Without the science of intangibles, the earth is still flat

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ABSTRACT. The modern age, leading up to the Information age, has been dominated by Europe-centered science, often termed as the 'New Science'. Even though it is not readily recognized, the root of this New Science lies within Aristotle's theory of excluded middle and old Greek philosophy that confuses between ideal and real. These same principles, which is synonymous with the short-term approach (focusing on tangibles or taking \(\Delta t\) to 0), was supported by the Roman Catholic Church, which, in turn opposed the emergence of New Science. This dichotomy is not clear as the original science (as in process) has been divided into many branches, such as hard science, social science, theology, and others. Because this distinction is not clear, a scientist can be pro-science and pro-Church at the same time. This would explain why most scientists who are credited to have pioneered new science did not confront the fundamental dogmas of the Church. Galileo, for instance, never opposed the original dogma of Catholic church yet he drew the wrath of the church because he opposed the literal (tangible) meaning of the book that was being promoted as the holy book (\textit{bible} literally means, The Book). In scientific sense, what Thomas Aquinas, the man credited to have revived Aristotelian logic (via Averröes's translation), was to Christianity what Newton was to New Science and Mathematics. Both of them based their syllogism on the first premise that was aphenomenal. It is no surprise that most of the New Scientists are 'believers' of Christianity. Greek philosophical notions of idea or form could not be verified or disproved by experiment, so outside of mathematics, the Greek philosophical approach was sloughed off in experimental science. The problem was that neither the Greek notions of idea and form, nor experimental science, revealed the truths of nature. Yet, those notions were dominant in New Science. Experimental studies had the advantage of helping to eliminate what was outrightly false. In itself, that only eliminates possibilities. It does not automatically tell us what is true or even distill the truth from whatever remains after the false has been eliminated. Einstein made a big leap forward with the notion of thought-experiment, but this has proven difficult to rigourise in terms of modeling. Meanwhile, everything that claims to be rigorous in contemporary scientific modeling is highly suspect precisely to the extent that these models fail to account for multiple and-or singular solutions. The main problem with aphenomenal models (that have dominated the New Science) is their assumption of mechanisms that are not anywhere in evidence in physical nature/reality. The problem with Greek-philosophical abstract ideas and forms is the assumption that whatever exists in reality is just the materialization of the abstract idea. The deficiency in the Greek-philosophic method is the absence of any notion of pathway, while the deficiency of the aphenomenal model is its inherent assumption of 'either with us or against us', leaving no room for the science of intangibles. In this paper, first approximations of Newton's 'laws' as well as other fundamental 'laws' of Physics, Chemistry, and Mathematics are presented and compared with fundamental traits of nature. It is shown that each of these 'laws' has an aphenomenal basis, making the

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each of them inherently aphenomenal. The paper then discusses the implications of these 'laws' and how engineering based on these 'laws' would lead to processes that are inherently anti-nature, hence, unsustainable. It is shown that by focusing on tangibles (i.e., eliminate root and pathway from a process), the New Science has become a tool for confirming the prejudice that fueled the investigation. This is contrary to any true scientific investigation that should not allow any prejudice to propagate, let alone form the basis of a scientific process. The paper further argues that with the science of tangibles, doing more of the same science will not advance knowledge and will in fact render a falsehood (from ignorance) into an apparent (perception of) truth. Finally, the paper shows an outline on how to introduce the science of intangibles – the essence of knowledge.

1. INTRODUCTION
It is becoming increasingly clear that the current mode of technology development is not sustainable (Mittelstaedt, 2007). Most agree with Nobel Chemistry laureate Dr Robert Curl that the current technological marvels are ‘technological disasters’. Few, however, understand the root cause of this failure. This failure now endangers the future of entire species, including our own. Many theories put forward— including those branded as ‘conspiracy theories’, ‘pseudoscience’, ‘creationism’, etc. — but none provides answers to the questions that face the current perilous state of the world.

This lack of sound, fundamentally correct theories is felt in every sector. The outcome is seen in the prevailing popular mood throughout Western countries that “there is no alternative”. This so-called TINA syndrome was recently identified once again by Zatzman and Islam(2007a), who credited former British Prime Minister (now Baroness) Margaret Thatcher with its enunciation during the 1980s as the secular equivalent of Holy Write among Anglo-American policymakers. The essence of this approach upholds and promotes the status-quo as the only way to move forward – a modus operandi that is inherently anti-nature and, hence, implosive.

