

Development of Science and Technology: A Gandhian Perspective

Ghanshyam Dev

HOD, Deptt. of Political Science DAV College, Chandigarh, India

Abstract

In this materialistic age, where economics has become all important and nuclear power a must, the post independence generation has begun to consider Gandhi and his principles totally irrelevant in the present context. They think that the Mahatma belonged to a bygone era and his ideas have become obsolete. But, it is really so? Is Gandhi relevant today with all his lofty ideals? No, not at all. On the contrary he is more relevant today and his ideas more urgently needed than ever before. Despite the unprecedented advancement of science and technology, Gandhian ideals still hold well in economic, social and political fields. Gandhi realized that the fabric of the Indian economy rests on the rural base. The tiller is still the backbone of the Indian economy. If he remains illiterate, his crafts are not properly organized, if education is not centered on the crafts, villages are without water and the ecological balance is disturbed. Indian economy will not be able to progress much. In fact, Indian planners have again and again turned to take a second look at rural sector from the Gandhian point of view. Gandhi was not against industrialization but his venue was half a million villages which he wanted to see developed as authentic village republics. He pleaded for the technology that would supplement and complement man-power and animal power available in India. That was the way to safeguard unemployment and starvation.

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Gandhi's concept of decentralized economy and industrialization would perhaps have led to a prosperous village population with an exploitation-free equitable distribution of natural resources, means and instruments of production as well as the produce. The fact that India is now concentrating on the production of bio-gas and solar energy is itself vindication of Gandhi's ideas. In the political field, we are experimenting with Panchayati Raj and LokAyuktas.

Some of Gandhi's views on education, too, are absolutely relevant today. In the highly materialistic America which has reached the zenith of economic prosperity, there is strong advocacy in favour of school prayers which is nothing but Gandhi's offshoot of spiritual education. Gandhi felt that education should not only increase knowledge but develop the culture of heart and hand. It should teach self-reliance and inculcate the value of manual labour.

Gandhi has often been accused of being conservative. But it would be wrong to call him so. His views were conditioned by the knowledge in life in the country where the standards of living were low, unemployment had assumed staggering proportions and the privileged few were leading a most sophisticated life.

Gandhi did not have any soft corner in his heart for the rich. His concept of trusteeship has often been misunderstood. Trusteeship is a means of transforming the present capitalistic system into an egalitarian order. It does not recognize any right of private ownership of property except to the extent regarded by the community as essential for its welfare.

Gandhi's philosophy of life has been criticized to such an extent that independent India has completely repudiated it. Modern India is committed to the operation of highly centralized parliamentary government, the creation of a socialistic order, large scale industrialization on the western pattern and modern science and technology. But Gandhi's views on autonomous villages, his advocacy of cottage industries, charkha and khaddar, and his general opposition to mass production, big labour-saving machinery and imitation of western production methods should be considered in the context of the conditions prevailing in the country. His greatest contribution to modern India though lies in his insistence that man is fundamentally a spiritual and moral being and that society is an association of human spirit, an association which is not limited in any way of considerations of nationality, race, creed or sex.

Today, when there has been deep erosion of moral values in our public life and when ethical principles have virtually disappeared from politics, Gandhian values appear as a whiff of fresh air. In his time Gandhi provided not only political but also moral leadership to the country, something which is missing in today's India. However, the yearning for raising the level of our public life remains and as long as that is there, Gandhi can never become irrelevant.

Gandhiji's skepticism related to technology was a concomitant of his deep rooted antagonism to industrialisation. Firstly, there is in his writings a Luddite kind of view of technology as a factor inimical to employment. But his antagonism went considerably further than the usual "technology displacing labour" argument. To Gandhiji, technology was to be feared because it threatened the very basis of a dignified human existence. "In modern terms, it is beneath human dignity to lose one's individuality and become a mere cog in the machine. I want every individual to become a full blooded member of the society. The villages must become self sufficient. I see no other solution if one has to work in terms of ahimsa". This view led Gandhiji to oppose technology not only in modern industry but also in village manufacturing enterprises. He insisted that it was the governments duty "to encourage the existing industries and to revive where it is possible and desirable the dying or dead industries of villagers *according to the village methods*, that is, the villagers working in their pawn cottages as they have done from times immemorial."

