

Attaining and Applying Consistency from Semantic Evolved from Conceptualization

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Abstract—Based on a dualism of human and matter, this paper proposes to derive fundamental semantics from conceptualization which bridges observation and existence. We identified that theoretical knowledge is characterized exclusively by consistency instead of any other concept in contrast to any other expressible/observable semantic expressions. Then evolution mechanism of knowledge from fundamental semantic is revealed. Discussions on applications are extended on a broad scope in the manner of starting from exploring semantic of problem descriptions.

Index Terms—semantic, knowledge, cognitive, formalization, conceptualization

I. INTRODUCTION

Since long we are enlightened by what Wittgenstein [1] had claimed that the problem of philosophy is more of a problem of bad expression than a problem by itself. We propose to solve the problems starting from the understanding the semantic of the problem expression in a radical manner. What we strive to find out has revealed further on the fundamental semantic of problem expressions. The guideline of our approach confirms to the rule of Ockham [2]. Our point: the semantic level reasoning based on conceptualization will be more near the truth than the observation which is built on the phenomena above the fundamental level. One of the possible expressible solutions lies in exploring the fundamental semantics based on conceptualization. The problem of expressible vs. not is as concrete as that whether a concept can be traced back to conceptualization. To avoid a discussion to be limited unconsciously to the level of conceptual [4], we propose to derive the initial semantic of concepts (CPT) on conceptualization which bridges mind and physical existence.

Many current or even old issues can be revisited with our approach. The application on existing theories can be seen as the validation in an ultimate objective manner. The result which can be derived from application of our approach constrains the theory/restrictions for all expressible/identifiable theories whether they are visible directly or not.

The obsession for the understanding of our approach:

without a clear understanding, the problem proposer could be isolated from the answer as a consequence of that he/she is isolated from the intended meaning/semantic of the original problem since that a revelation of the semantic of the original problem description is absent. Even if the final answer is properly provided, it might not be properly acknowledged as the expected answer if the original problem has been not misunderstood. A revelation is not an enforcement of the acceptance of a new knowledge. It is a process of inspiring the understanding and self-organization by means of revealing the identification of the existence (E) [4] and notations of observations while avoiding the misleading illusions and various superficial phenomena [4].

II. SYNTHESIS

A. Attaining Exchangeable Semantic Beyond Conceptual Level

We start from nothing even without any existing concept (CPT). Conceptualization not only guarantees the complexity will not unnecessarily expand but also avoid the mind to be filled with misleading disturbance. When we try to find an expression with a determined exchangeable solution, we follow the principle listed as below:

a) Objectively Exchangeable Semantic of Expressions

The expression if it is semantically exchangeable, semantics of all the notations must be explicitly [3] expressed. This will make the semantics objective instead of subjective. Even if there are one omitted unidentified free variable, it will ruin the understanding of the whole solution since that a variable could be everything, or equals to uncountable numbers of variables. Actually the whole solution can be viewed as trying to locate the only variable: the solution expression. Free variable is semantically equal to unknown. Unknown is a quality level unique expression, the exist/"E=1"[4] of unknown is all unknown and not apply to be quantifiable. Introducing new variables is an instance of introducing new CPTs, e.g., for the reasoning of semantics, etc. We propose that there are no help of directly introducing any new variables for the purpose of approaching more fundamental solution with or without corresponding

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conceptualizations. And indirectly introducing new variables or CPTs if justified as proper is actually a form of identifying the existing/"E=1" variable in the manner of transformation from implicit towards explicit: implicit→explicit. An validation formula of the implicit vs. explicit semantic can be found in [3]

A systemically integrated expression will not leave any gap and will avoid the argumentations of CPT level such as "relationship vs. entity" [5], since that the first level semantics of relying relationships among CPTs is determined.

b) *Trade-off for Understanding*

To catch the fashion of current expressions and make the text more interesting, we assume the extent of uniform among readers' understanding of several CPTs such as computation, etc. Then we would like to classify our approach as computation/reasoning at semantic level supplied with usual instance level computation. Our temptations are to reveal the superficial problem at structural level concerning visibility. Solution hypothesis: A throughout expression of the solution cannot avoid the revelation of the corresponding fundamental semantic. To avoid the relativity at CPT level, our first step is directly based on the conceptualization on a Dualism [4], [22]. Intuitively there are no other solutions which can be more throughout.

