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The-O ring: Theory, Theorem, Theology, Theosophy?

a playful intercultural quest for fruitful complementarity

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Introduction

Curiously the prefix "theo" is effectively central to one of the most divisive debates in the current global civilization, namely that between science and religion. On a mathematical blog, the obvious question as asked: *Is there some connection between the etymology of "theorem" and words like "theology" or "theist"?* (Michael Lugo, *Etymology of "theorem"*, *God Plays Dice*, 23 November 2008). Some respondents asserted that they are not related, as for Eugene van der Pijll:

> There are two different Proto-Indo-European roots here: *dheie-*, to look, watch, and *dhes-*, holy, divine. The first evolved into Greek *theaomai*, "to watch", *thea*, "spectacle", and *theatron*, "theater". Together with *orao* "to look": *thea-oros* > *theoros*, "spectacle watcher"; and *theorema*, "performance", *theoria*, "attendance at a spectacle". The other became *thesos* > *theos*, god, and *thea*, goddess. So theorem and theory are related to theater, but not to god.

It might be similarly asserted that "waves" and "particles" are not related -- except from the perspective of quantum mechanics. Appropriate to this playful argument, however, it took the perspective of a playful theoretical physicist, Richard Feynman, to show dramatically the vulnerability of the O-ring -- under certain conditions -- as an explanation for the traumatic US Challenger Space Shuttle disaster. Ironically, as in accounts of his famous demonstration to the presidential Rogers Commission, this could be described as a piece of theatre -- employing methods which Rogers asserted were a "real pain". It follows that playful aesthetics may well provide a key to the relationship between the variants of "theo" -- as explored below. despite conventional views on the matter.

Beyond the obvious relationship of their prefixes, the issue explored here is therefore whether and how *Theory*, *Theorem*, *Theology*, and *Theosophy* might indeed be related in some form of implicit cognitive "The-O ring" through a pattern of aesthetic correspondences. This follows a brief indication of the distinctive nature of each and of the problems with which they are associated.

The playfulness of this argument follows from previous recognition of its role in integrative insight (*Humour and Play-Fullness: essential integrative processes in governance, religion and transdisciplinarity*, 2005).

Although playful, **the suggestion here is that to ignore some such possibility is to court further disaster**, already evident in the highly dysfunctional relationship between religion and science -- with all the consequences which they exacerbate, separately and in combination, righteously denying any responsibility in the matter. The issue could be fruitfully explored in the terms of each, as argued separately, but that would seem to be unlikely (*Mathematical Theology: future science of confidence in belief*, 2011). This exploration could be considered a contribution to that possibility.

The argument here was partly inspired by the continuing sterile dynamic between science and religion regarding the nature of any singular deity and the questionable existence of a multiplicity of deities for some religions. Curiously science, although envisaging and anticipating singularities, has yet to formulate the Theory of Everything to which it aspires -- however incomprehensible this may prove to be to most. Science is however unembarrassed by the number of theorems it has engendered -- seemingly innumerable.

It is then appropriate to ask whether those theorems are effectively functional substitutes for hierarchies of deities within a "theology of science" -- potentially then to be understood as a form of belief system variously attracting worshippers to its many temples. Just as people in crisis may seek intercession through specific deities (angels, or saints), it is clear that there is now a somewhat similar recourse to theories and theorems to explain and manage such crises. There is widespread agreement amongst atheists that human ingenuity, informed by science, will respond in a timely manner to those crises -- despite arguments to the contrary (Thomas Homer-Dixon, *The Ingenuity Gap*, 2000).

The playful dimension is significant to the concluding argument in that the etymology of "*theo*" is intimately related to "*thea*", and theatre (as noted above). This fruitfully introduces the feminine dimension variously excluded from the preoccupation of the modalities with which "*theo*" is associated. In a second part, the concluding argument is usefully clarified using a variety of illustrations relating the theme to current global preoccupations (*The-O Ring and The Bull Ring as Spectacular Archetypes: dramatic correlation of theatre, theory, theorem, theology, and theosophy*, 2014). The emphasis there is on how dramatic incorporation of the feminine can enhance "interestingness, suggestiveness and memorability" of the "theo" modalities -- otherwise to be recognized as increasingly sterile, infertile and "unfit for purpose".

The argument as a whole might be caricatured by an adaptation of the title of a famed study of psychotherapy: *We've Had a 1000 Years of Theo -- And the World's Getting Worse.*

Focus of theory, theorem, theology and theosophy

It would be inappropriate and presumptuous to attempt here any systematic account of these four "modalities". There is an extensive literature on each, as noted in each case below (notably via relevant entries in *Wikipedia*). The purpose is rather to frame briefly the subsequent discussion. This endeavours to elicit a degree of problematic commonality or complementarity between them whilst highlighting their individual distinctiveness. The question is whether this then offers a fruitful "way of thinking" about the four together.

The inclusion of theosophy is helpful in clarifying the difficulty in the use of the four terms in that the preoccupation of "theosophy" is more readily understood through a wider literature deriving from "*sophia*", including perennial philosophy. **As with the other three terms however, any discussion is distorted by the manner in which a term like "theosophy" is variously appropriated by particular schools of thought with particular agendas -- each relatively indifferent to the preoccupations of the other**. Its use here could therefore be considered as a form of "marker" indicative of a cluster.

The issue is especially evident in the case of theology, but is also obvious in the dynamics between the "sciences" -- notably "natural" vs. "social" -- for which "theory" is used here as a form of marker. In the case of theosophy, the nature of "theo" may then be variously implicit in the "wisdom" traditions -- with the appropriate challenge deriving from the associations of "*sophia*" with the feminine. Understanding of "theo" in that case then contrasts subtly with its use in "theology", conventionally understood as the study of "theo". A corresponding subtle contrast exists between "theory" and "theorem" (as noted below).

More fundamental, in all four cases, is the understanding of the cognitive role of "theo" under conditions in which objectivity and subjectivity may be variously called into question. It too may be understood as a form of marker -- for comprehension held to transcend human cognitive limitations in some way. This is rendered variously explicit by the four terms -- to a degree. Each offers a degree of closure on the nature of that comprehension -- with every probability of being inadequate as a descriptor. Each might be understood as offering a distinct form of "cognitive feel" for the abstract integrative generality held to transcend conventional human comprehension.

The discussion which follows endeavours to clarify those distinctions. It can be considered as partially framed by previous explorations (*Beyond the Standard Model of Universal Awareness: Being Not Even Wrong?* 2010; *Quest for a "universal constant" of globalization? Questionable insights for the future from physics*, 2010; *Metaphorical Insights from the Patterns of Academic Disciplines: Learning from the Standard Model of Physics?* 2012).

It could be argued that the selection of the four terms prefixed by "theo" is arbitrary. However it is interesting to note that it is primarily the more specialized preoccupations relating to theology which also have "theo" as a prefix (as discussed below). The other three terms do not appear to engender distinctive modalities. Rather than "arbitrary, there is a case for recognizing that the fourfold set of distinctions reflects a fundamental pattern of cognitive functions framed by usage of "theo". This point is subsequently mentioned below in relation to the arguments of Carl Jung, as developed by Marie-Louise von Franz (*Number and Time: reflections leading toward a unification of depth psychology and physics*, 1974).

Theory -- usage and etymology: There are of course whole libraries of literature on theories and their nature. The *Wikipedia* description of theory is introduced as follows:

> Theory is a group of ideas meant to explain a certain topic, such as a single or collection of fact(s), event(s), or phenomen(a) (on). Typically, a theory is developed through the use of contemplative and rational forms of abstract and generalized thinking. Furthermore, a theory is often based on general principles that are independent of the thing being explained. Depending on the context, the results might for example include generalized explanations of how nature works.

The intention is to offer an explanation based on general principles independent of the thing to be explained. The set of principles may then be the basis for the practice of an activity as in "a theory of education". This may be framed as the justification for a course of action: "my theory would be that the place has been seriously mismanaged". For *Wikipedia*:

> The word theory has its roots in ancient Greek, but in modern use it has taken on several different related meanings.... By extension of the philosophical meaning, "theoria" is a word still used in theological contexts to mean viewing through

> contemplation -- speculating about meanings that transcend measurement. However, by contrast to *theoria*, theory is based on the act of viewing analytically and generalizing contextually. It is thus based upon a process of abstraction.

Metatheory: This is a theory whose subject matter is some theory. All fields of research share some meta-theory, regardless whether this is explicit or correct. In a more restricted and specific sense, in mathematics and mathematical logic, metatheory means a mathematical theory about another mathematical theory. Of particularly fundamental significance are the approaches of metamathematics and metalogic -- each endeavouring to study its domain using the methodology of that domain. "Metascience" seemingly only exists by implication through the study of science and technology, or the related policies -- although a *Metascience* journal exists. Metaphysics is specifically associated with philosophy.