Here again, one must guard against an extreme interpretation of Gandhiji's position. His main aversion was to the modern Western technology, which was essentially "labour replacing" and often "labour degrading". But he was not opposed to technology per se. As a matter of fact, he set up two criteria for the appropriateness of technology – first that it should not be labour displacing (cf. "I have no objection if all things required by my country could be produced with the labour of 30,000 instead of that of 30,000,000. But those 30,000,000 must not be rendered idle or unemployed" *quoted in the chapter by M. R. Masani in D. G. Tendulkar et al. (1945) p. 88-89*) and second, that it should increase the general well being (cf. "I welcome the machine that

lightens the burden of millions of men living in cottages and reduces man's labour" *Ibid.*, p. 88). In a catch-phrase of the 1980s, he was really making out a case for "appropriate technology".

Five Myths About Gandhian Economics

Gandhi did not receive any formal training in economics; no did he study much economics on his own. His busy political life left little time for reading, as he notes in his candid autobiography, *The Story of My Experiments with Truth*. He had probably read Adam Smith's *Wealth of Nations*, and he turned to the serious study of Marx only in his 75th year. Since moral considerations weighed heavily with Gandhi in everything he did, his economic ideas were influenced not so much by economic treatises as by his reading of such books as Tolstoy's *The Kingdom of God is Within*, Ruskin's *Unto This Last*, *The New Testament*, and the *Bhagavad Gita*. They were also distilled from the crucible of experience comprising intense political activity that spanned three continents. In view of these circumstances it is not surprising that his economic ideas are not expressed in the jargon of the economist, nor are they presented in the form of a scientific or scholarly treatise. Nevertheless, it is possible to cull from his scattered writings and pronouncements a consistent body of knowledge in economics, that is as distinctive as to merit the name "Gandhian Economics, and which has contemporary relevance, remarkable originality and the attributes of an analytical contribution of a high order. It is unfortunate that professional economists, with a few notable exceptions, have not given to Gandhian economics the scholarly attention it deserves. Nevertheless, Gandhi's economic ideas are widely known, in a general way, and have become associated in the popular and professional minds with certain definite conceptions. Among these, five seem to me, to have the widest currency. By and large, in the minds of most people, Gandhian Economics has come to be associated with the advocacy of the following:

- 1) acceptance of poverty;
- 2) return to the simplicity of India's economic past;
- 3) elimination of machinery and large-scale production;
- 4) adherence to the social and economic rules and regulations of orthodox Hinduism;
- 5) rejection of communism and acceptance of a modified capitalism.

First, Gandhi's advocacy of the acceptance of poverty. In order to show his complete identification with the poor people of India, Gandhi adopted their dress and their simple ways of living at all times. Even when he went to see the British King George V, he wore just a loin cloth like the poor people of India, provoking an outraged Churchill to call him a "half naked fakir".

Nevertheless, Gandhi did not admire poverty, and most emphatically did not see in poverty the virtues that are sometimes claimed for it. He said "*No one has ever suggested that grinding pauperism can lead to anything else than moral degradation. Every human being has the right to live and therefore to find the wherewithal to feed himself and where necessary to clothe and house himself.*" Again he said "*If by*

advance you mean everyone having plenty to eat and drink and to clothe himself with, enough to keep his mind trained and educated, I should be satisfied.

No, Gandhi was not an admirer of poverty. He wanted India to develop herself economically, to make possible a satisfactory life for all. As early as 1928 he wrote “*According to me, the economic constitution of India and for that matter, the world, should be such that no one under it, should suffer from want of food and clothing. In other words, everybody should be able to get sufficient work to enable him to make the two ends meet. And this ideal can be universally realized only if the means of production of the elementary necessities of life remain in the control of the masses*”.

