The Globalization of Value Theory Mathematics

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ROBERT SHORT resides in New Tazewell, Tennessee and has dedicated 30 years to the research of the Asymptotic Model and the development of the Qaaba Software. He is the founder of McQube, Inc., and the Ark Earth Foundation. He has had training in computer science, mechanical drafting and design, solar energy, robotics, and paralegal services. In addition, he is an autodidact with various field experiences involving a wide range of activities. Inspired by descriptions within ancient Sumerian records of the mythical ME and the utilization of a phenomenology and mathematics, he created an Asymptotic Spatiotemporal Tesseract Tetracomb, referred to as the Asymptotic Model. The Asymptotic Model was used to fashion a software program that he titled, "Qaaba," meaning "cube" in Aramaic. Robert used the Asymptotic Model in the design of a computer software technology to be marketed as a Web 3 and Web 4 Semantic Intelligent Agent and MicroApp Framework Wizard. Robert promotes a Web 3 progression to include Axiological Psychology as the value theory component in the development of an Innovative System for the knowledge economy. To achieve the progression to Web 3, Robert promotes Axiological certifications for ICT and business curriculums within all higher education institutions throughout the world. Robert promotes a Web 4 progression for the advancement of the Internet using Artificial Intelligence and Avatars.

Abstract

The Globalization of Value Theory Mathematics is one of the most exciting junctures in the history of the human evolution. In this article, I examine Asymptotic Modeling as it relates to Phenomenology and Axiology. This article also examine the mathematics of *Asymptotic Analysis* as discussed by Sam Howison in his book, *Practical Applied Mathematics* (2005) and the role Axiology plays in constructing the *Asymptotic Model* as discussed in Dr. David Mefford's journal article, "Origins of Formal Axiology in Phenomenology and Implications for a Revised Axiological System." I will refresh the understanding of the quantum mechanics of Axiological Artificial Intelligence that I presented at Hartman Institute Conferences in Oct. 2006 and Oct 2010. The role that *Asymptotic Modeling* plays in Axiological Artificial Intelligence is defined. I will explore, in mathematical notation and pseudo code expression the value theory integration of Dr. Hartman's three (3) dimensional modeling in *The Structure of Value* (1967), as it is in a multidimensional environment cognitively subjected to *Asymptotic Influences*. The discussion concludes that Axiological Artificial Intelligence will encourage civil engagement when involving governance and economic issues, and how it will become commonplace in our progression into the 21st century.

1. Influences of Husserl, Hartman, and Mefford

Artificial Intelligence presents great potential for all enthusiasts, researchers, and philosophical explorers who feel challenged to navigate the finite within the infinite space of the human mind. One such explorer was German Philosopher Edmund Husserl (April 8, 1859 – April 26, 1938). In *The Development of Husserl's Thought*, Theodorus Boer elaborated on Husserl's assertion

that in order to study the structure of consciousness, one has to distinguish between the act of consciousness and the phenomena to which it is directed as objects and as intended. Husserl asserted that knowledge would only be possible by bracketing all assumptions of the existence of an external world. Boer said that Husserl referred to this procedure as *epoché*, the ancient Greek term that describes putting the mind into neutral, where all judgments about the existence of the external world are suspended. A century later, we may revisit Boer's translations and thoughts on Husserl's conceptualization. Through this exploration and others, we can gain a greater understanding of the mechanics of the human mind.

Husserl's broadened conceptualization of the human mind also influenced another pioneer, his student, Robert S. Hartman (January 27, 1910 – September 20, 1973). In *The Structure of Value*, Hartman presents axiology as a means to explore logic and mathematics centered on his axiom of value. Hartman described his axiom of value as generating systemic, extrinsic, and intrinsic value as concept fulfillment. Influenced by Hartman, David Mefford continued to expand the foundational work of his professor in developing the *valuation* side of axiology.

David Mefford points out that the value sets of Axiology may be used in *Asymptotic Modeling. A*s such, systemic, extrinsic, and intrinsic values are subjected to quantum string logic (Mefford 2010, 70). Mefford ascertains that Axiology is applicable to *Asymptotic Modeling* when defining *constructs* as in the systemic dimension, *catalogues* as in the extrinsic dimension, and *containers* as in the intrinsic dimension. In his dissertation *The Phenomenology of Man as a Valuing Subject*, (1989), Mefford framed the need for teaching axiological value science and the knowledge of good (through the stages of valuation) in all higher education institutions.