B. *Intuition from Conceptualization*

a) *The start of the expression*

- Concepts are built on existence (E)

The confirmed observation is called an instance (INS). The confirmation is an acknowledgement of its E=1. "1" is used for True and "0" for false objectively. A notation is assigned to a reflection of the observation for the first time. This is called a conceptualization. And the notation for identification and its independent representation of the reflection is called a concept (CPT).

- The characteristics of a CPT

The independent representation power of CPT actually contains the meaning that all of the INSs can be related to it. "◊" is used for represent all/completeness [12], [13], [14] if necessary.

- Type vs. instance level

To ease the discussion/understanding, some existing concepts are adopted for this expression while their semantics are clarified based on previous conceptualization. For conceptualization: CPTs are forms of TYPEs; they are always with ◊. Observation: from E=1 of INS, CPTs are created and expressions are formed. It can be expressed as: TYPE ::= <INS>. At TYPE level, since that the CPTs are with ◊. There are the explanations for the Zeno's paradox [10]: the division is a CPT which will not really touch another CPT which is different or an INS at INS level.

b) *Closed World Assumption(CWA) vs. Open World Assumption(OWA)[3, 4] Backgrounds*

The determinant <scope> of usage of Negation: There will be negation [3] for the expressions which tries to link

among the two levels of TYPE(< >) and INS/(E=1/0). This is the only place that a negation will be theoretically determined to explicitly appear for a fundamental structure. In other cases, negation is only excluded from appearance.

The negation on expressions crossing TYPE level and INS level implies: there are no exceptions for TYPE level expression. It is supported by the approach of conceptualization: the basic difference lies in the used set of CPTs. CPTs are at TYPE level from conceptualization. The difference between TYPE level and INS level: TYPE::=<INS, ◊>. "◊" is a fundamental CPT, so it is not replaceable. Then there will not be an alternative supplement of the E= 1 of the "◊" at the two ends of a "==" which links INS and TYPE.

The <scope> of confirmation:

- At TYPE level, no negation can be derived as a decision for previous derived expression. This is obviously a situation of OWA.
- Every expression derived at TYPE level has to be consistently correct/acceptable as long as there is E=1 of INS for the expression. The consistency is a transfer/expansion of the E=1 of the acceptable/properness of the extended expressions.
- There is no chance of mistake for any TYPE level expression if there is a case of E=1 for it. It means that for TYPE level, there is consistency/<◊.
- The mistakes are enforcement of expressions which do guarantee the E=1 for INS.
- Not all possible phenomena at INS level can be expressed with limited TYPE level. The difference is drawn by whether there is a conceptualization. As long as a conceptualization has been made an observation can be summarized.

C. *Usages of This Method*

Usually an answer of a problem is a decision on True(T) or False(F). A systemic application of the T/F flow underling semantic phenomena can be found at [15], [16], [17], [18]. The determinate rules which are listed above are explored to try to cover as much scope as possible where the True and False is available. Once a situation can be classified as confirm to a rule, the internal determinate result can be reused. For the following case study, we are showing how decisions can be made by applying this approach.

The ultimate existence of True/False vs. consistency: We propose not only to thought with conceptualization but also confirm that only through thought with conceptualization can consistency be achieved in an ultimate expressible manner at the same time avoiding the inconsistency, gap and overlap of semantics. Here we would also like to extend from this discussion: only consistency can be achieved this is the only Truth if we have to use the CPT of Truth. No other independent CPT of True/False do exist in an ultimate manner.

Compared to the proposed approach which do not have any "shape", we propose that shape is a result of

observation which is related to E=1 at INS level. So starting from conceptualization and proceed towards shapeless abstraction stays at the level of TYPE.

