

## **Ecocentric Approach of Science from the Perspective of Mahatma Gandhi and Rabindranath Tagore: Exploring Sustainability and Ethics amidst British Colonialism**

**SABAREESH. P.A.<sup>1</sup> AND REETA SONY A.L.<sup>2</sup>**

<sup>1</sup>Research Scholar, Centre for Studies in Science Policy, School of Social Sciences, Jawaharlal Nehru University, New Delhi

Email: sabareesh.jnu@gmail.com

<sup>2</sup>Assistant Professor, Centre for Studies in Science Policy, School of Social Sciences, Jawaharlal Nehru University, New Delhi

Email: reetasonyjnu@gmail.com

### **ABSTRACT**

Just as the 'Renaissance' in Europe led to a stronger urge in the individuals to explore new avenues of arts and science there was also a spurt in gradual scientific inventions and technological interventions. Much importantly the invention of the steam engine revolutionised Europe's industries and transportation in terms of speed and efficiency. The demand for finished goods propelled the European nations, particularly Britain, to explore trade options for the importing of raw materials from overseas, including India, which later took the shape of colonial political plundering amidst regional political instabilities in the Indian sub-continent. The British imperialism, mercantilism, forced cultivation of cash crops, exploitative trade practices, procurement of raw materials from the sub-continent and elsewhere, selling of foreign products at exorbitant prices and colonial superiority were all intended to support the fledgling industrial development of the British homeland.

This un mindful nature of unsustainable development gave rise to a fresh era of ethical and moral questioning, particularly by Mohandas Karamchand Gandhi and Rabindranath Tagore as to 'what science and development should stand for?' Gandhi's questioning of the British on these lines evolved into the nationalistic tone of '*Hind Swaraj*' while Tagore's views employ the context of 'Universality'. The paper discusses the perspectives of Gandhi and Tagore as to whether the applications of science and technology should be ecocentric i.e. taking into concern the

environmental, humanitarian and ethical aspects or should it be anthropocentric i.e. development and exploitative centric. The paper also details the humanitarianism emphasised by Gandhi and Tagore from the Indian philosophical perspective and sustainability in the possible role that science and technology can actually play in 'real human advancement'.

**KEYWORDS:** Mohandas Karamchand Gandhi, Rabindranath Tagore, *Hind Swaraj*, Ecocentricism, Universality, Sustainability, Science and Technology, Anthropocentrism.

### Introduction

The European renaissance and the resulting industrial revolution in Britain enabled faster production of goods in a mechanised way and therefore demanded a huge amount of raw materials. Britain depended on its colonies, including India, for procuring raw materials with gradually India becoming the major exporter of raw materials such as tea, coffee, indigo, tobacco, sugarcane, cotton, etc. and importer of finished British products to the Indian market (Hoffenberg, 1998). Such a paradigm was achieved as a result of systemic and strategic British colonial expansion and control of trade in the Indian sub-continent. In what was termed as the '*Drain of Wealth*' by Dadabhai Naoroji, the British forced the Indian economy to tilt its supply chain in accordance with the demands of the British economy (Rahman, 1984). The British and other European colonisers like the Portuguese, Dutch, Danes and French through mercantilism, imperialism, cash crop cultivation, monopolistic trade, extensive taxations, exploitation, loot, treachery, slavery, brutal violence and genocide made it possible to carve a colony out of the Indian sub-continent and asserted powers to the extent of strategically subjugating the whole of it (Moxham, 2016). It is evident that the European colonisers, particularly the British possessed technological supremacy on the lines of the steam engine-based ship and rail transportation, rapid communication through electric telegraph

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and thereby used science as a political and militaristic means for colonial power in India and generation of wealth elsewhere in a swifter manner (Kumar, 1995).