The situation has meanwhile become so desperate that some Nobel laureates (e.g., Robert Curl) or environmental activists (e.g., David Suzuki) openly despair Humanity’s acquisition of technology in the first place as a form of societal ‘Original Sin’. Others have pinpointed the severe pollution burdens mounting especially in the energy resource exploitation sector to single out petroleum operations and the petroleum industry for special blame. In the context of increasing oil prices, the petroleum sector has become an almost trivially easy target, and this situation has been compounded by more recent pronouncements from current US President George W. Bush about “oil addiction”. Even his most ardent detractors have welcomed this particular comment as a signal insight (Khan and Islam, 2007a). Numerous alternate fuel projects have been launched — but they propose the same inefficient and contaminated processes that got us into trouble with fossil fuel.

Albert Einstein famously stated, “The thinking that got you into the problem, is not going to get you out.” Today, there is no evidence that modern Eurocentric civilization is ready to propose a way out of this technological conundrum. The symptoms are ubiquitous, from toxic addiction (Mittelstaedt, 2006) to global warming (Chhetri and Zatzman, 2008). How is the crying need to treat these symptoms being addressed, however? Soon after it was revealed that the farmers of India have been committing suicide in record numbers, and that the much-vaunted ‘green revolution’ was actually a fraud keeping humanity in a chokehold (Saunders, 2007), the Congressional Medal of Honour was bestowed on Dr Norman Borlaug. This is the individual who orchestrated the key experimental research undertaken with Mexican maize in the 1940s that underpinned the eventual introduction of costly chemical pesticides, herbicides and other ‘aids’ for enhancing the productivity of individual tillers throughout the Third World, in one crop after another (Editorial, 2007).

In the chemical sector (food, drug, and lifestyle), similar absurdities continue to abound. Recently, chemical companies ‘celebrated’ 100 years of PVC, as though PVC has done Humanity good. Yet, China is being accused of using PVC and other toxic chemicals in children’s toys, leading to the recall (only in USA and Europe) of millions of toys (CNN, 2007). Weeks before, the head of China’s Food
and Drug Administration was executed for allowing unwanted chemicals in drugs. That followed weeks of other major scandals (or accusations) regarding Chinese chemical treatment of food and health products (e.g., toothpaste) earmarked for export to United States. In this same year, debates have been raging around the possible connections to chemical fertilizer, chemical pesticides, genetically modified crops, and you-name-it to honey bee Colony Collapse Disorder (CCD) among European honey bees. This is a crisis that can wipe out human race from the planet. Some time in the last century, Albert Einstein was famously quoted saying: “If the bee disappeared off the surface of the globe then man would only have four years of life left. No more bees, no more pollination, no more plants, no more animals, no more man.” (Häfeker, 2005). Yet scientists don’t seem to have clue about what is taking place and they are only busy trying to save their own turf. Concerning CCD, every scientific article that appeared pointed the finger to ‘other science’ - other meaning other than the one that is funding the research. Then, soon there is another publication, this time from the one at whom the finger was pointed and this scientific article refutes everything that was said before and points fingers to everyone else other than his/her own funding agency’s science. It happened regarding link of cell phone to brain cancer, link of microwave cooking to elimination of nutrients, link of night light to myopia, link of fluorescent light to depression, and the list truly goes on for ever (Zatzman and Islam, 2007b).

This paper goes to the root of the problem related to post-renaissance New Science. It identifies the reasons behind the science that accounts for the current status of the world that threatens the very existence of life on this planet. It then gives clear directions as to how to get out of this mode and start living like the only thinking species (Homo sapiens means ‘thinking man’).

![Figure 1](image.png)

**Figure 1.** Logically, a phenomenal basis is required as the first condition to sustainable technology development. This foundation can be the Truth as the original of any inspiration or it can be ‘true intention’, which is the essence of intangibles.