III. APPLICATIONS

For theorems of number: from the view of our approach, they can be seen as special cases at higher semantics level which originate from the isolation of related phenomena. In fact, they are just as general as the numerals similar cases which are the INSs of some fundamental semantic theories. They are not very much interesting from the view of our approach because that their starting point limits their expressiveness or abstraction scopes. If efficiency is demanded for finding all results, we propose to study them not isolated as endless surprises but instead proceed from conceptualization. It might worth an argumentation on the “daily” perceived opinion that philosophical ideas might be too general to be useful. We refute that as long as the usefulness is proper and exist in a fundamental manner. It can be covered by philosophical/fundamental semantic expressions even better than the so called specific theorems. And no more useful can be achieved by specific theorems than it can be covered by fundamental semantic expressions.

A. For Collatz conjecture [7] of “3*x+1”

a) Strategy Dealing With Semantics of CPT: Numbers

- Limit the scope of basic numbers

Principle: there are essentially only <0, 1> which map to dualism, e.g., EID-SCE[4]. Limit the <number> ::> <0, 1> which will help to explore the variations in a more fundamental manner while maintain a complexity at the scope of <0, 1> which is simpler than that of more than <0, 1>. Then some problem descriptions in bigger expression category such as decimal could be revealed as coincidences in <0, 1> which will not only help to reduce the curiosities but also encourage the extension of the shifted efforts towards more fundamental issues such as building more efficient computing from changing patterns as a whole directly instead of by pure accumulations or summarized partial phenomena of the whole.

Intuitively, all phenomena expressible in decimal could be expressed by <0,1> while the contrary will not found. So there will be the cases that the truth cannot be expressed in decimal and <0, 1> is a necessity.

The core of our proposal: from <0, 1>, the fundament view of numbers can be viewed. The Tool for the clarification of expression by way of exploring the semantics of related CPTs (both entities and relationships) is conceptualization from the dualism exclusively.

- Visibility vs. existence

The E=1→E=0 is forbidden since that an observation will not change the physics E=0/1. For the invisible, there is energy CPT for the expression of physics rules such as conservation of energy balance [21]. In our retrospection, the success of related physics rules lies in the introduction

of the CPT which helps to relate the invisible to experiments. This manner is a breakthrough of the relative older manner of which only visibility by eyes directly is under discussion.

b) Reasoning with the Rules

For “3*x+1”, the shape level observations are all <. All “10000...00” can be reduced to “010101(01)...(01)” +CW(“010101(01)...(01)”). They can be reflected as TYPE level. As long as that there is one INS of E=1. The whole expression is founded. The CW is a TYPE/< operation for this situation, so the expression is <. Then the ODD applies for <ODD>.

“010101(01)...(01)” can be described as a pattern of “(01)*” which does not contain more fundamental semantic which restricts its shape. There is no observation of Negation of the E=1 of the reducing of a number to “010101(01)...(01)” through “3*x+1”. This means that all forms are achievable including “010101(01)...(01)”.

All the TYPE level semantics of “3*x+1” are from that of “a*x+b”, so it can be proclaimed cases of “5*x+3”, “7*x+1”, etc, will share most of the common characters of “a*x+b”.

Obsession for direct observation: The proof of the problem lies in that the observation of the shortening or oscillation or consistent change of the rhythm of the shape of the binary expression of the number is deprived in general since that the E=1 of the target of the last “1” disappears or being invalidated after the operation. The invisible of the shortening of the length of the “line” of {0,1} representations of the number invalidates the attempt to build an observable consistent tendency. Or in other word, all the attempt to find patterns which is visible by fixed viewpoint observations which require the trace of the E=1 of INSs will be invalidated. It can be summarized as that the E=1 of the individual parts of a line is not as essential as the E=1 of a line, so observation of the individual parts will in general not reflect the essential E=1 related characteristic/semantic of a line. This is a conclusion we believe to be generally beneficial.