Theorem -- usage and etymology: There is of course a very extensive literature on the distinct characteristic of a theorem The *Wikipedia* description of theory introduces the distinction between theory and theorem as follows

> Theories are distinct from theorems. Theorems are derived deductively from objections according to a formal system of rules, sometimes as an end in itself and sometimes as a first step in testing or applying a theory in a concrete situation; theorems are said to be true in the sense that the conclusions of a theorem are logical consequences of the objections. Theories are abstract and conceptual, and to this end they are always considered true. They are supported or challenged by observations in the world. They are 'rigorously tentative', meaning that they are proposed as true and expected to satisfy careful examination to account for the possibility of faulty inference or incorrect observation.

According to *Wikipedia*, the laws of science, or scientific laws, are statements that describe, predict, and perhaps explain why, a range of phenomena behave as they appear to in nature. An analogous term for a scientific law is a principle.

Metatheorem, according to *Wikipedia*, is a statement in logic about a formal system proven in a metalanguage. Unlike theorems proved within a given formal system, a metatheorem is proved within a metatheory, and may reference concepts that are present in the metatheory but not the object theory

Theology -- usage and etymology: For *Wikipedia*, theology is the systematic and rational study of concepts of God and of the nature of religious truths. It is recognized as the "science of religion", and the relationship of God to humanity -- typically framed in terms of a particular religion. (John Hick, *The Logic of God Incarnate*, *Religious Studies*, , 1989; Thomas V. Morris, *The Logic of God Incarnate*, 2001; *The Logic of God*, 2013). In its Latin and Greek forms as *theologia* it was "an account of the gods", from *theologos* "one discoursing on the gods". According to Paul Tillich, theology moves back and forth between two poles, the eternal truth of its foundations and the temporal situation in which the eternal truth must be received (*Systematic Theology*, 1951).

Much creative effort may be applied to rethinking the nature of theology, as with Sallie McFague (*Metaphorical Theology: models of God in religious language*, 1982; *Models of God: theology for an ecological, nuclear age*, 1987; *Life Abundant: rethinking theology and economy for a planet in peril*, 2000).

Theosophy -- usage and etymology: As noted above, consideration of this term as a cognitive modality is instructive given the the manner in which it illustrates preoccupations with wisdom (*sophia*), the implication of the divine (*theo*), and the appropriation of particular understanding by competitive charismatic leaders, their movements, and their schools of thought.

The *Wikipedia* description of "theosophy", as such, indicates:

> Theosophy, refers to systems of esoteric philosophy concerning, or investigation seeking direct knowledge of, presumed mysteries of being and nature, particularly concerning the nature of divinity. Theosophy is considered a part of the broader field of esotericism, referring to hidden knowledge or wisdom that offers the individual enlightenment and salvation. The theosophist seeks to understand the mysteries of the universe and the bonds that unite the universe, humanity, and the divine. The goal of theosophy is to explore the origin of divinity and humanity, and the world. From investigation of those topics, theosophists try to discover a coherent description of the purpose and origin of the universe.
>
> The word *theosophia* appeared in both Greek and Latin in the works of early church fathers as a synonym for "theology". The *theosophoi* are "those who know divine matters." During the Renaissance, use of the term diverged to refer to gnostic knowledge that offers the individual enlightenment and salvation through a knowledge of the bonds that are believed to unite her or him to the world of divine or intermediary spirits. By the 16th century the word theosophy was being used in at least one of its current meanings.

As further noted by *Wikipedia*, the term is variously related to (and conflated with):

- Sophia: as Greek for "wisdom", this is a central idea in Hellenistic philosophy and religion, Platonism, Gnosticism, Orthodox Christianity, Esoteric Christianity, as well as Christian mysticism.
- Sophiology, as a philosophical concept regarding wisdom, as well as a theological concept regarding the wisdom of God. It has roots in Hellenistic tradition and Platonism. Sophia had a major role in almost every sect of Gnostic Christianity. Some see Sophia as a deity in her own right, others see her as representing the Bride of Christ (Revelation 19), others as a feminine aspect of God representing wisdom (Proverbs 8 and 9), and others as a theological concept regarding the wisdom of God.
- Perennial philosophy: as an idea was popularised by the Transcendentalists and further popularized by the Theosophical Society, under the name of "Wisdom-Religion" or "Ancient Wisdom". It subsequently became as feature of the New Age movement.

According to *Wikipedia*:

> Perennialism is a perspective within the philosophy of religion which views each of the world's religious traditions as sharing a single, universal truth on which foundation all religious knowledge and doctrine has grown. According to this view, each world religion, including but not limited to Christianity, Islam, Judaism, Hinduism, Taoism, Confucianism, Shinto, Sikhism, and Buddhism, is an interpretation of this universal truth adapted to cater for the psychological, intellectual, and social needs of a given culture of a given period of history. The universal truth which lives at heart of each religion has been rediscovered in each epoch by saints, sages, prophets, and philosophers.
>
> Although perennial philosophy also holds that there is no single true religion, it differs when discussing divine reality. Perennial philosophy states that the divine reality is what allows the universal truth to be understood.[56] Each religion provides its own interpretation of the universal truth, based on its historical and cultural context. Therefore, each religion provides everything required to observe the divine reality and achieve a state in which one will be able to confirm the universal truth and achieve salvation or spiritual enlightenment.

Variants of "*sophia*" in relation to understandings of "theo" could be understood as fundamentally related to the Hebrew concept of the Ein Sof. This is the divine origin of all created existence, in contrast to the Ein (or Ayn), which is infinite no-thingness.

Problematic characteristics of variants of "theo"

The extensive literature on each of the associated knowledge processes offers many criticisms -- typically from the perspective of one with regard to the limitations of the others. It is appropriate to recognize that the problems in one case may be reflected or mirrored in some way in problems within the others -- *mutatis mutandis*.

Given the introductory argument regarding the O-ring of the Challenge Space Shuttle disaster, these "problems" might be usefully recognized as "cracks" in "The-O ring" of the knowledge vessel through which humanity aspires to achieve global orbit in order to explore the limits of the noosphere. Ironically there is an O-ring theory of economic development -- inspired by the disaster (M. Kremer, The O-Ring Theory of Economic Development, T*he Quarterly Journal of Economics*, 108, 1993). This has recently been tested for the case of foreign direct investment to determine whether ?rms locate affliates that produce goods that are positioned at later stages in the production process in countries with lower propensities to making mistakes (Martina Engemann and Henrike Lindemann, *Testing the O-ring theory for FDI*, Deutsche Bundesbank, 2013). Might an analogous pattern also apply in some way with respect to investment framed by the "theos" (*Investing Attention Essential to Viable Growth: reappropriation of financial skills and insights*, 2014) ?

Problematic theory: This is most evident through the selectivity of any theoretical formulation, namely the factors and parameters considered relevant -- and irrelevant. This may be explored more generally through the processes neglected in any methodology (*Knowledge Processes Neglected by Science: insights from the crisis of science and belief*, 2012). More specifically it may be explored with respect to "conceptual gerrymandering", possibly with respect to reinforcement of particular framings of the challenges of governance (*Scientific Gerrymandering of Boundaries of Overpopulation Debate*, 2012; *Lipoproblems: Developing a Strategy Omitting a Key Problem -- the systemic challenge of climate change and resource issues*, 2009).

Bluntly put, it is then a question of what gets "designed off the table" and out of the system as irrelevant to the theory -- potentially to be explored in terms of the questions "unasked" in formulation of any theory (*Strategic Implications of 12 Unasked Questions in Response to Disaster*, 2012; *Global Strategic Implications of the "Unsaid"*, 2003; *Map of Systemic Interdependencies None Dares Name: 12-fold challenge of global life and death*, 2011).

The problematic nature of theory has been expressed succinctly, with respect to the "requirement for embracing error", by Donald N. Michael (*On Learning to Plan and Planning to Learn*, 1973):

> More bluntly, future-responsive societal learning makes it necessary for individuals and organizations to embrace error. It is the only way to ensure a shared self-consciousness about limited theory to the nature of social dynamics, about limited data for testing theory, and hence about our limited ability to control our situation well enough to be successful more often than not.

Especially relevant to understanding the problematic nature of theory is the sense in which the question as to "how many theories there are" is seemingly irrelevant -- except in relation to particular domains. It is questionable whether a "theory" recognized by any social science would be considered to be a theory from a natural science perspective.

So there are indeed "lists of theories", but only with respect to such domains -- however restrictive their definition (*How many string theories are there?*; *How many universe creation theories are out there?*). There is a sense that enumerating the theories, or recognizing a global ecosystem of theories -- as a feature of the noosphere -- is held to be pointless and meaningless. Again however a more restrictive approach may be taken through the compilation of encyclopedias serving that purpose to some degree -- for example, *Conspiracy Encyclopedia: The Encyclopedia of Conspiracy Theories* (2005), *Encyclopedia of Feminist Theories* (2002). Of particular relevance is the scope of the *Encyclopedia of Scientific Principles, Laws, and Theories* (2008).