## 2. PRE-CONDITIONS FOR INCREASING KNOWLEDGE

Following a scientific model originally proposed by Averröes (known as Ibn Rushd in the eastern world), Zatzman and Islam (2007b) outlined the basis for increasing knowledge. As Figure 1 points out, the knowledge can only increase if the three reality conditions are met. They are: 1) real root (true first premise for a logic and true (good, as in long-term) intention for an action); 2) true pathway (correct science in logical train or natural pathway in product development); 3) true end (leading to universal balance, just consequences, or ultimate salvation for an individual). In this graph, it must be clarified that there is only one truth, but infinite number of falsehood. Because the science of tangibles, also known as the New Science, only works with numbers, it is inherently incapable of formulating a knowledge-building logic. This science is incapable of differentiating between real and artificial or truth and falsehoods. The only way to increase knowledge is to introduce the science of intangibles. Recently, Mousavizadegan et al. (2007) identified the need of including a continuous time function as starting point of acquiring knowledge. This is also the pre-condition for the science of intangibles (Zatzman and Islam, 2007a). The knowledge is conditioned not only by the quantity of
information gathered in the process of conducting research, but also by the depth of that research, i.e., the intensity of one’s participation in finding things out. In and of themselves, the facts of nature’s existence and of our existence within it neither guarantee nor demonstrate our consciousness of either, or the extent of that consciousness. Our perceptual apparatus enables us to record a large number of discrete items of data about the surrounding environment. Much of this information we organize naturally and indeed unconsciously. The rest we organize according to the level to which we have trained, and-or come to use, our own brains. Hence, neither can it be affirmed that we arrive at knowledge directly or merely through perception, nor can we affirm being in possession at any point in time of a reliable proof or guarantee that our knowledge of anything in nature is complete.

Table 1. Criterion, origin, pathway and end of scientific methods in some of the leading civilizations of world history

| People                  | Criterion | Origin                  | Pathway                      | End                      |
|-------------------------|-----------|-------------------------|------------------------------|--------------------------|
| Zatzman and Islam (2007a) | $\Delta t \to \infty$ | Intention                | $f(t)$                       | Consequences             |
| Khan (2006)             | $\Delta t \to \infty$ | Intention                | Natural                      | Sustainability           |
| (Zatzman and Islam, 2007b) | $\Delta t \to \infty$ | “God does not play dice…” | Natural                      | Natural (used $\Delta t \to \infty$ to validate intention) |
| Einstein                | $t$ as 4th-D | “external force” (1st Law) | No difference between natural & artificial | N/A                      |
| Newton                  | $\Delta t \to 0$ | All knowledge & truth reside in God; choice resides with Man | Universe will run down like a clock |
| Aquinas                 | Bible     | Acceptance of Divine Order |                             | Heaven and Hell          |
| Averroës                | Al-Furqan (meaning The Criterion, title of Chapter 25 of The Qur’an) stands for Qur’an | Intention (first hadith) | $Amal saliha$ (good deed, depending on good intention) | Accomplished (as in Muflehoon, 2:5), Good (+\infty) |
|                         |           |                         |                              | Losers (as in Khasheroon, 58:19), Evil (-\infty) |
|                         |           |                         | $Eudaimonia$ (Eudaimonia, tr. “happiness”, actually more like “Man in harmony with universe”) |
| Aristotle               | $A$ or not-$A$ ($\Delta t=0$) | Natural law              | Natural or artificial agency |                         |
| Ancient India           | Serving others; “world reveals itself” | Inspiration (Chetna) | $Karma$ (deed with inspiration, chetna) | Karma, salvation through merger with Creator |
| Ancient Greek (pre-Socratics) | $t$ begins when Chaos of the void ended | the Gods can interrupt human intention at any time or place | N/A | N/A |
| Ancient China (Confucius) | N/A       | Kindness                | Quiet (intangible?)          | Balance                  |
Historically, what Thomas Aquinas model did to European philosophy is the same as what Newton’s model did to the New Science. The next section examines Newton’s models. Here it would suffice to say that Newton’s approach was not any different from the approach of Thomas Aquinas or even Aristotle. One exception among scientists in Europe was Albert Einstein, who introduced the notion of time as the fourth dimension. However, no one followed up on this aspect of Einstein’s work and it was considered that the addition of a time term in the Newton’s so-called steady state models will suffice. Mustafiz (2007) recognized the need of including the time dimension as a continuous function and set the stage for modeling science of intangibles (Abou-Kassem et al., 2007). Table 1 summarizes the historical development in terms of scientific criterion, origin, pathway and consequences of the principal cultural approaches to reckoning, and reconciling, the tangible-intangible nexus.