A brief retrospect: start from the strict background of conceptualization: Since that there is no “Negation” applicable for INSs at expressions at TYPE level, there will be no deny for the occurrence of “01(01)...(01)”. Or in direct positive expression, there will be E=1 for the occurrence of “01(01)...(01)” at any limited change of the semantic of the “3*x+1” problem expression. Since that all expressions at pure TYPE level will be consistently acceptable/correct as long as there is at least one E=1 of its INSs, then the occurrence of “2^m:→(“11”) TYPE *(“01(01)...(01)”)TYPE + (“1”)INS” will be the E=1 case of INS to fully support the rest of the more fundamental TYPE level expression of “01(01)...(01)”::→ODD. Or the TYPE level semantic of ODD is inherited/embodyed consistently in “01(01)...(01)”. By taking “01(01)...(01)” as a special case of ODD within the revealed limited semantic of the previous conceptualization, the expressible semantic at TYPE level can be counter directionally confirmed from “01(01)...(01)” to ODD since that the portion of semantic

confirmed at ODD has been transferred to “01(01)...(01)” as a case of E=1. The consistency will be a form of E=1 for this system extension. (“01(01)...(01)”)TYPE is already at TYPE level since that it is a pure shape level existence which can be observed as a so called rhythm. Shape level observation is less fundamental than that of derived semantic from conceptualization.

Even the case of the formula of “ $e=mc^2$ ”[21] can be explained as related to the transformation of “ $E=1 \leftrightarrow E=0$ ” of related CPT of mass and energy. The expression is also a case of the derived expression at TYPE/CPT level. The consistency of the proper/correct is inherited. Since that there are no “Negation” for TYPE expression with one case of E=1, the expression for TYPE prime will not be evolved from conceptualization to “there is a stop/limit/negation to the E=1 of INSs of prime”. Or the TYPE:=<INS>:=(INS, CPT(unlimited))explicitly. In another word, this will always be INS of prime which is as solid as the E=1 of other TYPES.

Alternative extension for Prime: for the Primes, they can be seen as the special point where the “+1” is necessary for the filling of the gap of “0” from ODD towards EVEN. Its E=1 means the E=1 of the difference between the semantics of ODD and EVEN. So ODD is necessary for the forming of the final Even of 2^n in $3*x+1$. The E=1 of “+” operation cannot be replaced by E=1 of “*” which relies it at fundamental semantic level. Also from the determining relationship of “+” describing “*” at fundamental semantic level while the contrary is not guaranteed, the conclusion can be drawn: the E=1 of prime is guaranteed by the difference between complex number which maps to <E=1> of <*>, while the “+” cannot be replaced in an unlimited manner for <natural number> which originates from “+1”/<+>. The E=1 of Prime is guaranteed by <E=1> of <Prime> which is a reflection of the irreplaceability of <+> by <*> at fundamental semantic level. For any number other than Primes, it can be seen the symmetric of “*” which semantically equal to “same”, while prime keeps a sense of uniqueness of semantics which comes from the existence of any number which is extended from <E=1, “+”>.

B. For Goldbach Conjecture[8]

It is similar for EVEN= Prime +Prime. It is actually: <EVEN> = <Prime>+<Prime>. There will be at least one INS of “EVEN = Prime + Prime” consistently interpreted as “same := uniqueness + uniqueness” for every EVEN. This is a fundamental semantic determined by the relying semantic of “+” explaining “*”: “+”:→”*” while “*” cannot replace “+” conversely. The <E=1> of the semantic cannot be eliminated at semantics level, so there will be E=1 of the “EVEN/(relative same) = Prime/(uniqueness) + Prime/(uniqueness)”. “+” only represent the “sameness” of INS level while “*” expands it to the level of multiple [25], [26], [27]. During the conceptualization, the CPT same/ (“2”) relies on the CPT of uniqueness (“1”) and the firstly level of “sameness” of “+” , and the second level of “sameness” of “*” is

explicitly employed for more efficient denotation based on “+”. In short: the semantic of “EVEN = Prime + Prime” is actually embodied in the semantics of “EVEN = ODD + ODD” which is more fundamental.