2. Asymptotic and Axiological Primer

Understanding all the components of *Asymptotic Modeling* is essential for discussing and applying concepts to *Asymptotic Analysis* as it relates to Phenomenology and Axiology. To begin, consciousness must grasp all the complexities of *Asymptotic Modeling* and how it applies to *Axiological Psychology*. *Asymptotic Modeling* provides a theoretical and visual object that may be constructed and used to convey how human interoperability works in a machine reasoning environment.

Sam Howison's book, *Practical Applied Mathematics*, discusses asymptotic theory and practice as well as mathematical modeling. Howison draws from an exhaustive variety of mathematical processes to explain how mathematics can be intelligently applied within specific contexts to a wide range of uses. I will be drawing from Mr. Howison's formalities in asymptotics and modeling principles to better create a foundation for *Asymptotic Modeling*. The order of growth to mechanize the function $f(n)$ is used to establish a continuum and set the limit of the expansion. Consider that the conditions for an *Asymptotic Analysis* occurs as presented in the function, $f(n)=n^2+3n$, and when it is said that n^2 becomes larger than $3n$, $3n$ becomes less significant. Therefore, the function of $f(n)$ is equivalent to n^2 as $n \to \infty$ and written as $f(n) \sim n^2$. Compiling the essential components that make up the *Asymptotic Analysis* model begins with the *rate of expansion*. As such, the *Asymptotic Expansion* is defined by the *Asymptotic Scale*, by which the *Asymptotic Model* is constructed. The *Asymptotic Scale* of $f(n) \sim n^2$ is used to define the *Asymptotic Expansion,* which is a means to value assess all

elements in the expansion as they emerge to fully define *systemic value.* The function *f(n)* synchronizes the *Asymptotic Framework* and *Asymptotic Model* architecture. For example:

$f \sim g_1$

$f \sim g_1 + g_2$

$f \sim g_1 + ... + gn$

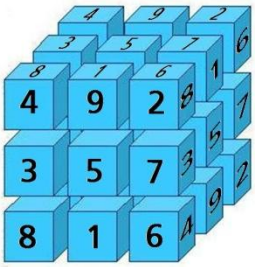
Whereas *n,* is the termination sequence that ends the *Asymptotic Scale* by a simple fixed prime number, and/or a more complex occurrence of some other programmatically generated condition. The termination sequence is used to set the *Asymptotic Scale,* thus limiting the growth of the *Asymptotic Expansion*. Under such a termination sequence, we may consider the function $f(n) \sim n^2$ as a means to propagate the *Asymptotic Framework* using systemic, extrinsic, and intrinsic value as an *Asymptotic Scale* by $n=3$; and thus, n^2 subsequently sets the *Asymptotic Expansion* to 9. This is to assure that the *Asymptotic Framework* is structurally synchronized to the construct of the *Asymptotic Model*. In the above function of $f(n)$ sets, the *Asymptotic Scale* as $n=3$ and *g* cardinally would represent the systemic, extrinsic, and intrinsic extensional properties as they are sequentially depicted.

The function $f(n)$ provides a more accurate and reliable mathematically defined architecture to better order growth. Using this extrapolation of *Asymptotic Analysis* as your primer, the *Asymptotic Expansion* sometimes, may result in becoming very large. Under the exampled *Asymptotic Scale*, the function *f(n)* also defines the *Asymptotic Trajectory* which encompasses the intent depicted within the axiological properties of function as *f ~ {g1}, {g2}, {g3}, {g1, g2}, {g1, g3}, {g2, g3}, {g1, g2, g3}.* This is to say that the *Asymptotic Framework* and the *Asymptotic Model* are structured to mutually function using the properties defined by the *Asymptotic Trajectory*. Thus, programmatically, the properties of the *Asymptotic Trajectory* would be applied to queries as a means to stroke the extrapolation of knowledge using the systemic, extrinsic, and intrinsic value sets from stored data.