With this above table, we present a table (Table 2) that shows the characteristic features of Nature. These are true features and are not based on perception. They are true because there are no example of their opposites.

3. PROBLEMS WITH THE NEW SCIENCE

The new science has the root in Aristolean logics. As Table 1 indicates, Aristotle, as well as his followers (Thomas Aquinas in theology and Newton in New Science) all focused on short-terms. Scientifically, it means they worked on perception, rather than reality (e.g. if you cannot see it doesn’t exist). What was not helpful is the notion of pragmatic approach that perverts the reality by introducing the logic ‘whatever works must be true’ (Khan and Islam, 2007a). This notion excluded any possibility of challenging the first premise of any theory. Nothing has changed today. The most important reason that McDonald’s is allowed to continue to raise havoc is that ‘they have sold over 100 billion hamburgers, even though everyone knows this number only means that many people have been adversely affected (Spencer et al., 2005). Prince Charles talks about it (when he told the Sheikhs of Abu Dhabi, “Have you considered banning McDonald’s?”) and even novice movie makers talk about it with a lot of acclaim (Morgan Spurlock and his documentary, Supersize Me!), but scientists seem to be puzzled by this development and remain tight lipped about offending any establishment. What could be the reason behind this fear?

In the words of Aristotle (384-322 BC): “The chief forms of beauty are orderly arrangement (taxis), proportion (symmetria), and definiteness (horismenon)” What is the problem with this statement? Scientifically, there is no such thing as ‘orderly’, ‘symmetrical’, or ‘definite’ in nature. If Aristotle is right along with all who say “God created us in His image”, we must have an ugly God. This cannot be a true first premise – the first condition of a knowledge-leading logic. Yet, practically all theories and ‘laws’ that emerged from the time of renaissance suffer from the same problem – their first premise is false, as in something that does not exist. If one considers the fundamental features of nature, the following true features emerge. They are true because there is no counter example of them. They are: 1) Complex; 2) Chaotic; 3) Unpredictable; 4) Unique; 5) Productive; 6) Non-Symmetric; 7) Non-Uniform; 8) Heterogeneous; 9) Internal; 10) Anisotropic; 11) Bottom-up; 12) Multifunctional; 13) Dynamic; 14) Irreversible; 15) Open system; 16) True; 17) Self healing; 18) Non-linear; 19) Multi-dimensional; 20) Infinite degree of freedom; 21) Non-trainable; 22) Infinite; 23) Intangible; 24) Open; 25) Flexible. Consider these features and then compare them to the first premise of various ‘laws’ and theories, as shown in Table 2. Note how the first premises of practically all of these theories violate fundamental features of Nature. Only conservation of mass that in fact has root in ancient times and theory of relativity do not have an aphenomenal first premise. It is important to note that only recently Kvitco (2007) discredited Einstein’s relativity altogether. However, he did not elaborate on the first premise of the theory. Our contention is, Einstein’s relativity theory appears to be spurious if processed through the science of tangibles. So far, there is no evidence that the first premise of the theory of relativity, as Einstein envisioned, is aphenomenal. Now, if New Science has given us only theories and ‘laws’ that have spurious first premise, Averrôes criterion would make New Science aphenomenal. This is indeed found in modern technologies that have resulted in ‘technological
disasters’, reversing originally declared ‘intention’ for every technology (Khan and Islam, 2007b). We
find no exception to this aphenomenal first premise ranging from quantum mechanics and
nanomaterials (Shewe and Stein, 1999; Tung et al., 2006) to technology development (Khan and Islam,
2007b).

