



Necessity Is the Mother of Invention: Invention Is the Unification of All Sciences

Archana Mukherjee, Partha Sarathi Mukherjee

Abstract

If we dissect the title of paper, the four words are significant like 'Mother', 'Invention', 'Necessity' and 'Unification of Sciences'. Among these, most important is 'Mother'. Both biological and Nature 'Mother' are important for existence of all in this planet. Biological mother is just the miniature of 'Mother Nature'. In fact, 'Biological Mother' introduces all of us with this wonderful 'Cosmic World'. Now proceed to 'Invention' and 'Necessity' those are totally dependent on both the 'Mothers'. We after being getting nourishment from 'Mother Nature' our human brain get stimulants to resurgence the required items already exist in 'Mother Nature'. Those resurgent items get renamed as 'Innovation'. The stimulated brain waves actually inspire the emission of regenerative thoughts as 'Thoughtful Philosophy' or the 'Hypothesis' of 'Science'. Later those Hypotheses get established with logical sequences as 'Science'. Therefore, philosophy is the root of all 'Scientific- Social- Technological and Environmental events. The thought waves in the form of 'Philosophical Science' actually getting generated from 'Conscious human brain'. The 'Conscious human brain' or 'Science of Consciousness' is the power house of "Resurgence and Regenerative Thought Waves". If we think deeply 'Science' it is within 'Conscience'. 'Gyana' is within 'Vigyan' and combinations of all these are getting transformed in 'Wisdom'. One can attain such wisdom only when 'human brain' is in resting state with most powerful 'Apparent Zero Entropy'. Rather, we can say our 'Mother Nature' gives us opportunity to explore more and more as per our need. Those get explored from 'Mother Nature' by tuning our brain at 'Stable Consciousness' under 'Apparent Zero Entropy'. 'Stable Consciousness' under apparent zero entropy leads to 'Unification of all Sciences'.

Keywords: *Mother, Invention, Necessity, Unification of Sciences*

Prelude To Invention, Wisdom, Life Force and Edible Energy



Prelude to Invention

The quote of the Greek philosopher- ‘Plato’ that ‘Necessity is the mother of Invention’ is the reality since inception of dwelling of human beings on this planet. In the primitive era- human beings had no shelter, formal food, health care and so on. In due course, food habits, shelter, health care had built up owing to necessity through progressive evolution. Yes, it is “necessity” which triggers our brain to think and those thought waves get translated in different forms of invention to meet our demands. Further, necessity is called as ‘Mother of Invention’. We all know we are born and live under the care of our biological ‘Mother’ as well as under the congenial environment of our ‘Mother - Nature’. Biological mother holds support to respective individual lives but ‘Mother- Nature’ holds all lives, non-living matters and interconnects all in a cyclic process.

In human life, scientific education begins at childhood during each step of our growth. Parents teach us how to sit, stand, eat and walk step by step. It involves child care, food, nutrition and health care sciences the various sectors of physical, chemical and biological sciences. The foundation of scientific and moral education we first receive from our parents and elders. Parents are our inborn teachers for overall growth.

While quoting Greek Philosopher Plato’s thought we must recall our ancient Indian wisdom. In Indian wisdom, parents are considered living God to children. Father and Mother teach us bit by bit to stand on our own. We should pay our respect to our mother with this verse

“Janani Janmabhoomischa Swargadapi Gariyasi” - means Our biological mother is more glorified than our birth place and heaven. Similarly, we should bow down to father with the verse

“Pita Dharma: Pita Swarga: Pita Hi Param Tapah

“Pitri Preetimapanne Priyante Sarvadevataah” - means Our biological father is our heaven, path finder and most lovable divine force.



Wisdom and Life Force

Our 'Ancient Wisdom' helps us to refine our characters with moral values of human beings and strengthen our intellects.

