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# C<sup>3</sup>W semantic Temporal Entanglement Modelling for Human - Machine Interfaces

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## 1. Introduction

This Chapter focuses on 'Command – causalities – consequences Wisdom' (C<sup>3</sup>W) semantics temporal entanglement modeling using 'Wisdom open system semantic intelligence' (WOSSI) methodology (Ronczka, 2009). A feature might be a Rubik-Schlangen type three-dimensional system and wisdom-based delivery engine acting as a continuum with engagements.

WOSSI is a mapping system that allows identification of wisdom from lower order delivery engines and associated domains to acquire the information, knowledge, reasoning, and understanding whilst in an open-system context. WOSSI mapping has the outcome of minimising the influence of 'de Montaigne' paradoxes. That is, a possible negative outcome: '*nothing is so firmly believed as that which we least know*', (Collins, 2002) that may drive conflicting tangibles and intangibles such as 'actual monetary benefits' and 'Willingness-to-pay' but still providing foresight based on evidence based 'knowledge – information – learning delivery engines' (KILDEE's) for the user.

A modified Semantics approach based on WOSSI provides a mapping process that could account for the many complexities that interfaces are required to adjust too such as data mapping of the associated Ontologies, taxonomy of Semantics User Interfaces and Semantic Adaptive Systems. Interfacing Semantic and Semiotic may assist when it is required for various inclusion of natural languages to adjust to the intended user but yet overcome any adverse informatics outcomes when translated for other users.

## 2. Problem addressed

Within the contextualization of Human – machine interface and supporting firmware information and knowledge there may be cognitive predisposition to the way information and knowledge may be processed within an interface C<sup>3</sup>W Kernel. If critical constructs and associated domains are therefore skew the Human – machine interfaces information and knowledge critical path outcomes might not be met and skew the Kernel (e.g. biological and non-biological).

Temporal entanglement of the interface memory with information-knowledge cipher-prima strings further complicates the interface C<sup>3</sup>W Kernel. This Kernel plausibly would be

adaptive and assimilation the users preferences for how the presentation of KILDEE's is undertaken. What may exist are Human–machine interfaces information and knowledge critical path for Kernel (e.g. biological and non-biological) with a number of Rubik–Schlangen type three–dimensional system and wisdom–based delivery engines.

The associated firmware changes might in turn be required to be enabled in the WOSSI mapping systems that essentially allows wisdom to be identified from the lower order delivery engines information, knowledge, reasoning and understanding. This is suggested to be undertaken in an open–system (may be additionally known as open–source) to allow C<sup>3</sup>W for self correction. C<sup>3</sup>W Kernel self correction might be useful for Biorheology interfaces to help overcome impairments in Humans, weapons systems, wargaming.

Fiscal responsibility has recently been highlighted as an issue for general management that flows onto IT projects. These projects may have complex interconnecting engagement threads and stakeholder partnerships for a given business operation space.

Such a view is not uncommon of Cost benefit Analysis (CBA): “One of the problems of CBA is that the computation of many components of benefits and costs is intuitively obvious but that there are others for which intuition fails to suggest methods of measurement” [1].

Problems associated with ranking projects tend to involve complexities with determining value for tangible and intangibles. A simplification is required for IT projects to drive clarity of how to achieve efficiency outcomes as traditional Benefit to cost ratio (BCR) has shortcoming for a given scenario – context.

The problem addressed by moving to ‘Wisdom open–system semantic identification (WOSSI) mapping, is therefore to simplify the outcome of leveraging evolutionary jump in the way to control and management the systems of gates as entities, events and interaction change. To move one needs not to be stuck in the conceptual phase of design with complex digital circuit mathematic and logic Truth tables. Secondly, WOSSI uses cognitive bases with hybrid semantics to facilitate moving from the macro, meso, micro, and quantum–nano scales with minimal support conjectures [9].

Problems that need to be addressed in the context of impairments in Humans, weapons, gaming (wargaming) systems tends to be the following:

- Human impairments overcome/minimised
- Enhancements via entangled single–to–multiple chain delivery engines
- Interoperability communication–companion Human – machines
- Biorheology interfaces for Human – machine interfaces
- Low rejection rates of host Bio material.

### 3. Methodology

The methodology focuses on benchmarking between how impairments in Humans, weapons systems, gaming (wargaming) systems are modeled using exercises. A well–executed and designed C<sup>3</sup>W) exercises ( Fig 1) are the most effective way to:

- Validation and testing of a range of entities and events (e.g. plans, procedures, training, agreements)

- Clarifying roles and responsibilities
- Demonstration of operating procedures through to communications
- Improvement of communications, and operations with coordination
- Identification of coordination surfaces and resource gaps to enable project completion
- Improvement of performance (system to personal)
- Identification of system improvements that need to be made (NCHRP 2006).

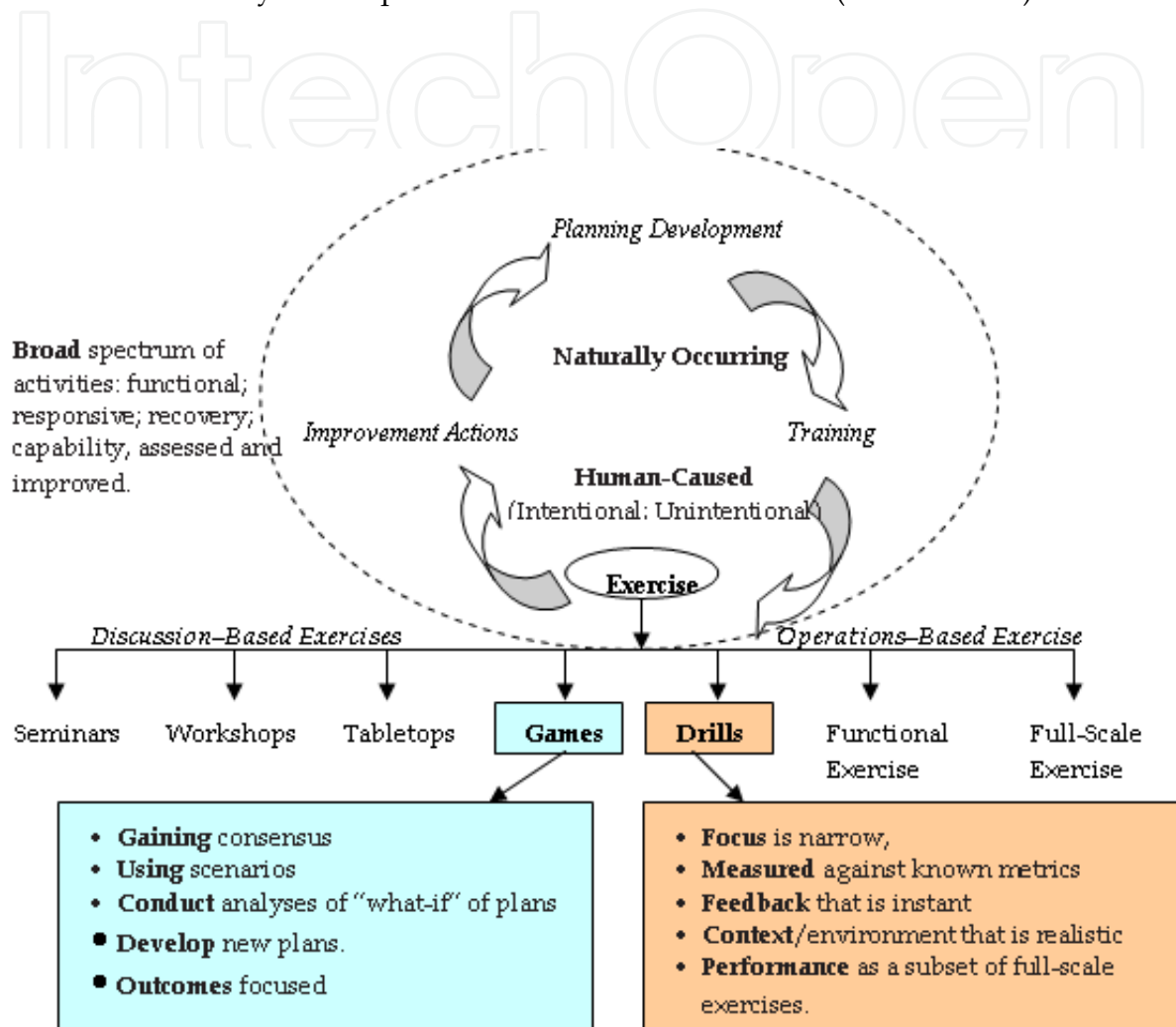


Fig. 1. Cycle of planning training, exercises, and improvement actions (NCHRP, 2006)

The basic conceptualization seems to have a relationship with traditional ‘strategic management planning (SMP) systems and processes (Fig 2). The journey commences with a continuum:

- develop drivers of reasoning might gain an human-machine evolutionary jump in achieving wisdom integrated management information system (MIS)
- data interchange (EDI) and data cube aggregation via information packets by way of human-machine interfaces (neuro-fuzzy wisdom sub-delivery engines) could exist
- Constructs are likely to be shown to exist and may act as a temporal meshing continuum of events and entities within critical decision points (Ronczka, 2006).

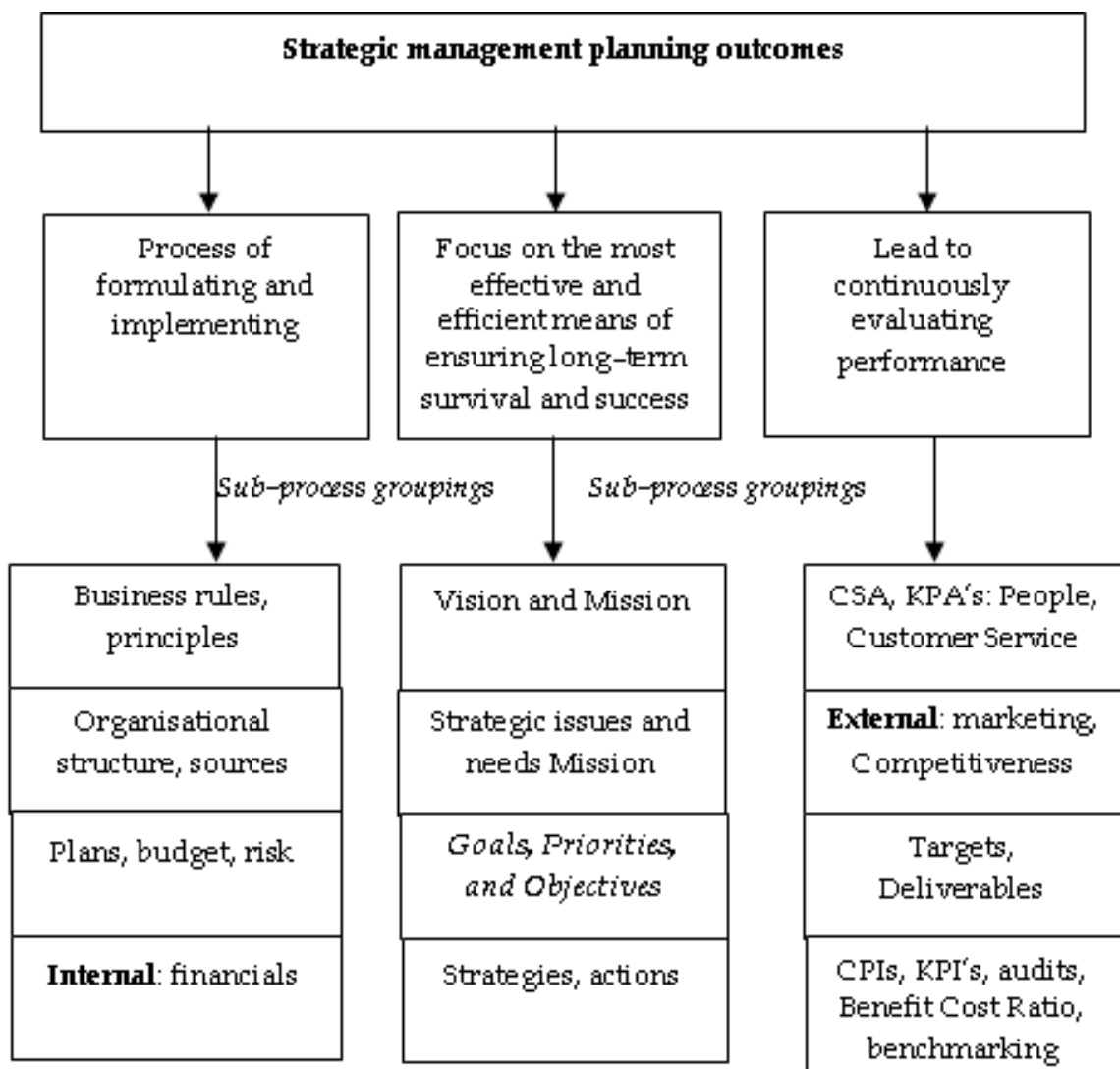


Fig. 2. How strategic management process outcomes drive domain groupings (Hawkins, 1993; Raimond & Eden, 1990; Camillus & Datta, 1991; David, 2002; CSMINTL, 2002; McNeilly, 2002; Goold & Campbell, 2002; Miller et al., 1996). Legend: Critical Success Areas = CSAs; Critical performance indicators = CPIs; Key result areas = KRA; Key performance areas = KPAs; Key performance indicators = KPIs.