Table 2. How the Natural features are violated in the first premise of various ‘laws’ and
theories of the science of tangibles

| Law or theory                  | First premise                                                                 | Features violated |
|--------------------------------|-------------------------------------------------------------------------------|------------------|
| Conservation of mass           | Nothing can be created or destroyed                                          | None             |
| Lavoisier’s deduction          | Perfect seal                                                                 | 15               |
| Phlogiston theory              | Phlogiston exists                                                            | 16               |
| Theory of relativity           | Everything (including time) is a function of time                            | None             |
|                                | Mass of an object is constant                                                | 13               |
|                                | $E = m c^2$                                                                  | 13               |
|                                | Speed of light is constant                                                   | 14, 19, 20, 24   |
|                                | Nothing else contributes to E                                                |                  |
| Planck’s theory                | Nature continuously degrading to heat dead                                    | 5, 17, 22        |
| Charles                        | Fixed mass (closed system), ideal gas, Constant pressure,                   | 24, 3, 7         |
| Boyle’s                        | A fixed mass (closed system) of ideal gas at fixed temperature               | 24, 3, 7         |
| Kelvin’s                       | Kelvin temperature scale is derived from Carnot cycle and based on the      | 3, 8, 14, 15     |
|                                | properties of ideal gas                                                      |                  |
|                                | Energy conservation                                                          |                  |
| Thermodynamics 1st law         | (The first law of the thermodynamics is no more valid when a relationship of | None             |
|                                | mass and energy exists                                                       |                  |
| Thermodynamics 2nd law         | Based on Carnot cycle which is operable under the assumptions of ideal gas   | 3, 8, 14, 15     |
|                                | (imaginary volume), reversible process, adiabatic process (closed system)    |                  |
| Thermodynamics 0th law         | Thermal equilibrium                                                          | 10, 15           |
| Poiseuille                     | Incompressible uniform viscous liquid (Newtonian fluid) in a rigid, non-capillary, straight pipe | 25, 7 |
| Bernouilli                     | No energy loss to the sounding, no transition                                | 15               |
|                                | between mass and energy                                                      |                  |
| Newton’s 1st law               | A body can be at rest and can have a constant velocity                       | 13               |
| Newton’s 2nd law               | Mass of an object is constant                                                | 13               |
| Newton’s 3rd law               | Force is proportional to acceleration                                         | 18               |
|                                | External force exists                                                        |                  |
| Newton’s viscosity law         | The action and reaction are equal                                            | 3                |
| Newton’s calculus              | Uniform flow, constant viscosity                                            | 7, 13            |
| Fractal mathematics            | Limit $\Delta t \rightarrow 0$                                              | 22               |
|                                | Self similarity                                                              | 7                |
4. TRANSITION FROM TRANSPARENCY TO OPACITY WITH MATHEMATICS OF TANGIBLES

The publication of the book, *Principia Mathematica* by Sir Isaac Newton at the end of 17th century has been the most significant development in European-centered civilization. It is also evident that some of the most important assumptions of Newton were just as aphenomenal as the assertion of Thomas Aquinas, except Newton did not talk about Theology (Zatzman and Islam, 2007a). In the above, Newton’s laws need special attention. Newton’s laws are considered to be the most important aspects of modern engineering, yet the first premise of each of these laws is aphenomenal. The reasons are: they 1) remove time-consciousness (nature is truly dynamic); 2) recognize the role of ‘external force’ (equivalent to ‘gods playing with human intention in pre-Aristotle Greek philosophy); and 3) do not include the role of intention. In brief, Newton’s laws ignore, albeit implicitly, all intangibles from nature science. Similarly, the most significant contribution of Newton in mathematics as the famous definition of the derivative as the limit of a difference quotient involving changes in space or in time as small as anyone might like, but not zero, viz.

$$\frac{df}{dt} = \lim_{\Delta t \to 0} \frac{f(t+\Delta t) - f(t)}{\Delta t}$$ \[1\]

Without regards to further conditions being defined as to when and where differentiation would produce a meaningful result, it was entirely possible to arrive at “derivatives” that would generate values in the range of a function at points of the domain where the function was not defined or did not exist. Indeed: it took another century following Newton’s death before mathematicians would work out the conditions – especially the requirements for continuity of the function to be differentiated within the domain of values – in which its derivative (the name given to the ratio-quotient generated by the limit formula) could be applied and yield reliable results. Kline (1972) detailed the problems involving this breakthrough formulation of Newton. However, no one in the past did propose an alternative to this differential formulation, at least not explicitly. In addition, no one pointed out the information that is lost by invoking the differential form in stead of the algebraic form. Consider the following analysis. Let y be a simple function, defined by y = 5. Following steps show how this function simple function can take route of knowledge or ignorance, based on the information that is exposed or hidden, respectively.

