

**Notes of the
One-Day Workshop
HIND SWARAJ : CONTEMPORARY RELEVANCE**

Compilation & Editing

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November 2009

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**One-Day Workshop on
HIND SWARAJ : CONTEMPORARY RELEVANCE
2nd November 2009, IIT Delhi**

Background

2009 is the centenary year of Mahatma Gandhi's "*Hind Swaraj*", a text often cited for its seminal influence on the Indian Freedom Movement. Written on board a ship during Gandhi's return trip from England to South Africa, this relatively small book encapsulates a number of ideas that remain central to Gandhi's conceptual understanding of colonialism, tradition, society and self-rule. Whether one agrees or not with the conceptual framework advanced by Gandhi, it is impossible not to acknowledge the complexity of the text or its resonance in contemporary Indian life.

The objective of the one-day workshop "*Hind Swaraj : Contemporary Relevance*" is to understand / engage with the text, from different disciplinary perspectives to appraise, rethink, and analyze the constitutive aspects of "*Hind Swaraj*". The workshop then, is an opportunity for both critical appraisal of and celebration of a thoughtful, intriguing, visionary and revolutionary text.

In addition to Invited Talks and Student Presentations, the Workshop will also showcase various technologies developed at the Indian Institute of Technology Delhi which cater to India's rural sector. These technologies have been developed at the Centre for Rural Development and Technology, IIT Delhi. Some of these technologies include Bamboo Bow Beams for Construction, Biomass Gasification, Biogas Bottling Technology, Machinery for Biofuels, Biomass Utilisation technologies and Ecological Sanitation Technologies.

Tentative Schedule

09:30 AM	Invocation & Welcome	
09:45 AM	Inaugural Address : Dr Savita Singh	
10:00 AM	Keynote Address 1 : Prof Y P Anand	
	Keynote Address 2 : Prof Navjyoti Singh	
11:00 AM	Student Presentations & Visit to Exhibits / Posters	
1:30 PM	Lunch	
2:00 PM	Experience Sharing	Shri Ravi Gulati (Education) Prof P L Dhar (Rural Industrialisation) Er L Kannan (Textiles Machinery) Prof L K Das (Crafts & Design) Er Ajit Seshadri (Waste Management) Er P B Srinivas (Bioenergy)
5:00 PM	Vote of Thanks	

Invited Speakers : The following eminent speakers are practitioners in various disciplines who have deep engagement with Technology for a Sustainable and Equitable Future and will be participating in the workshop :

- Dr Savita Singh, Director, Gandhi Smriti and Darshan Smriti
- Dr Y P Anand, Former Director, Gandhi Smriti, New Delhi
- Prof Navjyoti Singh, IIIT Hyderabad
- Er L Kannan, Vortex Technologies, Chennai
- Er Ravi Gulati, Manzil, New Delhi
- Er Ajit Seshadri, The Vigyan Vijay Foundation, New Delhi
- Prof L K Das, IIT Delhi
- Prof P L Dhar, IIT Delhi

Student Projects : Over forty students of IIT Delhi who have worked on various issues involving Technology, Environment and Society with Hind Swaraj as a reference text will put up an exhibition of posters and products developed by them.

S No.	Exhibit / Poster Theme	Students
1	Eco Toilets	Tinton Abraham, Atul Singh, Sankalp Joshi, Bharat J
2	Eco Urinals	Aman Sadana, Pavan Sonkar, Rahul Bhasker, Debidutt Gharai
3	Nutrient Recovery from Human Waste	Siram Phanindra, Amit Kumar, Piyush Singh
4	Decentralised Technology for Cotton Sector	Suresh Jakhar, Achintya Mondal, Vivek Prasad Shaw, Amit Gupta, Pronit Roy
5	Decentralised Technology for Wool Sector	Pavan Kumar, Anirudh Pandey, S Sujeet Gulhane, Sanjay Parmar, Suresh Parmar, Anshul Khare
6	Bamboo for Housing	Diwakar B, Shubham K, Divya B, Neha C, Rashmita S, Ruchira Sharma
7	Value-added Bamboo Products	Soumava Mandal, Brij Kumar, Vishal Raj, Uttam Kumar
8	Value-added Bamboo Products	Rakesh Das, Dheeraj E, Easterson, Amol V J
9	Animal Power for Appliances	Avik Ghosh, Chacko Abraham, Parimal Tukdeo, Prashant Borkar
10	Sustainable Transportation	Razee Arya & Prateek Raj
11	Lok Swasthya Prampara	Ashish Khullar & Yudhveer Singh

Hind Swaraj : A Manifesto for Global Nonviolent Awakening

Inaugural Address

by

Dr Savita Singh

Director, Gandhi Smriti and Darshan Samiti

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Amongst all the works of Mahatma Gandhi *Hind Swaraj* (or Indian Home Rule) occupied a place of pride for the author as it contained ideas, which were closest to his heart. Small wonder, then, in 1921 in the foreword of the new edition of the *Hind Swaraj* Mahatma Gandhi expressed his happiness at the growing popularity of his book. He writes, "It is certainly my good fortune that this booklet of mine is receiving wide attention. The original is in Gujarati. It has a chequered career. It was first published in the columns of the *Indian Opinion* of South Africa. It was written in 1908 during my return voyage from London to South Africa in answer to the Indian school of violence and its prototype in South Africa. I came in contact with every known Indian anarchist in London. Their bravery impressed me, but I felt that their zeal was misguided. I felt that violence was no remedy for India's ills, and that her civilization required the use of a different and higher weapon for self-protection. The *Satyagraha* of South Africa was still an infant, hardly two years old. But it has developed sufficiently to permit me to write of it with some degree of confidence. What I wrote was so much appreciated that it was later published as a booklet (in 1909). It attracted some attention in India. The Bombay Government prohibited its circulation. I replied by publishing its translation. I thought it was due to my English friends that they should know its contents".

We learn from his long time associate and Private Secretary Mahadev Desai that Gandhiji translated the book especially for his friend Hermann Kallenbach, his close associate in South Africa. He sent a copy of it to Leo Tolstoy who in reply showed great admiration for the author's commitment to nonviolent resistance which he considered not only of importance for India but for the whole humanity.

'*Hind Swaraj*' contains the seeds of Gandhian revolution, a "whole theory of life" as he himself characterised it. It has been aptly termed as "seminal" by Mahadev Desai.

In 1921 *Hind Swaraj* suddenly came to occupy centre stage in Indian political scenario. It was around the time when Gandhiji had launched the first nationwide *Satyagraha* against the British rule in India. He described it as Non-cooperation movement and formally inaugurated it on 1 August 1920. He held out the promise of winning '*Swaraj* in one year' provided people remain united, adopt *Swadeshi* and above all, adherence to truth and non-violence was the most important factor the people should pledge themselves to. But the emphasis was clearly on Nonviolence. The call of '*Swaraj* in one year' sent the entire nation in the grip of excitement on one hand and attempts by the foreign rulers to discredit Gandhiji on another.

This compelled Gandhiji to comment on the situation in that year's January edition of the Young India, "I observe that much is being quoted from the booklet to discredit the present movement. I have even seen writings suggesting that I am playing a deep game, that I am using the present turmoil to foist my fads on India, and am making religious experiments at India's expense. I can only answer that *Satyagraha* is made of sterner stuff. There is nothing reserved and nothing secret in it. A portion of the whole theory of life described in *Hind Swaraj* is undoubtedly being carried into practice. There is no danger attendant upon the whole of it being practiced. But it is not right to scare away people by reproducing from my writings passages that are irrelevant to the issue before the country."

Why were these apprehensions about *Hind Swaraj* in 1921? Perhaps the people at the helms of affair were afraid that it might arouse the masses to revolt against the regime.

However, the national euphoria was short-lived as the violent incidents at *Chauri-Chaura* and other places proved that the 'experiment seemed impossible in India in 1921' and had to be abandoned. But what was then impossible became possible in 1930. Even now the question is often raised: What is a nonviolent means? Gandhiji was absolutely clear as to what the debate is all about when he says. "It will take long practice to standardize the meaning and content of this term. But the means thereof is self-purification and more self-purification. What some modern thinkers often lose sight of, is that the fundamental condition of non-violence is love and pure unselfish love is impossible without unsullied purification and purity of mind and body. For *Swaraj* came never from a political system, but only from self-discovery: "*Swaraj* is to be found by searching inward, not by vainly expecting others, even our fellow-workers, to secure it for us" explained the Mahatma. And walking through this path Mahatma Gandhi led the national movement to its final destination and Sovereign India was born on 15 August 1947.

Hind Swaraj is written in the form of a dialogue between the Reader and the Editor, who is the author himself. The reader represents any intelligent person in the Indian society. This dialogic debate is primarily a manifesto a record of Gandhiji's conversations with the 'misguided' patriots in London. The young Gandhi must have been impressed by Plato's style whose works he had read with great interest and appreciation.

Gandhiji makes it clear at the outset that, "Whilst the views expressed in *Hind Swaraj* are held by me, I have but endeavoured humbly to follow Tolstoy, Ruskin, Thoreau, Emerson and other writers besides the masters of Indian philosophy."

The main ideas that emerged from Gandhiji's South African experiences are contained in this short work, *Hind Swaraj*, easily one of the key writings of his entire career. In 1907 Gandhi, the Young Crusader was in London to canvass support for the Indians in South Africa. While in London, he was invited by the Indian Students Association. He accepted the invitation and went to the appointed place but his host was not present there. After meals Gandhiji offered to do the washing of plates and cleaning of vegetables like the rest of the young students. All of them were happy with this new-

comer whom they did not know. Then the person who had contacted Gandhiji turned up and all were stupefied when he announced that the stranger washing the plates was none other than the speaker of that evening. But Gandhiji continued washing the plates even after his introduction to the organizers. This is the essential Gandhi.