What the British crown and its empire failed to understand were the logical, ethical and moral grounds of science and its utilitarian aspects of benefitting humankind and civilization sustainably. The highly materialistic or anthropocentric nature of the western model of unsustainable development, to which colonial India was being forcefully made a party, was notably challenged by two of the prominent contemporary colonial subjects who were also acclaimed socio-cultural and political giants of India: Mohandas Karamchand Gandhi and Rabindranath Tagore. Both Gandhi and Tagore were critical of the unmindful nature of development that western civilisation had imposed on the globe. This led to the ethical and moral questioning as to what science and its technological applications should stand for when it comes to civilisational progress. Not forgetting that Gandhi and Tagore were political and literary stalwarts in British India, their critique and questioning of the nature of modern western science gave rise to rediscovering the indigenous culture, philosophy and social essence. This not only gave a fresh impetus to challenge British imperialism and colonialism but also led to the reinventing of an alternative model of development on the lines of sustainability and a viable ecocentric approach to science. Notably, their respective critique of unethical deployment of science went on to become an integral part of Gandhian '*Hind Swaraj*' and Tagore's interpretation of 'Universality' that were used to ideologically spearhead India's multi-cornered fight for independence.

The paper explores Gandhian and Tagore's perspective of the application of science and technology from the moral and ethical context that emphasises humanitarian and sustainability aspects that lead to the ecocentric approach of science. A comparison is duly made with regards to 'Anthropocentric' and 'Ecocentric' aspects of science and how science can play a critical role in human development from the Indian philosophical context.

### **Gandhi's Perspective on Sustainable Science**

At the peak of British Colonialism in India and the perils of the Industrial Revolution at the global level, Gandhi had serious

reservations at this resource-intensive and unsustainable industrial engineering that was brought to India by Britain post the Industrial Revolution and therefore called for a manufacturing model that was more sustainable, humane and community-oriented. He had also called for less-harmful technologies ('Mahatma Gandhi and Sustainable Science', 2019). In his *Young India* on 22 October 1925, Gandhi writes "*Seven Social Sins*" as:

1. "Politics without Principle
2. Wealth Without Work
3. Pleasure Without Conscience
4. Knowledge without Character
5. Commerce without Morality
6. Science without Humanity
7. Worship without Sacrifice"

*(The Collected Works of Mahatma Gandhi, Volume 28 (August-November 1925), 1968)*

Stephen R. Covey, in his book *Principle Centered Leadership*, deliberates on Mahatma Gandhi's Seven Social Sins in the Chapter '*Seven Deadly Sins*'. Out of the seven social sins, Gandhi considers '*Science without Humanity*' as the sixth social sin. Stephen elaborates, "*If science becomes all technique and technology, it quickly degenerates into man against humanity*". (Covey, 1991)

It is generally thought that anti-science is a part of the Gandhian perspective of man-nature relation and his critique of modern civilisation that is dependent on modern science-based machinery and mindless exploitation of physical resources using technology. However, the view taken by Gandhi with regards to science was that of an alternative method with a focus on non-physical resources. Gandhi was opposed to the global inequality caused based on technology and the hegemony it represented or symbolised. So Gandhi's critique of modern science was precisely from the ethical, moral, and logical, impact caused to the environment, and political perspective of what the modern western civilisation had envisioned and achieved of science: as a

tool for colonial hegemony through technological supremacy (Sahasrabudhey, 2002). His idea of modern western science was worthy of resisting in order to uplift the *swadeshi* spirit of the Indian population for achieving the ultimate goal of *Hind Swaraj* or self-rule through the non-cooperation movement. Indeed this idea of *Hind Swaraj* had become the impetus for the Khadi movement that had envisioned sustainable development through the use of indigenous concepts of science and localised technologies such as the *Charkha* or spinning wheel for cloth making. Gandhi was very specific in choosing his means of seeking *Swaraj* or self-rule i.e. through *ahimsa* or non-violence (Puri, 2015). Hence Gandhi's critique of modern science was from the context of decolonisation by putting 'humane' indigenous textile technologies, like the *Charkha*, head-on with mechanised spinning mills and large machineries as unsustainable capitalistic expansionism had become an integral part of the modern western civilization with its colonies and farmers at the receiving end of exploitation and forced cultivation (Prasad, 2001).