Step 1: $y = 5$. This is an algebraic equation that means, $y$ is a constant with a value of 5. This statement is an expression of tangibles, which becomes clear if the assumptions are pointed out. The assumptions are: a) $y$ has the same dimension as 5 (meaning dimensionless); b) nothing else matters (this one actually is a clarification of the condition a). Therefore, the above function implies that $y$ cannot be a function of anything (including space and time). The mere fact that there is nothing in nature that is constant makes the function aphenomenal. However, subsequent manipulations (as in Step 2) make the process even more convoluted.

Step 2: $dy/dx = 0$. This simple derivation is legitimate in calculus that originates from Newton’s ratio of quotient theory. In this, even partial derivative would be allowed with equal legitimacy as nothing states in conventional calculus that such operation is illegitimate. By adding this derivative in $x$ (as in $x$ direction in Cartesian coordinate), a spurious operation is performed. In fact, if Step 1 is true, one can add any dimension to this the differential would still be 0 – statement that is ‘technically’ true but hides background information that becomes evident in Step 3.

Step 3: If one integrates $dy/dx$, one obtains, $y = C$, where $C$ is a constant that can have infinite number of values, depending on which special case it is being solved for. All of a sudden, it is clear that the original function. All of a sudden, it is clear that the original function (y=5) has disappeared.

Step 4: One special case of $y=C$ is, $y=5$. To get back the original and unique function (as in Step 1), one now is required to have boundary conditions that are no longer attached to the mathematical formulation. If a special case of C=5 is created, similarly one can have $y=1, 2, 3, 4, 5, 6, ...$. How does one know which solution will give the ‘true’ solution. Based on pragmatism, one resorts to
eliminating solutions that do not meet the immediate need. In this particular case, all but one solution are called 'spurious' solutions, because they failed to match the solution of interest, i.e., y=5.

This simple example shows how imposing Newton's differential and integrating procedure convolutes the entire process, while losing information that would allow anyone to trace back the original algebraic function. On the other hand, if one is looking at an actual phenomenon, then \( \frac{dy}{dx} = 0 \) could mean that we are at the very start of something, or at the very end of something. However, we actually don't know, because, in physical nature, spatial transformations that do not incorporate a time element are like the two-dimensional person who could be sleeping or dancing. If we look at \( \frac{\partial y}{\partial x} \), on the other hand, then we have to look also at \( \frac{\Delta y}{\Delta t} \), and then we also have to consider the situation where \( \Delta y/\Delta x=0 \) but \( \Delta y/\Delta t \) is non-0. This might very well be a branch-point, a point of bifurcation or, generally speaking, something marking a change from an old state to a new state. Branch-points in physical natural reality clearly imply infinite solutions, since the process could go, literally, anywhere from that branch-point. This approach of locating bifurcation phenomena has eluded previous researchers engaged in modeling chaos (Gleick, 1987). What does it mean in terms of useful applications? See Figure 2.

![Figure 2](image)

**Figure 2.** Economic wellbeing is known to fluctuate with time

In this figure, economic index (it may be one of many indicators) is plotted as a function of time. In nature, all functions are very similar. They do have local trends as well as global trend (in time). One can imagine how the slope of this graph on a very small time frame would quite arbitrary and how devastating it would be to take that slope to a long-term. One can easily show the trend, emerging from Newton’s differential quotient would be diametrically opposite to the real trend. There entails the modus operandi that is currently in place in every sector, but only openly recognized in politics (Shapiro et al., 2007). It is called the aphenomenon model. Here is how it works in the following 3 steps:

- Decide what outcome would please the establishment (e.g. the earth is flat, Adam would be 10,000 yr old);
- Model earth in a domain for which it appears to be flat (with no discernable pattern);
- Declare continuity in that domain and express the differential equation;
- Integrate with boundary conditions that would fit your objective (Step 1) and there you can miraculously discover, Establishment was right (e.g. the earth is flat, *homo sapiens* are 10,000 year old and aliens built the pyramids);
- In case there are doubters and critics, conduct experiments and declare any difference between Model solution (Step 1) and observed solution as ‘experimental error’.

This is what is done in order to justify medications that do not cure, foods that do not provide one with nutrition, light sources that damage the brain, energy sources that damage the lung, and the long
list of technologies that can only be characterized as ‘technological disaster’. Consider the following transitions, in which the profit margin has gone up but the quality went down exponentially.