The second part of the journey involves distilling the critical Theme (Conjecture) questions initially using Ackoff system of filters<sup>1</sup>:

- How did the Literature Review to get Information Theory Themes?
- Why is there variability within a 'fit-for-purpose' ethos?
- What cross platform control systems and memory exist with information-knowledge?
- When does the combining the 'logic gates' and 'event horizon' of enablers used in information-knowledge patterning?

<sup>1</sup> Ackoff system of filters: information ('who', 'what', 'where', and 'when'); knowledge (application of 'how'); understanding (appreciation of 'why') and wisdom (evaluated 'why' [e-Why]) continuum (Hobbs, 2005; Bellinger, 2004; Ackoff, 1962; Wikipedia, 2009).

- Where are highlighted the interconnected nodes and threads?
- Who is the driver of Semantics and Semiotic decision models, mapping and expressions?
- Why develop drivers to data interchange (EDI) and data cube aggregation for interfaces to help overcome impairments in Humans, weapons, Gaming (wargaming) systems?

The third I likely to involve testing using Causality:

- Context of 'Internet Technologies and Applications'
- Practical application examples to personalise the learning outcomes and the achieved competencies of participants.

Once testing has been undertaken an analysis to validate if say Semantic and Semiotic based information system is plausible initially using Ackoff system of filters:

- What are the relationships to an information interface packet?
- Where are the levels of Semantic and Semiotic packet distortion and random radicals at different scales
- How does a process undertake Semantic test?
- Who undertakes Semantics and Theory of Conversation (ToC) and its nexus
- How does a process undertake Semiotics test?
- When should base information be used?
- Why use Constructs and domains for interfaces to help overcome impairments in Humans, weapons systems, wargaming?

The basis of the methodology is to drive a paradigm shift *via a cognitive* Semantic and Semiotic interface mapping approach and strategic management planning (SMP) is a 'tool kit' help overcome impairments in Humans, weapons systems, wargaming.

#### 4. Theory

Coalescence Theory based Semantic mapping has two principle conceptualisations, that is, 'Wisdom open-system semantic identification' (WOSSI) and the existence of 'Causality Logic gates' (COR gates) for use of Human – machine interfaces (Ronczka, 2006).

Human – machine interfaces could tend to be COR gates meshed and reflected within cognitive processes that semantic – semiotic mapping assists with. Current methods have extensive notations and mathematical fractals that make it difficulty for tech managers to understand the outcomes to be met and then develop the metrics to assist in monitoring.

As a stakeholders and partners the owner – funder – managers with the developer must have clarity and a common purpose. That is, the traditionally C<sup>3</sup> (say C<sup>3I</sup>) has been 'Command – communication – control' but does not fit the current realities of 'Command – causalities – consequences' (C<sup>3N</sup>) required for transparency, clarity of purpose and having processes that met the required corporate governance (Ronczka [2], 2006).

WOSSI based on Coalescence Theory may have application to rheology of entangled, single and multiple chains to suggest biorheology logic gates - Coalescence Theory (CT) application to rheology of entangled, of single and multiple chains suggests the existence of biorheology logic gates using CT developed at the University of Tasmania. Using CT may

have plausibility in understanding the dynamics of deformation and flow of matter (rheology) as related to entanglement of single and multiple chains as possible biological logic gates (B-gate or biorheology logic gates) within bio-delivery engines and sub-delivery engines. Entanglements perhaps are the outcomes of coalescence processes and possible are part of a biologically based control systems approach. With the assistance of 'Wisdom open–system semantic identification' (WOSSI) mapping, what might be further suggested is the existence of entangled single-to-multiple chain 'causality logic gates' (COR gates). A likely outcome could be biorheology machine systems that provide SIANS (synergy, integration, assimilation narrative and synchronization) for strand-to-threads-to-chains (S2T2C), to accounts for random radicals in a dynamic continuum and achieve a human–machine partnership with enhanced biological entities (Ronczka, 2010).

## 5. Wisdom as multiple-dimensional

Lets start the journey, what is wisdom? It may be suggested to be a capability that has the outcome of decision that is likely to be based on perceived, discovered, or inferred insight (Ask, 2010).

If wisdom cannot be limited to the intellectual or cognitive domain but encompasses the whole person, it might be more important to find out what a person is like rather than what a person knows to measure wisdom. In terms of 'expert in wisdom' this might involve integration of cognitive, reflective, and affective characteristics (Table 1) (Ardelt, 2004).

Dimension	Definition	Operationalization
Cognitive	Intrapersonal and interpersonal meaning of phenomena and events with knowledge and acceptance	Ability and willingness to understand the Knowledge and acknowledge uncertainties.
Reflective	Multiple perspective perception of phenomena–entity–events from self-insight.	Ability and willingness to look at different perspectives of the phenomena and events.
Affective	Compassionate–sympathetic	Behavior toward entity and events.

Table 1. Wisdom as a three dimensional.

## 6. WOSSI - COR gates

Traditional Logic gates are the building blocks to digital logic circuits via combinational logic. This may cover mono concepts such as NOT gates (or inverters), AND gates, OR gates, NAND gates, NOR gates, XOR gates, and XNOR gates. WOSSI based Logic gate mapping tends to be a cognitive–human–machine process.

The focus of WOSSI mapping is on the nexus of WOSSI-COR gates on how they entangled single-to-multiple chain 'knowledge–information–learning domains (KILD's) using Information Theory. These entangled-single-multiple chains might exist in multiple operating dimensions as *Möbius strips* hybrid 'Biorheology causality logic gates' (B-COR gates). The B-COR tendency may be to act as a biological 'knowledge–information–learning delivery engines' (KILDEE's). Conceivably, the fusion of human–machine *Markov chain* Biorheology interfaces (Fig 3) might be the next '*Internet Technologies and Applications*' evolution (FEDEE, 2001).

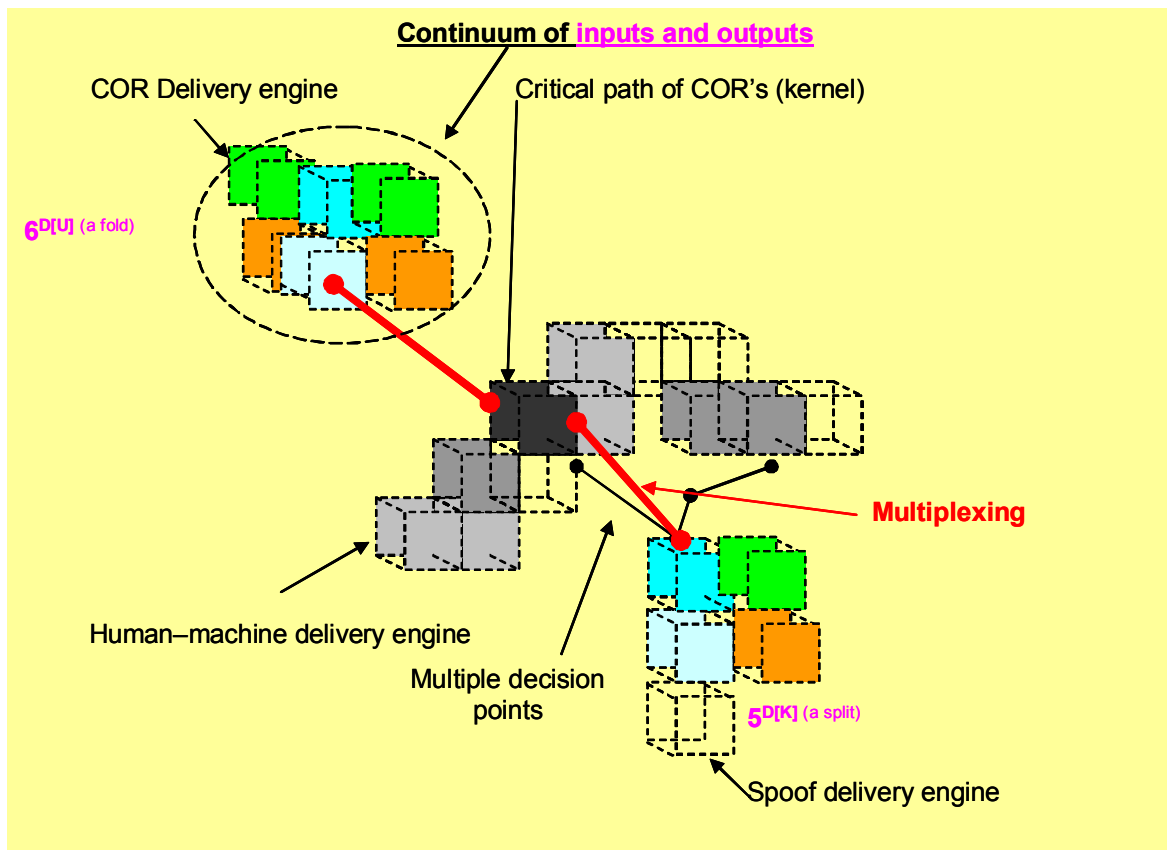


Fig. 3. Entangled-single-multiple chains – *Biorheology Markov chains* (Brand, 1993; Ronczka, 2006).

To allow validation and plausibility of the existence of WOSSI data cube embedded KILDEE packets conceptualization a process may use Information Theory, plausible hypotheses. Secondly, hypotheses could allow highlighting of WOSSI–B–COR entangled single-to-multiple chain KILD's philosophies to undergo convergence and merging at event horizons of:

- C<sup>5</sup>M ('Command – communication – control' with 'Management – causalities – consequences') (Carbonell, 1979; Ronczka, 2010).
- SIAN (Synergy, integration (Interoperability), assimilation and narratives) (Carbonell, 1979).
- BRI (Biorheological informatics: use of mathematics, statistics, and computer science approaches to study biological interfaces of life sciences (e.g. biology, genome) (Fuberlin, 2010).

WOSSI–B–COR entangled single-to-multiple chain KILD's convergence and merging as Biorheology interface hybrid access act as drivers. Conceivably the fusion of human-machine in the workplace-community may achieve life style and Health benefits. "In the workplace of the future the most important ingredients will be people and knowledge. The technologies that are mesmerizing us today will be recognised for what they really are – the embedded tools for doing business" (Goldsworthy, 2002). Semantic and Semiotic neutral nets may be a way forward for Biorheology interface hybrid access ('devices – entities – events – processes') to overcome impairments?



Within the dynamics of deformation and flow of matter (Rheology), biological logic gates (B-gates) with bio-delivery engines might be the reality for Human–machine ‘Worldwide Interoperability’ communication–conversation. Like in human communications there are misunderstanding (random radicals) that are possible within the supporting spectrums and bandwidths as they exist over multiple hybrid access interfaces.