There is the further challenge of the problematic distinction between a "field" of knowledge or study and the discipline through which that field is defined and explored. As noted by *Wikipedia*, a discipline incorporates expertise, people, projects, communities, challenges, studies, inquiry, and research areas that are strongly associated with academic areas of study or areas of professional practice.

The number of fields of study is clearly vast and unnumbered -- being only partially "defined" by the facilities of search engines and dictionaries, whether a distinction from "subjects" or "topics" is sought or proves meaningful. Again the need for any comprehensive list

of disciplines, or any sense of the knowledge system it constitutes, would appear to be considered largely irrelevant -- except for some administrative purposes, as in educational institutions or in defining funding domains. However, here too, the distinction from topics is typically unclear. In the case of the *List of academic disciplines and sub-disciplines*, as presented by *Wikipedia*, on what basis items are included and what controversy surrounds those that are excluded? No effort is made to enumerate them or to order them systematically -- as disciplines. *Wikipedia* also offers a *List of fields of doctoral studies in the United States*.

These concerns were discussed as part of the preparation of a systematic list of disciplines in a section on *Intellectual Disciplines and Sciences* within the *Yearbook of World Problems and Human Potential* (1976). The list included 1845 "disciplines" and indicated their potential relationship to the 2,600 profiled "world problems" in a separate data set. The section was not included in subsequent editions of what was renamed as the *Encyclopedia of World Problems and Human Potential*, or its current online version.

These points are of relevance to the fundamental inadequacy of interdisciplinary, crossdisciplinary, multidiscipinary and transdisciplinary approaches through which a more integrative perspective might supposedly emerge (*Challenges More Difficult for Science than Going to Mars -- or exploring the origins of the Universe or of Life on Earth*, 2014; Andrew Abbott, *Chaos of Disciplines*, 2001). This inadequacy frames any quest for omniscience, unified science, or a Theory of Everything, as presumptuous, if not quaint. There is little interest in the nature of any ecosystem of knowledge -- a noosphere.

Problematic theorems: As noted by *Wikipedia*, with respect to the laws of science, The term "law" has diverse usage in many cases: approximate, accurate, broad or narrow theories, in all natural scientific disciplines (physics, chemistry, biology, geology, astronomy etc.). At its most fundamental, the problematic dimension has been addressed in the form of the incompleteness theorems of Kurt Gödel. These are two theorems of mathematical logic that establish inherent limitations of all but the most trivial axiomatic systems capable of doing arithmetic.

The cognitive challenges buried within science are highlighted separately (*Comprehension of ignorance, nonsense and craziness*. 2011). There it was noted that the disturbing implications of Gödel's incompleteness theorems regarding undecidability have now been reinforced by the work of Harvey Friedman (*Boolean Relation Theory and Incompleteness*. 2010) through identification of entirely new forms of incompleteness. In his summary of such challenges, Richard Elwes (*It doesn't add up*, *New Scientist*, 14 August 2010) asks whether "a gaping hole has opened up in the foundations of mathematics".

However, with respect to the above argument, perhaps even more challenging, is what this may imply for a "gaping hole" in the foundations of philosophical reflection on the development of consciousness and the governability of the planet. Curiously, as noted by Elwes:

> With Friedman's work, it seems Gödel's delayed triumph has arrived: the final proof that if there is a universal grammar of numbers in which all facets of their behaviour can be expressed, it lies beyond our ken.... The only way that Friedman's undecidable statements can be tamed, and the integrity of arithmetic restored, is to expand Peano's rule book to include "large cardinals" -- monstrous infinite quantities whose existence can only ever be assumed rather than logically deduced.... We can deny the existence of infinity, a quantity that pervades modern mathematics, or we must resign ourselves to the idea that there are certain things about numbers we are destined never to know

Possibly to be interpreted as symptomatic of the problematic nature of theorems is the absence of any theorem about theorems -- beyond what is explored as meta-theory. Potentially relevant arguments are made by Gregory Chaitin (*Meta Math!: The Quest for Omega*, 2006).

It is surprising that the immense riches of mathematics do not give rise to a way of ordering the laws of science, or the theorems formulated which reflects that sophistication -- by comparison with the online *World Atlas of Language Structures* (WALS) as a large database of structural (phonological, grammatical, lexical) properties of languages gathered from descriptive materials (such as reference grammars). The ordering system of the *Mathematics Subject Classification* could well be said to be simplistic (*Towards a Periodic Table of Ways of Knowing -- in the light of metaphors of mathematics*, 2009).

More intriguing is the lack of motivation or care for the range of theorems engendered, namely to give greater meaning to the seemingly simplistic question as to how many theorems (or laws of science) there are -- especially in the light of the scornful deprecation of the number of deities in some belief systems. One response to the question as to how many theorems there are is as follows:

> Every sub-field in math and physics has at least hundreds, and there are hundreds or thousands of sub-fields. So overall we've proven... At least millions? This is one of those things that can't really have an exact answer, or even a ball-park answer. One person's theorem is another person's corollary... At the very least, you can say that there are so many recognized theorems out there that no one could possibly live long enough to learn them all, or even any more than a small fraction. You'd have better luck collecting all of the art. (*Ask a Mathematician / Ask a Physicist*)

As partially implied above with respect to theories, there are various (incomplete) lists of theorems, but most are associated with pure mathematics, with some from theoretical physics, economics, and other applied fields . Given a degree of preoccupation with metatheorems, metalogic and metamathematics, it is appropriate to ask whether the scope of inquiry is adequate to the challenge -- however it might be understood -- or whether that challenge has been reframed to fit a particularly convenient methodology or fashion (see *The Hundred Greatest Theorems*; *Formalizing 100 Theorems*).

Seemingly the question of any "theorem of theorems" is irrelevant -- other than as considered through the particular logical framework of a metatheorem. There is little sense of the system of theorems as a feature of the knowledge ecosystem -- whose scope some may seek to advance

Problematic theology: The case of theology renders even more evident the problem in the case of the sciences. Typically "theology", in the literature, is framed exclusively as that of a particular religion, as articulated with respect to its scriptures and revelations. This is then characterized by immense reluctance to recognize the meaning attributed by other religions to their theology. Theology might even be recognized as the science of justification of exclusivism -- whilst cultivating the righteous pretence of claiming otherwise as the embodiment of a universal worldview.

To the extent that other religions are considered, those recognized are characterized as inherently problematic, misguided, wrong -- possibly even "evil". The theology may frame such aberration in terms of heresy or unbelief, possibly to be listed as such (see *List of Christian heresies*, for example). At best such aberrations are understood as symptomatic of ignorance for which corrective measures are required. This dynamic can be fruitfully explored in terms of "us and them" -- with the reinforcement that this may give to the policies of government where religion is able to influence them (*Us and Them: Relating to Challenging Others -- patterns in the shadow dance between "good" and "evil"*, 2009).

Theology is thus much constrained in its ability to relate to "otherness" of any kind, whether in the form of perspectives that preceded its articulation, those that coexist with it in the present, or those that might be expected to emerge in the future. The theology of any given religion is recognized as having its own "internal" challenges in that, in seeking to know God, theology cannot step outside of that faith in its effort to truly understand the God associated with that religion. This implies an ontological problem of relating speech to being (true of every science), and a theological problem of relating statements to God.

Aside from the criticism of one religion of another in terms of its theological dogma, there is currently extensive criticism of theism by those promoting atheism (Richard Dawkins, *The God Delusion*, 2006; Christopher Hitchens, *God is not Great: the case against religion*, Atlantic Books, 2007).

Tom Campbell-Ricketts. *Bayes' Theorem: All You Need to Know About Theology*. *Maximum Entropy*, 16 August 2012

> Any unfalsifiable theory must have infinite degrees of freedom in order to be able to remain consistent with all conceivable observations. With limited degrees of freedom, the complexity of the path traced by the model curve will also be limited, and the theory will be vulnerable to falsification - the model curve will not be guaranteed to be able to find a path that travels to each data point. Any unfalsifiable theory, therefore, has zero posterior probability. This includes the hypothesis of an omnipotent deity. Because of its unlimited powers, such an entity is capable of producing any sequence of events it chooses, meaning that we need a model curve with infinite free parameters to be guaranteed access to all data points.

Perhaps most problematic are the defensive theological twists and turns in relation to women in religions dominated by men. These are only too evidently played out with respect to rights of women (dress codes, marriage, abortion, etc) -- readily to be caricatured as "screwed up". This has resulted in the articulation of thealogy as a complementary discipline. This is understood as a discourse that reflects upon the meaning of Goddess (*thea*) in contrast to God (*theo*). As such, it is the study and reflection upon the feminine divine from a feminist perspective.