Our ancient wisdom taught us to be grateful to our 'Mother Nature' which provides us everything including 'Life Air' for our existence on this planet. Therefore, we should express our gratefulness to 'Mother Earth'- the holding supports, "Sun God" - the lamp of the Universe and other divine forces with the verse or our '**Gayatri Mantra**'.

"Om Bhur Bhuvah Svah Tat Savitur Barenyam

Bhargo Devasya Dhimahi Dhiyo yo nah Prachodayat"

We in the modern era know the various fundamental laws and theories which seem to govern the physical nature around us. However, what all had been depicted in ancient time in our sacred books are the fundamental laws which can define various mysteries beyond the scientific explanations. There are several such slokas that exist as our ancient treasures of science rather 'Super Science of Consciousness' to understand the "Super Nature and Supreme Power (energy)" exist to govern the visible and also the invisible world in the Supreme Cosmic world. One such very powerful and applicable to the super nature is our sacred '**Gayatri Mantra**'.

This mantra reveals the interconnectedness of everything in this Universe. Such as the living entities, the life force - 'The soul', their knowledge, intellect, wisdom, consciousness and the surroundings they exist in "Triloka (permanent shelters)". Let all get enlightened with divine sound, divine light energies which are always emitted from celestial divine forces and from the Supreme Divine Creator (The Solar being). We invoke all these celestial forces with '**Gayatri Mantra**' which is allowing us to take breath and live lively.

Edible Energy

The food and nutrition are the basics of human or living world's mobility. However the food, the calorie actually the edible energy comes from plant and animal kingdom. Plants are the efficient converter of solar energy into edible energy with the components of air and water. We all know how plant synthesizes carbohydrate. To synthesis carbohydrate in plant cells, chlorophylls absorb light energy from Sun then it is utilized to



convert inorganic substances like CO_2 , H_2O etc. subsequently into a complex carbohydrate. This provides us energy and makes us active to do various energy consuming works. Similarly, animals do depend on plants and other animals for edible energy. This simple example is just cited to understand that energy is always convertible, from one form to another. If we talk about thermodynamics (Callen 1985), then it will be understood better based on reality of the happenings around us in this physical world. However, the happenings beyond limited world are still remained unexplored as mystery.

The mystery of the universe's laws is encapsulated in several fundamental principles. The second law of thermodynamics states that in any natural thermodynamic process, the total entropy of a system and its surroundings always increase. Entropy, a measure of disorder or randomness, indicates that energy transformations are not entirely efficient, and some energy is always lost as heat. This fundamental principle has far-reaching implications for our understanding of the universe.

Innovative Idea is the key to Invention, an Outline of Innovation Management matrix

Innovative ideas are the key to open up the box of invention. However, brain waves driven innovative ideas are found to be different in respect to their implications. With regard to market needs, innovations can be classified into four categories (Satell 2012; Kalbach 2012) using Innovation Management Matrix (Fig. 1). This matrix identifies four types of innovations including basic research based on the problem they resolve with applicability.



Fig. 1 : Innovation Management Matrix

Well defined	Breakthrough innovation	Sustaining innovation
Not well defined	Basic research	Disruptive innovation
Not well defined		Well defined
Domain definition		

Basic Innovations

These are pillars or base to offer viable solutions for the basic problems. They can propel towards other innovations depending on the magnitude of the problems, its address & impact in the market.

Breakthrough Innovation

Breakthrough innovation refers to immense technological advances that propel an existing product or service ahead of competitors (Kalbach 2012). The breakthrough technologies are results of research conducted in R & D organizations with clearly defined problems, but the outputs are significant enough for use in diverse application domains.

Disruptive Innovations

A disruptive innovation is an innovation which provides high throughput consumer value of the existing product. Thereby creating a new market. In the process of providing high-quality consumer benefits, this innovation eventually disrupts the existing market and makes.



Sustaining Innovation

The sustaining innovations are technological advances which systematically improve the performance of current technologies along with dimensions of existing markets. In contrast to disruptive innovation, a sustaining innovation does not create new markets. Rather it evolves only existing ones with better value.