## 7. Augmentation of systems

Augmentation of host’s and systems may focus on intellectual effectiveness, wisdom extraction and assimilation-adaptation to the users needs (*Guanxi type C<sup>3</sup>W*). Use of *Guanxi type C<sup>3</sup>W* personalised command, control and communication (C<sup>3</sup>) networks of influence could translate into impairment correction and enhancement Human-machine interfaces. The enablers are likely to be C<sup>3</sup>W Informatics Semantic temporal mapping.

In the context of mapping Artificial Intelligence (AI) and Artificial Wisdom Intelligence (AWI) appears to require development of a Semantic-Semiotic based control-language vocabulary and symbolism to translate into impairment correction to augment interoperability between biological and non-biological interface communication–conversation. This therefore suggests alternatives to augment both the biological host and non-biological AI (e.g. symbolic, connectionist; situated activity). As both the host and AI are meshing and merging processes, there could be cognitive science implications that suggests the likely existence of AI impairment that may be random radicals that adversely impact on achieving correction and enhancement of Human-machine interfaces (Engelbart, 1968; Spector, 2001).

Augmented Reality (AR) together with AI within a host (entity) may result in compounding error correction (e.g. biological host and non-biological AI Adaptive Intent-Based Augmentation System that have contra wisdom intends) with unintentional consequences. Such a augmented wisdom entity may have unique Biorheology interface entangled single-to-multiple chain KILD’s for a *Guanxi type C<sup>3</sup>W* personalised command, control and communication (C<sup>3</sup>) networks access between Human–machine ‘Artificial life derived entity replication’ (ALDER) which may be user modified (‘Artificial life guided entity replication’ (ALGER). Artificial life that is being suggested to be the bases to Human-machine interfaces tend to involve integrates motor, perceptual, behavioural, and cognitive components (Terzopoulos, 2009).

Depending on the user and systems shared understand and knowledge the communicative mechanism and intent may need C<sup>5</sup>M with SIAN to lever the required level of AR application augmentation. This augmentation may suggest need for decision caution, need for diagnosis and intervention or entity re-purposing (AIBAS, 2006; Adkins et al., 2003).

Via Informatics Medicine (definition of Informatics medicine refers to using informatics for medicinal purposes) AWI’s could be the leap beyond ‘virtual entity – person in a reality environment’ (Avatar). A version may be the ‘artificial life derived entity replication’ (ALDER) to ‘artificial life guided entity replication’ (ALGER). The may assist by augmentation of ‘human like operations’ to overcome impairment or enhance capabilities.

## 8. Delivery engines

Various logic delivery engines requires complexities in the supporting knowledge–information–learning. What may be an outcome are false negatives, confusion, or skewed interpretation (Watkins, 2000; WSU, 2003).

Delivery engine are a devices that probably is a process or series of processes or sub-delivery engines that interact for a common purpose, milestone, or outcome to achieve a specific deliverable. It is likely to have an analogy with legislative machinery within the judicial system enacted by a set of predetermined protocols when an event occurs. This machinery comes into being by the coalescence of unique trigger events, information–knowledge that has temporal meshing to facilitate a decision, event or process (WSU, 2003).

## 9. Simple causality mapping

An initial simple mapping tool is required to validate ‘proof–of–concepts’ before moving into complex mathematics and Truth Tables. A simple mapping tool facilitates adjustment of support knowledge–information–learning that might span discrete and possibly dilated entities, events and relationships in time, space, place, and tempo.

This paper therefore, put forward a plausible paradigm shift using wisdom-based open-system mapping of causality. By doing so, the blocks to digital logic circuits are broadened to provide nexus wisdom based ‘Causality Logic gates’ (COR gates; Fig 4). These gates are able to provide SIANS (synergy, integration, assimilation narrative, and synchronization) for clone strands to or with other hierarchies and hybrid gates to enable an evolutionary jump(s)<sup>2</sup>.

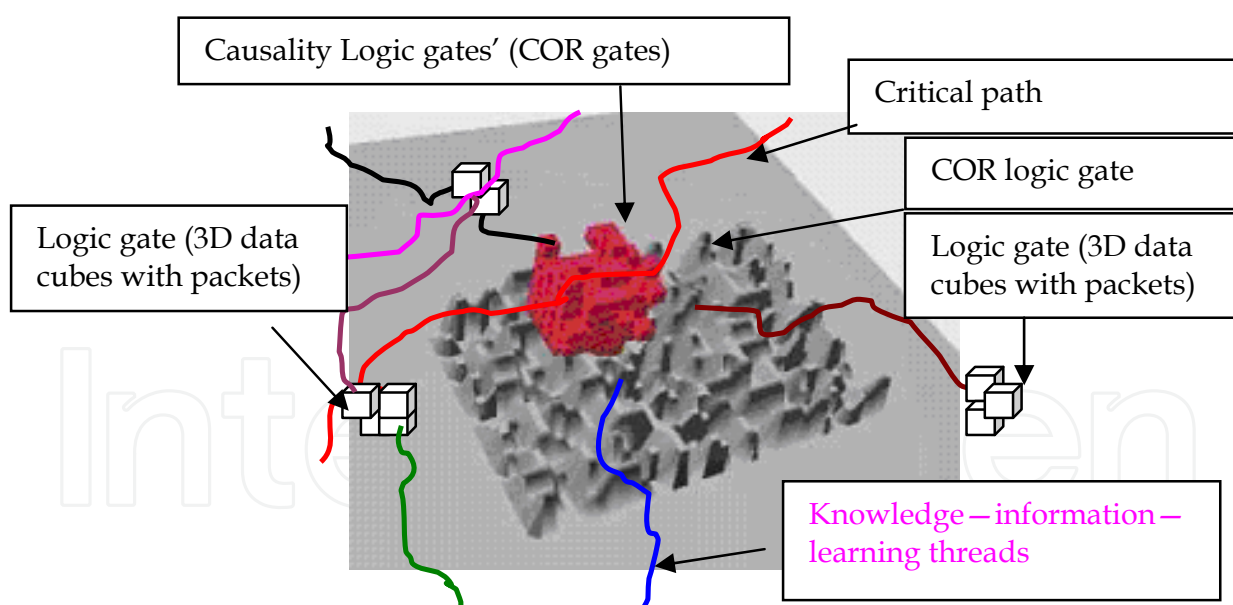


Fig. 4. Concept of WOSSI nexus ‘Causality Logic gates’ (COR gates) (Wander et al., 2004; Roh, 2006).

<sup>2</sup> Wave revolutions might be to be: First (agricultural); Second (industrial); Third (information); Fourth (overload-over-choice); Fifth (Quantum human-machines); Sixth (Unity); Seventh (Merged society?) (Dictionary, 2008; Golec, 2004).

## 10. Paradigm shift

Such an approach is the acceptance of adaptation to real world negative feedback loops with the interplay of causalities and consequences:

- Notion of mechanism of feedback
- Return to the input of part of the output'
- Negative resultant actions e.g. 'Willingness'
- Opposing the condition that triggers it (continuum)
- Output of a pathway inhibits inputs to another or the same pathway
- Control systems part of output may be 'fed back' to the system, resulting in an action-reaction in the opposite direction (Golec, 2004; Bowen, 2001).

Identification of critical paths and enablers to the existence of 'Command—causalities—consequences' ( $C^{3N}$ ) (Dictionary, 2004) e.g. 'Willingness-to-pay' or 'benefit' for a given scenario—context.

A new paradigm of cognitive adaptation is not to say that there is no nexus between the 'Command' construct in both the  $C^{3N}$  and  $C^{3T}$  mode. Causalities—consequences might act as a continuum of drivers and as such making it no longer acceptable to fund projects without a business case, being within a strategic management planning framework or having defined outcomes.

The developer has a self interest by way of ensuring a bonus is paid at the delivery stage within the projects set financials. The outcome therefore sought is to drive corporate governance; transparency with Total Quality Management (TQM), and Continuous Quality Improvement (CQI) (LeBrasseur, et al., 2002; Nüchter, et al., 2008).

## 11. People and knowledge

This is not a new concept but still provides guidance to owner—funder—managers. *"It will be knowledge that will provide sustainable competitive advantage, and knowledge is the capital of people"* ( Goldsworthy, 2002) or are likely to have radicals as drivers of uncertainty and 'Willingness-to-pay' or 'benefit' conflicts.

Simple Semantic and Semiotic mapping may be a way forward? A recent view point is provided by Dr. James Canton Institute of Global Futures CEO and advisor on Fortune 1000:

- "Despite the bleak economy and uncertain future, technology is key to our future" and
- "Tech workers and IT leaders are in a unique position to create opportunities for themselves" (Daniel, 2009).

People knowledge—information—learning management are the corner stones of any plausible  $C^3$  semantics modeling—dynamics to assist owner—funder—managers and developers as partners.

Various management and leaning styles exist that may complicate the implementation and use of ridge processes and tool sets. It is therefore appropriate to utilize a continuum approach that allows a practitioner to start and finish at any point and achieve workable outcomes such as cognitive adaptation and capabilities.

### 12. Semantic mapping

Semantic mapping (Fig 5) has variability within a ‘fit-for-purpose’ ethos (e.g. F-semantics; I-semantics). ‘Fit-for-purpose’ results in the need for cross platform control systems and memory with information-knowledge cipher-prima strings that may support families of delivery engines. Semantic mapping aids in verification, interoperability and collaborative distribution and facilitates moving from the macro, meso, micro, and quantum-nano scales within key themes (Table 2) for a given scenario – context.

Themes	Key details /Constructs
Control_semantics_promise (Coppock, 2005)	<ul style="list-style-type: none"> <li>Proposed a responsibility-based for control “shift” phenomena.</li> </ul>
Control_semantics (Kiss, 2005)	<ul style="list-style-type: none"> <li>Contrast view theory of control and non-finite complementation.</li> </ul>
Meta_semantic [Ikehara, et al., 2007)	<ul style="list-style-type: none"> <li>Logical semantic category;</li> <li>Truth items (Common Concepts);</li> <li>Semantically equivalent mapping: Truth Items.</li> </ul>
Coordination _semantic (Armarsdottir, et al., 2006)	<ul style="list-style-type: none"> <li>Mapping;</li> <li>Processes solve the interoperability emerges;</li> <li>model-Reference Ontology;</li> <li>Proposes a layered approach in the system.</li> </ul>

Table 2. Semantic Themes (Coppock, 2005; Kiss, 2005; Ikehara, et al., 2007; Armarsdottir, et al., 2006)

In summary, Semantic mapping comprises:

- Domain: “entities”
- Model: “representation”
- Ontology: “describes/ description" taxonomies)”

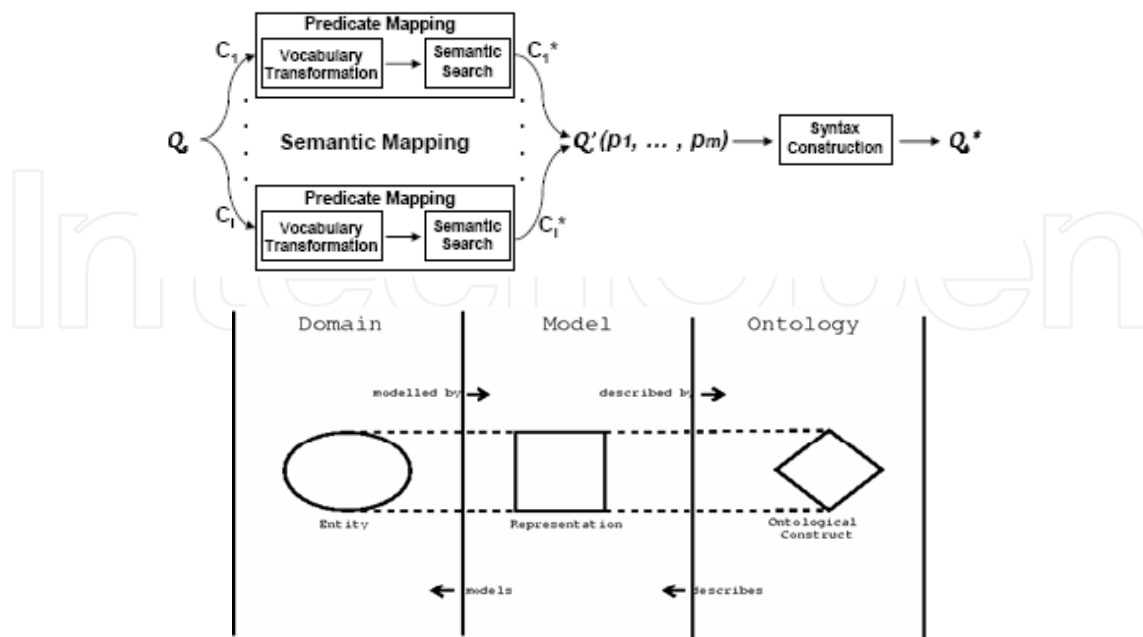


Fig. 5. Semantics modeling – dynamics mapping (He et al., 2005; Hatten et al., 1997; Wagner et al., 2005; Avery et al., 2004).