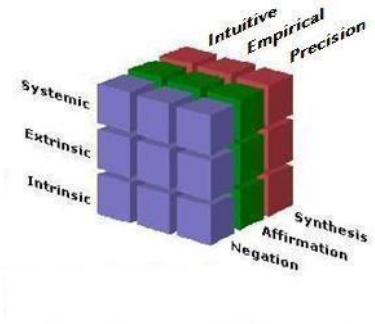
In this example of function $f(n) \sim n^2$, we may begin to explore the mathematics used to construct the *Asymptotic Model*. The *Asymptotic Model* can be defined spatially as *cubical, hypercubical, or through super-symmetry modeling - asymptotic*. A generalization of the cube is that when the dimensions are greater than three, this is referred to as a *hypercube*. In mathematics, a *hypercube* is the *n-dimensional* generalization of squares, cubes, and tesseracts. In geometry, the *hypercube* begins to form as a four dimensional analog of a *cube,* and this process is referred to as "tessellation." An *Asymptotic Tessellation* provides us with a theoretical grid of six (6) sided plane of references using mathematics. Therefore, to conceptualize an *Asymptotic Tetracomb* using the *Asymptotic Scale,* when $n = 3$ and *n* is cubed we would realize 27-partitions of the systemic. The following image shows a tessellation of 27-partitioned sectors defined by 162 planes within a spatial environment:

In this visual example, the *Asymptotic Model* is understood to be theoretical and have 27-partitioned fields of influence. The *Asymptotic Tesseract Tetracomb* is created using number-set sums, and these number-set sums are used as a mathematical checksum that assures the existence of a differentiated continuum. In this example, ordinally positioned numbers, have

the sum equal to the numbers of each pillar, along any axis, as well as the main space diagonals, when added together. To obtain the number, the equation $M = \frac{n(n^k+1)}{2}$ returns the sum value which reveals a mathematical phenomenology using the *Asymptotic Scale, n*=3. In this example, *M* results with the number-set checksum of 15 when *n*=3. The following image illustrates a spatial structure, that exist by using inlaid numbers sets that mathematically define a given partitioned area, as if it would be constructed using planes and surfaces.



The *Asymptotic Model* presented has the *Asymptotic Scale* set to *n*=3 and therefore, the structure of the *Asymptotic Tesseract Tetracomb* is applicable to the *Asymptotic Framework* using systemic, extrinsic, and intrinsic properties. In the image on the right, we have added the nine (9) observation points that define the *Asymptotic Expansion* and thus, creating the *Asymptotic Background* for the *Asymptotic Model*. In physics, this background is referred to as the *Landscape*.



The *Asymptotic Framework* provides the *Landscape* by using ontology to target the Axiological valuation, which is assessed as it is subjected to *Asymptotic Influences*. The *Asymptotic Influences* are captured in the properties defined by the *Asymptotic Background*. The following table lists the *Asymptotic Influences* as they are axiologically defined:

Asymptotic Framework			
Asymptotic Expansion	**Persistent Properties**		
Quantum Mechanics	**(Event)**	**(Event Horizon)**	
Theoretical Physics	**(Properties)**	**(Space and Time)**	
Asymptotic Influences (Knowledge Value)	**Content**	**Domain**	**Exposition**
Asymptotic Expansion$_1$ (Systemic Intransigent)	Systemic (Constructs)	Intransigent (Intuition)	(Negation)
	Systemic (Constructs)	Intransigent (Intuition)	(Affirmation)
	Systemic (Constructs)	Intransigent (Intuition)	(Synthesis)
Asymptotic Expansion$_2$ (Systemic Inferent)	Systemic (Constructs)	Inferent (Empirical)	(Negation)
	Systemic (Constructs)	Inferent (Empirical)	(Affirmation)
	Systemic (Constructs)	Inferent (Empirical)	(Synthesis)