After thirty-five years of planned efforts, Indian economic development has not come anywhere close to fulfilling Gandhi’s economic aspirations. In fact, even in the United States of America, universally regarded as the richest nation in the world, suffering from want of food and clothing is the lot of a substantial minority of her people. What Gandhi advocated was not poverty but sufficiency for all. He wanted enough development to enable all people to live in comfort and dignity. But, of course, he was opposed to extreme inequalities and to the pursuit of ever-rising material standards of living, because he realized that such a path would not lead to happiness.

As early as 1908, he wrote in his important book *Hind Swaraj* “*We notice that the mind is a restless bird; the more it gets the more it wants, and still remains unsatisfied. The more we indulge our passions the more unbridled they become. Our ancestors therefore set a limit to our indulgences. They saw happiness was largely a mental condition. A man is not necessarily happy because he is rich or unhappy because he is poor. The rich are often seen to be unhappy, the poor to be happy. Millions will always be poor. Observing all this, our ancestors dissuaded us from luxuries and pleasures.*

Gandhi felt that the solution to the economic problem through continuous increase in material production was a false solution. Ever increasing wealth will not ensure happiness because of the tendency of wants to multiply even faster. This can be called Gandhi’s first impossibility theorem. The experience of the rich nations and of rich people in poor nations testify to its validity.

Gandhi, however, firmly believed that all human beings should have enough to satisfy their basic needs. In the planning efforts of India and other developing countries, economic growth is the central goal. Under a Gandhian scheme, reduction of inequalities, provision of full employment, and the eradication of poverty would be the dominant goals, and economic growth would not be a separate growth objective. In such a society, economic growth is likely to be the consequence of the pursuit of the other goals mentioned above.

Secondly, many persons think that Gandhi advocated a return to India’s economic past. For example, Dr Arthur Lewis, Nobel-laureate in economics, in an otherwise admirable book, observes “*Not all nationalist politicians favour economic development. Some like Gandhi have resisted Westernism and desire on the contrary to return to old ways.*”

Gandhi called his ideal republic Ram Rajya, a throw-back to a mythical past where under the rule of God-King Rama perfect justice prevailed. Nevertheless, it is not correct to say that Gandhi advocated a return to India's past. To be sure, there were certain attributes of India's civilization, like the recognition of the dangers of the multiplication of human wants, and the need to exercise restraint, that Gandhi admired, and wished his countrymen not to forsake. But his face and feet were firmly turned toward the future and not toward the past. In an exchange of letters with Nehru, he drew a robust picture of the ideal village of his dreams. *"My ideal village will contain intelligent beings. They will not live in dirt and darkness as animals. Men and women will be free and able to hold their own against anyone in the world. There will be neither plague nor cholera, nor small pox; no one will be idle; no one will wallow in luxury...It is possible to envisage railways, post and telegraph...and the like"*

It is relevant to note that in that letter Gandhi describes the ideal village as his dream. Since at no time in India's past the village even remotely resembled the ideal portrayed by Gandhi, it would be hard to sustain the claim that he advocated a return to the past. Untouchability, lack of freedom for women, and extreme inequalities have been part of village life in India from time immemorial to the present. Gandhi was uncompromisingly opposed to these. He said *"Today, there is gross inequality. The basis of socialism is economic equality. There can be no Ramrajya in the present state of iniquitous inequalities in which a few roll in riches and the masses do not get enough to eat.* To his radical mind, the present which is a product of the past, was unsatisfactory and needed to be changed in fundamental ways.