### 13. Semiotic mapping

In summary Semiotic mapping comprises:

- Object: “Immediate; dynamic”
- Sign: “representation”
- Interpretation: “Immediate; dynamic; logical”

Semiotics Themes (Fig 6) are inclined to be:

- Analysis is deemed essential for providing information and critical skills for interface and media literacy.
- Informs about a text, its underlying assumptions and its various dimensions of interpretation.
- Context with a operating-cultural structures and entities (human-machine) motivations that underlie perceptual representations.
- Offers a lens into entities (human-machine) communication.
- Sharpens the entities consciousness surrounding a given text.
- Rejects the possibility that can represent the world in a neutral fashion.
- Unmasks the deep-seated rhetorical forms and underlying codes that fundamentally shape entities realities (Ryder, 2004; Lemke, 2001).

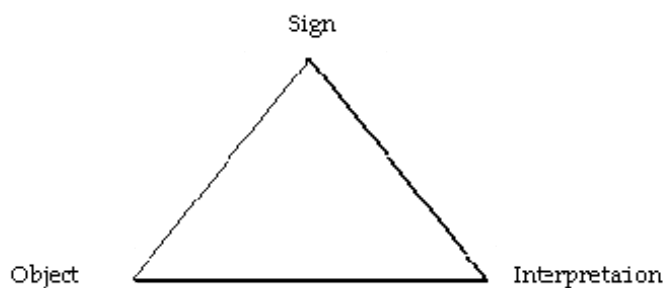


Fig. 6. Semiotoc model (Ryder, 2004; Lemke, 2001).

### 14. Guiding parameter

Essentially  $C^3$  semantics modeling—dynamics mapping is based on ‘reasoning’ and ‘understanding’ using dynamic information and knowledge domains in the context of Ackoff system of filters. An example may be a mobile machine cognitive map that may “contains, in addition to spatial information about the environment, assignments of mapping features to entities of known classes” (Uschold, 2001).

The semantic process serves another purpose to facilitate the ‘resource description framework’ (RDF) which is drawn from the traditional project management processes. If this is the commonality then  $C^3$  ‘semantic project management mapping’ (SPMM) stresses the ‘semantics’ core meaning of really ‘itself’ using knowledge—information—learning domains.

In the SPMM context there is a reliance on meaningful communication with and within dependant or independent domains that interact with various entities and events. This therefore leads to a continuum:

- Importance (specific [must]; explicit [description] or implicit [consensus]; essential [outcome to be met])
- Suitably (informally [likely] or formally [will])
- Processing (human or machine or both)
- Freedom of action (operating space; Limitation; restrictions; boundaries; opportunities; risk)
- Causality (facts; assumptions; criticality)
- Consequence (deductions; shape; course of actions; areas of interest) coalescences of delivery engines for a given scenario – context.

## 15. Graphic notations

A graphic notation tends to be cognitive by nature and as such is a feature of a semantic network or network. As an enabler, what is suggested is representing information-knowledge domains with patterns and symbols. By doing so the various management and learning styles are able to be accommodated. Additionally, what are highlighted are interconnected nodes and threads with alignments with philosophy, psychology, and linguistics (Sowa, 2006).

So what should it be F-semantics, I-semantics or a hybrid? F-semantics that is, the semantics is deterministic: no stable models or well-founded model is empty, but is meaningful. I-semantics namely lexical semantics: no principled reason to restrict being an ad hoc stipulation or satisfying declaratives for agent programs or a hybrid? (Phan Luong, 1999; Tancredi, 2007; Eiter et al., 1999).

## 16. Command and control

Command (to direct with specific authority) and Control (to exercise restraint or direction over (Dictionary, 2008) system theme have a nexus:

- Context: must be the same for all entities (human-machine) and tests
- Controlled: variables are important than if dependent or independent
- Isolate: the controlled variables as may lead to ruining the experiment
- Experimental design: manipulating one variable, the independent variable, and studying how that affects the dependent variables
- Control group: to give a baseline measurement for unknown variables
- Factors-characteristics: must be known control potential adverse influences on the results (separation between controller and the system)
- Causality: cause-effect upon the results must be standardized, or eliminated, exerting the same influence upon the different sample groups.
- Analysis: statistical tests have a certain error margin as such repetition and large sample groups should minimise the unknown variables.
- Consistency-systematic: via monitoring and checks, due diligence will ensure that the experiment is as accurate as is possible (Kiss, 2005)
- Consequence: can refer to a good or a bad result of your actions – knowledge – information – learning (Ask, 2010).
- Reasoning: A cognitive process of looking for reasons for beliefs, conclusions, actions or feelings (Deductive reasoning [support that conclusion]; Inductive reasoning

[phenomenal patterns]; Abductive reasoning [attempt to favour]; Fallacious reasoning [fallacy] (Ask, 2010)..

Control system in summary can be considered a “system in which one or more outputs are forced to change in a desired manner as time progresses; Interconnections of components forming system configurations which will provide a desired system response as time progresses” (Ask, 2010).

## 17. Semantic mapping and Theory of Conversation

Drawing from traditional Theory of conversation (Fig 7) and Semiotic and Semiotic temporal mapping. This nexus allows the development of ‘Command–communication–control’ (C<sup>3</sup>) interfaces with complementary explicit and implicit considerations associated with the realities of ‘Management–causalities–consequences’ (MC<sup>2</sup>) (Tables 1 and 2) (Joslyn, 2001).

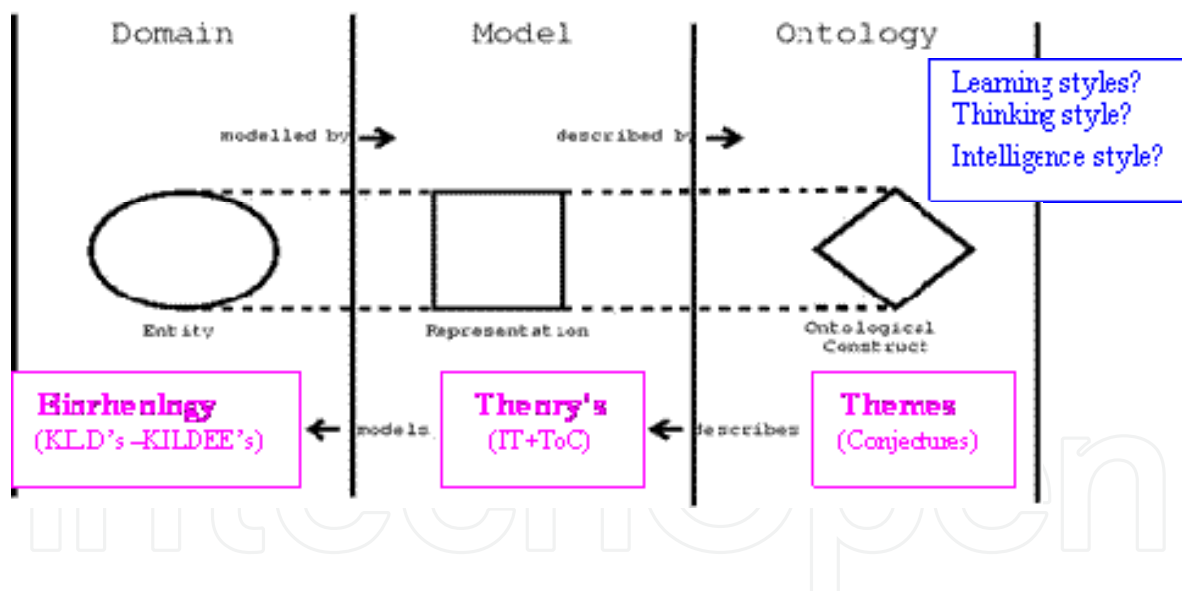


Fig. 7. Semantic mapping and Theory of Conversation (Wagner, et al., 2005; Avery, et al., 2004).

Theory of Conversation (ToC), have the following key domains (Fig 8):

- Long term memory (LTM).
- Captured in conversational to consequences (CAC)
- Short term memory (STM)
- Mixed-Initiative Conversational System (MICS) (Carbonell, 1979)

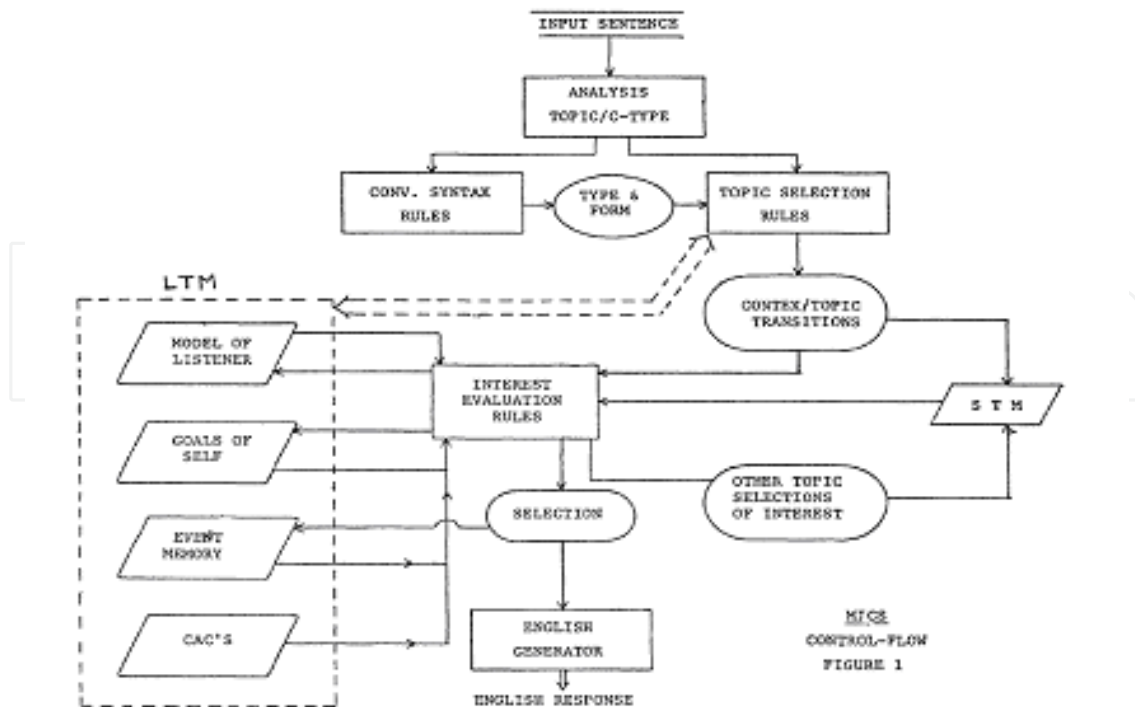


Fig. 8. Theory of conversation (Carbonell, 1979).

## 18. Wisdom open–system semantic identification (WOSSI)

### 18.1 What is WOSSI?

The 'Wisdom open system semantic intelligence' (WOSSI) is essentially a 'wisdom' mapping systems that fundamentally allows wisdom to be identified from the lower order delivery engines and sub–delivery engines information, knowledge, reasoning and understanding in an open-system (may be additionally known as open-source) (Ronczka, 2006). 'Wisdom abstraction virtual intelligence' (WAVI) threads tend to have variable bandwidth within and between the connecting and interconnecting COR logic gates.

