#S + //\#f;(\sim 1f) \gg \sim 1!3"1S + (?S) V (+?S) V (\text{£}S) = S \text{ at timeN}$

8n.  $t_{13} = \#S + //\#f;(\sim 1f) \gg \sim 1!3"2S + (?S) V (+?S) V (\text{£}S) = S \text{ at timeN}$

8o.  $t_{13} = \#S + //\#f;(\sim 1f) \gg \sim 1!3"3S + (?S) V (+?S) V (\text{£}S) = S \text{ at timeN}$

- 8p.  $t_{13} = \#S + \#\#f;(\sim 1f) \gg \sim 2!1"1S + (?S) V (+?S) V (\pounds S) = S$  at timeN
- 8q.  $t_{13} = \#S + \#\#f;(\sim 1f) \gg \sim 2!1"2S + (?S) V (+?S) V (\pounds S) = S$  at timeN
- 8r.  $t_{13} = \#S + \#\#f;(\sim 1f) \gg \sim 2!1"3S + (?S) V (+?S) V (\pounds S) = S$  at timeN
- 8s.  $t_{13} = \#S + \#\#f;(\sim 1f) \gg \sim 2!2"1S + (?S) V (+?S) V (\pounds S) = S$  at timeN
- 8t.  $t_{13} = \#S + \#\#f;(\sim 1f) \gg \sim 2!2"2S + (?S) V (+?S) V (\pounds S) = S$  at timeN
- 8u.  $t_{13} = \#S + \#\#f;(\sim 1f) \gg \sim 2!2"3S + (?S) V (+?S) V (\pounds S) = S$  at timeN
- 8v.  $t_{13} = \#S + \#\#f;(\sim 1f) \gg \sim 2!3"1S + (?S) V (+?S) V (\pounds S) = S$  at timeN
- 8w.  $t_{13} = \#S + \#\#f;(\sim 1f) \gg \sim 2!3"2S + (?S) V (+?S) V (\pounds S) = S$  at timeN
- 8x.  $t_{13} = \#S + \#\#f;(\sim 1f) \gg \sim 2!3"3S + (?S) V (+?S) V (\pounds S) = S$  at timeN
- 8y.  $t_{13} = \#S + \#\#f;(\sim 1f) \gg \sim 3S = (?S) V (+?S) V (\pounds S) = S$  at timeN
- 8z.  $t_{13} = \#S + \sim 1\#\#f(\sim 1f) \gg \#S((-?S) V (?S) V (+?S) V (\pounds S)) = S$  at timeN
- 8aa.  $t_{13} = \#S + \#\#f(\sim 2f) \gg \#S((-?S) V (?S) V (+?S) V (\pounds S)) = S$  at timeN
- 8ab.  $t_{13} = \#S + \#\#f(\sim 3f) \gg \#S((-?S) V (?S) V (+?S) V (\pounds S)) = S$  at timeN
- 8ac.  $t_{14} = \#S + \#\#f(\sim 2f) \gg \#\sim 2S = S$  at timeN

**09. Macro Toll Gradient [@t] is an energy toll of previously established physical and social parameters measured in and pertaining to the observed context between time1 and time2.**

**When contextual disaster strikes though, tolerances within the system break down and release numerous breakdown products from aspects of the system and new environmental context that interfere and mix with and disrupt (or augment) previously working and stable physical relationships. e.g.  $\sim 1\#\#S$ , t1.**

**In normative circumstances: Context Q \$ S  $\gg$  S([@d] \$ [@t])**

**In abnormative disruption :**

**9a.  $t_{15} = \#\#Q \$ \#\#S, \#S \gg = ?S(f2;153)$  at timeN**

**9b.  $t_{15} = \pounds S + (\#\#(S[@d])) = ?S(f2;153)$  at timeN**

**Within the damaged system, possibilities for recombination of simples (n) represent at the damage interphase until the unique physical tolerances of the damaged zone are either superceded and disintegrated or useful recombination and structural attenuation can present enough bridging material to repair the systemic defence [@d] such that the feeding gradient from the systemic metabolism can support [@t] the abnormative structural distress.**