Asymptotic Expansion$_3$ (Systemic Referent)	Systemic (Constructs)	Referent (Precision)	(Negation)
	Systemic (Constructs)	Referent (Precision)	(Affirmation)
	Systemic (Constructs)	Referent (Precision)	(Synthesis)
Asymptotic Expansion$_4$ (Extrinsic Intransigent)	Extrinsic (Catalogues)	Intransigent (Intuition)	(Negation)
	Extrinsic (Catalogues)	Intransigent (Intuition)	(Affirmation)
	Extrinsic (Catalogues)	Intransigent (Intuition)	(Synthesis)
Asymptotic Expansion$_5$ (Extrinsic Inferent)	Extrinsic (Catalogues)	Inferent (Empirical)	(Negation)
	Extrinsic (Catalogues)	Inferent (Empirical)	(Affirmation)
	Extrinsic (Catalogues)	Inferent (Empirical)	(Synthesis)
Asymptotic Expansion$_6$ (Extrinsic Referent)	Extrinsic (Catalogues)	Referent (Precision)	(Negation)
	Extrinsic (Catalogues)	Referent (Precision)	(Affirmation)
	Extrinsic (Catalogues)	Referent (Precision)	(Synthesis)
Asymptotic Expansion$_7$ (Intrinsic Intransigent)	Intrinsic (Containers)	Intransigent (Intuition)	(Negation)
	Intrinsic (Containers)	Intransigent (Intuition)	(Affirmation)
	Intrinsic (Containers)	Intransigent (Intuition)	(Synthesis)
Asymptotic Expansion$_8$ (Intrinsic Inferent)	Intrinsic (Containers)	Inferent (Empirical)	(Negation)
	Intrinsic (Containers)	Inferent (Empirical)	(Affirmation)
	Intrinsic (Containers)	Inferent (Empirical)	(Synthesis)
Asymptotic Expansion$_9$ (Intrinsic Referent)	Intrinsic (Containers)	Referent (Precision)	(Negation)
	Intrinsic (Containers)	Referent (Precision)	(Affirmation)
	Intrinsic (Containers)	Referent (Precision)	(Synthesis)

3. Asymptotic Modeling the Science of Sciences

The exploration of Husserl's original vision discussed by Hartman (1967), the *science of sciences* contained the possibility of creating the science of *formal* axiology. Hartman concluded that Husserl's vision of the *science of* sciences would include other sciences as well, including a formal axiology. In this exploration, we have experienced the convergence of the Axiological value sets with *Asymptotic Modeling.* The convergence expands upon Hartman's 3-dimensional perspective by including the *event horizon*. In theoretical physics, the *event horizon* is referred to as *space* and *time*. Therefore, to examine another potential science would be an *Asymptotic Axiology* that may be easily illustrated as quantum field theory.

Relative to theoretical physics, the construct of *Asymptotic Modeling* denotes a theoretical framework for constructing a quantum mechanical model used in the quantum field theory. Quantum field theory provides a theoretical framework or standard model for constructing quantum mechanical models of subatomic particles. In *Quantum Field Theory,* Mark Srednicki described quantum mechanics as a theory of abstract operators that act on an abstract state space, where the state space represents the possible states of the system under study. When applying the *Asymptotic Model* as the construct for a quantum mechanical system, the 27-partitions limit the theoretical spaces, whereas subatomic particles are influenced by other particles in the field. Theoretically, *Asymptotic Modeling* would benefit quantum field theory by better understanding the influences of the states that obey the laws of quantum mechanics.

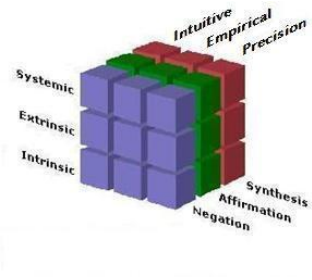
Asymptotic Modeling provisions the limiting of behavior used with quantum mechanical systems to theorize a fixed number of particles that have a small number of degrees of freedom. The standard model is also used in particle physics to support a theory concerning weak and strong nuclear interactions. The standard model fails to provide a complete understanding of the fundamental interactions and makes certain simplifying assumptions about gravitational influences. Therefore, one would consider Husserl's vision of the *science of sciences* to suggest that *Asymptotic Modeling* would incorporate the full theory of gravitation concerning weak and strong nuclear forces and become recognized as the standard model.