He was willing to borrow many bricks from the past, but the edifice itself was new and belonged to the future. On the subject of machinery and large-scale production, Gandhi's views are especially susceptible to misrepresentation because these views evolved over a period of time. As a rule, whenever there seem to be conflicting pronouncements of Gandhi on any subject, the chronologically latest one is the idea that should be attributed to him. Gandhi himself recommended this course to his followers. Another point that should be borne in mind is that Gandhi's economic ideas were evolved in the context of India's fight for independence. Some of the measures he recommended, such as hand-spinning and weaving were designed to weaken the hold of a foreign power over India. Since he died a revolutionary's death at the hands of a reactionary Hindu fanatic soon after independence, he did not have the opportunity to examine adequately the validity of many of his economic ideas to the problems of an independent India.

This underscores the need to pay special attention to the context in which his ideas were expressed in assessing their significance.

Gandhi's attitude toward machinery changed considerably with the passage of time. In his book *Hind Swaraj*, written in 1908, he had said *"Machinery is the chief symbol of modern civilization; it represents a great sin. I cannot recall a single good point in connection with machinery. Books can be written to demonstrate its evils. It is necessary to realize that machinery is bad. We shall then be able gradually to do away with it"*. Again in 1926 he wrote in *Young India* *"The fact is that this industrial civilization is a disease because it is all evil.*

Let us not be deceived by catchwords and phrases. Our concern is therefore to destroy industrialism at any cost from this uncompromising opposition to all machinery that he took in the early years, he gradually began to recognize the useful role that machinery can play under proper public control and in the appropriate conditions. Firstly, all machinery is permissible if it does not cause unemployment. In 1934 he wrote "Mechanization is good when the hands are too few for the work intended to be accomplished. It is an evil when there are more hands than required for the work as in India. The problem with us is not how to find leisure for the teeming million inhabitants of our villages. The problem is how to utilize their idle hours, which are equal to the working days of six months in the year.

Increasingly he began to realize that it is not machinery as such that is an evil but the social conditions under which it is used. Four years later, we find him making a still stronger statement in support of machinery under appropriate conditions. He wrote *"If I could produce all my country's wants by means of 30,000 people instead of 30 million? I should not mind it, provided that the 30 million are not rendered idle and unemployed. But even in his early years, he was in favour of simple tools and implements that improved the productivity of labour for he wrote "I am uncompromisingly against all destructive machinery. But simple tools and instruments, and such instruments and machinery as save individual labour and lighten the burden of the millions of cottages I should welcome."* But Gandhi began more and more to see that under proper conditions of social control even large-scale machinery could be used in such a way as to serve the villages and their crafts and not destroy them as they did in the past in the absence of social control. He wrote in 1940 *"I do visualize electricity, ship-building, iron works, machine-making and the like existing side by side with village handicrafts. Hitherto industrialization has been so planned as to destroy the village and village crafts. In the state of the future, it will subserve the villages and their crafts.* In other words, he wanted mass production to be replaced by production by the masses. Thus, the position that Gandhi came to hold on machinery was quite close to that of Marx. In the absence of social control machinery causes unemployment and leads to exploitation of labour and the destruction of the artisan.

While the indiscriminate proliferation of machinery is harmful, under proper social control, machinery could confer many benefits on society. While Gandhi with the passage of time began to realize that machinery under proper conditions could be a valuable asset to man and society, the views advanced against large-scale industrialization very early in his life are valid to this day.

He advances four reasons why it would be impossible for industrialization to provide a satisfactory solution to man's economic problem. This is Gandhi's second impossibility theorem and constitutes at the analytical level, an original and durable economic contribution.

1) First, he noted that industrialization involves exploitation of the underdeveloped countries by the industrializing nations. They require the poor countries as suppliers of raw materials and as buyers of their finished goods. Under these circumstances, if all countries attempted industrialization their efforts must surely fail. Stronger nations would try to prevent the weaker nations from embarking on independent paths of development. Competition and rivalries among the developed

countries would lead to war and destruction of human life as well as material resources.

2) Secondly, the wide use of large-scale methods of production would lead to mass unemployment in many countries, especially in labour-abundant countries like India.