The problematic consequences are especially evident with respect to theological reinforcement of procreation at any cost, irrespective of the possibilities of remedial action. Curiously whilst suffering is central to the preoccupation of theology, it is seemingly unable to address effectively its role in engendering and sustaining it (*Indifference to the Suffering of Others: occupying the moral and ethical high ground through doublespeak*, 2013).

As in the case of sciences, the sense of the number and variety of religions (and their associated theologies) is questionable. Curiously, to a greater degree than in the sciences, efforts are made to reflect them in compilations (*Encyclopedia of Religion*, 2004; *Merriam-Webster's Encyclopedia of World Religions*, 2000; *Schaff-Herzog Encyclopedia of Religious Knowledge*, 1954). *Wikipedia* stresses the incompleteness of its *List of religions and spiritual traditions*, noting that religion itself is hard to define. The entry indicates that, according to some estimates, there are roughly 4,200 religions in the world.

Again there is seemingly little ability or motivation to explore this set of belief systems -- as a noosphere in which each claims a unique understanding of truth. The preponderant influence of some is of course a preoccupation, as noted by Stephen Prothero (*God Is Not One: the eight rival religions that run the world* , 2011). This contrasts with continuing efforts to position millions of species appropriately within the biosphere.

The future will undoubtedly view with deep astonishment the incapacity of theology to encompass -- in an adequately creative and sophisticated mode -- perspectives other than that of the religion with which it is specifically associated. This failure has proven to be remarkable in its capacity to reinforce every form of violence between populations with distinct religious religious beliefs, or none at all.

Problematic theosophy: The most problematic aspects distinguished are those characteristic of esotericism, the role of variously hidden masters, and secretive sources of insight and revelation. Every form of delusion is then cultivated regarding these purported sources of insight, with little capacity to distinguish their relative merits. Given the problems of theology in encompassing the reality of the feminine, it is remarkable that there is such focus on "masters" of wisdom as being almost exclusively male in achieving "mastery" of wisdom -- despite the feminine associations to Sophia. This is ironically consistent with the secretive "Masters of the Universe" of Wall Street fame -- and the noted absence there of "Mistresses of the Universe". The Masters of Wisdom, as known in the current period, are of course renowned for their questionable consorting with mortals of the opposite sex.

These biases acquire particular focus with respect to individuals claiming to be theosophists, most notably those inspired by Helena Blavatsky and the Theosophical Society. With respect to the latter, the problematic nature is most evident in the arguments of those movements which separated from theosophy, as it has been more recently promoted. They include Rudolf Steiner (Anthroposophy), Osho, Jiddu Krishnamurti, Alice Bailey, upheld as channelling a hidden male master. The same can be said of religions, their schisms and

their heresies (as noted below).

Unlike the theology of religions, the "uptake" of theosophy is relatively limited, whether within closed movements or beyond them. However the seeming limitation obscures or disguises the range of secret societies which may variously claim the inspiration of wisdom in some form -- of "*sophia*" -- and pursue its promotion and acquisition.

Especially problematic is the secretive nature of this modality, both with respect to such movements and with respect to the process of progressive initiation into greater insight -- readily claimed to be communicable only under special circumstances. Much is questionably made of the special attributes of those claiming to offer guidance in this process, whether as "masters" or otherwise. This engenders problematic dynamics amongst followers and disciples, and with those perceived as enabling acquisition of insight. These have been extensively documented in particular cases.

As a process of acquiring insight with experiential dimensions, variously framed as wisdom, theosophy in its most general sense is vulnerable to any criticism of the process through which this is acquired, whether enabled by a person, a method, wisdom literature, or any school. As in the case of the theology of any religion, the exclusivity and particularity of subtle insight, perceived as a challenge to comprehension, is necessarily as problematic.

Wisdom, as acquired by these processes, has the greatest of difficulty in engaging with otherness -- whether that characteristic of alternative claimants to wisdom, or of those framed as ignorant. It has not been able to give adequate expression to the forms of subtlety of physics in handling such contrasting perspectives.

Practitioners of the wisdom traditions -- as variants of theosophy -- have been unable to formulate patterns of insight which fruitfully encompass other variants. The tendency is for each to approach the others with dynamics recalling those of imperialism, colonialism or dictatorship -- thereby reinforcing those dynamics in the case of global governance.

Problematic factors common to science and belief systems

Given the framing metaphor of the O-ring, and its brittleness under certain conditions resulting in the Challenge Space Shuttle disaster, the following can be considered indicators of dangerous lack of adequate flexibility in "The-O ring" modalities.

Questionable nature of "heaven": Although the sciences may not name it as such, there is a sense in which they aspire to a form of "heaven" in which all will be explained and all differences reconciled in a transcendent unity. True believers will be confirmed in their long-held assertions. This of course bears considerable resemblance to the aspirations to "heaven" by religious belief systems.

The difficulty is that not only do the religions contest each others aspirations and understanding of heaven -- and the right to take up residence there for an everlasting after life, the sciences also contest each others aspirations and understanding. Of course the sciences contest the understanding of the religious belief systems, and vice versa.

As indicated in the introduction, the situation is exacerbated by the manner in which the sciences deprecate the multiple (if not myriad) heavens recognized by religions. However the "heavens" to which the different disciplines might be said to aspire are similarly disparate and multiple -- if not innumerable.

As a core aspiration for humanity, this condition is addressed neither by the sciences nor by the religions.

Strife and incoherence: As argued by Nicholas Rescher (*The Strife of Systems: an essay on the grounds and implications of philosophical diversity*, 1985):

> For centuries, most philosophers who have reflected on the matter have been intimidated by the strife of systems. But the time has come to put this behind us -- not the strife, that is, which is ineliminable, but the felt need to somehow end it rather than simply accept it and take it in stride.

Science and belief systems are much challenged to deal with error, ignorance and otherness -- typically, and traditionally, associated with women. Ironically both cultivate sophisticated explanations of the origins of the universe -- from nothing *(Emerging Significance of Nothing*, 2012).

Most curiously the sciences and belief systems occasionally claim to be in quest of an integrative worldview which will reconcile regrettable differences and reframe the associated dynamics. For example, as argued by Brian Stratton, theology, philosophy, and natural science should be viewed as members of an ongoing dialogue which eventually results in a continuous world-view (*Coherence, Consonance, and Conversation: the quest of theology, philosophy, and natural science for a unified world-view*, 2000).

Simplistic framing of fundamental cognitive integration: Most surprising, despite the creative brilliance of those most concerned, is the lack of imagination in envisaging subtler understandings of the cognitive integration to which humanity might aspire -- as a potentially complex mix of integration of a higher order (and dimensionality) and one of high diversity. The question is not even framed in those terms, despite exposure to the diversity of the biosphere and the vast complexity of the visible universe.

There would seem to be, in the case of all concerned, a fundamental commitment to forms of integration and unity which are characterized by being readily comprehensible -- irrespective of challenges to comprehensiblity of complexity in other domains and the possibility that the future may have other ways of framing such understanding.

A radical possibility with respect to the "theos" is to seek complementarity between the methodologies and insights of the most articulate extremes, especially in the light of their apparent incommensurability (*Mathematical Theology: Future Science of Confidence in Belief: self-reflexive global reframing to enable faith-based governance*, 2011).

"Meta-failure" -- metaphorical impoverishment?: It might be assumed that the variety of "meta-disciplines" and modalities cited above would be instructive with respect to the challenges of "theo". Yet it remains entirely unclear how metatheory, metatheorems, metatheology, metalogic, and metamathematics are contributing to this end, whether separately or together -- whether aided by metadialogue, or otherwise.

The challenges of meta-knowledge, meta-education and meta-science do not appear to be well-defined or taken seriously -- in a world embroiled in conflict and a variety of forms of chaos, with more confidently predicted (*Mind Map of Global Civilizational Collapse: why nothing is happening in response to global challenges*, 2011). It is then especially appropriate to refer to "meta-failure" of which one description by George A. Fisher (*Meta Failure*, 2000) is introduced as follows (and includes reference to the O-ring disaster cited above) :

> A meta-failure is what happens when things go wrong because a set of underlying preconditions make an accident either likely, or inevitable. These sorts of accidents do not have simple causes like; corporate greed, negligent employees, or mechanical failure. Instead, the accident occurs because a set of deep underlying factors made it either possible or inevitable. In these sorts of accidents, looking at the shallow causes is not enough, we must take a deeper look. And, we must remember that the shallow causes are often used to provide cover for mismanaging managers. Understand, meta-failure accidents are not caused by simple things like the unnoticed mechanical fault in the subway car, or the negligent air traffic controller. Instead, meta-failures have multiple causes that may, in themselves, seem outrageous, and innocent perpetrators who were only doing their jobs.