- Air >> cigarette smoke, toxic smoke [aphenomenal mass balance that equates real with artificial]
- Water >> Coke [aphenomenal chemical balance that considers all molecules identical irrespective of their pathways]
- Tomato >> Ketchup [aphenomenal mass balance]
- Egg >> Mayonnaise [aphenomenal mass balance]
- Milk >> Commercial ice cream, cheese cake [aphenomenal mass and chemical balance]
- Corn, potato >> chips (trans fats!) [aphenomenal mass and chemical balance]
- Salad + oil >> coleslaw [aphenomenal mass and chemical balance]
- Sunlight >> Incandescent light >> Fluorescent light [aphenomenal energy balance that considers all photons to be identical; radiation to be discrete and non-impacting on mass; and ignores pathways]
- Human asset >> Human liability [based on aphenomenal assumption that all humans have infinite potential]

Overall, this is called the HSSA (Honey → Sugar → Saccharine® → Aspartame®, as described by Zatzman, 2007) that has seen a gradual transition from reality to aphenomenon (artificiality) as the profit margin skyrocketed, all in the expense of global instability and irreversible environmental damage.

5. THE WAY OUT: HOW DO WE FIND THE TRUTH?

Following five-step solutions are provided:

1. Observe nature (without accepting any prior theory or ‘law’). Nature is real and forms the foundation of phenomenal knowledge gathering.

2. Develop theory without a first premise that is aphenomenal (e.g. exact symmetry is aphenomenal, zero mass is aphenomenal, constant is aphenomenal). Make all assumptions explicitly known (so other researchers can investigate their roles afterwards).

3. Write the algebraic equation (engineering approach, as described by Abou-Kassem et al., 2006), rather than differential equation.

4. Solve the non-linear equation, without linearization (irrespective of the sequence of linearization).

5. Investigate all solutions. For economic evaluations, include the economics of intangibles.

6. SUMMARY AND CONCLUSIONS

The approach to knowledge in this paper has challenged many previous assumptions, not only in their contents but especially their “linearity” and implicit assumption of a more or less smooth continuous path of knowledge from the past into the present and the future. That is what this paper has set out to de-linearize.

Enormous blackmail was exercised against scientists aimed at compelling them to negate their conscience. This accounts for Galileo's resorting to defensive maneuvers (claiming he was not out to disprove Scripture) — a tactic of conceding a small Lie in order to be able to continue nailing down a larger more important Truth. Why mix such hypocrisy into such matters? Because it had worked for other investigators in the past. What was new in Galileo's case was the decision of the Church of that time not to permit him that private space in which to maneuver, in order to make of him an example with which to threaten less-talented researchers coming after him. The worst we can say against Galileo after that point is that, once an investigator (in order to get along in life) goes along with this, s/he destroys some part of her/his usefulness as an investigator.

Prior to the conflict with Church authority occasioned by the matter of Galileo's teachings, conflicts had already broken out about the relative weight of current knowledge discovered experimentally and what appeared to be the meaning and direction of earlier and most ancient knowledge. The Church’s authority was vested in the unchanging character of the key conclusions of
earlier investigators. This authority was never vested in the integrity and depth of probing by earlier investigators and investigations into all the various pathways and possibilities.

In this paper it is shown that little has changed since the time Galileo faced his enormous problem from the Establishment. To make it worse, there has been a Trinity formed as a joint venture among the Church, the Government and the Industry. Finding the truth has become more difficult than any other time in history. Today, under the conditions of what is known as the “Information Age”, this takes increasingly the form of what is known as “monopoly right”. Under present conditions and for the foreseeable future, IF & ONLY IF we put first the matter of the actual conduct of scientific investigations, as well as the ‘politics’ attaching to that conduct (meaning: the ways and means by which new results are enabled to build humanity's store of knowledge), THEN & ONLY THEN can we hope to reconstruct the actual line of development. With the knowledge of this actual line of development, for any given case, we can then proceed to critique, isolate and eliminate the thinking and underlying ideological outlook that keep scientific work and its contents traveling down the wrong path on some given problem or question. Without this true paradigm shift, our civilization will not move forward.

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