We have learned that the *Asymptotic Framework* is used to define the model background and how influences are modeled using axiology. In particle physics, relative to *Asymptotic Modeling*, the influences being valued are referred to as elementary *bosons*. The Hamiltonian formulation of quantum mechanics formalizes the degrees of freedom in a space of multiple identical-particle states. Hamiltonian mechanics was first formulated by William Rowan Hamilton in 1833 as classical system which is described by a set of canonical coordinates where all components are a frame of reference.

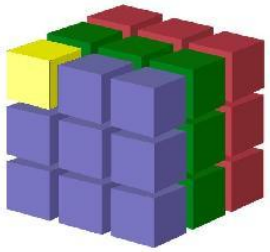
Elementary bosons are force carriers that function as the 'glue' holding matter together (Srednicki, 2007). Axiology forms a perfect symmetric framework for constructing the *Asymptotic Model,* and bosons form perfectly symmetric quantum states. In this model, the systemic, extrinsic, and intrinsic values define the boson states used to construct the *Asymptotic Framework.* The *Asymptotic Model* would provide a geospatially defined environment to gauge gravitational interactions as field operators when subjected to ambient or synthesized *Asymptotic Influences* – in particular, the exploration of the *Asymptotic Influences* used to gauge the forces of a photon. A photon is an elementary particle and the carrier for the electromagnetic force. This makes quantum mechanics the best method to gauge photon properties described as waves and/or particles.

4. Axiological Artificial Intelligence and the Intelligent Agent

The definition provided for Axiological Artificial Intelligence is greatly aided by images, figures, and examples. To reduce complexity, please refer to such aids wherever provided. It is important to understand the anatomy of *Asymptotic Modeling,* as it will prove to be beneficial when discussing Axiological Artificial Intelligence or the software referred to as an *intelligent agent*. The *intelligent agent* being discussed was created using the sample *Asymptotic Model* theorized in this article. The *intelligent agent* is the engine that animates the framework. The *intelligent agent* assures that all objects are mechanized cognitively. Such frameworks are discussed in the *W3C Semantic Web Activity* document produced by the World Wide Web Consortium as the next generation in web development.



The *Asymptotic Model* on the left is propositioning to illustrate the functionality of subjective cognition. When applying the *Asymptotic Model* to Professor Husserl's conceptualization, the structure is not background independent, but inertly dependent on an *Asymptotic Background*, which is referred to as the *Axiological Landscape*. An *Axiological Landscape* is a sophisticated use of applying meaning using Axiology and ontology. Axiological expressions are declarative and therefore may support an unlimited array of uses. Regardless of the *Asymptotic Background* of any given *Asymptotic Model*, all *Content Aware Objects* are disseminated intelligently and differentiated elementally by the *Asymptotic Influences* subjected as they are subjected. The illustration on the right presents the *Asymptotic Influence* under focus in its star position. In the star position, the *Asymptotic Influence* is placed on the *Content Aware Object* as *systemic, intuitive (intransigent)*, and *negation*.



5. Axiological Avatar

In theoretical terms, discussing the dissemination of an *Axiological Avatar* using the *Asymptotic Model* as an *intelligent agent* is very complex. The primary obstacle to developing an *intelligent agent* using the *Asymptotic Model*, or any perfect modeling system, is not to avoid a paradox by using a structured process such as conditional branching that would query unstructured stored data (this is bad). A perfect modeling system would assure that events are sustainable within the environment of the model itself. This means, the model must provide a continuum and be capable to value assess completeness, as well as incompleteness, regardless of subject matter.

Step 1

```
Begin Perspective
   ... until Viewpoint is satisfied
   Begin Observer
      ... until Observation is satisfied
      ... complete observer loop
   End Observer
   ... complete Viewpoint loop
End Perspective
```

Step 2

```
Begin Persistent 1 - Loop Strin
   ... until Systemic is satisfied
      Begin Persistent 2 - Short Strings
         if simple or realized
           then ...
           else .
         if complex or unrealized
           then ...
        ... until Extrinsic is satisfied
          Begin Persistent 3 – Super Strings
             if simple or realized
               then ...
               else .
             if complex or unrealized
               then ...
             ... until Intrinsic is satisfied
             ... complete loop 3
          End Loop 3
        ... complete loop 2
      End Loop 2
   ... complete loop 1
End Loop 1
```

Animating an *Axiological Avatar* requires constructing its *Asymptotic Expansion* properties that define it as an *object*. Content is disseminated using quantum string logic to manifest the properties that make up the *Axiological Avatar* as an *object*. In this section, we will explore pseudo codification for *Landscaping* an *Axiological Avatar* through properties created and animated utilizing two nested loops as step 1 and step 2.