The issue and possibilities can be tentatively explored (*¿ Higher Education 8 Meta-education ? Transforming cognitive enabling processes increasingly unfit for purpose*, 2011; *Metascience Enabling Upgrades to the Scientific Process: beyond Science 2.0 in the light of polyhedral metaphors?* 2014). Metacognitive failure is itself recognized as a challenge (Merrilyn Goos, *Understanding Metacognitive Failure*, University of Queensland)

Of particular interest, as symptom of the the problematic condition, is the inability to provide more than a "laundry-list" pattern of order to the incredible range of the mathematical disciplines, given their particularly sophisticated understanding of relationships and integration (*Towards a Periodic Table of Ways of Knowing -- in the light of metaphors of mathematics*, 2009; *Is the House of Mathematics in Order? Are there vital insights from its design*, 2000).

As noted above, the issue might be framed as "*We've Had a 1000 Years of Theo -- And the World's Getting Worse*" -- as an adaptation of a famed study (James Hillman and Michael Ventura, *We've Had a Hundred Years of Psychotherapy -- And the World's Getting Worse*, 993). In an anthology of his articles, *Johan Galtung* includes a case study entitled *Meta Failure -- United Nations*, arguing: *The UN is now out of date, and the so-called reform plans do not even articulate the issues* (*Johan Galtung: Pioneer of Peace Research*, 2013, p. 83)

Over-identification factors: These have been appropriately indicated by Matthew Melko (*The Hazards of System Building*, Main Currents in Modern Thought, 269 1969):

1. You identify with your system. It cost you blood to build it,and if it is attacked, it is your blood that is being shed.
2. You cannot tolerate tentativeness, suspension of judgment, or anything that does not fit the system.
3. You cannot apprehend anyone else's system unless it supports yours.
4. You believe that other systems are based on selected data.
5. Commitment to systems other than your own is fanaticism.
6. You come to believe that your system entitles you to proprietorship of the entities within it.
7. Since humour involves incongruity and. your system explains all seeming incongruities, you lose your sense of humour.
8. You lose your humility.
9. You accept all these points -- insofar as they apply to builders of other systems.
10. So do I. (P.S. I hope I believe in the cult of fallibility)

Cult factors: To the extent that theory and theorem are primary characteristic of science, it is appropriate to note the problematic role played by the exemplars and icons of this modality. This takes the form of:

- preoccupation with precedence and the processes required to ensure it
- personality cults relating to the exemplars (most evident in relation to the leaders of schools of thought)
- undignified quarrels between exemplars or their disciples, to the point of being unable to meet in any format
- inability to process the points of difference
- inability to allow for the possibility that the theory or theorem may be reframed and subsumed by later development

To the extent that theology and theosophy are primary characteristic of (non-scientific) belief, it is appropriate to note the problematic role played by the exemplars and icons of this modality. This takes the form of:

- exclusive claims by the exemplars regarding the clarity of their insight and the manner in which it supersedes previous insights
- personality cults relating to the exemplars (most evident in relation to the leaders of particular sects and cults)
- undignified quarrels between exemplars or their disciples, to the point of being unable to meet in any format
- inability to process the points of difference
- inability to allow for the possibility that the belief system may be reframed and subsumed by later development

Disassociation from social responsibility: To the extent that theory and theorem are primary characteristic of science, it is appropriate to note their problematic role in relation to society, the environment and processes of government. This notably takes the form of: extensive complicity in weapons development and use, complicity in the development and use of torture, and development of

technologies endangering the environment

To the extent that theology and theosophy are primary characteristic of belief, it is appropriate to note their problematic role in relation to society, the environment and processes of government. This notably takes the form of: developing dubious justifications for war and its atrocities, complicity in the use of torture, and denying responsibility for engendering social and environmental problems through encouraging unconstrained population increase.

"Us and them" and lack of self-reflexivity: As indicated above, there is an obvious extent to which the various "theo" modalities -- and their subdivisions -- cultivate their own preoccupations with a degree of complacency. Most notable is the manner in which disrupting factors are designed out of their comfort zones. At best these factors are recognized as problematic characteristics of "them" -- of "others" (*Us and Them: Relating to Challenging Others -- patterns in the shadow dance between "good" and "evil"*, 2009).

Not only is there a lack of "meta-perspective", as indicated above, but there is a lack of self-reflexivity through which any otherness implies a mirroring of the neglected self-awareness of such modalities (Hilary Lawson, *Reflexivity: the post-modern predicament*, 1986). This can be framed succinctly by adapting a standard phrase: *If a "theo" modality cannot recognize how it is part of the problem, it will be unable to recognize the nature of the solution required.*

The issue may be expressed otherwise by recognizing that the "theo" modalities are together part of a dynamic system whose modalities each strive for relative advantage using strategies readily framed as questionable by those entrapped by them. This pattern may be framed by the adaptation of Le Chatelier's Principle by management cybernetician Stafford Beer:

> Reformers, critics of institutions, consultants in innovation, people in short who "want to get something done", often fail to see this point. They cannot understand why their strictures, advice or demands do not result in effective change. They expect either to achieve a measure of success in their own terms or to be flung off the premises. But a ultrastable system (like a social institution)... has no need to react in either of these ways. It specializes in equilibrial readjustment, which is to the observer a secret form of change requiring no actual alteration in the macro-systemic characteristics that he is trying to do something about. (*The Cybernetic Cytoblast -- management itself*. Chairman's Address to the International Cybernetics Congress, September 1969).

Missing from this formulation is the sense in which "theo" modalities employed "to get something done" are themselves perceived in these terms -- as specializing in "equilibrial readjustment" and in a "secret form of change". Their purported innocence is questionable. A more self-reflexive mode is required, as can be argued with respect to any collective initiative (*Consciously Self-reflexive Global Initiatives: Renaissance zones, complex adaptive systems, and third order organizations*, 2007).

Secretiveness and incomprehensibility: Especially questionable is a degree of secretiveness associated with special knowledge, most notably combined with a preoccupation with copyright and precedence. As yet to be discovered is the degree of complicity of the "theos" in sustaining the false image of reality partially revealed by recent disclosure of diplomatic cables and the surprising level of invasive surveillance.

This increasingly questionable image of reality is further exacerbated by the degree of incomprehensibility by which many "advances in human knowledge" are characterized (*Dynamics of Symmetry Group Theorizing: comprehension of psycho-social implication*, 2008; *Living with Incomprehension and Uncertainty: re-cognizing the varieties of non-comprehension and misunderstanding*, 2012). This is curiously matched by the tendency of political leaders to frame incidents as "incomprehensible" and "unacceptable".

Aesthetic and mnemonic potential of suffixes of "theo"

In this more playful part of the argument, it is appropriate to note the degree to which the mnemonic and aesthetic associations tend to traverse or transcend the cognitive modalities distinguished above. They tend to highlight potential correspondences through a degree of fluidity which is somewhat alien to the boundedness of those modalities. With respect to "The-O ring" as a whole, this point is developed further below.

Potential associations to the suffix of theory (*-ry*): It would be a delight if the suffix (-ry), or its plural form (-ries), could be associated with laughter, through the French *rire* and the Latin *ridere*. A theory might then have the quality of a joke, consistent with long-standing speculation regarding the so-called laughter of the gods, as separately discussed (*Humour symbolism -- the "Laughter of the Gods"*, 2005).

- Aristotle: *The gods too are fond of a joke.*
- Albert Einstein: *Whoever undertakes to set himself up as judge in the field of truth and knowledge is shipwrecked by the laughter of the gods.*
- Japanese proverb: *Time spent laughing is time spent with the gods.*

Given the mirroring typically offered through humour, this might inform understandings of the nature of reality, and the place of humans in it, with a flavour of what might be imagined as the laughing discourse of the gods. Twitter might even be understood as a precursor of this modality (*Re-Emergence of the Language of the Birds through Twitter?* 2010; *Tweeter, Tweeter, Little Star: How I wonder what you are*, 2012).

Rather than a theory only being taken as seriously as its promoters would tend to have it, it may then be recognized to embody a degree of humour --perhaps understood as characteristic of a creative process informed by a degree of humility, rather than by the defensive arrogance to which others may be sensitive. This would be consistent with the assumption that the future may so treat the definitive assumptions of the present -- as has been the tendency of the present to frame the theories of the past. Such a take would also frame the

falsifiability required of a theory with a humorous dimension -- somewhat consistent with the Sanskrit adage of relevance to any premature closure *Neti Neti* (not this, not that).