C. Similar Discussion

Even the case of theory of relativity’s view on time vs. space can be matched as that the E=1 of pure CPTs will not support fundamental semantics other than that they can be bounded with such as time→ semantic(order/ORD) and space→semantic(classification/CLA), etc. Then computing can be mapped as <CLA, ORD> which is similar to what Descartes see what compose a method [22]. For quantum measure, the relating of the indeterminate can be viewed as that if one variable is viewed as two inconsistently, there will be illusions to match the inconsistency. The energy vs. mass formula: the CPT of energy and mass represent the <visibility> at semantics level and the visibility at higher level, the internal consistency will determine that they two can be unified and represented with the same CPT.

a) Understanding of Natural Language Concepts

Our revelation is founded on what we propose as semantically quality reasoning which will be consistent with the INS level reasoning. We contribute in that quality reasoning which is based on our approach will be founded on a solid base of conceptualization. The topic of inconsistency, vagueness, gaps and subjectivity of semantic could be necessary only for human unintended mistakes. So the main task for current situation lies in not only in building a knowledge system through conceptualization but also in reconstructing existing knowledge with validation.

If a CPT is introduced as a result of the evolution of a proper conceptualization, it will bear the semantics which cannot be eliminated as long as the conceptualization link from it to other CPTs in use is maintained. Controversially if there is such a link exist, the CPT can be either meaningless or with wrong/bad/useless semantic. We can retrospect and validate semantics such as “Pi”, “i”, “e”, “power/square”, etc, for numbers as new CPTs from conceptualizations. More clear and efficient understanding could be achieved. We save the discussion here for brief.

b) Physics hints

Matter vs. distance: Just as what we have observed and proposed that mathematical number is based on the separation of real matter and the denotation. The length and distance among matters can change too. For the case of “ $3*x + 1$ ”, it can be viewed from the isolated influence on individual elements: the result of last elements is accumulating faster than the others. So the distance among it and the part ahead is getting nearer in compassion to the distance change among other elements. Also the density among the previous gaps among integrations is filling in with more S1. In view of this, we propose a potential physical rule: the distance among matters could be measured not only by the enforced standard of among the core of gravity but by in ratio to

the amount of the matters. Actually in physics, it is observed that the increase of the amount of the matter incurs the increase of the influence among matters. The distance defined in this way can be combined with the influence among matters. Then the distance which is a visually observable CPT can be replaced by the more general CPT of amount. This could help to reach more fundamental.

We also propose the measure of distance and shape with a unified meter which originates in one CPT through essentially the same conceptualization instead of through enforced two CPTs. The separation will not only create complexity in practice but more essentially replace the uniformity of the objectivity with subjectivity.

c) *Extension for Consistency vs. (Yes/No)/(True/False)*

From a proper conceptualization, every semantic which is evolved out is granted the properness, while the unknown are only left to be related/covered. It is not an obsession for the absent of negative side which is taken often in current accepted ideology as a supplement of the completeness. It reflects instead the vulnerable of current accepted system which could be optimized towards clearance and precise by reconstruction from conceptualizations.

From the view of conceptualization, every CPT which is introduced can be classified by whether evolved as an extension of the fundamental semantic which is related to $E=1$. Then the concept of Yes/No (Y/N) and True/False (T/F) [3] can be classified as well. T/F can be more objective than Y/N because that it can be traced back to $E=1$ by enforcement of commonsense unconsciously. Even T/F has to be classified as not evolved directly from $E=1$ since that the semantics of $E=1$ cannot be transferred/shared in a pure meaning. Only the secondary CPTs such as numbers and their structures can be shared/transferred as pure semantic. So from the observation, it can be concluded: only pure semantics can be transferred to realize the goal of communication; $\langle \text{semantics} \rangle ::= \langle \langle \text{numbers} \rangle, \text{“consistency”} \rangle$, since that $\langle \text{structure} \rangle|_{\text{semantic}} ::= \text{consistency}$.