Several revolutionaries then studying in England were present in that meeting. Virendranath Chattopadhyaya was amongst those who attended the meeting. B.C. Pal was in the Chair. Gandhiji delivered a speech on the *Ramayana* since the meeting was in connection with the celebration of *Vijyadashmi* or *Dussehra*.

In fact, it was the story of Lord Rama that led to a dialogue on Truth and Untruth, Violence and Non-violence.

Following this, Gandhiji had several informal meetings with the revolutionaries during his nearly three week stay in London on occasion he had long and heated discussions with them over the question of use of violence for the attainment of self-rule or *Swaraj*.

But the main purpose for which he had gone to London remained unfulfilled. For, in spite of his best efforts during his three-week sojourn, Gandhiji was disappointed that he was returning from England empty handed as he had failed to get justice from the British statesmen for the Indians in South Africa. Sitting in his cabin on board 'S. S. Kildonan Castle', his mind was seized with very serious questions, which the partisans of violence had raised during the discussions.

Even his close friend Pranjivan Mehta laughed over his views on *Swaraj* Civilization, and use of violence. Gandhiji has said that he wrote the entire "*Hind Swaraj* to present his point of view on these subjects to his friend Pranjivan Mehta".

On 11 September 1906 Gandhiji had made history when at the Empire Theatre in Johannesburg he had made three thousand strong gathering of Indian and Asian settlers in the State-sponsored racist South Africa take a pledge to fight for their rights with Truth and Nonviolence, which forms the core of *Satyagraha*. The Question that now agitated his mind was "What is the efficacy of his own method in the light of the present attitude of the British and South African authorities? What is at the root of oppression and exploitation of one nation by another or miserable existence of those whose hard work supports luxurious living by a few in a Society? Is the system at fault or the individuals are so depraved, what is real Home Rule or *Swaraj* for Indians who had been fighting for it?"

His mind was crowded with currents and cross currents of ideas as he sailed back, some of which did not fit into his view of life and his methods of attaining his objectives. In order to unburden his mind to the answers of these questions and to reassure himself of the rightness of his approach to the problems that confronted him in South Africa, he started putting them down in black and white. He worked day and night for about ten days and wrote on the steamer's stationary 30,000 words covering 271 pages in Gujarati. When his right hand was exhausted, he wrote with left hand as if he was seized by some kind of spirit.

Hind Swaraj is regarded as the "first clear landmark in the systematic exposition of Gandhi's philosophy"; Perhaps "Systematic" may not be the right word. He begins with an estimate of the Indian National Congress and pays high tributes to Dadabhai Naoroji and Gopal Krishna Gokhale. Then he passes on to the dramatic theme of the Partition of Bengal effected by Lord Curzon and the brutality unleashed against the emotion-charged people. If there is anyone day when there was a desperate protest of the entire people against the British Empire, "that day may be considered to be the day of the Partition of Bengal. The shock the British power received through the Partition has never been equalled by any other act. As the Partition overrode all prayers and petitions "a new spirit was born in Bengal", he noted. The *Swadeshi* movement sprang into life. And the spirit of revolt was asweep from the Punjab to Cape Comorin.

The nature of Gandhiji's argument is crucial too. He neither identifies himself with the Moderates nor does he considers their position adequate: he argues only that their contribution was necessary to make further advance possible. "If, after many years of study," the Editor contends, "a teacher were to teach me something and if I were to build a little more on the foundation laid by that teacher, I would nol. on that account be considered wiser than the teacher. He would always command my respect. Such is the case with the Grand Old Men of India, thus, while the Moderates are defended in an almost reverential spirit, they are in practice set aside as "ancestors" who have played out their roles. The Congress appears in much the same manner, worthy of respect but no longer a dynamic organ of progress. 'All I have to show," Gandhi the Editor concludes, "is that the Congress gave us a foretaste of Home Rule [*swaraj*]"

Even in 1938 when another edition of the booklet was published he would alter nothing in the book, except perhaps the language in some parts.

In 1938 when Lord Lothian was at Segaon he asked Mahadev Desai for a copy of *Hind Swaraj*, for, he learnt from him, all that Gandhiji was teaching now lay in that little book which deserved to be read and re-read in order to understand Gandhiji properly.

Curiously enough, it was also about the same time, Sophia Wadia, an admirer and follower of Gandhian path was writing an article on the book exhorting all the Ministers and M.L.A.s, all the British and Indian Civil Servants, indeed, every one who wanted the non- violent experiment in democracy to succeed to read and re-read the book. "How can a non-violent man be a dictator in his own home?" she asks. "How can he be a wine-bibber? How can a lawyer advise his client to go to court and fight? The answers to all these questions raise highly important practical issues. The people's education in *Hind Swaraj*, in which these problems are dealt with from the point of view of principles, should be extensively carried on."

Sophia Wadia sent copies of *Hind Swaraj* to numerous friends abroad and invited the most prominent of them to express their views on the book. She had herself devoted special articles to the book and seen in it the hope for future India, but she wanted the European thinkers and writers to say that it had in it the potency to help even Europe out of its chaos. The result was remarkable. The special number contains articles by

Professor Soddy, G. D. H. Cole, C. Delisle Burns, John Middleton Murry, J. D. Beresford, Hugh Fausset, Claude Houghton, Gerald Heard and Irene Rathbone. Some of these are of course well-known pacifists and socialists. Commenting on this overwhelming response Mahadev Desai writes, "One wonders what the number would have been like, if it had included in it articles by non-pacifist and non-socialist writers!"

Why does *Hind Swaraj* demand to be taken seriously now? Because it has far greater relevance today than it had a century ago. Gandhi's warnings have come true. He had cautioned mankind to adopt a 'need based' as against 'greed-based' life style, which is in harmony with nature. It provides a detailed vision of an alternative model of development. Gandhiji had seen the changes coming in the Western societies. That is why Gandhian vision seeks to integrate economics, politics and technology with ethics and thereby to integrate individual with society. Gandhiji studied in England during the period when reaction against industrialism was beginning to gain ground. Those who were leading this protest movement against excesses of industrialism were not obscurantist but were the foremost social thinkers and philosophers of all times. They were moved by a profound concern for human values. There were notable figures like John Ruskin and William Morris, Leo Tolstoy, Charles Dickens and Henry David Thoreau who were cautioning mankind to halt the progress to destruction by advocating a return to simple way of life. They were moved by the sight of the "Satanic Chimney's" of the factories belching black fumes, innocent childhood toiling for endless hours in the womb of Mother Earth, depleting her of precious natural resources. They were moved by the experience of the exploitation of human being at starvation wages. Their writings stirred the sensitive mind of young Gandhi. He was horrified to see the traits of industrialisation and wondered "if this is the state at the nascent stage what will become of the human society when Industrialisation attains maturity."

He saw industrialism at its worst in England: then in South Africa and this ultimately led him to the understanding of the causes of the miserable plight of his beloved country, the depth of despair modern civilisation is leading her to. It was these experiences that prompted Gandhiji to boldly declare, that "It represents not the spirit of God or Christianity but the spirit of Satan. And Satan's successes are the greatest when he appears with the name of God on his lips. Europe is today only nominally Christian. It is really worshipping Mammon."

He also saw while in the West how the wars recurring at regular intervals took away the flower of youth.

Gandhiji was still in Europe when the 'Scramble for Africa' began. It was inspired by the motive of exploitation of the black labour" and it also happened that these countries contained various valuable raw materials. Greed, thus, became the most important of the motives. The case of British imperialism was no different from others, though it tried hard to camouflage it under the pious cover of Utilitarianism or give it a complexion of a more idealistic kind.

Small wonder, then "*Hind Swaraj* is a severe condemnation of modern civilisation". It provides a clue to the diagnosis of the disease that is eating into the vitals of modern

civilisation. Gandhiji questioned the very nature of life dictated by industrialism, because it does not conform with mankind's deepest aspirations which answers its spiritual needs. He clearly analysed that the fault lies with "the stark materialism which transformed the main motive of industry from creative self-expression to profit making, whence men become machines and societies competitive gladiatorial whose leaders feed the people with perpetual excitement which they miscall sport."

Two decades later he wrote, "I shudder to think God forbid that India should ever take to industrialism after the manner of the West. The economic imperialism of a single tiny kingdom (England) is today keeping the world in chains. If an entire nation of 300 millions (that was in 1928) took to similar economic exploitation, it would strip the world bare like locusts."

A visionary, he could foresee the impending disaster and hence had warned, "that those who have amassed, wealth out of factories are not likely to be better than other rich man. It would be folly to assume that an Indian Rockfeller would be better than the American Rockfeller".

Backed by his vast experiences, Gandhiji could clearly comprehend the dynamics of economic imperialism, which was the direct outcome of the new type of economic organisation based on industrialism fed on imperialism and vice-versa. Born out of modern economic technique that furthered the pace and cause of imperialism giving it a new character, which in turn gave a new political complexion to industrialism. Though imperialism had already a long history when the industrial epoch began, it acquired different orientation under the influence of free-trade doctrine and the acquisition of colonies.

It were these experiences and understanding that had turned him into an early critic of the dehumanising character of the modern industrial civilization, which he described as "Satanic".

He also advises that "the key to an understanding of *Hind Swaraj* lies in the idea that worldly pursuits should give way to ethical living." A "Practical idealist" as he was Gandhiji diagnosed the real and deep malady of modern civilisation and by pointing out the remedy of that "disease" he was far ahead of our times. But with his death soon after independence, neither the theoretical or the practical implications of his vision for India were fully worked out. He was not taken seriously either during his lifetime or for many years after his death by Indian intellectuals, majority of whom adopted Science, Secularism and Socialism as their creed. Gandhiji was looked upon as a religious obscurantist, a faddist who was against modern technology, and the one who is bent upon 'putting the clock back' and the cardinal sin in the eyes of the intellectuals, poorly read.