### 18.2 Information—knowledge—domains'

These COR logic gates act as 'knowledge-through-to-wisdom' (KTTW) delivery engine(s) and sub–delivery engine(s). These engines contain sub-COR logic gates (CORS) within and with specific 'memory open-system semantic yielding' (MOSSY) information domains accessed any 'place-time-way' C<sup>3</sup>M<sup>3</sup>. Plausibly WAVI 'wisdom–information–knowledge–domains' (WIKED) exists in multi-dimensions and may be dilated and temporal. They can exist in both the virtual and actual reality with causality and can be identified by the Ackoff system of filters to drive augmented wisdom with common sense systems via cause–effect; inputs–outputs and desire outcomes.

### 18.3 WOSSI drives biorheology 'Causality Logic gates'

*Wisdom open-system semantic identification* (WOSSI) is a mapping system that allows identification of wisdom from the lower order delivery engines information, knowledge, reasoning, and understanding in an open-system. WOSSI mapping has the outcome of



minimising the influence of ‘de Montaigne’ paradoxes (negative outcomes: ‘*nothing is so firmly believed as that which we least know*’ (Lin, 2003 ; Collins, 2002)) and providing foresight based on knowledge–information–learning delivery engines (KILDEE’s). Therefore CT used within WOSSI drives the development of KILDEE’s to suggest the existence of ‘biorheology causality logic gates’ (B-COR gates) (Answers, 2010; Senese, 2005; Ronczka, 2009).

#### **18.4 Causality logic gate themes**

This covers themes that are put forward in the general literature within the causality logic gates context maybe suggested being ‘Decomposition’ to ‘Enablers’.

##### **18.4.1 Decomposition**

The logic decomposition uses standard-C architecture for complex gates to promote optimization (Kondratyev, 1999).

##### **18.4.2 Discrete**

Discrete space-time, but discrete space-time tends not to be quantum, as C drives Boolean logic and might not allow cycles but does suggest mapping quantum space-time into proto-space-time via XOR gates (Zizzi, 2003).

Researchers from Kondratyev, Cortadella, Kishinevsky, Lavagno and Yakovlev (1999) through to Zizzi (2003) and Schneider, Brandt, Schucle and Tuerk (2005) have looked at relationships with logic gates.

Causality cycles between systems, preconditions, and “that stronger notions of causality are reasonable, as long as they retain the relation between stabilization of circuits, existence of dynamic schedules and constructive programs” (Schneider, 2005).

##### **18.4.3 Complementary–symmetrical**

Effect of logic circuits based on Markov random fields in Complementary metal–oxide–semiconductor (CMOS) occur using ‘complementary–symmetrical’ (C-S) pairs for logic functions and the need for a paradigm shift (Nepa, 2006).

Logic gate need a level of simulation that provides comparable accuracy and control of events without expensive code pre-processing (Riepe et al., 1994). Digital circuits known as combinational circuits occur with cycles (Riedel et al., 2003).

##### **18.4.4 Decisions**

Binary decision diagrams allow Boolean function computations (Schneider et al., 2005).

Boundaries, surfaces and gaps exist between gates that that may lead to random radicals. This may lead to spoofing and making the circuit behave in combination with externality gates not within the desired operating space or bandwidth parameters (Neiroukh, 2006).

#### 18.4.5 Synthesized and adaptability

Synthesize connections via additional gates may occur as an outcome of disconformities within the semantic model and coding (Chung, et al., 2002).

#### 18.4.6 Reasoning

Logic (reasoning) circuits with logic gate inputs and outputs with associated Truth Tables to develop a reasonable or logical conclusion based on known information (NAVEDTRA, 1998).

To provide a plausible avenue for the development of new ideas and paradigm shifts in digital circuit logic gates does one 'return to the future' by drawing on Aristotelian logic or Non-Aristotelian Logic. (Alder, 2004).

Another way forward might be to remain sceptical and focus on plausible conjectures based on deductive logic strands covering propositional, contemporary, and traditional through to monadic and dyadic. An Ockham's razor approach may have simple logic symbols: negation ( $\sim$ ), conjunction ( $\&$ ), inclusive disjunction ( $\vee$ ), exclusive disjunction ( $\otimes$ ), conditional ( $\supset$ ) and bi-conditional ( $\equiv$ ) (QSA, 2004).

#### 18.4.7 Enablers to Logic

Logic gate development has enablers that have critical path KILDEE's using Information Theory. The KILDEE's could tend to be 'devices – entities – events – processes' (DEEP) that in turn interact within a series of sub-DEEP (sub-delivery engines). Another could be that KILDEE's might be inclined to interact with say area network WIKED's within a specific context or series of constructs to achieve specific deliverable.

### 19. Coalescence Theory and biorheology

Coalescence Theory (CT) states: "in a situation where entities, events, actions, reactions, interactions and other influences are interlinking, they will cluster together as a unique construct and then may form a system of unique constructs within a unique, three-dimensional space continuum that is 'goeey-dough-like'" (Ronczka, 2006). In Table 3 the supporting hypotheses have been detailed (Table 3) as they are likely to apply to biorheology (Answers, 2010; Senese, 2005).

CT-SMP Hypothesis	Biorheological		
	Plasticity	Non-Newtonian fluids	Biological
1. Constructs emerge as unique	Y	Y	Y
2. Constructs could stay unique	Y	Y	Y
3. Constructs have bonds	Y	Y	Y
4. Might have a common vector	Y	Y	Y
5. Strongest bond, at the pivot point	Y	Y	Y
6. Profile changes	Y	Y	Y
7. Uniqueness decay likely	Y	Y	Y

Table 3. CT-SMT hypotheses as they apply to Biorheology (Answers, 2010; Ronczka, 2006).

Biorheological categorisation are:

- Plasticity: which describes materials that permanently deform after a large enough applied stress including the ability to retain a shape attained by pressure deformation and the capacity of organisms with the same genotype to vary in developmental pattern, in phenotype, or in behaviour according to varying environmental conditions (Answers, 2010; Merram-Webster, 2010).
- Non-Newtonian fluid: Compare with Newtonian fluid: A fluid whose viscosity changes when the gradient in flow speed changes. Colloidal suspensions and polymer solutions like ketchup and starch/water paste are non-Newtonian fluids (e.g. ketchup, blood, yogurt viscosity). What is the determinate is the coefficient of viscosity: The resistance a liquid exhibits to flow. Experimentally, the frictional force between two liquid layers moving past each other is proportional to area of the layers and the difference in flow speed between them (Answers, 2010; Merram-Webster, 2010).
- Biological: relates to biology or to life and living processes (Answers, 2010; Merram-Webster, 2010).

## 20. Temporal entanglement mapping

### 20.1 Temporal mapping

This is essentially a visual aid for simplifying an expression; function; entities; events; interactions – to – influences over a time interval (Gregersen et al., 1998).

### 20.2 Entanglements (single-multiple) associated with Packets

There tend to be three domains to an entangled packet format:

- Describes what each type of packet looks like
- Tells the sender what to put in the packet
- Tells recipient how to parse the inbound packet (ANU, 2010)

In terms of entanglements (single-Multiple) associated with Packet Semantics the domains are:

- Sender and recipient must agree on what the recipient can assume if it receives a particular packet
- What actions the recipient should take in response to the packet
- May be described using a Finite State Machine (FSM) which represents the transitions involves in the protocol (ANU, 2010).

What are Semantic and Semiotic entangled–single–multiple chains based on:

- Complexities in the supporting knowledge – information – learning domains
- Multiple operating dimensions as *Möbius strips*
- 'Biorheology causality logic gates' (B-CORG)
- Biological–machine 'knowledge – information – learning delivery engines' (KILDEE's)
- Unique trigger events, information – knowledge that has Biological – *machine* temporal meshing
- Fusion of human – machine via *Markov chain* B-CORG Biorheology interfaces = evolution.

## 21. Interfaces

To assess interface effectiveness an Heuristic Evaluation is utilised as prime metrics:

- Visibility of system status: system with feedback within reasonable time.
- Consistency and standards: system follow conventions?
- User control and freedom: system offers control when mistake made?
- Flexibility and efficiency of use: system is flexible and efficient?
- Recognition rather than recall: system assists user to remember information (Sambasivan et al., 2007)?

What is suggested is that the concepts of user interface design ideally allows:

- Changes in State: for flexible exploration of the content through a variety of controls
- Closure: concept of closure of information within a learning environment
- Information Access: provides users information access with the controls to conduct deliberate searches
- Interactive Tools for Interactive: tools for interacting with the information
- Interface Consistency: users' ability to "scroll around" within text and audio segments
- Media Integration and Media Biases: more easily explained
- Metaphors: what information is contained
- Modelling the Process and Coaching the User: coaching the user
- Progressive Disclosure: keeping information within learning environment
- Searchability and Granularity: how chunks of media are stored
- Unfamiliar Territory: provide users with visual or verbal cues
- Visual Momentum: maintains a user's interest
- Way Finding: user verbal and symbolic information
- Selection Indicators: marks a user's selection of information
- Control Types: interaction controls
- Tool Availability: presenting users with interaction mechanisms (Jones et al., 1995).

### 21.1 Semantic interfaces

The Semantic interface has specific requirements:

- Effective: means of communication which has proven itself in practice?
- pre-established: human-defined ontology rely upon?
- Communication: can only proceed by the interpretations of behaviours, common behaviours? (Wagner et al., 2001; Eiter et al., 1999; Phan Luong, 1999).

### 21.2 Semiotic interfaces

The Semiotic interface has specific requirements:

- Metaphor: such as a new idea is created from the fusion of the two original ideas, or our understanding of the first idea
- Mental models: that are cognitive based for human-computer interaction
- User System usage comprises: D1: concepts the user knows and uses; D2: concepts used only occasionally and not initially known; D3: the user's model of the system (i.e. the set

of concepts the user *thinks* exists in the system); D4: the actual system (Joslyn, 2001; AIBAS, 2006; CSCS, 2004).

### 21.3 Biological interfaces

Biological interfaces tend to drive:

- preloaded firmware a feature of the biological entity
- Spoofing (rejection rates; skewed data-actions; random radical events?)
- Entity-event-data cascade (coalescence Theory)
- Cognitive: a visual focus due to eye construction - 3D mapping temporal dilation (version of atom structure). (Carbonell, 1979; Adkins et al., 2003).

### 21.4 Administrative Web Interface (AWI) for telecommunications

An administrative web interface provides for:

- Browse database, account management, orders and repairs
- Security and screening user profiles
- Administer "special users" (e.g., forum moderators) to Online Account Management (OAM)
- Create and edit applications and app versions including Off campus access
- Send mass email to users
- Recording malfunctioning hosts
- Distribution of how many Flops used
- Cancelling user access and work units
- View recent results, metrics and analyze failures
- Browse stripcharts and system flowcharts
- Browse log files (BOINC, 2007).

## 22. Results

Information and Causality Logic Gate Themes, as an initial stage, a review starts with statements and conjectures about what the literature considers Information Theory and Causality logic gates to be. The outcome required was the establishment of common themes that aid any 'place-time-way' C<sup>3</sup>M<sup>3</sup>.

### 22.1 Themes

Using Ockham's razors, Information Theory, and Causality logic gates enables themes to be filtered (Table 4).

These Themes appear as a continuum (Tables 4 and 5) that could be further clarified through the Theory of conversation shown in Fig 6.

### 22.2 Logic gates - blocks

Possible circuit construct blocks and plausible within Logic gates using the highlighted themes (Table 6).

Statement	Information Theory Themes (Conjectures)	Causality logic gate Themes (Conjectures)
The theory of the probability of transmission of messages with specified accuracy when the bits of information constituting the messages are subject, with certain probabilities, to transmission failure, distortion, and accidental additions (Answers, 2008) at different scales (Macro-to-quantum)	Message	Decomposition
	Transmission	Discrete
	Processing	Complementary-symmetrical
	Parameters	Decisions
	Conditions	Synthesized and adaptability
	Limitations	Reasoning
	Foresight	Enablers to logic

Table 4. Title of table, left justified Information Theory – causality logic gate themes (CSCS, 2005; Wikipedia 2008; Mei, 2008).