As an extension, it is safe to say that knowledge in the form of semantic expressions fulfills its usage by consistently linking its requirement to its answer. And scientific knowledge only demands that both ends can be traced back to $E=1$. From the background of our dualism of EID-SCE [4], originally $\langle E=1 \rangle ::= \langle E=1|_{\text{mind}}, E=1|_{\text{matter}} \rangle$. Then after the extension to superficial phenomena, $\langle E=1 \rangle ::= \langle \langle E=1|_{\text{mind}}, E=1|_{\text{matter}} \rangle, \text{consistency} \rangle$. So as long as an abstracted/identified composed integration confirms to that it is composed purely/completely by primitive $E=1$ and consistency, it can be accepted as an integration of $E=1$ for at least one of its possible semantics. Actually the consistency can be seen as the root relationship of modeling languages such as UML for formalization/identification of meaningful relationships such as association, etc., with a general acceptable base.

There is a similar attitude to ours by Stephen Hawking in his model-dependent realism [24] with the truth/realism vs. various theories/models which are

created/expressed to chatter it. The difference is that we further identified conceptualization as a tool to locate the consistency and validate the semantic completeness of an expression link.

d) *Some Extra Computational Hints*

The steps for accomplishing the reduction of “ $3*x+1$ ” can be decided by the introduction of the implicit energy steps existing in integrations of “ $1(1)...(1)$ ” of a binary line shape representation of a target number ODD. Another thought: Since that “0” and “1” which conform to a number does not show any difference at the boundary of a line: there is a semantic of “=”. So does the occurrence of the ODD and EVEN. Then the visibility of the last “1” of $ODD*3$ will be equal to that of the appearance of a “0”. Then the visibility of the speed of the advancement of the tail of the last “1” will be 4 steps while the speed of the rest will be 3 steps. This is a discussion based on the semantics level reasoning. So the tendency of reduction can be proclaimed. Although the visibility of the speed and the appearance will not be directly available, there is an $E=1$ of it as other CPTs, such as “energy” in physics.

For probability: we understand that theoretically it can be derived from this semantic approach as well. The practice will never reveal the $\langle \rangle$ of semantic level while it will be decided at TYPE level.

The lineal computation for subjects of human society might be improper since that it believes the less trustworthy INS level phenomena instead of the trustworthy TYPE level. Actually from the view of conceptualization, TYPE level will generate everything which is consistent or undeniable by reasoning. While the not conceptually guaranteed expressions are not really related and meaningless because they are not semantically consistent, they could contain everything and be misused deliberately to replace objectivity with subjectivity implicitly. Instead of proposing the quality/TYPE level expressions if guaranteed by conceptualizations is more near the truth than the superficial discussions occurred at INS level, we would like to make it more clear with that there are no more worthy expectations for INS level costly explorations other than coincidence with the proper expressions at TYPE level which are evolved from conceptualizations.

e) *Intuitions beyond “Commonsense”*

Based on our fundamental analysis, we identify the following propositions which betray those “commonsense”:

At TYPE or fundamental level, only from “false/wrong/bad/improper” propositions, “true/correct/good/proper” propositions can be achieved instead of from “true/correct/good/proper” ones, such as “INS+INS \rightarrow TYPE”, “CWA+CWA \rightarrow OWA” [4], etc. This can be clarified with a CWA analysis where the identified one can be separated/CLA from the rest whether correct/intended or not. Reversely from “true/correct/good/proper” propositions, nothing semantically meaningful in the sense of T/F at TYPE level can be attained other than replacing previous coarse

models with more detailed ones for easier understanding. We have a similar reasoning on “cause-result” at [13].

For validation and checking, only consistency instead of T/F aspects is feasible/implementable. There is no short cut to avoid the necessary detail and be more efficient than identifying first gap which invalidates the target consistency.