There is the oft-repeated judgement that "Gandhiji was not consistent in his thought nor did he write systematically about the nature of modern predicament or how to resolve the tensions inherent in it". It can scarcely be denied that Gandhi was perhaps one social activist who continued to experiment with Truth till his last and did modify

his ideas in the light of his experiences. He was an upholder of Truth who firmly adhered to the dictum 'the test of truth is in action'. Gandhiji was consistently growing. He outgrew his moorings and became truly universal in his appeal. His teachings have been largely forgotten or distorted, torn out of context and ridiculed. The glitter and pageantry of modern civilisation further tended to make him look hazy, the revolutionary, progressive Gandhi, who was far ahead of his age was forgotten.

How often has history shown us in retrospect that those who castigated or sat in judgement upon mankind were wrong. We may recall Galileo and his disputes with the Inquisition, and Savonarola, who opposed the spirit of the Renaissance and was finally burnt as a heretic for his convictions.

Mahatma Gandhi with his now famous dictum "the world has enough for everyone's needs, but not for anyone's greed," provides an alternative vision of development, which is economically sound and ecologically sustainable. He was a perspective thinker and a visionary who could foresee the dangers inherent in our mad rush after industrialisation and modernisation. He was an early critic of the dehumanising character of modern industrial civilisation. It is in the context of new value orientations and the quest for human survival threatened by environmental and ecological crisis that the re-discovery of Gandhiji's warning of "Industrialise and Perish" as embedded in the *Hind Swaraj* has to be seen.

A world exhausted by over consumption is in need of an alternative, a well thought out framework of ideas that will provide solace to the wounded Earth and will appeal to the intellect. It was in the first decade of the twentieth century when the world was poised for great "Development" and "Progress" that Gandhiji had cautioned the world through "*Hind Swaraj*", "Machinery has begun to desolate Europe. Ruination is now knocking at the English gates. Machinery is the chief symbol of modern civilisation; it represents a great sin." In the first decade of the twenty-first century all the apprehensions have become real, Climate Change and its impact on planet Earth are the visible manifestation of this crisis.

The irony is, the most alarming warnings about the impending environmental disasters too have come from the developed countries. But they are at the very root of this global crisis. Whether it was the Brandt Report called 'Common crisis', or Club of Rome Report called 'Limits to Growth' or Brundtland Report 'titled Our Common Future'. According to a famous American study, the time has come to have "real concern for the global environment if we do not, we face the prospect that an over-burdened biosphere will no longer sustain us and that we will destroy ourselves in a struggle to survive."

How close it comes to Mahatma Gandhi's prophetic warnings of 1909 in the *Hind Swaraj* that "this modern civilisation is such that one has only to be patient and it will be destroyed."

The key to future of mankind lies in reflecting on what Mahatma Gandhi held so dear, the need for keener social consciousness and a deeper sense of personal responsibility. "The essence of what I have said is that man should rest content with what are his real

needs and become self-sufficient. If he does not have this control he cannot save himself. After all the world is made up of individuals, just as it is the drops, that constitutes the ocean. This is a well-known truth."

He found a revalidation of these fundamental postulates in the ancient Indian civilisation and its philosophy of economics which rests on mutual cooperation rather than cut-throat competition; on simple living and high thinking instead of useless multiplication of wants." Gandhiji used 'wants' and 'needs' interchangeably. He desired, "Civilisation, in no uncertain terms, to consist not in the multiplication, but in the deliberate and voluntary reduction of wants. This alone promotes real happiness and contentment, and increases the capacity for service."

Mahatma Gandhi was far ahead of his times as he clearly saw the unsustainability of the Western model of development, which did not suit India, instead, he advocated that India should aim at, what we may call a *Sarvodaya Society* (which in today's parlance means a sustainable society). He believed, and rightly so, that resources of the country are sufficient for all genuine needs of the people but not for their greed; and for comfort but not for luxury. The development as conceived by him was essentially biomass-based (using renewables and low or non-polluting appropriate technology. Here modernity was appropriately blended with tradition. Also there was respect for nature, and welfare of the weakest (antodaya) leading to welfare of all (*sarvodaya*). Such a pattern of development goes well with the situation prevailing in India where over 75 per cent of the people live in her 5,76,000 villages. Such development is bioindustrial in character being largely based on renewables.

Interestingly Mahatma Gandhi did not find much to choose between Capitalism and Communism.

He found great contradiction between the two. Louis Fischer once remarked to Gandhiji when such a discussion was proceeding: "But you are a Socialist and so are they." Gandhiji answered, "I am, they are not... My claim will live when their Socialism is dead." Time has shown his claim was truly prophetic.

He would often say, "I am not built for academic writing, action is my domain". Yet he was guided by values and ideas that remained enduring throughout his life. He was a social scientist par excellence, a born experimenter, the story of his life was a story of his experiments with Truth as he liked to define it. He was a pragmatist. He described himself as a 'Practical Idealist'. He refused to accept an idea, theory or plan as sacrosanct or inviolate which aimed at the betterment of some aspect of the life of human beings on earth. Nor did he find any place in his thought or life for ideas, which did not work. In this sense he was a scientist and not a philosopher.

A scientist is a dreamer and so is a revolutionary. And Mahatma Gandhi was both a scientist and a revolutionary. If we may say so he was an evolutionary scientist.

The spirit of science that he had imbibed made his life a saga of experimentations and

discovery. It needs to be remembered that no other teacher in world history but Gandhi had the opportunity to work in countries situated in three continents, Asia, Africa and Europe. And whose life and its message spans over three centuries. Born in the second half of the 19th Century, his experiments with Truth were carried out in the 20th Century that has answers for some of the most pressing problems humanity is facing in the 21st Century.

Like most of his ideas *Hind Swaraj* too emerged out of his experiences in South Africa. His greatest gift to the world is the gospel of *Satyagraha*, which stands on the twin pillars of Truth and Nonviolence. It can safely be said that South Africa not only gave to the world a *Satyagrahi* and the gospel of *Satyagraha* but also *Hind Swaraj* that shows the path of achieving both the goals. That explains why Mahatma Gandhi always felt an eternal bond with South Africa and her people.

There is an apparent resistance to the appreciation of Gandhian values, which seem hopelessly idealistic at first glance but are so essential for building a humane society. Gandhi's views on *Swadeshi* (self-reliance), *Swaraj* (self-rule) and Trusteeship were not a narrow inward looking principles. They were part of his all inclusive worldview. Insensitiveness to human misery is the curse of heartless consumerism. Unless the proponents of industrialism ponder the fact, humanity would be plunged into violence and anarchy. Gandhi's Message and his Truths offer affirmations of ecological integrity and stability. The spiritual dimensions of nonviolence as seen by him and as lived by him have universal significance and provides a blue print. a manifesto for action to save the Planet-in-crisis.

Human ideas have a high rate of mortality especially now in this hi-tech culture with fast changing global scenario where ideas are picked up and put aside with an almost frivolous zest. To imagine that Mahatma Gandhi's philosophy whether social, political or economic, which had their origin and inspirations in the nineteenth century could have anything but a remote chance of acceptance in the twenty-first century will be naive on our part.

But it would be doing a disservice to him if we force the application of his ideas unchanged on situations, which have altered radically. And it would be equally a disservice to find piecemeal solutions for the predicament of humankind and put them together and imagine that we have found an integrated Gandhian solution. We must never forget that all that Gandhi did was to put forward from an astonishingly fertile mind a number of tentative hypothesis to be tested in the crucible of time and to be accepted or rejected, amended or added to.

The ideas contained in the *Hind Swaraj* indicate the path towards the realisation of the elusive dream of "building a new India today not just a new India tomorrow". Gandhiji wanted to present the "India of his dreams" as a model of development to the world. This quest as he firmly believed must begin with first looking within and find plausible answers to 'why' and 'how' India has reached this impasse. An honest answer alone will guide a new humanity on to the path of recovery.

A comment made by an American writer, Paul F Power, may well be pondered over: "The contents (of *Hind Swaraj*) reveal how... his beliefs had completed their movement into broad currents of cultural nationalism, active pacifism and personal asceticism. Henceforth his thought flowed through these channels, and the essential Gandhi appeared."

It took a bewildered world a century to realise the power of *Satyagraha* and express its faith by coming together on the United Nations Organisation's platform to declare October 2, the birth anniversary of Mahatma Gandhi as "the International Day of Nonviolence". It is also a reflection of the global quest and yearning for eternal peace. Adoption of the U.N. Resolution now makes it imperative upon the global society to work together towards making this noble thought a success.

The year 2009 marks the centenary of *Hind Swaraj*. It presents a viable alternative that contains the seeds of cultural regeneration ecological balance, distributive justice and economic progress. The re-discovery of *Hind Swaraj* is a positive step towards an appreciation of the fundamentals of the underlying message of the Gandhian philosophy in action. It is a tribute to Mahatma Gandhi and the eternal relevance of his teachings.

On the Sixtieth Anniversary of India's Independence, we pay our tributes to Mahatma Gandhi, the Father of the Nation and all the brave soldiers and martyrs of the independence movement.

Hind Swaraj and its Contemporary Relevance

Keynote Address

by

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I. 'HIND SWARAJ'

INTRODUCTION

'HIND SWARAJ', the title of the first definitive writing of Mahatma Gandhi, and which continues to evoke an increasing interest and critical acclaim the world over, literally means 'Self-rule in India'.

This booklet of about 30,000 words was written in Gujarati—'*Hind Swarajya*'-- between 13 and 22 November, 1909, on board the ship *Kildonan Castle*, on the ship's stationery, during his return from England to South Africa after an abortive mission undertaken on behalf of the Indians in South Africa. 40 of the 275 pages were written with left hand as the right hand got tired, and only 16 lines were scratched out and only a few words were changed in the manuscript. It was serialized in the *Indian Opinion* (Natal) on 11 and 19 December, 1909 and was issued in January 1910, as a booklet by Gandhiji's International Printing Press, Phoenix, Natal.