These four categories of innovations with practical implications of developed technologies in 'Root and Tuber Crops' have been well illustrated by Mukherjee *et al* 2024.

Coming back to broader aspects of "Innovation" is also the thought wave coming out of the human brain and spreading arena in the different spheres of science including the present era of "Microchip" or AI (Artificial Intelligence) the disruptive innovative technologies. Of course, AI has come out as a necessity today but we should always remember that the 'Human brain' is having "humanity feeling" whereas AI though will work like the human brain but it is devoid of human feelings.

In case of AI- "Necessity is the Mother of Invention" is quite confusing. 'Mother' is 'soulful word' very much integrated with ultra caring for all. However, in the case of AI it will work more precisely than any human being but it will not have the human feelings and is far away from 'motherly care'. When we talk about 'Unification of Sciences'. Yes, science is not an isolated field it is integrated with each and every section of human life and its surroundings like 'Soil Earth to Space'. Some aspects are apparently visible to us, some are not. Therefore, 'Science' too is nothing but infinitesimal action, reactions of the super active celestial entities. Those happenings are integrated, disintegrated and again reforming with various virtual forms from a core of unified 'Gyana- Vigyana'. Science, 'Vigyana- Gyana' has been well explained in various scriptures. Among those, the knowledge in 'Bhagavad Gita' is unique. While Arjuna was confused to perform his Karma, Lord tried to make Arjuna understand 'Karma' and 'Dharma'. Dharma is the path to perform the Karma. Arjuna needs to get rid of confusion regarding 'Karma - Dharma' in the battle field of 'Kurukshestra'. The verse on Gyana-Vigyana is not only for Arjuna. It is for all human beings to perform their duties rather 'Karma- Dharma' in righteous path. Let us try to understand the verse of 'Gita' in simplest way.



(Bhagavad Gita, Verse 6.8; Prabhupada and Bhaktivedanta Swami 2008)

**“Gyāna-Vigyāna-tṛptātmā kūṭastho vijitendriyah
yukta ity ucyate yogī sama-loṣṭāśma-kāñcanah”**

Translation:

"The yogī, who is fully content in knowledge (*Gyāna*) and wisdom (*Vigyāna*), who is unshaken (*kūṭastha*), who has conquered the senses (*vijitendriyah*), is said to be truly united (*yukta*). Such a yogī views a lump of clay, a stone, and gold as equal."

Śrī Krishna describes the highest state of self-realization, where the yogī attains complete contentment through both knowledge (*Gyāna*) and direct experiential wisdom (*Vigyāna*). The distinction between these two aspects is crucial in understanding the depth of this teaching. *Gyāna* refers to intellectual understanding, which can be acquired through study, reasoning, and contemplation. However, mere intellectual grasp of spiritual concepts does not bring transformation unless it is internalized through direct experience.

This 'deeper realization' is what has been termed as *Vigyāna*, which signifies knowledge that has been integrated into one's being through direct perception. In scientific terms, this differentiation is akin to explicit versus implicit learning. Explicit learning involves acquiring information consciously, while implicit learning occurs through experience and subconscious processing. A yogī who has attained *Vigyāna* does not merely understand spiritual truths in theory but perceives them as self-evident realities, shaping his thoughts, actions, and state of being.

In fact, if we go into depth of this verse we will be able to understand the interconnectedness, the integrated happenings and their rectification is going on in a cyclic way. In our illusory world "Space to Earth" are interconnected and the whole Cosmos is monitoring every such happenings in illusory world (Apara Prakriti) or inferior nature and the happenings in invisible world (Para Prakriti) or superior nature.

Gyana-Vigyan of Gita awakens 'Human Consciousness' the root of all inventions including 'microchip' or artificial brain 'components' to ignite 'human intellect' for 'Welfare' of Human beings and its environment.