Hence the Gandhian comparison of the western model of development that dwelled on the unsustainability aspect of modern science with that of the indigenous science of India emphasising on culture, decentralisation and sustainability is the most notable aspect of his *Swadeshi* movement that called for *Hind Swaraj* against the British (Dagli, 1982). In this sense *Charkha*, the spinning wheel became a symbol for sustainable industrialisation on the lines of indigenous science and technology and the freedom struggle on the lines of non-cooperation (Sinha, 2004). Gandhi was also highly critique of the systematic destruction of India's indigenous education system by the British. On India's indigenous education system being disrupted and diminished of its true essence and spirit of the Indian society, Gandhi spoke the following at the Royal Institute of International Affairs at Chatham House in London on 20 October, 1931:

*"I say without fear of my figures being challenged successfully, that today India is more illiterate than it was fifty or hundred years ago, and so is Burma, because the British administrators, when they came to India, instead of taking hold*

*of things as they were, began to root them out. They scratched the soil and began to look at the root, and left the root like that, and the beautiful tree perished... There are statistics left by a British administrator which show that, in places where they have carried out a survey, ancient schools have gone by the board, because there was no recognition for these schools, and the schools established after the European pattern were too expensive for the people, and therefore they could not possibly overtake the thing... This very poor country of mine is very ill able to sustain such an expensive method of education. Our state would revive the old age village schoolmaster and dot every village with a school both for boys and girls". (Dharampal, 1983)*

### **Tagore's Perspective on Sustainable Science**

It is crucial to understand the period of the intellectual renaissance that took shape in Bengal that led to the moulding of Rabindranath Tagore's thoughts. Tagore's thoughts were a synthesis of ideas propounded by the west as well as the east in the areas of art, literature, culture and science. He emphasised the popularisation and propagation of science as a tool to eliminate irrationality as is evident from *Visvaparikshay* (1937), his book on popular science. Tagore's interest in science was eminent since his teenage days and grew further through his contacts and interactions with the rising scientists of India and Europe during his life period.

During Rabindranath Tagore's conversations with Albert Einstein in Germany in 1930, there evolved a detailed discussion as to what science was according to both personalities. For Rabindranath Tagore, "*Science is concerned with that which is not confined to individuals; it is the impersonal human world of truth*". Tagore believed that the practice of science and its education needs to be to serve the society at the 'grass-root level' by nurturing reunion with the existing indigenous system and thereby upholding mutual relationships through cooperation. (Majumdar, 2011)

Tagore-Einstein's conversation was indeed an adaptation of the Indian traditional beliefs and insights into western science (Gosling, 2007). Tagore perceived science as a repository of the

greater truth that has the potential to liberate mankind from ignorance through experimentation. Simultaneously Tagore was a critique of science as being used as a tool by the west to impose superiority, mindlessly exploit resources, create destructive nuclear technology, attain power, wealth, restrict human freedom and equality (K. Roy, 2010). Tagore opines that this vested motive tended to create a conflict between science and the very nature of the human being. Hence his vision of science as a tool for collective prosperity on sustainable lines is vivid. Tagore, therefore, sees science as a gateway to seeking the spiritual truth of the universe and emphasises the nature of reality as a universal phenomenon (M. Roy, 2016).

Rabindranath Tagore had well acknowledged that European colonisation across the globe had played a role in the unethical practice of science. Hence he called for decolonising of minds by reforming and transforming the education system that was implanted by British imperialism in India. This is seen as an important reform from the socio-cultural perspective when India was still a colony in the early 18<sup>th</sup> century that eventually led him to establish Shantiniketan school and Visva-Bharati University aiming to nurture an indigenous intellectual capacitance with a creative fervour in order to decolonise education. (Mukherjee, 2021)

### **Comparing Anthropocentric and Ecocentric Aspects of Science**

Alternative views and thoughts are quite a possibility in a world that has a diverse society and culture. These thoughts are but moulded based on the respective society, culture, religion, worldview, and interactions between the people among others and hence considerably vary between communities and groups. Human history is also witness to the overpowering of one thought or worldview over the other to prove superiority. Anthropocentric and ecocentric aspects are also such worldviews that have constantly questioned human opinion over the clause and nature of development by either making us choose either 'ecology over economy' or 'economy over ecology'. They are also comparable to what the modern world discusses as sustainable and unsustainable models of development. Such discourses have become so important and common that modern

civilisation has started to adopt various features of ecocentric aspects of science and technology.

