

The Synthesis of Art and Science

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Addendum, Mar. 14, 2009:

Recent developments in biophysics support the principle theory expressed in this paper, that the four archetypal functions form the basis for "intelligence". The left brain is seen to embody the quantitative (logical) function with emphasis on "routine", while the right involves the qualitative as an encompassing or unifying function.

End:

The purpose of this paper is to establish an ontological basis for the synthesis of the arts and sciences. The archetypal forces that are active in both endeavours are identified and recognized as universal. In this respect, it is necessary to show that the laws involved in the operation of mind are same as those of matter. It may be said that such a vast subject is too great for the words used to describe it, and this may be the case. While not exhaustive, it is hoped that this effort will provide a solid platform for future development in the field.

Introduction

There is probably nothing more obvious in this world than the dual presence of the qualitative and quantitative. Yet we find even in the earliest stages of philosophy that one is invariably given precedence over the other. Precisely the same statement can be made with respect to the dichotomy between mind and matter. Whether we begin with Plato and Aristotle or the teachings of their antecedents, we will find an eternal recurrence of these themes. In the philosophy of Descartes, mind is dominant: "I think, therefore I am". This is followed centuries later in Sartre's statement of the opposing view: "Existence precedes essence". It is quite possible that this dichotomy is implicit in all philosophies. As examples, we find a substantive granularity in Atomism and repeated echoes of the immaterial, such as in Bergson's *élan vital*...

The need to establish precedence of one or the other position is apparent in all epochs and in all philosophies. In the writings of St. Thomas Aquinas and the religious philosophers of the middle ages, we find the invariable statement, "God is good" but given His omniscience, they are forced to either deny the existence of evil or recognize it as an attribute. John Stuart Mills' philosophy of Utilitarianism dispenses with God, but in his dictum, "The greatest good for the greatest number," he is paradoxically forced to recognize the existence of evil for the few who suffer for the greater good of the many.

We can see in these examples that the precedence of one view will inevitably lead to the exclusion of its opposite by a logical progression of thought. But when the attempt is made to encompass the whole of existence, each is forced to acknowledge the ineluctable presence of the other. One might easily dismiss the selection of a particular belief as due to the personal bias of the philosopher, but this is not the case. As a rule, it is the expression of a general world view or the harbinger of an imminent and universal change in social attitude. Also, an historical analysis would confirm that changes in attitude are usually sudden, antithetical – and recurrent. For example, consider the

materialistic and utilitarian example of the Roman empire and the subsequent domination of the church; the flowering of the arts during the Renaissance and that of the sciences in later generations. In the nineteenth century, a rigid determinism was superceded by a subjective, probabilistic, and relativistic shift in the twentieth.

Finally, all philosophies must be relegated to the category of partial truths for the following reason: In order to effect any synthesis or generalization, it is obvious that all opposites must be included¹. Furthermore, since it is impossible to show the exclusive verity of one over its antithesis, they must both be given equal status. With that said, we will begin with the words of Spinoza: "...the order and connection of ideas is the same as the order and connection of things"².

Universal Laws

We are led to believe that the laws of physics apply to inert matter and that human activity is somehow freed of this restriction through the perception of "free will". We may recognize certain limitations for the body in these laws, but how do we account for those of the mind, such as the apparent innate dictates of morality? Surely this is grounded on some universal imperative. The biblical injunction, "As ye sow, so shall ye reap" gives expression, as does the Hindu concept of maya, but these lack conviction since they are not related to a recognizable law, and society is apparently riddled with contradictory evidence. The existence of heaven and hell are also subject to debate as we have no first-hand knowledge of either. Yet if we contemplate Newton's third law, "Every action has an equal and opposite reaction", it is not difficult to see in it, an expression of an **inexorable law of compensation**.