The Bombay *Government Gazette* of 24 March, 1910, banned *Hind Swarajya*, along with some other publications of International Printing Press, as they "contain matter declared to be seditious". [CWMG 10:245] The ban on *Hind Swaraj* was finally lifted on 21 December, 1938. The news about the ban on the Gujarati edition hastened the publication of the English translation by Gandhiji himself under the title "Indian Home Rule".

Apart from a number of other editions in India, in 1924, an American edition titled '*Sermon on the Sea*' was published with an Introduction by John Haynes Holmes. Finally, the Navajivan have published the Revised New Edition (RNE) of '*Hind Swaraj or Indian Home Rule*' since 1939. The same text has been used in the CWMG Vol.10:6-68. However, Prof. A. J. Parel (ed.) has written his '*Gandhi: Hind Swaraj and other writings*' (1997), Camb. Univ. Press, (UK)/ Fdn. Books, New Delhi, based on the 1910 English edition.

In the 'Preface' to the original Gujarati edition, Gandhiji had explained his reasons for writing 'Hind Swaraj' thus: "I have written because I could not restrain myself. I have read much, I have pondered much, during the stay, for four months in London, of the Transvaal Indian deputation. I discussed things with as many of my countrymen as I could. I met, too, as many Englishmen as it was possible - -s. I consider it my duty now to place before the readers of *Indian Opinion* the conclusions, which appear to me to be

final." He wrote again: "Indian Home Rule - - was written in answer to the revolutionary's arguments and methods. - - to offer the revolutionary something infinitely superior to what he had, retaining the whole of the spirit of self-sacrifice and bravery that was to be found in the revolutionary." [At It Again, YI (7.5.1925), CWMG 27:49]

This book has 20 chapters (containing 91 Q.s & A.s exchanged between the 'Reader' and 'Editor' (Gandhiji) and 2 Appendices. App. I: 'Some Authorities' contains a list of 20 books 'recommended for perusal to follow up the study of the foregoing'. These include 6 books by Tolstoy and 2 each by Ruskin and by Thoreau, and one each by ten authors including Mazzini, Plato, Dadabhai Naoroji and R.C. Dutt.

App. II: 'Testimonials by Eminent Men' gives 'extracts from Mr. Alfred Webb's valuable collection [that] show that the ancient Indian civilization has little to learn from the modern'.

Gandhiji had written the original work in Gujarati and then translated it into English. In order to appreciate the full sense of some very important terms used frequently in the English text, it is necessary also to keep in mind their Gujarati equivalents:

1. For 'nation', the Gujarati text uses the term *praja* (=people, citizens, the ruled) and not the usually imagined equivalent *rashtra* (~ nation-state). Thus, 'one nation' or 'same nation' or 'one nationality' is *ek praja*, and 'different nations' is *judi praja*.
2. For 'home-rule' / 'self-rule' / 'swaraj', the Gujarati text uses the term *swaraj* or *swarajya*.
3. For 'civilization', the Gujarati text uses the term *sudharo* (~ reform, improvement) except that wherever 'modern' / 'Western' civilization is seen to have detrimental effect, the term—*kudharo* (~ deterioration) has been used.
4. For 'force', the Gujarati term is *bal*, for 'brute force' *darugolo* or *sharir-bal* or *maramari* or *hathiar* or *topa-bal*, for 'physical force' *hathiar-bal*; for 'love-force' or 'force of pity' *daya-bal*; for 'soul-force' *atma-bal*; for 'passive resistance' or 'truth-force' *satyagraha*.

Pre-Gandhian Concept of 'Swaraj':

The concept of *Swaraj* is pre-Gandhian, but it was Gandhiji who defined it in its fullness for us, particularly as the agenda for the non-violent social order in free India.

In *Rg-Veda* itself, in Part I, *Sukta* 80, all sixteen verses end with the word *swarajyam*. These verses exhort that the people should grow in knowledge (*vidya*) and happiness (*sukha*) by protecting their *dharma*-oriented kingdom, that none having doubtful integrity should rule, that the rulers should induce people towards right conduct and tend them with education (*vidya*) and justice, that no enemy can disregard righteous rulers (*dharmatmas*), that we should keep company of the learned, with faith in God, and thus acquire good reason and excellent health, wealth, and knowledge of the *Vedas*, and spread these among others. In modern times, the term *Swaraj* was first used by Dadabhai Naoroji in his Presidential address to the Congress in 1906 to ask for self-rule "like that of UK or the colonies". In 1907, Lokmanya Tilak advocated *Swadeshi* and national education to attain *Swaraja* or self-rule within the British Empire.

'HIND SWARAJ': THE GANDHIAN CONCEPT OF SELF-RULE

It is proposed to summarize the contents of the '*Hind Swaraj*', covering chapters 1-19 under five broad headings: 'Historical Perspective', 'Condition of India', 'Critique of Modern Civilization', 'Gandhian Vision of Swaraj (Home-rule/ Self-rule)', and 'Brute-/Body-Force or Violence Vs Truth-/Soul-/Love-Force or Passive Resistance or Satyagraha', and covering chapter 20 as 'Conclusion'. At the start itself, Gandhiji says that while answering 'Reader's' questions, he would observe all the three objectives which a newspaper should follow: "to understand popular feeling and give expression to it", "to arouse among the people certain desirable sentiments", and "fearlessly to expose popular defects". [ch.I]

1. Historical Perspective:

India was a 'Nation' from Ancient Times:

To Gandhiji, a 'nation' meant primarily its 'people' –*praja*--and not merely its ruling structures. He asserted: "We were one nation before they came to India. One thought inspired us. Our mode of life was the same. It was because we were one nation that they were able to establish one kingdom. Subsequently they divided us." [ch.IX] Further, "Nations are not formed in a day; the formation requires years." [ch.II]

Why was India Lost?

"The English have not taken India; we have given it to them. - - - Who assisted the Company officers? Who bought their goods? - - When our Princes fought among themselves, they sought the assistance of Company Bahadur. - - - The Hindus and the Mahomedans - - gave the Company its opportunity and thus we created the circumstances that gave the Company its control over India." [ch. VII]

Role of I.N. Congress as Harbinger of Home Rule & of Bengal Partition in Awakening India:

Had various Congress leaders not "prepared the soil, our young men could not have even spoken about Home Rule." Regarding Dadabhai Naoroji, he said: "It was the respected Dadabhai who taught us that the English had sucked our life-blood. - - Is Dadabhai less to be honoured because, in the exuberance of youth, we are prepared to go a step further?" He was not asking the youth to follow any leader blindly. He said that many Englishmen too desired Home Rule for India, and he cautioned: "We seek who justice will have to do justice to others." [ch.I]

While the seed was sown by the Congress, "the real awakening took place after the Partition of Bengal [in 1905]." Not that "the other injustices done to India are less glaring than that done by the Partition", and he added with great prescience--"The salt-tax is not a small injustice." –but, "The demand for the abrogation of the Partition is tantamount to a demand for Home Rule." Even more important, "As time passes, the nation is being forged." [ch.II]

He welcomed 'unrest': "Unrest is, in reality, discontent. - - - This discontent is a very useful thing. As long as a man is contented with his present lot, so long is it difficult to persuade him to come out of it. Therefore it is that every reform [*sudhar, badlava*] must

be preceded by discontent. We throw away things we have, only when we cease to like them." [ch.III]

2. Condition of India:

He chose railways, lawyers and doctors for special indictment because these "have impoverished the country so much" [ch.IX] and were functioning as instruments of the British rule in India.

Railways:

The British built the railways with the avowed aim of having a better control over India both militarily and economically, and "but for the railways, the English could not have such a hold on India as they have.

The railways - - are the carriers of plague germs. Formerly, we had natural segregation. - - have also increased the frequency of famines because, owing to facility of means of locomotion, people sell out their grain and it is sent to the dearest markets. - - - The holy places of India have become unholy. Formerly, - - only the real devotees visited such places." [ch.IX]

Lawyers:

While the objectives behind the railways have changed towards social good after independence, his views in the 'Hind Swaraj' on lawyers and doctors, though reflecting the situation under the foreign rule, apply in many respects to India of today also. Regarding lawyers, he observed: "My firm opinion is that the lawyers have - - accentuated Hindu-Mahomedan dissensions and have confirmed English authority. - - - It is one of the avenues of becoming wealthy and their interest exists in multiplying disputes. - - - Why do they want more fees than common labourers? - - In what way are they more profitable to the country than the labourers? - - - The parties alone know who is right. We, in our simplicity and ignorance, imagine that a stranger, by taking our money, gives us justice. - - - What I have said with reference to the pleaders necessarily applies to the judges; - - the one gives strength to the other." [ch.XI]

Doctors:

"The English have certainly effectively used the medical profession for holding us. - - - How do these diseases arise? Surely by our negligence or indulgence. - - - Had the doctor not intervened, nature would have done its work, and I would have acquired mastery over myself, would have been freed from vice and would have become happy. - - -

European doctors are the worst of all. For the sake of a mistaken care of the human body, they - - practise vivisection. No religion sanctions this. - - Most of their medical preparations contain either animal fat or spirituous liquors - -." [ch.XII]

To him, a true physician is one "who probes the cause of disease." [ch.VII]

As he wrote later: "[A] satyagrahi doctor - - would treat the poor before all others - - - Such an individual should not even hope to make a living from his profession." [Answers to Questions; *Navajivan*, 29.1.1928, CW 35:512]

3. Critique of Modern Civilization:

The Condition of England:

He was equally critical of the conditions then prevailing in England, particularly of the way its democracy worked: "the Mother of Parliaments - - - has not yet, of its own accord, done a single good thing. - - without outside pressure, it can do nothing. - - - it is generally acknowledged that the members are hypocritical and selfish. - - - Carlyle has called it the 'talking shop of the World'. Members vote for their party without a thought. - - - Parliament is simply a costly toy of the nation." Their existing "pitiable" state was "not due to any peculiar fault of the English people, but the condition is due to modern civilization. It is a civilization only in name." [ch.V]

The 'Modern' ['Western'] Civilization is based on Idleness, Greed, Violence, and Exploitation:

He was very critical of the 'modern' / 'western' civilization for being too materialistic and ignoring social and moral aspects. Explaining further, he wrote: "Its true test lies in the fact that people living in it make bodily welfare the object of life. - - - Men will not need the use of their hands and feet. - - Everything will be done by machinery. - - - - Formerly, - - to fight with one another, they measured between them their bodily strength; now it is possible to take away thousands of lives by one man working behind a gun from a hill. Formerly, men worked in the open air - -. Now thousands of workmen - - work - - at most dangerous occupations, for the sake of millionaires. Formerly, men were made slaves under physical compulsion. Now they are enslaved by temptation of money and of the luxuries that money can buy. There are now diseases of which people never dreamt before - -.