**Two similar but differently scaled systems may fare differently in a chaotic context disruption of similar magnitude. No modeling assertion could be absolutely true in a chaotic universe though.**

**examples s1 and s2, where  $s1(\text{mature}) + s2(\text{young}) \% S$**

**$s1 = !3ZS(\sim 1X"3\sim 1F"2)$  mature plant in emergent growing season**

**$s2 = !3ZS(\sim 3X"1\sim 3F"1)$  young plant in emergent growing season**

$$9a. t14 = \#\#-?\text{f}2[\text{@d}] + \#\#f(\sim 1f + \sim 2f + \sim 3f) \gg (\text{£}\#\text{S}) + (?S) + (+?S)$$

$$9b. t14 = \#\text{S} \% \sim 1[\text{@t}]^3!3\sim 1\text{S} + (\sim 3/\#\# + ?\sim 1!"3\text{Q}) + \#\#f(\sim 1f + \sim 2f + \sim 3f)$$

In this system S, values for fn at; macro ( $\sim 1fn$ ) = 500 - 1000

meso ( $\sim 2fn$ ) = 50 - 100

micro ( $\sim 3fn$ ) = 1 - 10

In the context  $\#\#Q$ , however, disruption at ( $\sim 1fn$ ) has caused systemic failure such that the velocity of the normative rate of supply is now insufficient to supply enough systemic defences to slow down the rate of systemic disintegration.

Some complex systems can still function and retain some damage within their structure.

In the context Q, normatively, the upper and lower tolerances of competition on  $[\text{@d}]$ , lie within the range of [800 - 1200] where [ $<1000$ ] is prevalent. e.g. 1:10 aggregates in context lie in the range [1001 - 1200]

This 1:10 entropy ratio  $\sim 3!S$  would define normative existence within context Q for S.

Also 1:10 aggregates in Q, used by S to make  $\sim 1S$  lie within the range [1 - 499].

In the context  $\#\#Q$ , however, this ratio has changed; e.g.1

Contextual disruption of Q has led from a normative  $\sim 3!S$ ; (1:10), to a systemically damaging,  $\sim 1!S$ ; (1:100 - 1:1000), tn.

$$9c. t15 = \#\#\text{S} + fn = \sim 2f2 + +?[\text{@f}] + (\#\text{S} + ?S) - S(\sim 1/\#\#!"1fn)$$

$$9d. t16 = \#\#\text{S} + fn + fn = \sim 2f2 + +?[\text{@f}] + (\#\text{S} + ?S) - S(\sim 1/\#\#!"1fn)$$

$$9e. t17 = \#\#\text{S} + fn + fn + fn = \sim 2f2 + +?[\text{@f}] + (\#\text{S} + ?S) - S(\sim 1/\#\#!"1fn)$$

$$9f. t18 = \#\#\text{S} + fn + fn + fn + fn = \sim 2f2 + +?[\text{@f}] + (\#\text{S} + ?S) -$$

$$9f. t18 = - S(\sim 1/\#\#!"1fn).$$

$$9g. t19 = \#\#\text{S} + fn + fn + fn + fn + fn = \sim 2f2 + +?[\text{@f}] + (\#\text{S} + ?S) -$$

$$9g. t19 - S(\sim 1/\#\#!"1fn).$$

$$9h. (t14 - tn) = \#\#\text{SQ} + ?[\text{@f}] \gg \#\text{S} + \#\#Q = (\#fn = \sim 2f2, tn) + (\#\text{S} + ?S) V$$

$$9h. (+?S).$$

$$9h. t20 = \#\#\text{S} + 6(fn), @tn(t+1) \gg @fn(+1fn)tn. = \sim 2f2.$$

$$9h. t20 \sim 2f2 + (+?[\text{@f}] + (\#\text{S} + ?S) - S(\sim 1/\#\#!"1fn))$$

$$9i. t21 = \#\#\text{S} + 7(fn) + = (\#fn = \sim 2f2, tn) + (\#\text{S} + ?S) - S(\sim 1/\#\#!"1fn)$$

$$9j. tn = \#\#\text{S} + 8(fn) + = (\#fn = \sim 2f2, tn) + (\#\text{S} + ?S) - S(\sim 1/\#\#!"1fn)$$