IV. SUMMARY

Extended from the discussion of “ $3*x+1$ ”, semantically the “ $a_1*x_1+a_2*x_2+a_3*x_3+a_4*x_4+...+c$ ” will be identical at semantics level because that there are no extra semantic which makes the $\langle \text{semantic} \rangle$: $\langle \langle 0,1 \rangle / E, “+” / \text{INS} \rangle \rightarrow \langle \langle 0,1 \rangle, “+” / \text{INS}, “*” / \langle “=” \rangle \rangle$ differs when it functions on any number in a fundamental manner. The intended difference actually focuses on the secondary influence which is incurred by introducing the new CPTs of EVEN and ODD. Newly introduced CPTs will expand the space of expressions, which will not introduce new fundamental semantics other than replacing/hiding those original semantic expressions with more complex composed expressions. While the structure of the expressions will grow with the expanding of CPTs, it will become an isolated problem by itself. The visibility of observation [6] of the structure will differ while the views are shifted. These different situations of visibility form problems/games for part of the mathematics which intends for the problem other than fundamental. The case of “ $3*x+1$ ” is actually a structural problem instance/INS of these situations of visibility which originate from the fundamental semantic problem of “ $a*x+b$ ” or “ $a_1*x_1+a_2*x_2+a_3*x_3+a_4*x_4+...+b$ ”.

By adopting the strategy of viewing problems from the fundamental semantics, we propose a computation from the conceptualization of semantic, and reinvestigate the existing problems from their expressions. Then we can see more fundamental thoughts than any other thoughts which come from the mind. Then dynamic can be found from what usually are considered static or fixed, such as from the view of $\langle 0, 1 \rangle$ instead of decimal, and from rhythms/shapes of binary line instead of from the amount. By introducing the CPT of “amount”, it actually introduces a new problem by introducing a new CPT instead of proceeding towards the solution. This will help to reduce the category of so called existing knowledge/information and focus on more deserved problems and being more efficiently. For example we can view that “3” can be computed more efficiently by shape.

We would also like to share some thoughts we experienced during the reasoning process. Among them, there might be some hints which could be beneficial to solve other problems. The more, we learn the phenomena instead of the truth or more fundamental if we are already involved in phenomena, the more distant we are from the revelation. Those who cannot accept as being understood if an introduction is not based on what is already clearly accepted or self-complete/evident will proceed towards a clearer thought. A clearer thought might come uneasily not only because of the required effort to fulfill the conceptualization which cannot be replaced in everyone’s

mind but mainly because of the required change of shifting from the existing habit of so called thinking with the help of not really fully understood CPTs of languages, including natural languages, computation languages, etc., to another one.

We would also like to apply semantic based approach to understand the general aspect of techniques such as the Fourier [21], and Wavelet [20] transformation, etc., and also explore/reveal the engineering efficiency from the stand point of visibility of observation. The Fourier and wavelet related techniques could be the INS of related discussion on the visibility transformation which demands synchronous conditions of the existed $E=1$ to be met while $E=0$ seems to happen at intervals. There will be much more to be explored at INS level through the view which we have proposed.

The deprivation of meaning from conceptualization realizes the binding of existence and mind. It answers all the fundamental questions concerning observation and concepts. By rendering the semantics to notations of numbers of $\langle 0, 1 \rangle$, the determining relationship from fundamental semantics to mathematics is revealed. In other word, when considering the fundamental semantics which is bounded with $\langle 0, 1 \rangle$ at conceptualization: every observation hence after can be expressed and must be expressed by them. Then everything is number which complies with Pythagoreans’ proposal in the form while differs in the content. Our approach does not intend to test existing theories and reality [24]. We don’t intend to realize the transfer of what we observed as truth other than numbers and consistency. We are motivated by and can only be meaningful in the sense of that our work could be used to save the efforts for certain explorations and validations which actually demand a fundamental consistency and its extension.