This civilization takes note neither of morality nor of religion. - - - They keep up their energy by intoxication. - - - According to the teaching of Mahomed this would be considered a Satanic Civilization. Hinduism calls it the Black Age." [ch.VI]

What is 'True' Civilization? The Indian Civilization has been a 'true' Civilization:

Contrasted with such a 'modern' civilization, he explains what he understood by 'true' civilization: "**Civilization is that mode of conduct which points out to man the path of duty. Performance of duty and observance of morality are convertible terms. To observe morality is to attain mastery over our mind and our passions. So doing, we know ourselves.** The Gujarati equivalent for civilization means 'good conduct'. If this definition be correct, then India has nothing to learn from anybody else - -."

The basic Indian civilization has been a 'true' civilization: "I believe that the civilization India has evolved is not to be beaten in the world. - - - What we have tested and found true on the anvil of experience, we dare not change."

"We notice that **the mind is a restless bird; the more it gets the more it wants, and still remains unsatisfied.** - - Our ancestors, therefore, set a limit to our indulgences. - - - **We have had no system of life-corroding competition.** Each followed his own occupation or trade and charged a regulation wage. - - - They saw that our real happiness and health consisted in a proper use of our hands and feet. - - that large cities were a snare - -. They were, therefore, satisfied with small villages. They saw that kings and their swords were inferior to the sword of ethics, and they, therefore, held the sovereigns of the earth to be inferior to the Rishis and the Fakirs. - - -

This nation had courts, lawyers and doctors, but they were all within bounds. - - Justice was tolerably fair. The ordinary rule was to avoid courts. The common people - - enjoyed true Home Rule." [ch.XIII]

Summing up, he stated: "**The tendency of the Indian civilization is to elevate the moral being, that of the Western civilization is to propagate immorality.** - - In our own civilization there will naturally be progress, retrogression, reforms, and reactions; but one effort is required, and that is to drive out Western civilization. All else will follow." [ch.XVIII]

4. Gandhian Vision of Swaraj (Home-rule/ Self-rule):

Swaraj means both self-rule and home-rule or independence: "**It is Swaraj when we learn to rule ourselves.** - - But such Swaraj has to be experienced, by each one for himself." [ch.XIV]

Swaraj means a change in the character of the Rule:

To Gandhiji, **swaraj meant a change in the character of rule and not merely the change of rulers:** "If the English become Indianized, we can accommodate them. If they wish to remain in India along with their civilization, there is no room for them." [ch.XIV] When the 'Reader' insisted that independence means that the English must leave India and, "We must own our navy, our army, and we must have our own splendour", he replied: "In effect it means this: that we want English rule without the Englishman. - - that is to say, you would make India English. And when it becomes English, it will be called not Hindustan but *Englistan*. This is not the Swaraj that I want." [ch.IV] Giving an example of the freedom movement in Italy, he reiterated: "I believe that you want the millions of India to be happy, not that you want the reins of government in your hands. If that be so, we have to consider only one thing: how can the millions obtain self-rule?" [ch.XV]

What is 'Patriotism'?

From this he deduced his definition of 'patriotism': "My patriotism does not teach me that I am to allow people to be crushed under the heel of Indian princes if only the English retire. - - **By patriotism I mean the welfare of the whole people - -.**" [ch.XV]

Swaraj and Religion:

The Hindu-Muslim communal issue had vitiated India's freedom struggle more than any other factor. Gandhiji was a devout Hindu, but – or, therefore – he could not accept sectarianism of any form: "India cannot cease to be one nation because people belonging to different religions live in it. The introduction of foreigners does not necessarily destroy the nation; they merge in it. A country is one nation only when such a condition obtains in it. - - India has ever been such a country. - - - **In no part of the world are one nationality and one religion synonymous terms; nor has it ever been so in India.** - - - Do people become enemies because they change their religion? - - - **Religions are different roads converging to the same point.** - - - If everyone will try to understand the core of his own religion and adhere to it, and will not allow false teachers to dictate to him, there will be no room left for quarrelling." [ch.X]

Referring to the prevalent communal situation, he asserted: "I do not suggest that the Hindus and the Mahomedans will never fight. Two brothers living together often do so. - - When people are in a rage, they do many foolish things. - - How shall a third party distribute justice amongst them?" His advice about Cow-protection, then a major issue of communal discord, remains relevant today also: "The cow is the protector of India - - - a most useful animal in hundreds of ways. - - **But, just as I respect the cow, so do I respect my fellow-men. - - - If I were overfull of pity for the cow, I should sacrifice my life to save her but not take my brother's.**" [ch.X]

Swaraj and 'True' Education:

He set the basic character of education thus: "**What is the meaning of education? It simply means a knowledge of letters. It is merely an instrument, and an instrument may be well used or abused.**" He wanted 'primary' education to be such that added to the knowledge and well-being of the peasant, and did not alienate him from 'his cottage' or his environment. Similarly, 'higher' education is useful only to the extent it benefits those acquiring it but also the society. And, "Therefore, whether you take elementary education or higher education - - - it has its place when we have brought our senses under subjection and put our ethics on a firm foundation." He also firmly believed that, "It is we, the English-knowing Indians, that have enslaved India. [ch. XVIII] He stressed the need to develop Indian languages and to adopt Hindi as the national language. [ch.XX]

Swadeshi (Self-reliance) means Swaraj, while Industrialism means Economic Enslavement:

Another facet of Gandhian Swaraj was his emphasis on Swadeshi (self-reliance) and his criticism of unbridled industrialism, which was causing large-scale rural unemployment and misery due to forced migration to work in large factories and to urban slums. [ch.X]

His critique of 'Machinery' was related to his time but its underlying logic remains valid even today when 'Development' has tended to accentuate social disparities. He explained how the import of mill cloth had wrought havoc on rural spinners and weavers in India: "When I read Mr. Dutt's *Economic History of India*, I wept - - - It is due to Manchester that Indian handicraft has all but disappeared. - - - Machinery is the chief symbol of modern civilization - -. The workers in the mills of Bombay have become slaves. The condition of the women working in the mills is shocking. - - - **It would be folly to assume that an Indian Rockefeller would be better than the American Rockefeller.** - - - What did India do before these articles were introduced? Precisely the same should be done today. - - - So doing, we shall save our - - money and support Swadeshi and so shall we attain Home Rule. - - -" [ch.XIX]

After his return to India in 1915, his views about 'Machinery' evolved more fully, as may be seen from his 'Discussion with G. Ramachandran' in 1924: "[R:] Are you against all machinery, Bapuji?

How can I be when I know that even this body is a most delicate piece of machinery? The spinning-wheel itself is a machine; a little tooth-pick is a machine. **What I object to, is the craze for machinery, not machinery as such.** - - - Today machinery merely helps

a few to ride on the backs of millions. The impetus behind it all is not the philanthropy to save labour, but greed. - - -

- - - scientific truths and discoveries should first of all cease to be the mere instruments of greed. - - - I am aiming, not at eradication of all machinery, but limitations. - - -

The supreme consideration is man. The machine should not tend to make atrophied the limbs of man. - - - The saving of labour of the individual should be the object, and honest humanitarian considerations, and not greed, the motive." [CW 25:251-2, 255]

5. Brute-/Body-Force or Violence Vs Truth-/Soul-/Love-Force or Passive Resistance or Satyagraha:

Coming to the core issue of the means to be adopted for India's freedom struggle in particular and in situations of conflict in general, he advocated non-violent resistance over violent resistance. He calls the former truth-force, soul-force, love-force or 'passive resistance' and the latter brute-force or body-force or violence. When asked for 'historical evidence' of Soul-force, he explained: "History, then, is a record of an interruption of the course of nature. Soul-force, being natural, is not noted in history." [ch.XVII] His thesis and technique of non-violent resistance--*Satyagraha* ('holding on to truth')--have become known the world over as an inspiration for fight against injustice, discrimination, and exploitation and as the right approach to conflict resolution.

Ethical principles of 'Means & Ends', and 'Duties & Rights' are vital in deciding the choice of 'force' to be used: "- there is just the same inviolable connection between the means and the end as there is between the seed and the tree. - - We reap exactly as we sow. - - - real rights are a result of performance of duty - -. And, where everybody wants rights, who shall give them to whom? - - - fair means alone can produce fair results, and that, at least in the majority of cases, if not indeed in all, the force of love and pity is infinitely greater than the force of arms. There is harm in the exercise of brute force, never in that of pity." [ch.XVI]

He defined 'passive resistance' thus: "Passive resistance is a method of securing rights by personal suffering; it is the reverse of resistance by arms. When I refuse to do a thing that is repugnant to my conscience, I use soul-force. For instance, the Government - - has passed a law - -. I do not like it. - - If I do not obey the law and accept the penalty for its breach, I use soul-force. - - Everybody admits that sacrifice of self is infinitely superior to sacrifice of others. Moreover, if this kind of force is used in a cause that is unjust, only the person using it suffers. - - - No man can claim that he is absolutely in the right or that a particular thing is wrong because he thinks so, but it is wrong for him so long as that is his deliberate judgment." [ch.XVII]

Here, the Gandhian concept of 'Relative Truth' is very relevant.