A related mnemonic thread derives from the original Greek -- *theoria*. This offers an association to Rhea, understood in classical Greece to be the mother of the 12 gods and goddesses of Olympus. She was daughter of the earth goddess Gaia and the sky god Uranus. The Romans identified her with Magna Mater. Rheology, as the study of the flow of matter, derives from Rhea. Although Rhea has no other association to humour, the Greek deity Gelos was considered the personification of humour. Gelos was rendered into Latin as the god Risus, now the name of a web comedy game. Curiously Geb, one of the nine principal deities of Egyptian mythology, was god of the Earth, whose laughter was considered to be associated with the earthquakes that enabled crops to grow.

Would an aesthetic/humorous framing not be desirable for a satisfactory Theory of Everything? Or would it be unable to encompass humour -- with "everything" to be understood as whatever does not have those qualities? The possibilities in this respect have been delightfully and famously addressed by Douglas Adams (*The Hitchhiker's Guide to the Galaxy*, 1978-1980) through the account of a group of hyper-intelligent pan-dimensional beings who demand to learn the Answer to the Ultimate Question of Life, the Universe, and Everything from the supercomputer, Deep Thought, specially built for this purpose. It takes Deep Thought 7 million years to compute and check the answer, which turns out to be 42. Deep Thought points out that the answer seems meaningless because the beings who instructed it never actually knew what the Question was (cf *Superquestions for Supercomputers: avoiding terra flops from misguided dependence on teraflops?* 2010).

Potential associations to the suffix of theorem (*-rem*): According to Egyptian mythology, Rem (also Rem-Rem, Remi, or Remi the Weeper), meaning "to weep"), lives in Rem-Rem, the realm of weeping. Rem fertilizes the land with his tears, producing both vegetation and the reptiles. He is assumed to be the personification of the tears of Ra as the supreme deity. The relation of tears to the sacred has been explored in a recent compilation (Kimberley Christine Patton and John Stratton Hawley, *Holy Tears: weeping in the religious imagination*, 2005), summarized as follows:

> What religion does not serve as a theater of tears? Holy Tears addresses this all but universal phenomenon with passion and precision, ranging from Mycenaean Greece up through the tragedy of 9/11. Sixteen authors, including many leading voices in the study of religion, offer essays on specific topics in religious weeping while also considering broader issues such as gender, memory, physiology, and spontaneity. A comprehensive, elegantly written introduction offers a key to these topics. Given the pervasiveness of its theme, it is remarkable that this book is the first of its kind--and it is long overdue.

The relation of tears to the fundamental implications of theorems can be taken further through the traditional recognition of pearls as the tears of the gods. Mark Hudson (*Pearls: the tears of the gods*, *The Telegraph*, 17 September 2013) makes the point that:

> The ancient Greeks believed pearls were formed from the tears of the gods. In Christian times the birth of the pearl was seen as a kind of immaculate conception, symbolising purity and closely associated with the Virgin Mary.

This understanding is especially developed with respect to the Hindu deity Indra and the thinking traditionally associated with Indra's Net, variously understood to be composed of jewels or pearls: *When one gem was touched, hundreds of others shimmered or danced in response, and a tear in the net made the whole world tremble*. A key theorem has been framed by the jewel metaphor (David S. Richeson, *Euler's Gem: the polyhedron formula and the birth of topology*, 2012).

As a metaphor it is used in Buddhist philosophy to illustrate the concepts of emptiness, dependent origination, and interpenetration. Of particular relevance to the understanding of theorem, or the set of theorems, the metaphor has been given mathematical form by Felix Klein (David Mumford, et al., *Indra's Pearls: the vision of Felix Klein*, 2002). The latter explores the fractal patterns created by iterating conformal maps of the complex plane called Möbius transformations, and their connections with symmetry and self-similarity. Indra's Net may be understood as a hologram, namely a pattern in which each of its individual parts contains the whole image. Any tear in the pattern leaves each portions with a record of the entire pattern, however much the tears are repeated.

Whether as pearls or tears, there is a degree of charm to recognition of the consequences of "tearing" the pattern of connectivity implied by Indra's Net. The point is succinctly made by Gregory Bateson (*Mind and Nature: a necessary unity*, 1979):

> The pattern which connects is a meta-pattern. It is a pattern of patterns. It is that meta-pattern which defines the vast generalization that, indeed, it is patterns which connect.

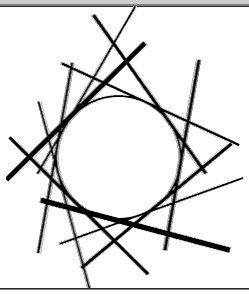
And it is from this perspective that he warns in a much-cited phrase: *Break the pattern which connects the items of learning and you necessarily destroy all quality.* Such breaks can then be fruitfully associated with "tears" -- a kind of problematic polyhedral dual to any jewel of which Indra's Net is composed. Perhaps an "untheorem", the absence of an adequate theorem, or the failure to comprehend it.

The unfortunate connotations continue to be found in popular superstition relating to pearls as gifts, through symbolizing tears and the belief that they bring sadness. Thus they are not incorporated into an engagement or wedding ring, lest they "bring tears to the marriage. This extends to the practice of "buying" a string of pearls by handing a small sum to the person presenting is as a gift -- thereby transforming it into a transaction. A similar practice exists with respect to the gift of a knife -- otherwise understood as "cutting" the connectivity of the relationship.

Potential associations to the suffix of theology (*-logy*): Theology offers a degree of meaning in the moment through lines of scripture, lines of prayer, lines of song, and lines of doctrinal argument -- all recalling the meaning of past revelation. It is essentially trapped in

linearity with little capacity to map the lines into any pattern of larger coherence, other than through story lines. It calls upon believers to follow those lines as the key to engendering and sustaining belief.

Metaphorically the lines may be compared to sticks -- or to logs (in a log jam) rather than trees in a forest. The wood cannot be seen for the trees -- themselves threatened with clearance and deforestation. With respect to any "tree of knowledge", it highlights the need to think like a forest or die like a log (Humberto Maturana and Francisco Varela, *The Tree of Knowledge: the biological roots of human understanding*, 1987). This suggests the following visual representations.

Pick-a-Stick (image of the Mikado game)	**Tangents to a circle**	**Log-jam**
		

Potential associations to the suffix of theosophy (-*sophy*): Useful associations are to be found in widely appreciated books and movies in which individuals are confronted with existentially challenging choices -- typically profoundly tragic in some way, possibly characterized by a degree of paradox. Examples of such works are *Sophie's Choice* (1979) by William Styron, *Sophie's World* (1991) by Jostein Gaarder, and *Catch-22* (1961) by *Joseph Heller*. Thus a Catch-22 is now recognized as a paradoxical situation from which an individual cannot escape because of contradictory rules. Related examples cited of such conflictual situations include: Hobson's choice and Kobayashi Maru. A "Sophie's Choice" is now recognized as any dilemma in which choosing one cherished person or thing over the other will result in the death or destruction of the other.

Clearly individuals engage with this modality when faced with disasters in which risking their own lives, possibly with the certainty of death, is weighed against the opportunity of saving others -- as in many acts of heroism. They imply recognition of a higher order of integrity in responding to the reality of circumstances -- whatever the choice made. With respect to the suffix "-sophy", choices made under all the conditions cited imply a degree of "sophistication". That term has however acquired pejorative connotations in specific instances -- specifically associated with fashionable snobbery (Faye Hammill, *Sophistication: A Literary and Cultural History*, 2010).

Inquest on meaning in the moment via "theo"

The underlying concern in this exploration is loss of meaning experienced in the moment, irrespective of the claims made in relation to any of the four modalities of "theo". Part of the challenge is one of attention span, distraction, busyness and information overload -- usefully framed by the technical term of communication throughput. A useful focus is the challenge of engagement with "now", as separately explored (*Now as the Ultimate Cognitive Strange Attractor A continuing invitation "down the rabbit hole"?* 2014). This has been specifically addressed by Douglas Rushkoff (*Present Shock: when everything happens now*, 2013). In practice it calls for skills in living in the moment, with all the incomprehension and uncertainty this may imply (*Living with Incomprehension and Uncertainty*, 2012).

With respect to insights from the sciences, Matthew Chalmers notes in a discussion of the subjectivity of quantum strangeness:

> From a human perspective, physics has a problem with time. We have no difficulty defining a special moment called "now" that is distinct from the past and the future, but our theories cannot capture the essence of the moment. The laws of nature deal only with what happens between certain time intervals. (*QBism: is quantum uncertainty all in the mind?*, *New Scientist*, 7 May 2014).

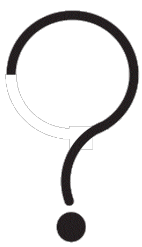
In practice, theory and theorem are preoccupied with explication, any sense of an underlying integration is only implied -- even if there are aspirations associated with theology or theosophy, as in the case of some mathematicians. Similarly, in practice theology and theosophy are preoccupied with implication -- even if they may be obliged to engage in explication.