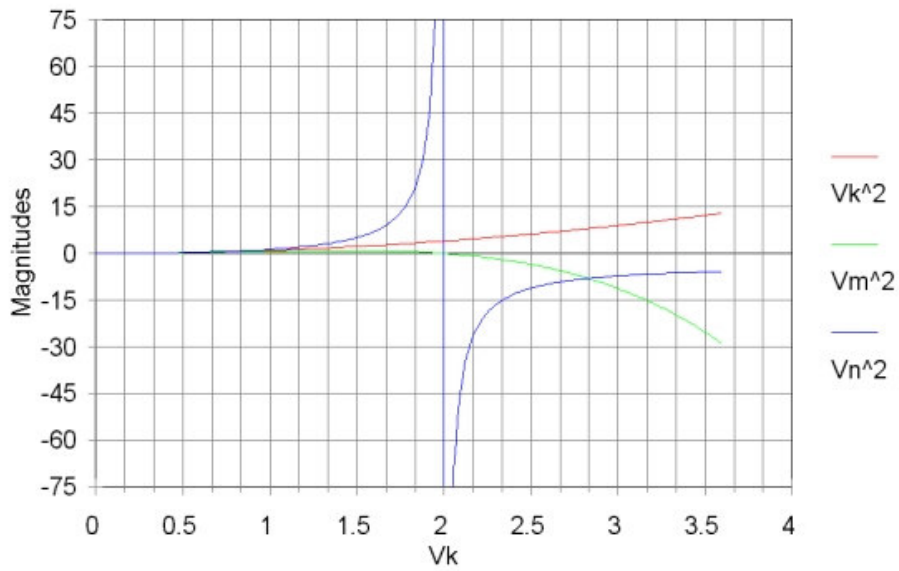
In correspondence with Newton's first law, we see that ideas will endure until circumstances force a change in "direction". This mental inertia hardly requires elaboration. One need only contemplate the remarkable endurance of concepts such as the flat earth, the geocentric universe and relativity theory. Mental "force" is equally obvious in the dictates of authority and persuasion, so that we may make the unequivocal statement that the **mechanical laws also apply to the mind**.

A perennial stumbling block to the synthesis of mind and matter is the limitation imposed in special relativity by the universal speed of light, C . Yet theory predicts that the interaction between an electron and a positron is instantaneous even when separated by vast distances. The Pappas-Oblensky experiments³ identified electromagnetic waves having speeds of C , $2C$ and infinity. A theoretical basis for both the predication and the reality has been established in a previous paper⁴. It demonstrates that the experimentally determined linear velocity V_m and the mathematically defined kinetic energy speed V_k of relativity theory are related by the following:

$$V_k^2/V_m = V_n \quad - \text{Where } V_n \text{ is the Newtonian velocity of classical mechanics}$$