Key References	Combining the 'logic gates' and 'event horizon' (C <sup>5</sup> M-SIAN - BRI) as subject key words	Themes (Conjectures)
(Kremer, 1998; NSF, 2004; Brand, 1993; <b>Ronczka, 2006</b> ; Sturm, 1994; Wikipedia; 2009; Antsaklis, 1997; Sowa, 2006; Carbonell, 1979; Coppock. 2005; Schneider et al., 2005; Nepa, et al. 2006; Wikipedia, 2009; Riepe et al., 1994; <b>Als, 1999</b> ; Bellinger, 2004	information; data; binary digits	Message
FEDEE, 2002; Kremer, 1998; NSF, 2004; Brand, 1993; <b>Ronczka, 2006</b> ; Sturm, 1994; Wikipedia; 2009; Antsaklis, 1997; Carbonell, 1979; Kiss, 2004; Kondratyev et al., 1999; Wikipedia, 2009; Schneider, et al., 2005; <b>Als, 1999</b> ; Bellinger, 2004	signal; code, transmit, event; decode; patterns; state; communication; generate; destination; receive	Transmission
Kremer, 1998; Brand, 1993; Sturm, 1994; Wikipedia; 2009; Wikipedia; 2009; Sowa, 2006; Carbonell, 1979; Coppock. 2005; Phan Luong, 1999; Tancredi, 2007; Zizzi, 2003; Schneider et al., 2005; Wikipedia; 2009; Schneider, et al., 2005; <b>Als, 1999</b> ; Bellinger, 2004	medium; device; source, destination, channel; capability; amount; capacity; storage; control; content; compression; detection' learning; acquisition; strings; computation	Processing
Kremer, 1998; Brand, 1993; Wikipedia; 2009; Wikipedia; 2009; Antsaklis, 1997; Carbonell, 1979; Coppock. 2005; Kiss, 2004; Phan Luong, 1999; Tancredi, 2007; Eiter et al., 1999; Zizzi, 2003; Schneider et al., 2005; Nepa, et al. 2006; Wikipedia; 2009; Riepe et al., 1994; Riedel et al. 2003; Schneider, et al., 2005; <b>Als, 1999</b> ;	measurement; mathematical; observation; rates, properties; statistical, quantification; methods; characters; assumptions; logical; semantic; relationship; category; constructs; definition; redundancy	Parameters

Bellinger, 2004		
FEDEE, 2002; Kremer, 1998; Wikipedia; 2009; Coppock. 2005; Schneider, et al., 2005; Bellinger, 2004	conditional; entropies; equivocation; conditions; optimal	Conditions
FEDEE, 2002; NSF, 2004; Brand, 1993; Sturm, 1994; Wikipedia; 2009; Antsaklis, 1997; Sowa, 2006; Carbonell, 1979; Coppock. 2005; Tancredi, 2007; Zizzi, 2003; Wikipedia; 2009; Riepe et al., 1994; Riedel et al. 2003; Schneider, et al., 2005; Bellinger, 2004	uncertainty; ambiguity; failure; distortion; additions; problems; random noise, beyond control; complexity; limitations; nonsense; improbability; negative feedback; random variable; ergodic; error; disorder	Limitations
NSF, 2004; Brand, 1993; Sowa, 2006; Carbonell, 1979; Kiss, 2004; Kondratyev et al., 1999; Tancredi, 2007; Eiter et al., 1999; Wikipedia; 2009; Riepe et al., 1994; Riedel et al. 2003; Bellinger, 2004	probabilities; prediction; selection, perception, memory; decision making; performances; choice; testing; accuracy; reliability; skills; analysis; determination; application; synonyms; simulations	Foresight

Table 5. Literature Review to get Information Theory Themes.

<b>Causality logic gate Themes (Conjectures)</b>	<b>Traditional Logic gates (Collins, 2002; Als, 1999)</b>	<b>Input to output connectivity (Collins, 2002; Als, 1999)</b>	<b>Valid Building Blocks (Collins, 2002; Als, 1999)</b>
Decomposition	NOT [inputs opposite to output]	single input; single output	output to input; no cycles circuits
Discrete	AND [1 if both inputs 1]	two input; single output	output to input; no cycles circuits
Complementary-symmetrical	OR [0 if both inputs 0]	two input; single output	output to input; no cycles circuits
Decisions	NAND [-1 if both inputs -1]	two input; single output	output to input; no cycles circuits
Synthesized and adaptability	NOR [-0 if both inputs -0]	two input; single output	output to input; no cycles circuits
Reasoning	XOR [1 if both inputs opposite]	two input; single output	output to input; no cycles circuits
Enablers to logic	XNOR [1 if both inputs same]	two input; single output	output to input; no cycles circuits

Table 6. Causality themes – logic gates – blocks

Venn diagrams, Boolean algebra and Karnaugh maps (K map) may be developed for all logic gates detailed within Table 6 to detail operations. Fig 7 details a traditional Venn diagrams for NAND Equivalent Circuits stressing the input to output relationship. If logic gate Kernels are on the critical path the WOSSI concept can be used to highlighted them (Fig 9) (Collins, 2002; Als, 1999).

The feature that stands out is that the COR's occur as required any 'place-time-way' C<sup>3</sup>M<sup>3</sup>. COR's and not mono, they will find the cross platform control systems and memory with information-knowledge cipher-prima strings that may support families of delivery engines to achieve the desired outcome. The analogy may be from project management and the use of critical paths for the tasks and required resources.

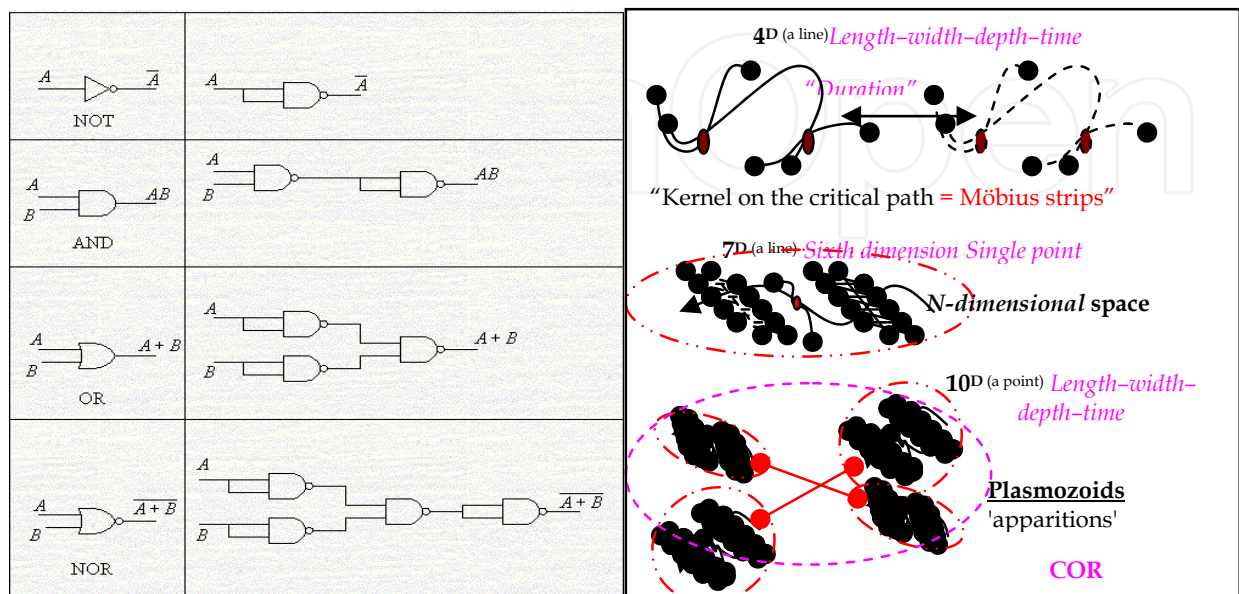


Fig. 9. NAND Equivalent Circuits Concept of WOSSI (COR gates) Logic circuit for function  $\overline{AB} = \bar{A}\bar{B}$  i.e. the complement of "A NAND B" (Collins, 2002; Als, 1999).

**22.3 Symptoms– immediate cause– remote cause**

A further refinement could be by providing a level of causality (Table 7), and relationship association. This is likely to indicate how useful the information might be considered and tested with an Ockham's razor outcomes aligned to causality (Carbonell, 1979; Wagner et al. 2005).

Causality logic gate Themes (Conjectures)	Symptoms	Immediate cause	Remote cause
Decomposition	Symptoms	—	—
Discrete	Symptoms	—	—
Complementary-symmetrical	—	Immediate cause	—
Decisions	—	Immediate cause	—
Synthesized and adaptability	—	—	Remote cause
Reasoning	—	—	Remote cause
Enablers to logic	Symptoms	—	—

Table 7. Causality Themes –logic gates – Causality.

A note on Causality: Symptoms: Affects–factors specific to an event or occurrence. Immediate cause explains why the event or occurrence has occurred. Remote cause may explain why the event or occurrence has occurred (Carbonell, 1979; Wagner et al., 2005; Hobbs, 2005; Bellinger, 2004; Mei, 2008; Ackoff, 1962; Wikipedia, 2009).



## 22.4 Wisdom open–system semantic identification

A paradigm shift occurs in the mapping of digital circuits by using ‘Wisdom open–system semantic identification (WOSSI) mapping (Figure 8). This paradigm shift aligns more to project management and the use of critical paths and acceptance of random radicals. Schneider et al. (2005) work provides the foundations to move forward using the declared series of Theorems.

A question that is simple in nature from a colleague “what are you trying to do” leads to some form of cognitive interchange that semantics is an enabler. Cognitive influence of ‘de Montaigne’ paradox affects the outcomes of mapping and the practitioner’s determinations.

### 22.4.1 Achoff filters

Achoff filters (Table 8; Figure 5) coalescence suggesting further alignment between causality, wisdom and Logic gates and scribing of the critical path. The KILDEE threads traced out the aligning WIKED’s via control system mapping of logic gates and multiplexing.

Causality logic gate Themes (Conjectures)	Information (I)	Knowledge (K)	Understanding (U)	Wisdom (W)
Decomposition	When	–	–	–
Discrete	–	How	–	–
Complementary-symmetrical	–	–	Why	–
Decisions	Who	–	–	–
Synthesized and adaptability	Where	–	–	–
Reasoning	What	–	–	–
Enablers to logic	–	–	–	e-Why

Table 8. Causality Themes - Achoff Filters

### 22.4.2 WOSSI map

Fig 10 details the likely WOSSI circuits and continuum that forms a COR logic gate that may exist in multiple operating dimensions as ‘U’ and ‘W’ or hybrids. The COR act as ‘knowledge-through-to-wisdom’ (KTTW) delivery engine(s) to give plausibly equivalent circuits sets of ‘wisdom–information–knowledge–domains’ (WIKED). The concept of causality could be uncertain at the Planck scale in tracing the critical path memory.

## 22.5 WOSSI delivery engine of COR logic gates

Metrics suggest ‘memory open–system semantic yielding’ (MOSSY) that does not contravene the rules associated with Truth table but are 3 by 3 by 3 matrices (three-four dimensional considering time dilation). This enables the COR’s to multiplex a number of WIKED’s in support of critical path KILDEE threads (Fig 11).