It is generally held that anthropocentric and ecocentric aspects are a tussle between ecology and economy with regards to the protection and conservation of the pristine environment on one side and exploitation of resources for industrialisation & development that are meant for human consumption and employment on the other side (Gray, 1991). It is the priority, weightage and magnitude adhered to the ‘people-environment relationship’ that determines whether a society is anthropocentric or ecocentric (Gagnon Thompson & Barton, 1994). Though there are several indigenous and traditional communities that take into consideration the ecological factors, their voices are always overpowered amidst the noisy anthropocentrism that is Eurocentric to the world (Pierotti & Wildcat, 2000). A comparison between both anthropocentric and ecocentric aspects of science is given below:

<b>Anthropocentric Science</b>	<b>Ecocentric Science</b>
Focus on the human at the centre of all developmental aspects.	Balance of environment at the centre of sustained use of human requirement.
Human dominance of Nature and all its living and non-living components.	Valuing nature, respecting and cooperating with all its living and non-living components.
Human as a superior creature than all living beings and nature.	Human as an integral part of nature. All beings as an expression of life.
Living in conflict with nature and its components.	Living in harmony with nature and its elements.
Unsustained exploitation of natural resources for development. Human-centred concern.	Sustained use of natural resources. Care for other living beings.
Economy over Ecology.	Deep Ecology over Economy.

(Alagoz & Akman, 2016)

### **Conclusion**

The modern world and society have aspired to grow at a faster rate than before and have given priority to the economy through vigorous preparation under the brand of ‘development’. The seeds of this were very much the result of mechanised industrialisation that sprouted out of the Industrial Revolution in



Britain. The thirst for raw materials to feed the mechanised production of goods not only has made society propel faster but made us compromise on ethical and moral values. What resulted was a paradigm shift in models of wealth creation, expansion of territories and rampant subjugation and colonisation of civilisations, particularly India, which altogether had a different worldview as compared to the western civilisations and societies. The assertive role played by science in enabling such a paradigm shift is magnanimous because it gave the European nations and their empires an upper hand in the form of technological supremacy to usurp power, wealth and territories across the globe. This was so due to the adoption of science without moral essence and hence was inhumane in its pursuit and spirit.

‘Science without humanity,’ Gandhi said, is a sin because it was unsustainable and also paved way for the subjugation of civilisations and enabled the creation of weapons of mass destruction. This interpretation and practice of science and technology ultimately made humankind portray itself against the very ethos of humanity. Gandhi’s *Hind Swaraj* aimed at enabling the grooming of the swadeshi model of development that was indigenous, sustainable and ecocentric in its approach. Gandhi thereby envisioned challenging the western anthropocentric approach that was unsustainable as it bore the very reason for the British to colonise India and other countries.

Rabindranath Tagore on the other hand was against the misuse of science and technology that were strategically used by the west and Britain to impose superiority, exploit resources through colonisation, and attain power and wealth that created a conflict between society and human nature. Tagore emphasises on the true nature of science as something that connects human beings with the truth through experimentation and therefore called for the popularisation of science and simultaneously worked for decolonising Indian education.

Through the worldviews of Gandhi and Tagore, it is understood that they layed emphasis on moral, ethical, humanitarian and sustainable applications of science and technology that can be applicable for the welfare of the entire humanity rather than benefitting a small group of people to result in the advancement of the human intellect. Both the stalwarts

have emphasised on development that is sustainable and that is in accordance with the genuine requirement of society. Hence the need to adopt ecocentric aspects of science is echoed in the worldviews of Gandhi and Tagore and finds resonating relevance for sustainable development in the 21<sup>st</sup> Century also.

### Conflict of Interest

We the authors hereby declare that there is no competing or conflict of interest in the title and the findings of the research paper.

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