Borrowing the framing offered by the quantum uncertainty principle, there is a case for exploring a correspondence between the particularity of such preoccupations with a wave-like reality potentially more resonant with subjective experience (*Encountering Otherness as a Waveform -- in the light of a wave theory of being*, 2013; *Being Neither a-Waving Nor a-Parting: cognitive implications of wave-particle duality in the light of science and spirituality*, 2013).

Curiously the effort to capture "now" and give meaning to the moment is intimately related to enthusiasm for photography and its aesthetics -- with the further suggestion that each of the "theo" modalities may then be recognized as a form of cognitive lens.

Given the mnemonic and aesthetic suggestions presented above, these may be employed together to clarify the situation further. There are curious paradoxes which merit comment.

Mnemonic indications regarding "theo*"			

			
Laughter theory (-ry)	Weeping theorem (-rem)	Answer theology (-logy)	Question theosophy (-sophy)

- Theory offers meaning in the moment when it is joyfully discovered and creatively elaborated -- possibly gleefully and with laughter. Thereafter the laughter takes on a quality of echoing the past -- a ghostly laughter (even a cackling from a place of death). Some of the meaning in the moment may however be recovered through humour about death.
- Theorem offers a degree of sorrowful meaning in the moment through recognition of its limitation -- of what it does not include and encompass. There is a continuing sense that its place in the integrity of any larger whole has been lost. It is a dissociated insight into a larger pattern into which it does not adequately fit such as to engender that pattern. As a jewel in Indra's Net, there is a sense in which it no longer reflects and refracts the light within the larger pattern and is reduced to being an "ordinary stone" rather than a "precious stone" (enstoning ***(Memorial to theo, memory of theo
- Theology offers a degree of meaning in the moment through lines of scripture, lines of prayer, lines of song, and lines of doctrinal argument -- all recalling the meaning of past revelation. It is essentially trapped in linearity with little capacity to map the lines into any pattern of larger coherence, other than through story lines. It calls upon believers to follow those lines as the key to engendering and sustaining belief.
- Theosophy offers meaning in any moment of existential choice, framed by the paradox and tragedy this may imply. Taking the form of a question, the meaning derives from confrontation with an often deadly challenge to any sense of identity -- whether who am I, what am I, or why is this happening. *** imposition external

Advancement of human knowledge:

- with respect to theory, cannot (or wont) enumerate extant theories in a meaningful pattern
- with respect to theorems, cannot (or wont) enumerate extant theorems in a meaningful pattern
- with respect to theology, cannot (or wont) reconcile extant theological frameworks meaningfully
- with respect to theosophy, cannot (or wont) render meaningfully operable extant theosophical frameworks,

Especially across knowledge (and geographical) space and time:

- ignore or deprecate what is elsewhere
- ignore or deprecate what is elsewhen, especially in the past
- ignore or deprecate what may well emerge in the future

In summary, there is no comprehensive meta-perspective, and little motivation to produce one -- other than by denying perspectives that purport to be comprehensive, as with:

- theory of theories
- theorem of theorems
- theology of theologies
- theosophy of theosophies

broadcasting the message to the unconverted, purporting to have resolved issues of identity ***

unresolved sense of incompletion, exclusion and incomprehension as a challenge to identity ***

not encircling now (dot in circle) but encycling now (dot travelling the circle) -- 2 papers ***

Correspondences suggested by conventional articulation of theology

Another pattern of potential interest derives from the articulation of theology, as indicated by terms relating to specialized concerns of that discipline and sharing the prefix "theo". However, as noted above, a difficulty in considering them is that these tend primarily to be associated with Christian theology -- raising the question of articulations in the theology of other religions. With respect to the more general concern here, the question is how to use this articulation as a form of template to elicit correspondences with respect to the other three modalities.

The terms from theology, potentially usable as a framework, are listed below with possible correspondences (and notably those of mnemonic value). The latter have been derived selectively from other words sharing the suffix:

Theocentrism: the belief that deity is central to human existence (as opposed to anthropocentrism or existentialism). The meaning and value of actions done to people or the environment are then attributed to deity. This is especially evident in the case of monotheism.

- centrism, especially in terms of the particular perspective it frames through the geometrical metaphor, is potentially characteristic of any systemic construction. Of particular interest is the manner in which this may frame theories, notably with respect to the structure, shape and origin of the universe -- and the place of the planet within it. The attitude may also be applied to a sense of

the central role of any theory. It may also be evident with respect to individual identity -- as with any emphasis on the individual rather than the community. In each such case a particular position is privileged with respect to others thereby defined as peripheral. The pattern plays out in what is deprecated as theism, as scientism, or as syncretism.

- centrism in politics, as noted by *Wikipedia*, describes a political outlook or specific position that involves acceptance or support of a balance of a degree of social equality and a degree of social hierarchy or social inequality; whilst opposing political changes which would result in a significant shift of society either strongly to the left or the right. This is contrasted with syncretic politics as a form of politics outside of the conventional left-right political spectrum. The term derives from the understanding of syncretism in religion, as itself contrasting with a centric theological worldview.
- curiously, despite the sophisticated developments in mathematics and physics, notably with respect to global and local organization, there is little recognition of the complementary role of acentrism and the nature of the cognitive relation between centric and acentric modalities
- curiously any such form of centrism, notably "monotheism" engenders secondary hierarchies (with their respective "angels", etc)

Theogony: the articulation of reality as a whole, offering an account of the birth or genealogy of the gods (from Greek *theogonia* "generation or genealogy of the gods," from *theos* "a god" (*theo-*) + *-gonia* "a begetting," from *gonos* "birth"); this universalizing impulse was fundamental for the early projects of speculative theorizing

- a correspondence can be recognized with cosmogony, with which it was naturally associated in speculation regarding the creation of the universe by divinity. As noted by *Wikipedia*, this is any theory concerning the coming into existence of either the cosmos, or the so-called reality of sentient beings. Developing a complete theoretical model has implications in both the philosophy of science and epistemology.
- notably through the relation to birth pains (as a characteristic of "begetting"), agony can be variously associated with forms of mental and other suffering through which anything, physical or conceptual, is engendered. The agony of completing any new initiative is readily comprehensible (especially when this involves an unprecedented degree of coordination and integration, with the necessary "delegation" of responsibility to secondary and minor "deities").

Theodicy: the effort to answer the question of why a supposedly benevolent divinity permits the manifestation of evil or suffering. The preoccupation is the resolution of the evidential problem of evil by reconciling divine characteristics of omnibenevolence, omnipotence, and omniscience, in either their absolute or relative form. It derives from the Greek (*theos*, "god") + (*dike*, "justice").

- a correspondence can be recognized in the preoccupation with regard to imperfections in any explanation, by comparison with some sense of perfection or completeness -- as with the sense of "goodness of fit" in any design. This calls for a capacity to encompass imperfection in practice, allowing for it through safety factors (*Comprehensive patterning of (in)comprehension and (im)perfection*, 2012). This may extend to concern as to why there is not wider uptake of some insight considered more significant or fruitful. Ironically science, religion and politics are all variously concerned with a degree of alienation from their projects -- with "unbelievers" in theological terms and the emergence of heresies and schismatic tendencies. This has long been the case with respect to insights framed as wisdom.
- the preoccupation may be more evident in the response to error or ignorance, and being "not even wrong" (or "wronger than wrong") -- as creatively articulated by John Keats with respect to negative capability. The challenge is evident in the dismay of the natural sciences at the preoccupations and methodology of the social sciences -- and in the effort to overcome them. This may play out in the challenge of "embracing error" (as noted above) -- and the paradoxes associated with that process in framing a more complex form of "perfection", encompassing inadequacy and decay
- especially problematic is the association of the "evil" and "imperfection" (supposedly calling for explanation) with women considered as their exemplification. This has been evident in science in reinforcing views regarding the inherent inferiority or ignorance of women
- a fruitful mnemonic is suggested by the jargon term "dicey" -- as being indicative of danger and risk

Theocracy: a form of government in which a deity is officially recognized as the civil ruler, with policy governed by officials (or a priesthood) regarded as divinely guided through a special understanding of divine law. It derives from the Greek (*theos*, "god" and *kratos* "a rule, regime, strength").