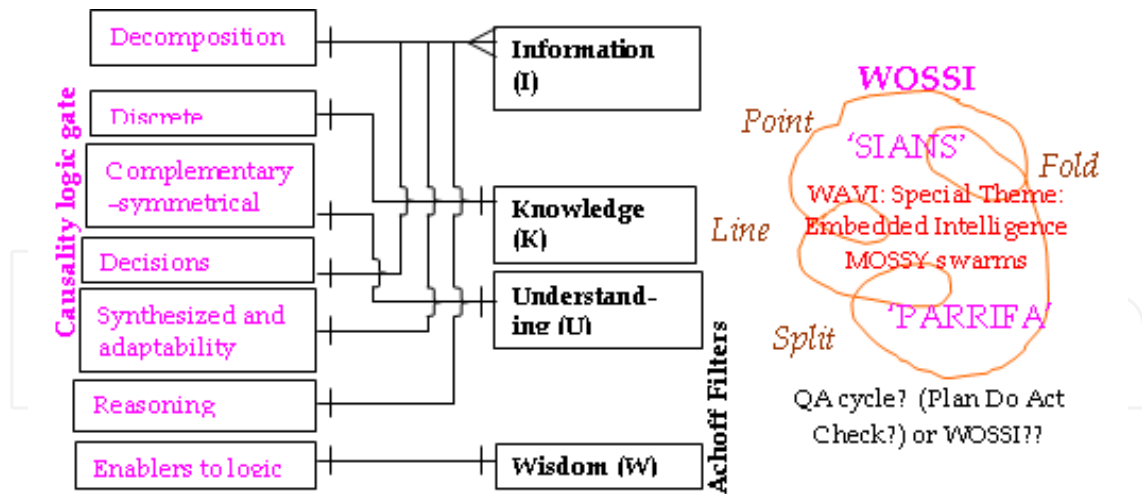


Fig. 10. WOSSI map of simple relationships and attributes (Mei, 2008; Ackoff, 1962; Wikipedia, 2009; Wikipedia, 2009).

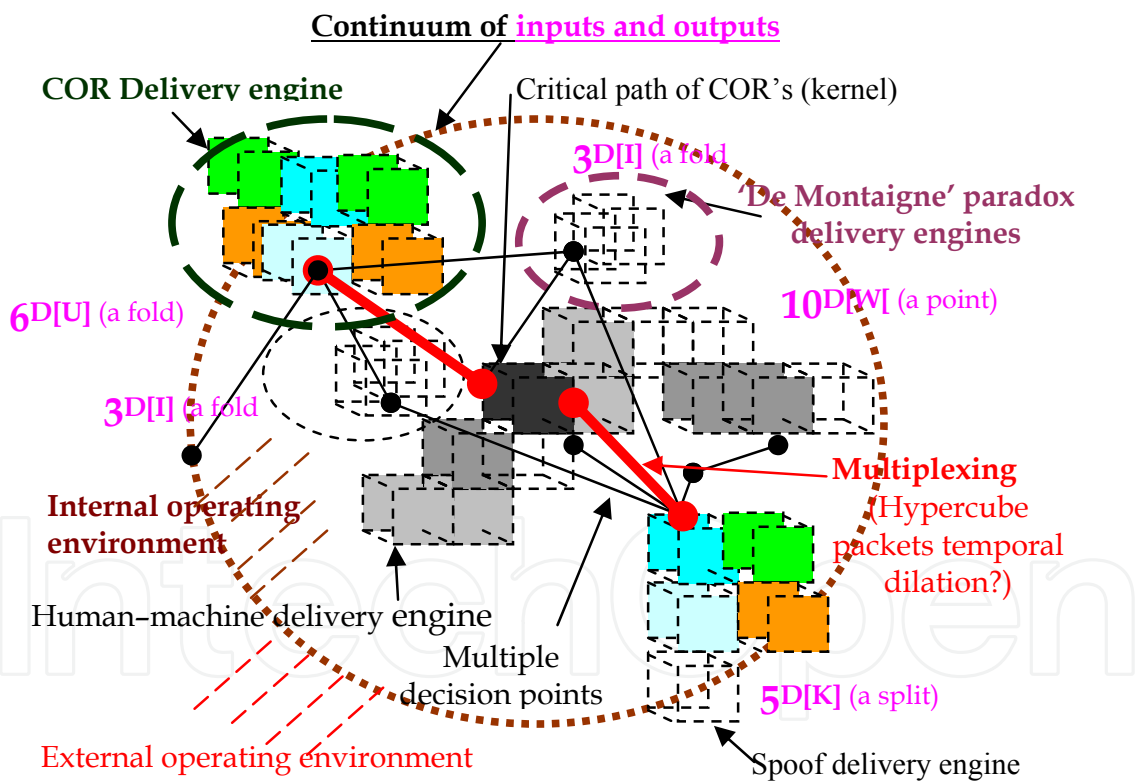


Fig. 11. WOSSI map (COR gates) Logic.

### 22.6 Plausible C<sup>3</sup>

The fundamental question may be “*what’s in it for me*”. In the financial context, it perhaps is shares of the bonus at the end of the project. An undesirable outcome would be complexity followed by more complexity.

Unintended consequences of an expeditionary cultural mentality might be a diminished rather than enhanced 'Command–communication–control' (C<sup>3</sup>T). The bonus could be lost due to a skewed semantic C<sup>3</sup> entity constructs or scenario (Bellinger, 2004; CSCS, 2005).

## 22.7 Semantic mapping

The conceptualization assists in tracing the critical path memory using semantic mapping. Semantics utility is in how one infers a relationship between the signs of an event or entity and the things they refer to (Chung, 2002). Semantic mapping (Fig 12) has been undertaken with Guiding parameter and Achoff filters.

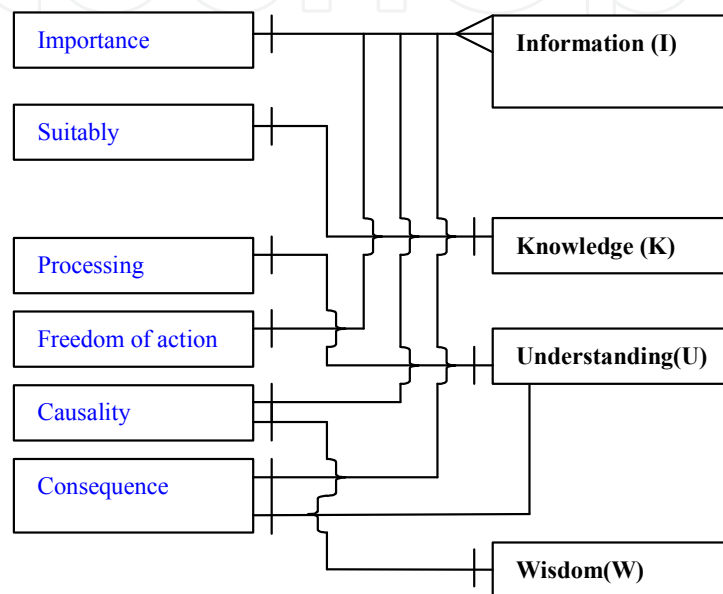


Fig. 12. Semantic map of simple relationships and attributes continuum (Schneider et al., 2005; Neiroukh, 2006; Chung, et al., 2002; NAVEDTRA, 1998; Wikipedia , 2008).

Notation used between domains (entities), models (representation) and Ontology (describes; description; taxonomies):

- No relationship
- Single relationship or Unique trigger events
- Many relationships or trigger events
- Single entanglement
- Multiple entanglement
- Multiple operating dimensions as *Möbius strips*
- Hypercube
- Causality
- Ackoff system of filters

## 22.8 Causality logic

Table 9 details the linkage of guiding parameter as 'delivery engine domains' within a causality framework. There appears to be immediate cause alignment with causality and consequence.

Guiding parameter	Symptoms	Immediate cause	Remote cause
Importance		–	Remote
Suitably	Symptoms	–	–
Processing	Symptoms	–	–
Freedom of action	–	–	Remote
Causality	–	Immediate	
Consequence	–	Immediate	

Table 9. Guiding parameter – Causality.

Causality within a medical context focuses on:

- Symptoms: effects – factors specific to an event or occurrence
- Immediate cause: explains why the event or occurrence has occurred
- Remote cause: may explain why the event or occurrence has occurred (Riepe et al., 1994; Riedel et al., 2003).

## 22.9 Achoff filters

Achoff filters coalescences (Table 10) suggests a further alignment between causality, consequences, and semantics for a given scenario – context.

Guiding parameter- DED	Information (I)	Knowledge (K)	Understanding (U)
Importance	When	–	–
Suitably	–	How	–
Processing	–	–	Why
Freedom of action	Who	–	–
Causality	Where	–	–
Consequence	What	–	Why

Table 10. Guiding parameter – Achoff Filters.

Achoff system of filters focus on::

- Information: ‘who’, ‘what’, ‘where’, and ‘when’
- Knowledge: application of ‘how’
- Understanding: appreciation of ‘why’
- Wisdom: evaluated ‘why’ or ‘e-Why’ (Riepe et al., 1994; Riedel et al., 2003; Schneider et al., 2005; Neiroukh, 2006; Chung, et al. 2002; NAVEDTRA, 1998).

Validates via Achoff system of filters as ‘conjectures’ (inferences)?

- Information: knowledge communicated
- Knowledge: acquaintance with facts
- Understanding: comprehension process
- Wisdom: judgment as to action; or insight
- Application: special use or purpose
- Appreciation: perception; recognition
- Evaluate: worth, or quality of; assess.

## 23. Discussion

Logic gate and WOSSI mapping has a predisposition to be semantics by nature and therefore tends to be a biological-cognitive-human-machine process. As such, the associated mechanisms and tools perhaps could be influenced by the 'de Montaigne' paradox, and causality – consequence creep. Traditional Logic gates are the building blocks to digital logic circuits via combinational logic that provides the foundations to move to B-COR gates. This has therefore required the need to draw from the solid foundations provided by traditional mono gate concepts such as NOT gates (or inverters), AND gates, OR gates, NAND gates, NOR gates, XOR gates, and XNOR gates (Lin, 2003; Als, 1999).

Plausible B-COR gates may be based on KILDEE's that have a common entangled-single-multiple chain themes such as '*any-place-any-time-any-way*' '*Command – communication – control*' of '*multiple – multiplexing – machines*' (C3M3). Pushing the conceptualisation further, B-COR gates possibly will exist in multiple dimensions with temporal KILDEE's *e.g.* *return to its starting point having traversed both sides of the strip, without ever crossing an edge of any dimensional state [all possible states]- n greater than 3 called hyperspaces hypercube/Hypersphere-moves between and within itself*. There could be biological-cognitive predisposition to the way information and knowledge may be used between human-machine partnerships with enhanced biological entities?

A 'tool kit' is able to be suggested to technology managers that is cognitively driven and not filled with complex data manipulations. As such the IT managers have a KISS 'tool kit' with portability and adaptability to meet the various management and learning styles.

### 23.1 Semantics-dynamics

By focusing on required capability and reward required for effort a technologist or manager might use the 'Bonus' entity in the continuum (Plausible C<sup>3</sup> Semantics-dynamics). Both the manager and the technologist practitioner are able to find a commonality by starting and finishing at any event or entity within or external to the continuum.

Another example might be if manager viewed 'Obligations' within the business management cycle to be part of a continuous improvement initiative. By having an understanding of the critical path memory highlighted within the continuum then drivers of the technology practitioner bonus may be proposed with various risk profiles and program logic relationships. The practitioner would be aware of the likely causality. Both parties would then determine their 'Willingness-to-pay' and 'Willingness-to--benefit' which is a form of ROI to participant.

### 23.2 Stakeholders-partnership

The next step in the 'tool kit' is to have a KISS mechanism that qualifies the many interlaced tangible and intangibles. A plausible A<sup>3</sup> - Stakeholders-partnership using SMP as a 'back or envelope' calculation is suggested.

What is provided is a semantic-cognitive mechanism. A critical path memory exists and can lead to strengthening efficiency outcomes. The system of Ackoff threads through to packets of C<sup>3</sup> have a quantifiable 'delivery engine domains' within a semantic modeling-dynamics that works as a continuum.

What is inclined to be formed is a nested 3-by-3 matrices using the guiding parameters. Between these nested 3-by-3 matrices could be determined critical path memory. This memory can be change with the re-assignment of nested 3-by-3 matrices values by either the manager or technologist practitioner.

Such an approach of tool-sets adjusts the various management and learning styles. There is commonality between and within the nested 3-by-3 matrices as one, some or all may be used and still result in an achievable outcome.