Squared Velocities

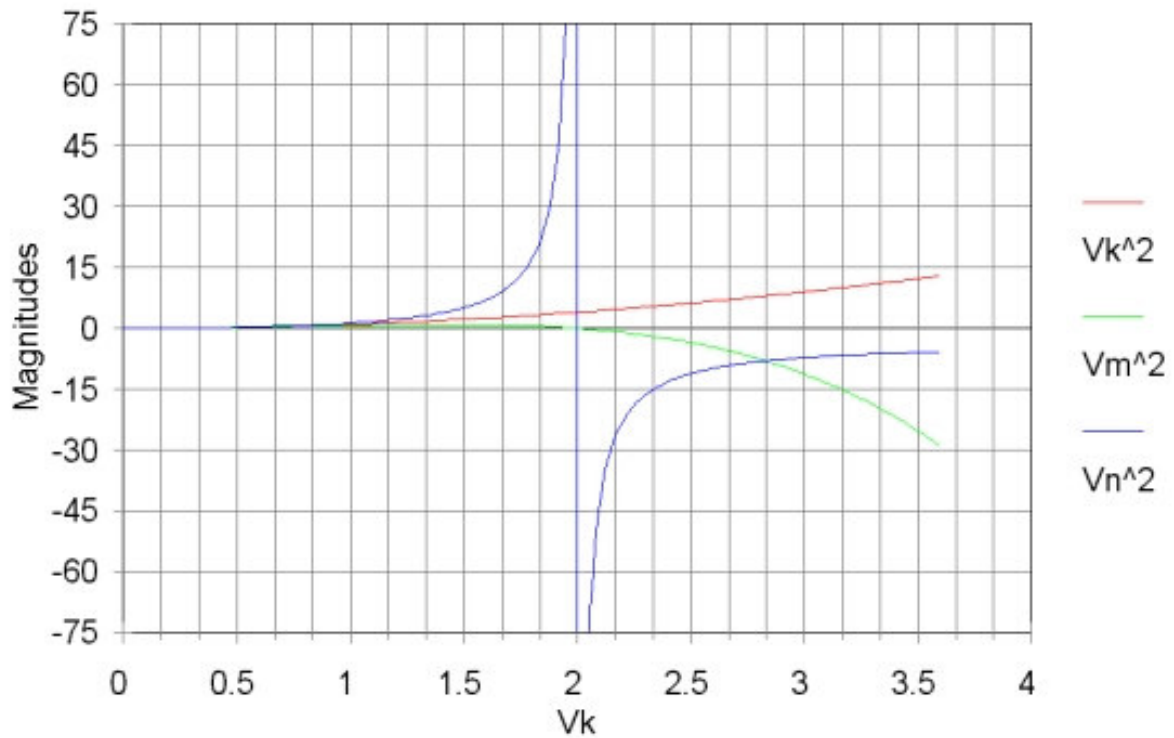
$c = 1$



The three velocities are plotted below.

Squared Velocities

$c = 1$



It is immediately apparent that **all speeds exceed that of light** although V_m does so in the negative sense, or negative direction as in recoil. V_n approaches infinity and at $2V_k$ (where V_k equals C), becomes its antithesis in a **juxtaposition of opposites**. (This is covered more fully in another paper⁵.) It is quite apparent that all velocities exist simultaneously as positive and negative (inertial) linear velocities, V_m , V_n , and angular, V_k which is also the velocity related to total energy. We can therefore unequivocally state that superluminal velocities exist in both the noumenal and phenomenal spheres.

As a final argument: There is no conceivable way that the material world can be defined through the immaterial unless they both follow the same laws!

Archetypal Functions

The following functions were introduced in a previous paper⁶ as specifically applying to **intelligence**. Here, they are generalized to include the material world. It is necessary to re-state that we are dealing with vast archetypal systems that surface in every sub-category of existence and under various guises. The functions have many names, none of which fully identifies the content. One should not be misled by the apparent simplicity.

a) Intellect-Matter:

This function deals exclusively with quantities and their relationships. It is expressed philosophically in Aristotle, Spinoza, Kant, et al. It includes mathematicians and those who deal with patterns and schema. The fundamental operations of logic are implicitly contained - **duality** as in positive-negative numbers - **multiplicity**, in their infinite extension - **progression**, which includes all sequences and methods of projection. Its attributes include that which is uniform, hard, discrete...factual.

There is a direct parallel in the integral progression of matter from the hydrogen atom through the entire periodic table, in the geometry of crystalline structures, the mathematical regularity in mollusk shells, the Fibonacci series in phyllotaxis, to name only a few. While hydrogen atoms are composite, they are invariant⁷, indistinguishable from one-another and are a precise representation of their mathematical equivalent, the unit. Duality is expressed in sub-atomic particles as "antimatter".

Nothing in intellect or matter suggests purpose. Its accumulation or separation does not suggest either ontology or teleology. For example, matter does not contain the requirement for spherical shapes in sub-atomic particles or planets.

Logic is *a posteriori*. Any premise may be used to construct an internally cohesive and complicated mathematical structure which, like an inverted pyramid, will invariably fall. One need only consider current theories like the "big bang", "string theory", black holes - all improbable, purely speculative and merely promulgating the illusion of knowledge while on an intellectual tangent with reality⁸.

2) Intuition, Form

The previous function dealt with **content**. Here, we introduce **form devoid of content**. This is an encompassing attribute dealing with summation, totality and containment. It is *a priori* and its arena is in religion and politics. The idealistic, religious philosophies and metaphysics in general, contain examples of this mode of thought. Plato's eidolons are perhaps the best representation. In the

physical world, we are aware of totalities such as the universe, the sun, animals, plants, as entities quite distinct from their constituent cells or particles. Dimension has no meaning here.

This function provides the ontological basis for philosophy and the theoretical basis for physics. In language, it is identified as generalizations or classes of objects; ie., man, country, galaxy, universe. Without it, intellect and logic are reduced to a meaningless iteration of facts and material accumulations are featureless. Without intellect-matter, intuition-form is empty of meaningful content, an airy nothingness in both realms.

3) Practicality-Energy

This function finds expression in the philosophies of pragmatism, utilitarianism and existentialism. Its aspect is primarily teleological. One is reminded of the considered application of forces as in gravity and/or magnetism. This is directed activity, which does not easily surrender itself to logic, but is in a sense, potential and purposeful. While apparently rooted in the concrete, it does not exhibit the quantitative any more than the qualitative. It may to some extent, partake of both. However, it is distinct and separate from either.