Further, "The real meaning of the statement that we are a law-abiding nation is that we are passive resisters. - - - Even the Government - - do not say: 'You must do such and such a thing,' but they say: 'If you do not do it, we will punish you.' - - If man will only realize that it is unmanly to obey laws that are unjust, no man's tyranny will enslave him. This is the key to self-rule or home rule." [ch.XVII]

With the use of Brute force, it is not Truth but greater Violence that wins. 'Passive Resistance' needs greater mental strength, courage and bravery than Brute force, and anyone may use it: "Physical-force men are strangers to the courage that is requisite in a passive resister. - - - even a man weak in body is capable of offering this resistance. One man can offer it just as well as millions. Both men and women can indulge in it. It does not require the training of an army - - - it blesses him who uses it and him against whom it is used. Without drawing a drop of blood it produces far-reaching results." Pre-empting his later thesis of 'Trusteeship', he wrote: "Those who have money are not expected to throw it away, but they *are* expected to be indifferent to it. They must be prepared to lose every penny rather than give up passive resistance."

'Passive Resistance' has been the norm in India and that meant real Home-rule: "- in India, the nation at large has generally used passive resistance in all departments of life. We cease to co-operate with our rulers when they displease us." Summing up, he wrote: "Real Home Rule is possible only where passive resistance is the guiding force of the people. Any other rule is foreign rule." [ch.XVII]

6. Conclusion:

Finally, he asserted: "Let each do his duty. If I do my duty, that is, serve myself, I shall be able to serve others. - - I will take the liberty of repeating:

1. Real home-rule is self-rule or self-control.
2. The way to it is passive resistance: that is soul-force or love-force.
3. In order to exert this force, Swadeshi in every sense is necessary.
4. What we want to do should be done, not because we object to the English or because we want to retaliate but because it is our duty to do so."

II. Contemporary Relevance

'Hind Swaraj' (1909), may be considered as the Gandhian manifesto for Swaraj, or the ethical, non-violent, just and equitable, sustainable, as well as progressive and prosperous social order that free India should build up, in its political, economic, social and moral aspects of national life. However, he also explained how, *always, the practical would fall short of the ideal but the ideal would show the path for continuous improvement:* "- it is not Indian Home Rule depicted in that book that I am placing before India. I am placing before the nation parliamentary, i.e., democratic swaraj. I do not suggest today a destruction of all the machines, but I am making the spinning-wheel the master-machine. *The Indian Home Rule depicts an ideal State. The fact that I cannot come up to the ideal condition of things laid down therein is to be attributed to my weakness.*" [Navajivan, 10.8.1924, CW 24:548]

After the *'Hind Swaraj'* was written and till his martyrdom, Gandhiji's precepts and practices continued to evolve and expand, covering nearly all conceivable aspects of personal and public life, including his multi-faceted concepts of Ethics and Religion, Swaraj (including those of Democracy, Ramarajya and Gram Swaraj), Swadeshi, Science, Technology and Industrialism, Theory of Bread Labour (Duty and Right to Work), Need-based Economy, Theory of Trusteeship ('Thesis of Social Ownership'), Sarvodaya ('Unto This Last' – Welfare of All), Constructive Programme, Gandhian

Concept of Socialism (Theory of a Just Social Order), Economy of Service, Gandhian Ecological Perspectives, Education, Social Issues, Planning and Development, Gandhian Concept of a Non-violent Social Order, and much else. However, the principles enunciated in the '*Hind Swaraj*' continued to remain at the core of all his thought and action.

While contemporary relevance of the basic principles of Gandhian thought is being increasingly realized and studied all over the world, here it is proposed only to touch upon the following selected issues as examples of the continuing relevance of '*Hind Swaraj*':

1. The Idea of Khadi.
2. Contemporary Relevance in India of his Concept of Right to Education.
3. Contemporary Relevance in India of his concepts of Swaraj, Swadeshi and Satyagraha.

1. The Idea of Khadi

Gandhiji wrote in '*Hind Swaraj*' that when he read R.C. Dutt's History of India, he wept as he realized that 'It is due to Manchester that Indian handicraft had all but disappeared' and Indians were impoverished as their primary cottage industry of hand-made cloth was nearly destroyed in order to support import of mill-made cloth. India produced all the cotton it needed but exported much of it. It was in London in 1909 that he 'saw as in a flash that without the spinning wheel there was no Swaraj. I knew at once that everyone had to spin. But I did not then know the distinction between the loom and the wheel'. [CW 37:287-9]

So, he wrote in '*Hind Swaraj*', rather wishfully, about the millowners: 'If they would be good they would gradually contract their business. They can establish in thousands of households the **ancient and sacred handlooms** - -.' [ch. XIX] His specific instructions in order to develop 'the requisite strength' included: '**If a lawyer - - - take up a handloom**', '**If a doctor - - - take up a handloom**', and '**If a wealthy man, he will devote his money to establishing handlooms**, and encourage others to use hand-made goods by wearing them himself'. [ch. XX]

This shows how in 1909 itself he had realized the utmost significance of the very idea of reviving khadi as the step necessary for alleviating the extreme poverty and sense of helplessness in India. Soon after he arrived in India in 1915 and set up his ashram at Sabarmati, he introduced a few handlooms. The whole history of how he started working the looms with mill yarn, then struggled to locate a spinning wheel, how his odd meeting with Gangabehn Majumdar led to her locating some abandoned wheels at Vijapur in Baroda State, and the hardships and struggles he and his committed comrades went through till hand-spinning and hand-weaving of khadi, not only in cotton but also in silk and wool, became household names in India, became the leading symbol of the Congress Party and of India's very freedom struggle--the 'Livery of Freedom' in Pandit Nehru's words--is as much a story of a highly successful adventure over three decades, of single-minded devotion and persistence, and of absolute commitment and of faith, as any other.

When someone sent a 100 Rupee currency note to him, he wrote: "I intend to utilize the amount on charkha and khadi work, for by that means we can serve the largest number of the poor." [30.4.1926, CW 30:386] And again, "I would today discard the spinning-wheel if someone shows a better and more universal political programme than hand-spinning." [YI (27.5.1926), CW 30:453] Spinning wheel became a part of the Flag of freedom struggle. It became a visible sign and a primary means of economic and political emancipation, of social integration (everyone was to spin, some for livelihood, some for self, and some for sacrifice), of women's emancipation (as spinners, as propagators of khadi, for picketing shops selling foreign cloth), of materialization of countrywide organizations, cadres, technological innovations in wheels and looms to improve both output and quality of yarn and cloth, and of a nationwide and enduring pride and idealism unique in its reach and depth.

2. Contemporary Relevance in India of his concept of Right to Education

The first resolution passed by the Educational Conference [held at Segaon on 23.10.1937, CW 66:273] among the resolutions placed by Gandhiji before it, was: "(1) That in the opinion of this Conference **free and compulsory education be provided for seven years on a nation-wide scale.**" Universal primary/ basic/ school education for every Indian child was one of the major objectives pursued during India's freedom struggle. It is exemplified by GK Gokhale's moving the Free and Compulsory Education Bill at the Imperial Legislative Assembly in 1911 and Gandhiji's sustained efforts in introduction of Basic Education as every child's right.

However, after independence, universal 'free and compulsory' school education was not made a Fundamental Right, and instead it was put as Article 45 of the Directive Principles of State Policy: "The State shall endeavour to provide, within a period of ten years from the commencement of this Constitution, free and compulsory education for all children until they complete the age of 14 years." Article 45, being only a Directive Principle is not enforceable in law and has also remained totally ignored by *all* Political Parties since 1950.

In the meantime, an increasingly discriminatory school education system has been allowed to grow, with exclusive, elitist, English medium 'Public' (in fact 'Private') schools at one end of the spectrum and 1.27 crore child labour up to the age of 15 (2001 census) at its other end.

The issue, however, took a momentum in 1992 when Supreme Court delivered two historic judgments, that every citizen had a right to education under the constitution and held that "though right to education is not stated expressly as a fundamental right, it is implicit in and flows from the right to life guaranteed under Article 21". There was tremendous pressure on parliament to enforce the Supreme Court judgment through a number of public interest litigation measures, and accordingly a constitutional amendment bill was introduced in July 1997. But due to the lack of political will it was only in 2002, that the 86th Amendment to the Constitution was passed, which intended to make 'right to education' as a Fundamental Right. However, instead of just converting the provision in Art. 45 into a Fundamental Right, it provided as under:

1. Art. 45 amended for age up to 6 years in place of up to 14 years.
2. Art. 21A introduced: "The State shall provide free and compulsory education to all children of the age of 6 to 14 years in such manner as the State may, by law, determine."
3. Clause (k) added under Art. 51A, Fundamental Duties: It shall be the duty of every citizen of India "(k) who is a parent or guardian to provide opportunities for education to his child or, as the case may be, ward between the age of 6 and 14 years."

The above Amendment has diluted the objective of 'free and compulsory' education for all Indian children up to the age of 14, and left vital gaps, as under:

- The State now has no responsibility for the pre-school (K.G.) education for children up to 6. This would deprive children of weaker sections of such education, as Government or other aided schools are not likely to provide this essential component of education.
- There is lack of emphasis on 'free and compulsory' education, and hence on 'Area Schools' for all children as the basic principle of school education, thus allowing continuation of 'Public' schools, and the rich-poor divide in school education.
- Continuation of heavy drop-out rates in classes 6 to 10 of children in govt./municipal/ other aided schools, mainly because of the system of school education under which children of the well-to-do are segregated in 'Public' schools from the children of poorer sections, including social discrimination in the matter of medium of instruction between the 'Public' and the common (ordinary) schools.