REFERENCES

- [1] Tractatus Logico-Philosophicus (TLP), 1922, C.K. Ogden (trans.), London: Routledge & Kegan Paul. Originally published as “Logisch-Philosophische Abhandlung”, in *Annalen der Naturphilosophische*, XIV (3/4), 1921.
- [2] “Occam’s razor”. Merriam-Webster’s Collegiate Dictionary (11th ed.). New York: Merriam-Webster. 2003. ISBN 0-87779-809-5. <http://www.merriamwebster.com/dictionary/Occam%27s%20razor>.
- [3] Y. Duan, Identifying Objective True/False from Subjective Yes/No Semantic based on OWA and CWA, ICSCT2010, IEEE CS press, pp 1-5.
- [4] Y. Duan. A dualism based semantics formalization mechanism for model driven engineering. *IJSSCI* 1(4): 90-110 (2009).
- [5] Peter P. Chen. The Entity-Relationship Model - Toward a Unified View of Data. *ACM Trans. Database Syst.* 1(1): 9-36
- [6] Y. Duan, C. Cruz, C. Nicolle. Semantics knowledge management for the 3D architectural reconstruction of building objects, *DDSS* 2010.
- [7] Jeffrey C. Lagarias (January 1985). The $3x + 1$ problem and its generalizations. *American Mathematical Monthly* 92 (1): 3–23.

- [8] Fliegel, Henry F.; Robertson, Douglas S.; Goldbach's Comet: the numbers related to Goldbach's Conjecture; *Journal of Recreational Mathematics*, v21(1) 1-7, 1989.
- [9] Krämer, Hans Joachim. Plato and the Foundations of Metaphysics. SUNY Press. ISBN 0-791-40433-1, 1990.
- [10] Huggett, Nick. Zeno's Paradoxes. Stanford Encyclopedia of Philosophy. <http://plato.stanford.edu/entries/paradox-zeno/>. Retrieved 2010-10-1
- [11] Torkel Franzén, 2005. Gödel's Theorem: An Incomplete Guide to Its Use and Abuse. Wellesley, MA: A K Peters.
- [12] Y. Duan, Creation Ontology with Completeness for Identification of 3D Architectural Objects, in Proc.ICCTD 2009, IEEE CS press, pp 447-454.
- [13] Y. Duan, C. Cruz, C. Nicolle. Propose Semantic Formalization for 3D Reconstruction of Architectural Objects, IJCIS, 11(1), 2010, pp 1-10.
- [14] Y. Duan, Efficiency from Formalization: An Initial Case Study on Archi3D, Studies in Computational Intelligence Vol. 253, Springer 2009, ISBN 978-3-540-79186-7, pages:1-12.
- [15] Y. Duan, A Constructive Semantics Revelation for Applying the Four Color Problem on Modeling, ICCMS 2010, IEEE CS press, pp 146-150.
- [16] Y. Duan, Revelation and Evaluation on Generation and Application of Empirical Rules with Semantics, ICCMS 2010, IEEE CS press, pp 544-550.
- [17] Y. Duan, C. Cruz, C. Nicolle. Managing semantics knowledge for 3D architectural reconstruction of building objects, SERA 2010, IEEE CS press, pp 121-128.
- [18] Y. Duan, C. Cruz, C. Nicolle. Architectural reconstruction of 3D building objects through semantic knowledge management, SNPD 2010, IEEE CS press, pp 221-226.
- [19] Ali Akansu, Richard Haddad, Multiresolution Signal Decomposition: Transforms, Subbands, Wavelets, Academic Press, 1992.
- [20] R. N. Bracewell, *The Fourier Transform and Its Applications*, 3rd ed., Boston, McGraw Hill, 2000.
- [21] Nolan, Peter J. . Fundamentals of College Physics, 2nd ed.. William C. Brown Publishers. 1996
- [22] Descartes, Rene; Laurence J. Lafleur. Discourse on Method and Meditations. New York: The Liberal Arts Press, 1960.
- [23] Blyth, T. S.; Robertson, E. F., Groups, rings and fields: Algebra through practice, Cambridge University Press , 1985.
- [24] Stephen Hawking, Leonard Mlodinow. The grand design, Transworld Publishers Ltd, 2010.
- [25] Y. Duan. "Catering quality evaluation design for service/cloud computing through visualized semantics locating", SSNE 2011, IEEE CS press. (in press)
- [26] Y. Duan. "Semantics computation: towards identifying answers from problem expressions", SSNE 2011, IEEE CS press. (in press)
- [27] Y. Duan, C.Cruz. "Formalizing Semantic of Natural Language through Conceptualization from Existence". IJIMT, V2(1), pp37-42.

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