10. Disruptions in the context  $\#\#Q$  may allow the survival of system S or not - dependent on the nature and magnitude and duration of the

systemic de-contextualisation and the durability and complexity of the system.

e.g. X = xylem transport system and F = foliage. s1 = mature, s2 = young.

s1 = !3ZS(~1X"3~1F"2) mature plant in emergent growing season, tn.

s2 = !3ZS(~3X"1~3F"1) young plant in emergent growing season, tn.

10a. tn = (@//#Q >> £S) V (#//#Q >> #S(s1.x));(S,phenotypes,

10a. tn = properties.x)

10b. t23 = !1ZS(~1X"3~1F"1), xs1.1;(deluge, mature root and xylem,

10b. t23 = bad foliage).

10b. t23 = !1ZS(~1X"2~1F"3), xs1.2;(deluge, mature root and xylem,

10b. t23 = excellent foliage).

10b. t23 = !1ZS(~1X"1~1F"1), xs1.3;(deluge, mature/decayed root

10b. t23 = and xylem, bad foliage).

10c. t24 = @//#Q = (-?s(1.1 + 1.2)) V (?s(1.1 + 1.2)) + £(s1.3)

10d. t25 = @//#Q!1Z >> S = (£X)x;(deluge, root dislocation, £[@f])

10e. t25 = IF @//#Q = t26 >> (s1.2 > s1.1) + (!1~1Z) + #(?s(1.2>1.1))

10f. t25 = IF @//#Q = t27 >> (s1.2 < s1.1) + (!1~1Z) + #(?s(1.1>1.2))

10e. t26 = !1Z@//#QSs >> #~3Q,x;(optimum temperature and light,

10e. t26 = £[@f])

10f. t27 = !1Z@//#QSs >> #~1Q,x;(extreme temperature and light, £[@f])

10g. t27 = f2 % &Q = (q1, q2, q3, q4, Q(1-n), ~1Z) > @(~2S + ~3S)

10h. t27 = #(~1S) = f2 % (q1, q4)

10i. t27 = @Q % &W = (W1, W2, w1, w2, w3, w4 ...wn)

10i. t27 = W;(tectonics, volcanism, tsunami) = &Q(~1!1{G} + ~1!1{L})

10i. t27 = W;(Richter, Geochemistry, Salinity + Temp) >> \$\$[@t]s

10j. t28 = W1 \$\$ W2 >> @//Q (q1 \$\$ q4) >> f2 + (&~1!1"1Q) + (#QSs)

10k. t28 = (!1W1 \$\$ !1W2 >> := {G}@w + #~{L} >> (q1 \$\$ q4)

10l. t29 = #~3{L} >> #~3(f2) >> #{L}Ss = (:= + ?Ss)

The objects and labels within this event description are interchangeable between similar events in different domains. E.g. function, malfunction, systemic integrity and disintegrity in the 'fruiting' process in other systems and outcomes.