Even with the 86th Amendment as it is, it requires action "in such manner as the State may, by law, determine." The Government had been dithering in passing the necessary follow-up Bill for making the 86th Amendment operative.

3. Contemporary Relevance in India of his concepts of Swaraj, Swadeshi and Satyagraha

Gandhian Swaraj was not merely political freedom, or a change of rulers. It meant a change in the nature of rule itself. Keeping to his basic idea expressed in '*Hind Swaraj*': "I believe that you want the millions of India to be happy not that you want the reins of Government - - - we have to consider only one thing: how can the millions obtain self-rule?" [ch.XV], he later defined India of his dream as: "I shall work for an India in which the poorest shall feel that it is their country in whose making they have an effective voice; an India in which there shall be no high class and low class of people; an India in which all communities shall live in perfect harmony. There can be no room in such an India for the curse of untouchability or the curse of intoxicating drinks and drugs. Women will enjoy the same rights as men." [3.9.1931, CW 47:388]

In August 1947, just as India became independent, he gave a clear directive to its rulers: "I will give you a talisman, Whenever you are in doubt, or when the self becomes too much with you, apply the following test. Recall the face of the poorest and the weakest man whom you may have

seen, and ask yourself if the step you contemplate is going to be of any use to him. Will he gain anything by it? Will it restore him to a control over his own life and destiny? In other words, will it lead to swaraj for the hungry and spiritually starving millions? Then you will find your doubts and yourself melting away." [CW 89:125]

However, after independence, he soon realized that his idea of Swaraj was being compromised:

- On January 26, 1948: "Now we - - seem to be disillusioned. - - We are entitled to celebrate the hope that - - we are on the road to showing the lowliest of the villager that it means his freedom from serfdom - - also equality of all classes and creeds- ." [CW 90:495]
- On January 27, 1948: "The Congress has won political freedom but it has yet to win economic freedom, social and moral freedom. These freedoms are harder than the political, if only because they are constructive, less exciting and not spectacular. - - In its difficult ascent to democracy, it has inevitably created rotten boroughs leading to corruption and creation of institutions popular and democratic only in name - -." [CW 90:497]
- On January 29, 1948: "India has still to attain social, moral and economic independence in terms of its seven hundred thousand villages as distinguished from its cities and towns." [CW 90:526-7]

The Constitution of India, adopted on January 26, 1950, was meant to embody the ideals that had inspired the freedom struggle. Its Preamble promised "to secure to all its citizens: Justice, social, economic and political; Liberty; Equality of status and of opportunity; and to promote among them all Fraternity assuring the dignity of the individual and the unity of the Nation." However, the Constitution itself created a hiatus by dividing the fulfillment of these promises through two different instruments: Part III, Fundamental Rights (Art. 14 to 35), and Part IV, Directive Principles of State Policy (Art. 37 to 51). The Fundamental Rights, broadly covered political and civic rights but not basic socio-economic rights, which are covered to a limited extent under Directive Principles. But this limited provision too has been nullified in practice because vide Art. 37, "The provisions contained in this Part [IV] shall not be enforceable by any court - -."

Hence, during 59 years of the operation of the Constitution, the position that has emerged is that of growing disparities and denial of basic human rights, particularly in areas of education, health, income and wealth, poverty and infant mortality, and generally in all major fields where equality of entitlements and opportunities were promised. No wonder, Dr. B.R. Ambedkar, Chairman, Constitution Drafting Committee, had warned that with this Constitution, India was "going to enter a life of contradictions" - of political equality and socio-economic inequality.

Six decades after independence, what Gandhiji had feared, continues to persist. India is a political democracy characterized by a highly non-egalitarian socio-economic order. Upper class urban orientation in economic planning, growth and development has taken such deep roots that Indian Prime Ministers feel no compunction while using slogans like '*India shining*' or '*India rising*' even with so much deprivation and poverty

around them. The much advertised GDP growth includes the conspicuously wasteful expenditure on luxurious lifestyles while nearly half the population has yet to meet its basic physiological needs:

- According to the highly deficient 'poverty line' fixed in 1970s, 26.1% of India's population is below Poverty Line. But taking a more realistic PL that accounts for minimum nutritional norms, basic health needs, basic needs of water, sanitation, shelter and clothing, and energy for lighting and cooking, and right to education, and other unavoidable needs, 68.8% of India's population is below PL. [EPW, 24.6.2006, pp.2534-40] Three-fourths of Indians survive on less than Rs. 20 per day.
- At the same time, the number of High Net Worth Individuals (having financial assets of over \$1 million excl. primary residence) in India grew by 20% during 2004 to 83,000, and by 19% during 2005 (versus 6.5% in the world) to 1,00,000. According to one report, consumption of luxury watches, branded jewellery, luxury cars, wine, and international travel in India is growing @ 30 to 50% annually.
- Global Hunger Index for 2009 ranks India 65th (worse than even Sudan) with 'alarming' rating out of 84 developing and transitional countries. The rating is based on 21% of Indian population being undernourished, 43.5% of its children under 5 being under-weight, and 7.2% mortality rate of its under 5 children. [HT, 15.10.2009]
- According to the UNESCO Global Monitoring Report 2007, India ranks a poor 99 on a scale of 125 countries on the Edu. Dev. Index; 45 million children are out of school, and drop-out rate up to Class V is 31%, up to Class X 63%. Higher education enrolment is a mere 9%. According to 2001 census, 12.567 million children (5-15 years age) are working as child labour. Overall, there may be 25-30 million child labour, over 75% in hazardous occupations.
- India's workforce comprises over 90% in unorganized sector. It includes the entire farm sector. Due to pro-rich, pro-capitalist policies of the State, social security schemes have been extremely sparse among the economically and socially vulnerable sections.
- Rural sector has shown a growing lag, leading to mass movement of the unemployed to the cities and growth of slum or homeless unorganized labour force. Relative poverty in rural areas has been rising. The rural youth are driven to go to the cities for sheer survival. As an example, there are 8 lakhs cycle rickshaw pullers in Delhi Union Territory (only 15,000 in 1975). They live at the mercy of the police, the municipal babus, and the Government policy which excludes cycle rickshaws from NDMC areas as being unsightly and severely restricts the issuing of licences leading to the majority of the pullers plying unlicensed rickshaws.
- Justice is available only to those with the capacity to pay the lawyers and other intermediaries for dealing with the labyrinthine, dilatory and expensive legal system, and hence the rich and powerful get rarely convicted even for major crimes. Over 30 million cases (including over 16 million criminal cases) are pending in Indian courts. It takes, on average, about 15 years for a case to get resolved. The proposal for having village courts is languishing for want of funds. [Pioneer, 27.5.2009; HT, 2.10.2009]

- The overall functioning of the State has led to pervasive rent-seeking, corruption, tax evasion, unearned incomes, and poor enforcement of the large portfolio of the otherwise impressive list of laws, and to criminalization of politics. All this works against the weak and the poor.
- It is clear from the foregoing that the State policies since independence have failed to secure the basic needs of education, health, employment and other essential areas of human development. On the other hand, India has been one of the biggest arms buyer among developing countries. Having been one of the fastest growing economies for over a decade, its upper classes have grown as affluent as the rich in the Western countries but the poor remain as poor as those in Sub-Saharan Africa.

Thus, while India got political freedom in 1947, it has yet to secure to all Indians the economic, social and moral freedoms. Such poverty, deprivation, and wide disparities constitute an endemic source of violence in a society. As long as 'elitism' plagues Indian political polity and economy, 'inclusive' growth is not possible. The 'trickle-down' form of development will breed increasing discontent and violence among the deprived population.

Economic Equality was one of the major planks of Gandhiji's Constructive Programme during freedom struggle: "Economic equality is the master-key to non-violent independence. - - It means the levelling down of the few rich - - and the levelling up of the semi-starved naked millions on the other. A non-violent system of government is clearly an impossibility so long as the wide gulf between the rich and the hungry millions persists. The contrast between the palaces of New Delhi and the miserable hovels of the poor labouring class nearby cannot last one day in a free India in which the poor will enjoy the same power as the richest in the land. A violent and bloody revolution is a certainty one day unless there is a voluntary abdication of riches and the power that riches give and sharing them for the common good." [13.12.1941, CW 75:158] Growing menace of *Naxalism*, therefore, should come as no surprise to us!

Gandhiji had explained his concept of Swadeshi too basically in terms of an inclusive and equitable social order: "Independence must begin at the bottom. - - - In this structure composed of innumerable villages, there will be ever-widening, never-ascending circles. Life will not be a pyramid with the apex sustained by the bottom. But it will be an oceanic circle whose centre will be the individual always ready to perish for the village, the latter ready to perish for the circle of villages, till at last the whole becomes one life composed of individuals, never aggressive in their arrogance but ever humble, sharing the majesty of the oceanic circle of which they are integral units." [21.7.1946, CW 85:32-3]

Thus, whether in the pursuit of Swaraj, or Swadeshi, or a non-violent social order, Indian democracy has been increasingly slipping in following the aims and ideals which inspired '*Hind Swaraj*' and whole the freedom movement. While certain Gandhian features such as Panchayat Raj (Constitution (73rd Amendment) Act, 1992) and NREGA have brought some relief, these have remained in the nature of exceptions

in the overall and fast-growing approach of political-economic elitism under Indian democracy.