4) Emotion-Fluidity,

The fourth function has the greatest association with art and all modes of expression. Its practitioners are poets, musicians, actors and dancers. It finds philosophical expression in Rousseau, romanticism and all who extol the virtues of love and beauty. While difficult to find adequate expression for this function in the material world, it does have a boundless mobility and fluidity. There are no discernable borders. Where the practical builds towards some foreseeable goal, emotion and fluid dissolve. Yet no one can dispute the practical value of the attraction of a bee to a beautiful flower or the herbivore's attraction to the taste of a fruit.

Nothing identifies this function more than the idea of capacity. It appears to be an inward-flowing of content. A picture, a gesture or a song may evoke an entire period or an era so that the idea of dimension or containment does not apply.

Summary

The functions are equal in importance and each bears an exclusive language that is **totally incomprehensible** to the other three. Each has a range from positive to negative, which identifies an eightfold parameter. Each function attempts to identify itself as an universal, but being partial, it eventually gives way to its opposite. Since none can be refuted, they must be given equal status. A generalization can occur only with the inclusion of each mode of thought or as a physical equilibrium. The qualitative and quantitative interpenetrate.

The functions comprise the universe and all that exists within. They encompass the bounded and finite as well as the boundless and infinite. One is the inverse of the other. They are not attributes, but things in and of themselves. They present themselves in varying degrees, but exist in their entirety as potential. An excessive emphasis or extreme position towards one or the other is equivalent to a mechanical imbalance that will inevitably cause fluctuation and breakdown. The height of intelligence (or mechanical equilibrium) is to have all attributes in equal proportion as well

as the ability to use them. **Creativity** naturally follows in imitation of the physical counterpart of birth and regeneration, as the **conjunction of opposites**, of male and female principles. Furthermore, it is not difficult to identify the functions with psychological types and individual tendencies towards four methods of perception.

In the interplay of forces, it would **appear that action is dependent on its antithesis** as in the active-reactive law. (Consider Hegel's thesis, antithesis, synthesis, or in mechanical logic, input, operation, output.) This is no doubt the principal reason for the cyclic appearance of opposing philosophies and their entelechy. This suggests that when one reaches an extreme, it will be superceded by its opposite. The union itself may not be perceptible, but is evident in the subsequent development of the new world view, whether it be qualitative or quantitative. In addition, we have subtle hints of catastrophic reversals in the material world, such as in the changes of the earth's magnetic polarity.

It is evident that mathematics, geometry, physics, music, dance, literature, and all expressions and endeavor, human or otherwise, are all equal representations and equal aspects of reality. Simultaneously, they are abstracts in that they are contained by, and contain the real. It is in the study of the vast archetypal systems that underlie this inclusive "reality" that all philosophical questions will be answered. "Truth" will contain them in equal proportion.

Note:

A distinguishing characteristic of a true philosophy is its conformity with all that came before. Along with Pythagoras, we identify the odd functions as quantitative (male), and the even functions as qualitative (female). We designate the former as "rational" and the latter, "irrational" (and **quickly** add that these are extreme positions. Nothing exists that does not contain all functions!). This identifies the limits of reason and other functions, how they apply, and why they exist. There is a direct correspondence with the ancient elements of Earth, Air, Fire, Water. They again appear in different order in the "states of matter" Solid, Liquid, Gas, Plasma. The functions in all their manifestations permeate the history of thought, but their universal character has never been recognized. The difficulty is not in identifying their existence, but in giving them full expression through the inadequate medium of language.

¹ This was stated succinctly (although not understood,) by Hegel in the "logical" process of "thesis, antithesis, synthesis".

² The Story of Philosophy, Will Durant, Spinoza, p. 176.

³ Thirty-Six Nanoseconds Faster Than Light, P.T. Pappas, Alexis Guy Obolensky, Article, Electronics & Wireless World, December, 1988

⁴ Synthesis of Quantum Mechanics, Special Relativity and Classical Mechanics, Walter Babin, <http://wbabin.net/babin/wd6.htm>, July, 2002

⁵ Superluminal Speeds and Superconductivity, <http://wbabin.net/babin/super.htm>, March, 2003

⁶ Introduction to the Synthesis -Ibid ⁵, Walter Babin, <http://wbabin.net/babin/intro1.htm>, July, 2002

⁷ Determinism Versus Probabilism, Walter Babin, <http://wbabin.net/dvp.htm>, April, 2005

⁸ Faust, Goethe, "When fails the comprehension, a word steps in as deputy".