In the image on the left, I have provided pseudo code as the logic for loop/nesting processes common to that of a computer software program. The pseudo code presents content population of the *Axiological Avatar's* properties, as it disseminates through the propositioning of *Asymptotic Influences*. In this model, *Asymptotic Framework* defines the *Axiological Avatar* to have three Persistent value sets of systemic, extrinsic, and intrinsic to populate its *Asymptotic Trajectory* properties. The *Asymptotic Trajectory* properties are processed in the *intelligent agent* as *Loop Strings*, *Short Strings*, and *Super Strings*. When the first is satisfied, a second nested loop begins its process until that loop is satisfied and completed, and by which the satisfaction of the third nested loop is completed.

The referenced pseudo code illustrates many processes to gather the elements that define the *Axiological Avatar* and completing the intent of the *Axiological Landscape*. In step 1, the *Axiological Avatar's Trajectory* is populated with the *Axiological Landscape*. In step 2, the *Loop Strings* are used to disseminate the *systemic* value. Once the *systemic* value is derived, the first loop disengages and the second nested loop is initiated. The *Short Strings* are used to disseminate the *extrinsic* values, which have a designated termination established by some sequence, and/or may be replayed time and time again, with other *Short Strings* or *extrinsic* values. This means, the second nested loop may loop 1 or more times until an event satisfies the loop as completed. The second nested loop of *Short Strings* may have two scenarios for its *extrinsic* potential. The first *Short Strings* potential is the *realized* or *simple extrinsic* value. The second *Short Strings* potential is the *unrealized* or *complex extrinsic* value. The third is the *Super Strings* or *intrinsic* values and also has a designated termination to a constant sequence and may be replayed time and time again with other *Super Strings* or *intrinsic* values. The *Super Strings* may have two scenario potentials. The first *Super Strings* potential is the *realized* or *simple intrinsic* value. The second *Super Strings* potential is the *unrealized* or *complex intrinsic* value.

6. The Globalization of Value Theory

The globalization of Axiological dimensioning will emerge as the best suitable human-to-machine reasoning use of a value-driven *Avatar*. Through the emergence of Web 4, *avatars* will become commonplace. The *Axiological Avatar* will provide the preferred means to synthesize and scientifically assess the values subjected to cognitive behavior synthesized in the memory of a machine. The synthesis provides a means to value assess human interoperability with machine

reasoning, utilizing *Axiological Landscaping*, which will define the *Asymptotic Influences*. *Axiological Landscaping* is maintained as the stored *Asymptotic Influences*, which the user may declare or disseminate from repositories whereas, machine reasoning is ascertained. Two global game changers for Axiological Psychology are open-data and open-government. As we progress toward social engagement in our governance, Axiological Psychology will play an important role in scientifically assessing the response to Crowdsourcing government policy and issues.

7. Conclusion

The objective of this article is to conclude the fulfillment of intentionality using *Asymptotic Analysis* as a means to mathematically elaborate Husserl's structures of consciousness (Boer, 1978, 121) with *Formal Axiology* as discussed by Hartman (1967, 19). Upon fulfillment of the intent, that asymptotic theory provides a theoretical set of properties sufficient to define a tangible array of features adequate to establish a mathematical existence to which the structures of consciousness encompass an environment that satisfies the value based analysis of an Axiological multidimensional observation.

Integration of Asymptotic Axiology supported by a semantic tool allows for more accurate means of creating, storing, and making good use of values. Therefore, with an understanding of this document and the exploration of the subject matter being discussed, I have propositioned this question, *"Does Asymptotic Modeling expand beyond the known mathematical practices of Formal and Applied Axiology giving way to the birth of Asymptotic Axiology?"*

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