3) Thirdly, since industrialization involves a very high cost of investment per worker, to provide employment for all unemployed human resources would involve capital accumulation on such a massive scale that it would be beyond the investment resource mobilization capacities of most of the poor countries.

4) Fourthly, the industrialized way of life when universally practised would make such large demands on our non-renewable resources that simply cannot be met by our meagre planet. Gandhi often said that there were enough resources for man's needs but not enough for his greed. Thus, long before all the countries could become industrialized, the process will be brought to a sudden halt by the barrier of resource depletion.

It is only in recent years that scientists and scholars in the rich nations are beginning to Realize the validity of Gandhi's second impossibility theorem so presciently articulated by him half a century ago.

The fourth myth that Gandhi was an orthodox Hindu who advocated strict adherence to the social and economic institutions and practices of Hinduism will also be shown on closer examination to be lacking in validity. Gandhi was a person with a strong religious motivation and found in each religion something of permanent value. What attracted him to Hinduism was its catholicity and freedom from doctrinal rigidity. It was the only religion which did not forbid him to be also a Muslim, a Christian and a Sikh. But there were many things about Hindu society he passionately disliked, and throughout his life, he carried on an active crusade against such established Hindu practices as untouchability, caste system and inferior status assigned to women. Even to this day in independent India, the caste system is rampant and the Harijans continue to suffer privations and persecutions of various kinds. But Gandhi accepted the Harijans as his equals even at the beginning of the century and would not tolerate his wife washing the commode of a Harijan in their South African home with a sullen face. In the beginning, though always opposed to untouchability, Gandhi saw some merit in the caste system and the practice of hereditary occupations. But these positions he later abandoned, and, in fact, strongly opposed them. There was a time when he was opposed to inter-caste marriage. Later, he withdrew this opposition and would attend only inter-caste weddings. His fight against untouchability is well known, and no individual has done more for the welfare and uplift of the Harijans than Gandhi.

For the cause of emancipation of women and their acceptance as equals, he fought a valiant fight against the citadels of Hindu orthodoxy. Gandhi was a Hindu heretic and a radical Hindu religious reformer whose message and achievements bear comparison with those of Martin Luther and the Buddha.

Lastly, Gandhi's attitude towards capitalism has also been subject to a great deal of misunderstanding. Marxists often portray him as an apologist for capitalism, and conservative Gandhians frequently invoke his name to oppose radical land reforms and other changes in society. Both of these positions are untenable and arise from misinterpretations of Gandhi's ideas and actions.

When Gandhi was engaged in the fight for India's independence, the Indian capitalist class saw in that struggle an opportunity for its self-expansion and growth. It wanted to take the place of the foreign British capitalist class, and therefore gave its support to the independence struggle. Thus, the historical circumstances conferred on the Indian capitalist class a progressive role, and under these circumstances Gandhi saw no reason to oppose them. Indian capitalists like Birla were his followers, and Gandhi was often a guest in their homes. These were the circumstances that gave rise to the myth that Gandhi was an apologist for capitalism. Actually, Gandhi had a prescient understanding of the progressive role that the Indian capitalist class and the wealthy were playing during the struggle for independence. He knew that in an independent India there would be the need to oppose these people. So we find him as early as 1928 writing to Nehru "*I am quite of your opinion that some day we shall have to start a movement without the rich people and without the vocal educated class, but the time is not yet.*"

It is thus evident that Gandhi had an uncanny historical sense of the progressive role that the capitalists were playing during the independence struggle. But he had no great fondness for capitalism, and nowhere in his writings or in his speeches can anyone find any support expressed for capitalism or for private property.

He was not only a firm believer in socialism, but his socialism is of a very radical kind. He sometimes referred to himself as a foremost communist. His disagreement with the Marxists and communists was not about the end to be sought about which he had no quarrel with them but about the means to be adopted for the attainment of the goals of communism. Gandhi felt that far from the end justifying the means, the means should justify the end. If communists were advocating violence for the attainment of socialism, Gandhi parted company with them at that point. He wanted socialism to be attained through the use of non-violence.