The main Ockham's razor point of the paper are, firstly, CT application to rheology of entangled, single and multiple chains suggests the existence of biorheology logic gates. Secondly, these gates appear to have entangled-single-multiple chains that plausibly are critical paths that influence the circuit logic gate system. Thirdly, B-COR's have the capability to multiplex. Fourthly, biorheology machine systems are likely to provide SIANS as intended consequences for S2T2C. Fifthly, it is likely the number of random radicals have un-intentional consequence in a biological dynamic continuum. The Truth Tables connectivity for B-COR's will be addressed in a separate future research paper.

## 24. Conclusion

The owner-funder-managers may now identify the semantic causalities-consequences that could have been hidden in the traditional complex mathematics approach. A critical path memory within the C<sup>3</sup> *semantic modeling-dynamics* continuum (SMDC) is clearly seen. This allows owner-funder-managers to effective manage and to then bring technology project and capability under the financial limits. Secondly C<sup>3</sup> SMDC could have a critical path memory to aid connectivity and engagement for a given scenario-context of all stakeholders. Lastly but not least, the technologist can identify the projects that attract the greatest bonus for their efforts and skill sets.

### 24.1 Plausibility of concepts:

Biorheology interfaces may help overcome impairments in Humans, weapons systems, wargaming was plausible:

- Temporal Mapping Informatics use Semantics and Semiotics for Interfaces (Biorheology)
- Interfaces may have wisdom critical path threads may have the capability to multiplex
- may be basis to 'proof-of-concepts' for quantum control systems
- plausibly exists in hypercube/Hypersphere *N-dimensional* space
- Need to processes '*Keep It Simple and Stupid Sensible*' (KISS)
- Actual mechanism needs clarification: Evolution, Assimilation, Adaptation, Transformation, Deviation, or Mutation.

### 24.2 Validates Semantic and Semiotic based hypothesis - plausible?

- Semantics and Semiotics are part of an information system that may adapt and assimilate Biorheological information into a Host

- Semantic and Semiotic entangled–single–multiple informatics chains exist to assist medical interventions and countermeasures
- Semantic and Semiotic Interfaces have nexus nodes that transition Biorheological information to and from Host C3M3 kernel

What was emphasised was that WOSSI proof–of–concepts' demonstrates COR's wisdom critical paths that influence the circuit logic gate system. Secondly COR's have the capability to multiplex. The Truth Tables connectivity for COR's will be addressed in a separate paper

### 24.3 Rubik–Schlangen type three–dimensional system and wisdom–based delivery engine acting as a continuum with engagements?

A number of Rubik–Schlangen type three–dimensional system and wisdom–based delivery engine appear to act as a continuum with engagements that could be suggested from the survey questionnaire responses, to guide a weapons system-wargaming 'foresight strategic management planning' (FSMP) processes. They may both work as a Rubik–Schlangen type, three–dimensional system and wisdom–based delivery engine in the given business context (Fig 13). These make it plausible to have the outcome of delivering the best possible business results and tap into the future potential within this particular business operating environment but have filters working as a continuum (SMP human–machine delivery engine) that could be under the influence of 'de Montaigne' paradox and subject to management process spoofing that skews SMP causality.

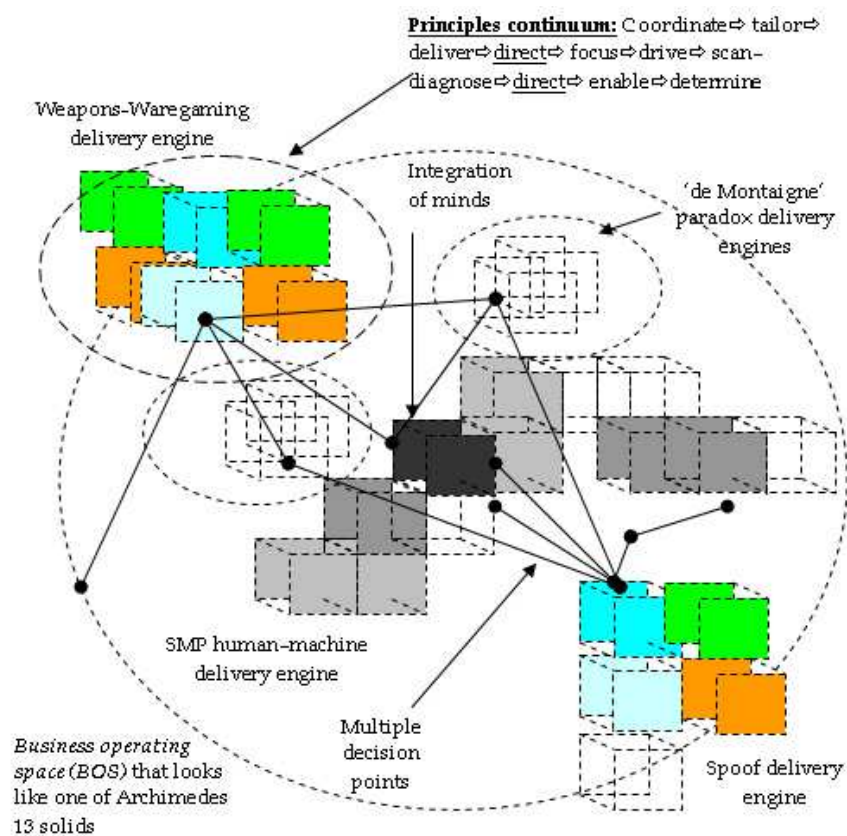


Fig. 13. Rubik–Schlangen type, three–dimensional system and wisdom–based delivery engine continuum.

C<sup>3</sup>W Kernel self correction might be useful for Biorheology interfaces to help overcome impairments in Humans, weapons systems, wargaming (Fig 14). The C<sup>3</sup>W Kernel associated firmware changes might in turn enable an expanded WOSSI mapping systems that essentially allows wisdom to be identified from the lower order delivery engines information, knowledge, reasoning and understanding. The entity is then able to self replicate based on the entities conceptualizations of it self and understanding of the environment that an interaction is required.

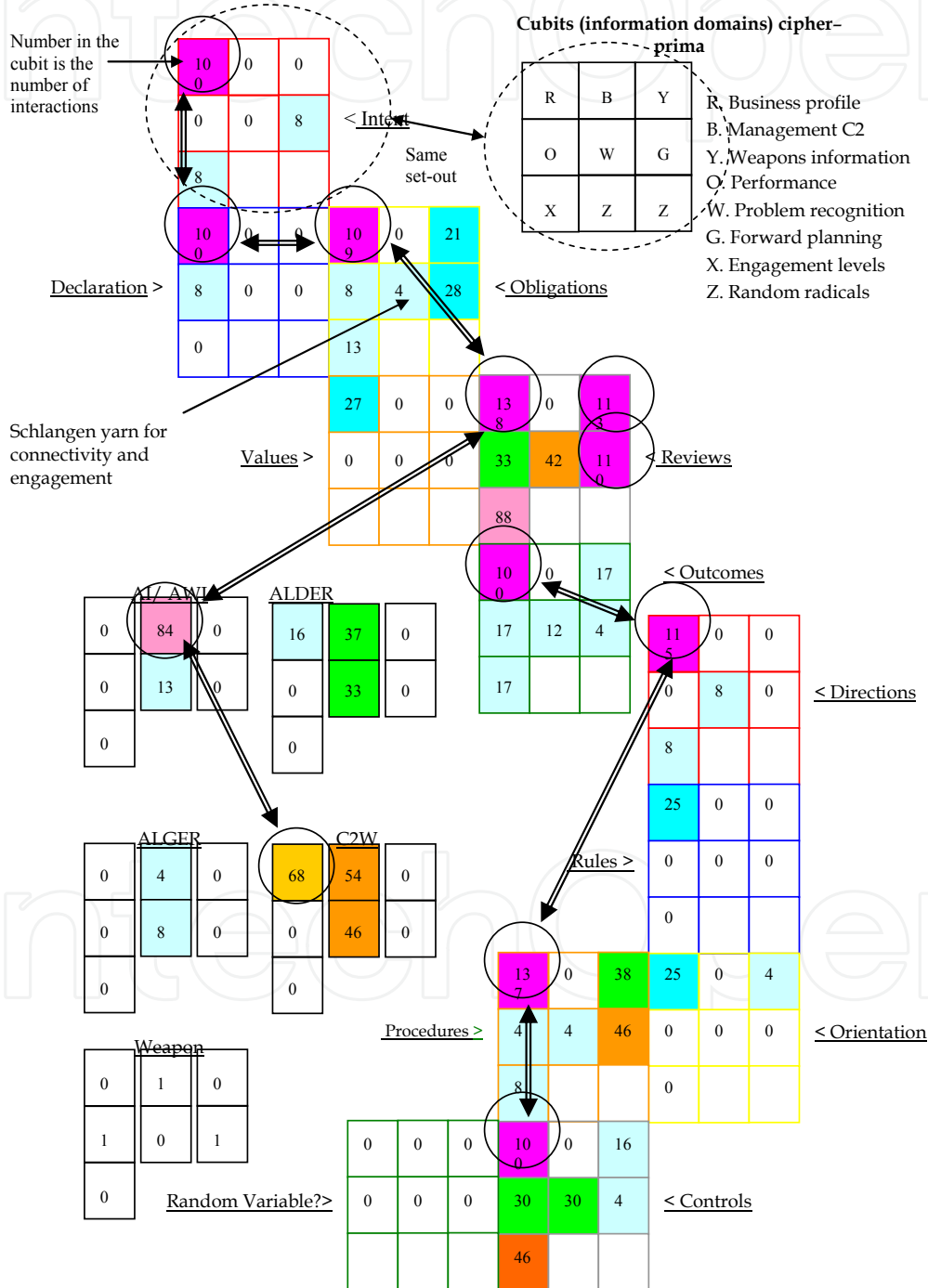


Fig. 14. Human – machine interfaces information and knowledge critical path for a C<sup>3</sup>W Kernel (e.g. biological and non-biological)



## 25. Implications for future work

The findings of the work may suggest the possibility to semantic via WOSSI enabling augmented reality with ‘artificial life derived entity replication’ (ALDER). This could be the leap beyond ‘virtual entity – person in a reality environment’ (Avatar). The ‘artificial life guided entity replication’ (ALGER) may assist ‘human like operations’ but conforming to established ethics and minimising unintended consequences such as ‘operation not possible’ outcomes.

Informatics Medicine as an option in the Medical Practitioners intervention toolkit:

- AIM: To emphasize the use of informatics for medicinal purposes
- SCOPE: Traditionally the focus of Medical informatics has been supported by intelligent decision technologies within the health system. On the flip side of “Medical informatics” is its use as an overarching distinct specialty discipline of medicine that is ‘Informatics Medicine as an option in the Medical Practitioners intervention toolkit.’

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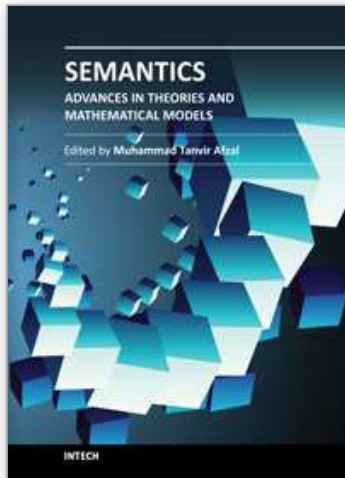
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## **Semantics - Advances in Theories and Mathematical Models**

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The current book is a nice blend of number of great ideas, theories, mathematical models, and practical systems in the domain of Semantics. The book has been divided into two volumes. The current one is the first volume which highlights the advances in theories and mathematical models in the domain of Semantics. This volume has been divided into four sections and ten chapters. The sections include: 1) Background, 2) Queries, Predicates, and Semantic Cache, 3) Algorithms and Logic Programming, and 4) Semantic Web and Interfaces. Authors across the World have contributed to debate on state-of-the-art systems, theories, mathematical models in the domain of Semantics. Subsequently, new theories, mathematical models, and systems have been proposed, developed, and evaluated.

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