Awakened 'Human consciousness' strengthens our intellects and guides us in righteous path to do good to others (Mukherjee 2023). If we think deeply, it is our 'Human Consciousness', the power store house of 'Gyana - Vigyana'. It triggers to work only when awakened. Hence, what all inventions are happening actually originating from awakened 'Human Consciousness' or 'Intellects'- The unified power house of 'Gyana - Vigyana'. After our birth, intellects get nourished from our parental care and grow slowly with maturity. The focused, matured knowledge enriches us with 'Wisdom'. 'Wisdom full' action guides us in the right path for 'Karma- Dharma'- The ultimate continuum of human life governed by 'Cosmos Veda'.

Gyana-Vigyana can be understood more lucidly by in depth knowledge of 'Energy and Consciousness'.

All Forms of Energy Including Edible Energy, Laws of Thermodynamics & Consciousness

While we explain the laws of thermodynamics, we realized that all forms of energy are changing with loss of some energy as heat. Such changes are observed to be obvious owing to randomness behaviour of energy. In fact, randomness can be explained as 'Unrest'. For every particle, everything needs to attain a resting position from unrest condition. Probably the third law of thermodynamics is observed to reflect that situation of energetic continuation from the unrest stage to 'resting stage' as 'Zero energy' or Entropy zero. If so, then what happens to the energies getting lost during the process from 'unrest' to 'rest'. As per 'Law of conservation of energy' – the lost energy also will recycle and continue to come to an apparent end but not an "Absolute end".

Edible energy also acts randomly like any other form of energy and its randomness manifests in different forms of human activities. Further, living beings require balanced food and nutrition to maintain good health. In fact, balanced food and nutrition provide stabilize energies and such energies recharge all the active parts of living bodies to be active in harmony. Such harmony only results in a healthy body. If there is imbalance in edible energy in any living being then there is randomness, anomaly and manifest as deficiencies, diseases etc. Therefore, the concept of a



balanced “Diet” has been enumerated. Further, any advancement of food, nutrition and medical sciences have enriched the concept of required “Edible energy” and its perfect sources to maintain stable or good health.

If we talk about “Zero Entropy and Beyond” as well as “Balanced Edible Energy” then we should not forget to discuss about the phase of “Consciousness”. Phase of consciousness can be explained through a hypothesis of mathematical explanation like C (PSI) of X (Bharadwaj *et al* 2025a; Bharadwaj *et al* 2025b). However, it is better to explain it with simplicity. Phase of “Consciousness” is nothing but the most important for human beings as they have super intellect. Such intellect comes from our “Central Nervous System”. Which allows us to think unlike other living beings. Our thought process only can allow us to attain “Super Intellect” and most importantly it illuminates our thought process further into “Consciousness”.

The stage of consciousness is alike to ‘Zero Entropy’. Which indicates our mind fully settled and stabilized with our body? Which otherwise is also the victim of randomness. When one reaches the phase of “Consciousness”, the external happenings cannot affect him. He totally comes out of randomness and reaches a stage of “Apparent Zero” but not “Absolute Zero”. During such phases the mind and body get totally stabilized. However, to attain this stage, we do need energy, probably that energy comes from powerful sources through intersections of different special energies may be from the unexplored path of “Zero Entropy and Beyond”.

Conclusion

All forms of energy including edible energy for food and nutrition follow the behaviour of randomness till it comes to a resting stage. All these can be well explained if we take any system around us. From complex substance to a simple one, from a macro body to a micro one, if we analyse those till their subatomic stage and beyond then things will be clear. The conversion of energy is a continuous process. If we try to understand the laws of thermodynamics and the law of conservation of energy then there must be energy beyond ‘Zero Entropy’. Those unexplored paths of energy beyond zero Kelvin can be explained with the path of **Consciousness**. The path of



consciousness does require energy from a powerful source which may be coming from the path of “**Beyond zero Entropy**”— The Reality of Real —A big question?? ?