## **AI and the [TREES] RHEOSTAT**

**The amount of energy and input in any one AI system at any given time as supplied through its operational context and mediated by the media and materials of its system's hardware and other processes can be translated directly into the semantics of a knowledge representation system.**

**This can be done by creating a rheostat made from materials of the systems operational context and by previously calibrating relative maximum and minimum operational success and functionality within the operational context .**

**As the AI system as previously constructed, continues to build ways to transfer the energies within the processes of its operational goals into relative outcomes – the medium of its physical structure increases the input to the central rheostat.**

**The relative heat of the rheostat can be directly correlated with one of several knowledge domains. Where Macro knowledge [relatively cool] represents the physical context of the goal locality, Meso knowledge [warmer] represents the engagement of tools to locate specific targets within the context and Micro knowledge [relatively hot] is the use of expert detail as the tools are executing the goals of the AI system. [difficulties can be represented as too hot or too cold]**

**Cold, Warm and Hot 'objects' or 'nouns' can also be represented in software as opposed to hardware.**

**The issue with the hardware is the regulation of core temperatures within the system and rheostat itself – whereas a software system may be more economical and may perform better.**

**This relationship between energy and natural language is created by the relative performance of any system within its operational context.**

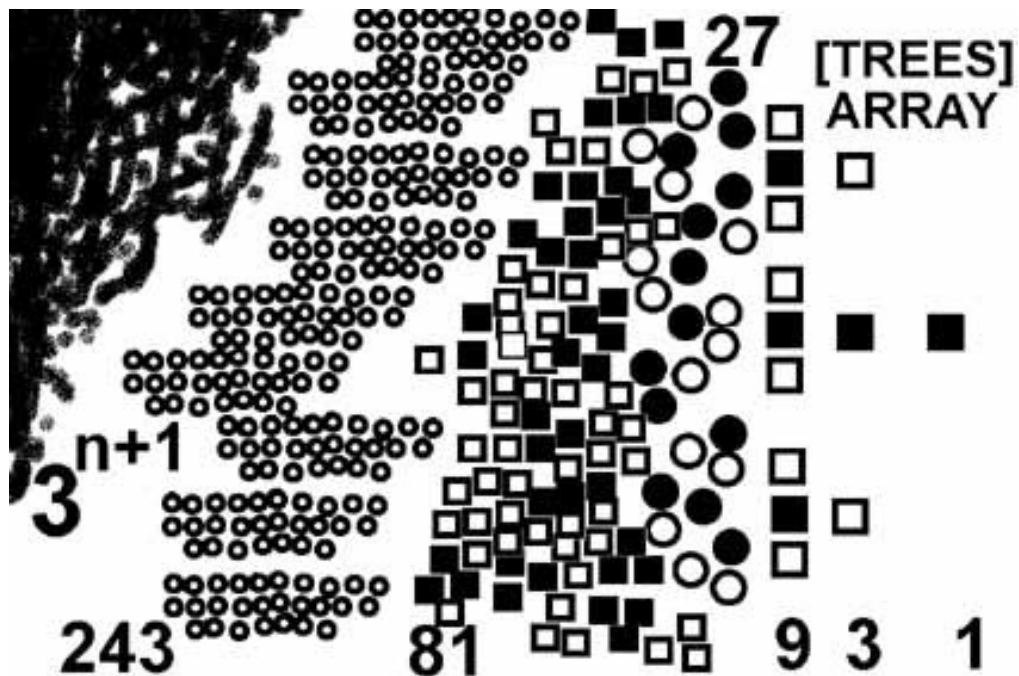
**The language of energy and energy transference is the cornerstone of universal behaviour, and it can be shown that this language of function overcomes the major paradoxes of recursion presented by Turing and Göedel in a Universe full of arbitrary labels.**



This dilemma has held back the evolution of executive robotics and self directed behaviour within AI.

The Tripartite Relativity Expert System [TREES] rheostat is directly physically related to a version of the Knowledge Representation System presented earlier.

e.g. start with MACRO1, MESO1 and MICRO1 then define the MACRO, MESO and MICRO of each of the initial MACRO1, MESO1 and MICRO1 etc at the far end of the array after a full 13 intervals the concepts have again become as non-specific as the initial context definition.



For a more complete demonstration of this important advance past Turing and into autonomous AI that doesn't need constant supervision and resupply – do get in touch.

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