- timocracy as a state where only property owners may participate in government, is suggestive of an emerging pattern in science in which only owners of intellectual property may participate in its processes. An equivalent may be seen in the authority accorded to lineage in various wisdom traditions. Equivalents may be seen in the more extreme forms of timocracy, where power derives entirely from wealth (however that is understood) with no regard for social or civic responsibility. These may shift to become a form of plutocracy where the wealthy and powerful use their power to entrench their wealth, and especially when this takes non-monetary form
- gerontocracy, through questionable conflation of wisdom with age, is evident in priesthoods and academic hierarchies of influence -- consecreated in use of "elders"
- meritocracy as a political philosophy holding that power should be vested in individuals according to "merit" (with advancement based on intellectual talent measured through demonstrated achievement) may be recognized as a characteristic advocated in the sciences, and extending to the wisdom traditions. A variant is recognized as technocracy, namely as a form of governance involving those who have knowledge, expertise, or skills, rather than elected politicians, businesspeople, and economists
- various proposals have been made for governance by the wise (in contrast with the religious), most notably the noocracy (or "aristocracy of the wise"), as defined by Plato, and developed by Vladimir Vernadsky and by Pierre Teilhard de Chardin. This is a social and political system that is based on the priority of human mind. Other variants have been proposed as sophocracy and geniocracy
- curiously any form of "-cracy" (including democracy) is much challenged by how to ensure fruitful communication with those

excluded to any degree in any way
- a fruitful mnemonic is suggested by the jargon term "crass"

Theonomy: the state of an individual or society that regards its own nature and norms as being in accord with the divine nature -- in effect of being governed by divinity through divine law. This derives from the Greek ("*theos*" god, and "*nomos*" law). The term has been used to describe various views which see divinity as revealed by the scriptures as the sole source of human ethics. As understood by Christian authors this may take the form of proposals for theocratic republics with exclusion of non-Christians from voting and citizenship and the application of Biblical law by the state. Equivalent arguments are formulated by theologians of other religions, most obviously in the case of Islam with respect to *sharia*.

- the suffix (-nomy), in deriving from *nomos*, is variously interpreted as arranging, regulating or managing. Its relevance to the sciences is evident in its use in astronomy, economy, and taxonomy, for example.
- the suffix is also suggestive of requisite conformity, as in its use in nomenclature and *Nomenklatura*. This may extend to the attribution of secret or mysterious names as a mask of identity *** secret name
- corresponding issues in the sciences are evident when the modality is perceived by its practitioners and critics as being a "law unto itself". This may be even more evident in the practice of secret societies inspired by a particular form of wisdom, held to justify a sense of superiority. The consequences become evident in the problematic dynamics between exemplars of any such groups.

Theophany: meaning "appearance of god", refers to the manifestation of divinity to a human being, namely the sensible sign by which the presence of deity is revealed (from *theos* 'god' and *phainein* 'to show').Epiphany was originally a Greek festival at Delphi during which the statues of Apollo and other gods were displayed to the public.

- an equivalent may be noted in the process through the which the "gods" of any academic discipline (or celebrity A-list) are placed on display at regular events (summits, conferences, talk shows, etc). Such people may even be known to their immediate followers as "God". If sufficiently charismatic, they may be expected to engender an epiphany amongst those attending those occasions.
- whether with respect to the sciences or the wisdom traditions, particular attention may be required by (and accorded to) the psychologically abnormal -- whether readily framed in terms of idiocy, special giftedness, madness, or genius (savant syndrome, crazy wisdom, etc).

Theomachy: meaning "battle of the gods", in reference to battles fought against or among the Greek Olympians.

- as noted above by Nicholas Rescher (*The Strife of Systems: an essay on the grounds and implications of philosophical diversity*, 1985)
- with the "gods" of sciences or the wisdom traditions framed as above, their "battles" are only too evident in the dynamics of their encounters (whether face-to-face or via some medium) -- or in their tactical avoidance of each other. The battles may however not be widely known
- whether occurring within an arena of discourse or not, the "battles" may be specifically recognized as logomachy, namely arguing about the meaning of words -- and possibly perceived as essentially sterile and unfruitful for that reason,

Patterns of cognitive functions associated with variants of "theo"

In considering the cognitive functions in relation to the modalities of "theo", the recognition of distinctions is usefully to be seen as constrained by the cognitive limitations of the human mind. Any favoured pattern is effectively a reflection of such constraints, as variously argued (George Lakoff and Rafael Nuñez, *Where Mathematics Comes From: how the embodied mind brings mathematics into being,* 2001).

Potentially most relevant in the articulation of sets of cognitive functions is the much-cited work of George Miller (*The Magical Number Seven, Plus or Minus Two: some limits on our capacity for processing information*, *Psychological Review*. 1956). This patterning limitation is evident in a wide variety of domains (*Patterns of Conceptual Integration*, 1984; *Representation, Comprehension and Communication of Sets: the role of number*, 1978).

A relatively obvious possibility is to explore the correspondence of the four modalities of "theo" with the four main psychological functions as originally proposed by Carl Jung (*Psychological Types*, 1921), and widely influential since then. The four main functions of consciousness distinguished were:

- perceiving functions: sensation and intuition
- judging functions: thinking and feeling

On the understanding that each partakes of the other to some degree, fruitful primary correspondences with respect to the above argument might then be:

- thinking: theory, given the manner in which theories are explored, elaborated and criticized
- sensation: theorem, given the tangible closure associated with proof of any axiom or use of any associated set of rules
- feeling: theology, given the judgemental emphasis on faith and belief
- intuition: theosophy, given the role of intuitive insight in exploring more general patterns

According to the proposal of Jung, the functions are modified by two main attitude types: extraversion and introversion. The resulting correspondences might then be:

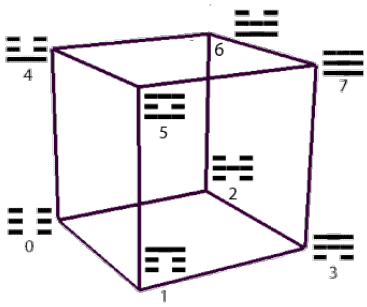
- extraversion, as the dominant characteristic of theory and theorem, consistent with the emphasis on objectivity, externality and

explication
- introversion, as the dominant characteristic of theology and theosophy, consistent with the emphasis on subjectivity, internality and implication

This would give rise to an 8-fold pattern of distinctions.

8-fold pattern of "theo*"?			
		primary	**secondary**
extraversion	theory	thinking	intuition
	theorem	sensation	feeling
introversion	theology	feeling	thinking
	theosophy	intuition	sensation

Consideration has been given by various authors to ordering Jung's pattern (and its subsequent extension into the Myers-Briggs Type Indicator) in terms of the symbolic *BaGua* trigram coding -- especially in the light of Jung's own later interest in the *I Ching*. A fruitful summary of these considerations has been made by Peter D. Loly (*A Logical Way of Ordering the Hexagrams of the Yijing and the Trigrams of the bagua*. *The Oracle: the Journal of Yijing Studies,* 2002). It is the possibility of some such patterning that is of interest here, not the most fruitful attribution. Loly's own efforts gave rise to the following pattern with respect to the 8 trigrams.

Sequence of 8 trigrams	**3D cube for the 8 trigrams proposed by Peter Loly**, with addition of the integers from the Leibnitz algorithm (redrawn from version by Peter Loly)
Standard binary order of Shao Yung-Leibnitz	
	
Revised sequence proposed by Peter Loly	
	

Especially problematic with respect to both tabular and cubic representations is the manner in which they reinforce assumptions as to the comprehensibility of the cognitive distinctions they represent. Fundamental to the modalities represented, as stressed in the Jungian 8-fold typology (and the MBTI 16-fold extension) is the sense in which, for a given individual, particular modalities are dominant and others repressed. These biases may be understood in terms of over-reliance and under-comprehension respectively. The latter corresponds to "sub-understanding" in the terms of Magoroh Maruyama (*Polyocular Vision or Subunderstanding? Organization Studies*, 2004). expressed otherwise, attaching equal weight to contrasting elements in any array or mapping does not imply equal comprehension.

The periodic table can perhaps be used as the most suggestive example, as argued and elaborated with respect to a *Functional Classification in an Integrative Matrix of Human Preoccupations* (1982). This approach was developed further (*Periodic Pattern of Human Knowing: implication of the Periodic Table as metaphor of elementary order*, 2009; *Periodic Pattern of Human Life: the Periodic Table as a metaphor of lifelong learning*, 2009; *Tuning a Periodic Table of Religions, Epistemologies and Spirituality -- including the sciences and other belief systems*, 2007).

Of particular interest is the sense in which the variety of "ways of investing attention" can be understood as "ways of knowing". As with the periodic ordering of the chemical elements, unfruitful simplistic orderings can be challenged from the mathematical perspective of Denis H. Rouvray and colleagues (*The Mathematics of the Periodic Table*, 2005), as separately discussed (*Towards a Periodic Table of Ways of Knowing -- in the light of metaphors of mathematics*, 2009). As noted there, of particular interest is then the design of such a framework -- understood here as a guide to possibilities of investing attention.

Extensive use of illustrations is made separately in the continuation of this argument in Part 2 (*The-O Ring and The Bull Ring as Spectacular Archetypes: dramatic correlation of theatre, theory, theorem, theology, and theosophy*, 2014).

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