He clearly foresaw the need for change and did not use his dislike of violence to justify the status quo. He not only saw the need for fundamental change but even recognized its inevitability. In 1942 he wrote "*I see coming the day of the rule of the poor, whether that rule be through force of arms or of non-violence.*" (16) He therefore urged his countrymen to establish socialism through peaceful means with the utmost dispatch. Gandhi saw with remarkable prescience that communism has not successfully dealt with the problem of power, either in theory or practice. Bringing all the means of production under public ownership creates enormous concentration of power, and the communists have not evolved a satisfactory method of dealing with this situation. The theory of socialism through trusteeship was Gandhi's answer to the problem of power. Unfortunately, his political preoccupations prevented him from elaborating on his theory. Soon after independence was won, his energies had to be given to the cause of the restoration of communal harmony, when his life was brought to an abrupt end by an assassin's bullet. But there is no doubt that Gandhi had great faith in the efficacy of trusteeship.

In a nutshell, the theory holds that all possessions including one's talents and mental excellence belong to society and those who have these possessions should hold them in trust for society. Gandhi said *"the rich man will be left in possession of his wealth, of which he will use what he reasonably requires for his personal needs, and will act as a trustee for the remainder, to be used for society. In this argument, honesty on the part of the trustee is assumed."*

Again, Gandhi clearly understood the dependence of the capitalist on labour. *"We invite the capitalist to regard himself as a trustee for those on whom he depends for the making, the retention of, and increase of his capital. A detailed examination of the concept of trusteeship falls outside the scope of this paper. But two points deserve mention. In the Gandhian social order, when capitalists refuse to act as trustees, there is room for "legislative regulation of the ownership and use of wealth."*

Secondly, according to Gandhi all the key industries should be nationalized and labour must be assured a dignified position. Speaking of such industries he said *"But I am socialist enough to say that such factories should be nationalised. They ought only to be working under the most attractive conditions, not for profit, but for the benefit of humanity, love taking the place of greed as the motive power. It is an alteration in the condition of labour that I want."* In the light of the above, it should be clear that the Gandhian concept of trusteeship so far has not been tried, though from time to time charlatans have tried to blunt its cutting edge by misrepresenting it to equal something close to a slightly modified status quo. Such attempts constitute a travesty of the spirit and letter of Gandhi's concept. If that concept is fully implemented capitalism and private property as we know them today will cease to exist.

Today, we live in a world where the imperfections of both the capitalist and communist paths have become painfully evident. The Gandhian method of transforming *society through state-regulated trusteeship holds great promise of safely steering the modern state between the Scylla of capitalist chaos and the Charybdis of communist rigidity. A distinguished Indian economist, Dr.V.M. Dandekar delivering the Zakir Hussain Memorial Lecture on March 8, 1978 in New Delhi subjected the Gandhian economic system to a searching examination, and concluded that the Gandhian path "...is a path leading to an alternative goal of human life and existence; a human society which is removed and immovable, unchanged and unchangeable, using the same kind of ploughs that existed a thousand years ago, living in the same kind of cottages as there were in times immemorial and educating its people on the same system as ever before; a society which limits and minimizes its material needs and one in which everyone earns his daily bread by a full day's physical labour seeking happiness as a mental conditions of life.*

This picture of a static, stagnant, unchanging and other-worldly society that Dr Dandekar has presented as constituting the goal of the Gandhian path is fundamentally contrary to the vibrant, dynamic and harmonious society inhabited by intelligent, creative, healthy, peace-loving and whole human beings for the realization of which Gandhi devoted his life. It underscores the importance and urgency of the need to dispel the many economic myths that have grown around the name of Gandhi, myths that obscure the relevance, originality and vitality of his thought, vision and to understand the views on technology.

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