Hence, if we dissect the whole process of ‘Celestial Cycle’ of ‘Cosmos’ - ‘Life’. – Wisdom, the whole continuum of ‘Cosmic Universe’ – Position of parents and mother earth found to be performing greater functions on integration of life, environment, scientific, non-scientific happening around us. Thus, we should pay our homage to ‘Mother Earth’, all divine forces and divinely parents every day, not as mere fashion as Environment Day, Mother’s Day, Father’s Day and so on in particular days.

The cosmic universe, Mother Nature, divine forces and parents are the root of all creations rather ‘Unified sources of all Innovations’. Which we can simply signify that those Cosmic Universe, Divine Mother Nature and Parents are the components of the ‘Unified Path’ of all sciences including modern ‘Microchip’ or ‘artificial brain technology’ applicable in every field of ‘Science’, Environment and Technology.

Necessity is the mother of Invention. However, most of the innovation comes out from ‘Science of Consciousness’. It is a reality that ‘Science of Consciousness’ stimulates our brains and generates thought waves. Those waves get translated in various forms of ‘invention’. Such occurs when ‘Human Brain’ reaches a stage of “Apparent Zero” but not “Absolute Zero”. During such phases the mind and body get totally stabilized. However, to attain this stage, we do need energy, probably that energy comes from powerful sources through intersections of different special energies may be from the unexplored path of “Zero Entropy and Beyond”. Wherein all forms of energies are unified and ‘human brain’ works with deepest consciousness to explore its surroundings and its own existence, interconnections with all in this “Cosmos”.

Acknowledgement

This communication is dedicated to all the ‘Celestial Energy Sources’ including. ‘Mother Earth’, the entire ‘Parents’ – the infinitesimal parts of Cosmic Circuit. Their driving forces which are leading all the beings towards ‘Unified Vision of Sciences’ in this World.



References

1. Bharadwaj, P., & Bharadwaj, D., & Mukherjee, A. (2025a). A Reality That Begins from Zero: The Play of the Union Between Consciousness and Nature. Institute of Philosophy of Nature, 2(3), 198–209.
2. Bharadwaj, P., Bharadwaj, D., & Mukherjee, A. (2025b). The Unified Vision of “Nothing” and “Science of Consciousness”. Open Journal of Philosophy, 15, 479–492. <https://doi.org/10.4236/ojpp.2025.152028>.
3. Callen, Herbert B. 1985. *Thermodynamics and an Introduction to Thermo statistics*. 2nd ed. New York: Wiley.
4. Kalbach, J. (2012) *Clarifying Innovation: Four Zones of Innovation*. Available at: <https://experiencinginformation.wordpress.com/2012/06/03/clarifying-innovation-four-zones-of-innovation>
5. Mukherjee, A., Sreekumar, J., Sheela, M. N., Immanuel, S., Sahoo, M.R., and Hegde, V., (2024c.) Enhancing Adaptability, Nutritional Quality in Tropical Tuber Crops: Source for Adaptive Food and Nutrition, *Food and Nutrition Sciences*, 2024, 15, 1141-1169 DOI: 10.4236/fns.2024.1511074 Nov. 29, 2024
6. Mukherjee, Archana. 2023. *Tribute to Goodness in Service Sectors and to Supreme Power: Experience Sharing*. *Journal of Environmental and Sociobiology* 20(2):181-184.ISSN0973 -0834.
7. Prabhupada, A.C. Bhaktivedanta Swami. 2008. *Bhagavad Gita As It Is*: With the Original Sanskrit Text, Roman Transliteration, English Equivalents, Translation and Elaborate Purports. Alachua, FL: The Bhakti Vedanta Book Trust.
8. Satell, G. (2012) Before You Innovate, Ask the Right Questions. Harvard Business Review. Available at: <https://hbr.org/2013/02/before-you-innovate-ask-the-ri>.