Eplilogue

I close this Paper with what Gandhiji had written while in the thick of India's freedom struggle: "My success lies in my continuous, humble, truthful striving. I *know* the path. It is straight and narrow. It is like the edge of a sword. I rejoice to walk on it. I weep when I slip. God's word is: 'He who strives never perishes.'" I have implicit faith in that promise." [NOTES: In Search of Guru; YI (17.6.1926), CW 31:9] The same 'straight and narrow' path everyone one of us too must follow if we wish to realize the essence of '*Hind Swaraj*' in ourselves and in our India.

Charkha : a Political, Ethical & Religious Conception

*Gandhi at the Crossroad of
Man, Machine and Morals*



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“I refuse to be dazzled by the seeming triumph of machinery” - Young India, 17-6-1926

“Machinery has its place; it has come to stay” - Young India, 5-11-1925

“After all the simple charkha is also a machine” - Letter to Giriraj, October 4, 1929

“If man controls the machines, then they will not” - Quoted in *The Hindu*, 21-12-1931

“Let us realize that we are nothing even as a machine is nothing. The machinist is everything. Let us reduce the teaching, of the Gita and the Ramayana to practice and we shall cease to worry.” - Letter to Satish Chandra Dasgupta, before February 17, 1927

“He who acts in a spirit of detachment, having destroyed his egotism and renounced the fruit of action, becomes a mere machine moving at the will and pleasure of the Master Mechanic or an instrument in the hands of God.” - Gandhi's Discourse on Gita sent as Letter to Narandas Gandhi, 9-12-1930

“We ourselves are machines, and if we believe God to be our mover, we must behave like machines in His hands. If the sun and other heavenly bodies did not work like machines, the universe would come to a standstill. But in behaving like machines, we must not behave like inert matter. We are intelligent beings . . .” - History of the Satyagraha Ashram, July 11, 1932

“If machines can thus give work to everybody, who would protest against them?” - Letter to Shankarlal Banker, January 25, 1932

“Machinery has its place; it has come to stay ... But if, by some chance, one man could plough up by some mechanical invention of his the whole of the land of India and control all the agricultural produce and if the millions had no other occupation, they would starve, and being idle, they would become dunces, as many have already become. There is hourly danger of many more being reduced to that unenviable state.

Young India, 5-11-1925

If some Chengiz Khan invades us in future and through slaughter reduces the 33 crores to 3 lakhs, we may then need machines just as Britain and the United State need them.

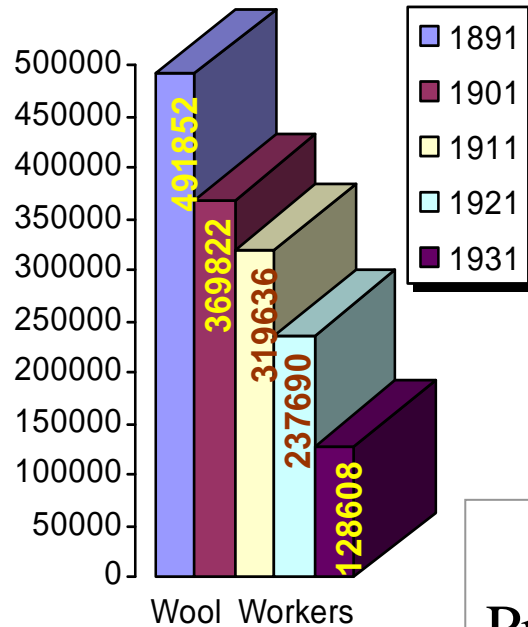
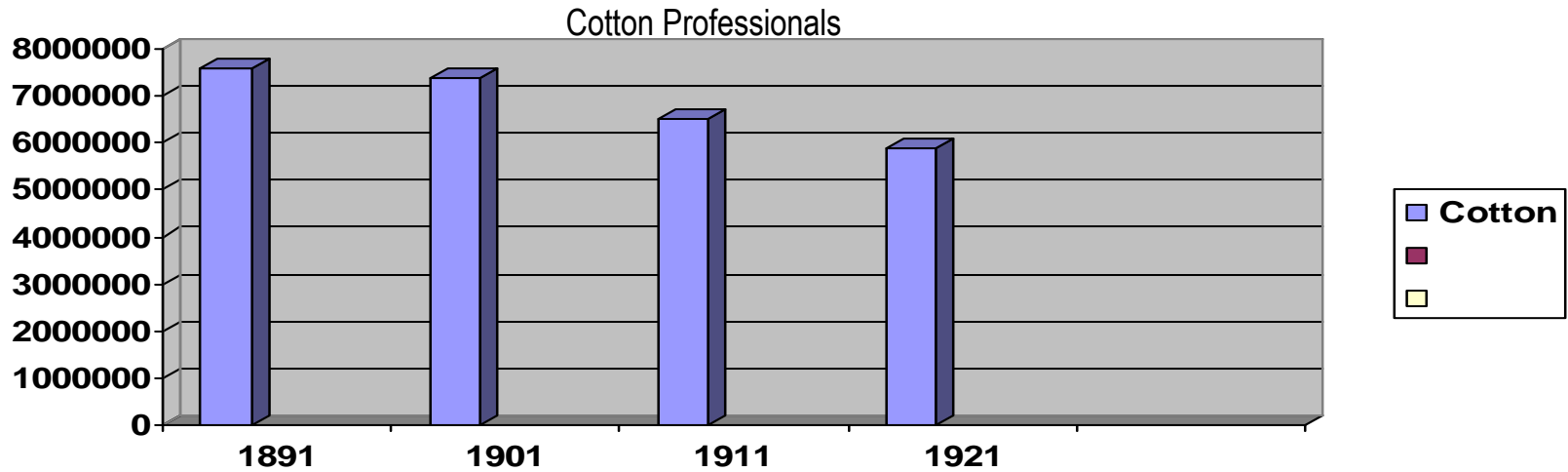
Navajivan, 29-1-1928

Search for Ethical Machine

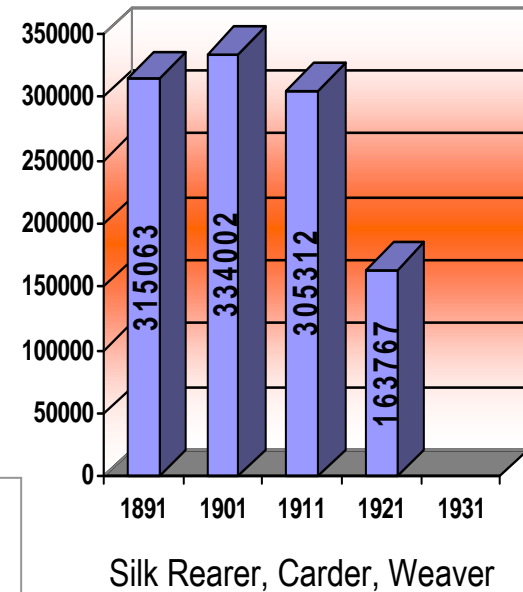
De-Professionalisation

Modern Phenomena of Socio-Economic Outcasting

In 1891, 25.64% of population earned its livelihood from manufacturing occupations



Fibre Professionals



Spread of Illiteracy

In 1834, William Adam reported results of extensive survey of education, wherein about 1,00,000 village schools in Bengal and Bihar were identified.

Flattening of Caste Diversity

In 1871, a caste survey of Panjab and Sind returned about 1.2 lakh castes

Caste survey of Madras returned about 56 thousand castes

Caste Survey of Bengal and Bihar returned nearly 2 lakh castes

Story of Charkha

In 1916, Gandhi ji is impressed with the widespread prevalence of the practice of Spinning among women of Panjab

Cotton Agriculture is in the hands of Indian Farmers
Weaving is in the hands of Indian weavers (competing with mill cloth)

However, spinning across country is in the hands of Colonial Mills

If spinning can be reclaimed by Indian people, Colonial economy will collapse

Charkha as a Politico-Economic Machine

I invite ... every other intelligent lover of his country, to take part in this privileged national service in making spinning universal by introducing it in every home, and make it profitable for the nation by helping to bring about a complete boycott of foreign cloth during this year.” - Young India, 6-4-1921

Gandhi's plan – to introduce 20 lakh charkhas working at least 4 hours daily

“...take the same work from them which, as Mr. Mohamed Ali said in one of his speeches, the British Government took from machine-guns.” - Quoted in *Amrita Bazar Patrika*, 13-5-1921

“If people start using them, India will regain her light.” - *Navajivan*, 25-9-1921

Appealed to Women of India - *Navajivan*, 25-9-1921

Appealed to Congress Workers - 1922 Congress *Adhiveshan*

“Pandit Malaviyaji has stated that he is not going to be satisfied until the ranis and the maharanis of India spin yarn for the nation, and the ranas and the maharanas sit behind the handlooms and weave cloth for the nation.” - *Young India*, 21-7-1920

“...everyone to spin for "thirty minutes every day as a sacrifice...”

“If we are angry and our blood is boiling, we cannot think of working at the spinning-wheel. The latter is an image of peace and gives us a sense of security about our livelihood. So long, therefore, as we do not have the spinning-wheel plying in every home, our desire for peace and our unity will not be demonstrated.” - Navajivan, 25-9-1921

“I have not seen in any machine the magic which he has glimpsed in the spinning-wheel.” - Navajivan, 6-11-1921

Charkha as Yogic Sadhana

Tagore's Objection

"The charka does not require anyone to think; one simply turns the wheel of the antiquated invention endlessly, using the minimum of judgment and stamina." Rabindranath Tagore, 1925

These criticisms, added Tagore tellingly, showed that Gandhi "is growing enamoured of his own doctrines — a dangerous form of egotism, that even great people suffer from at times".

“Every one must spin. Let Tagore spin like the others. Let him burn his foreign clothes; that is the duty today.”

“The Poet lives in a magnificent world of his own creation—his world of ideas. I am a slave of somebody else’s creation—the spinning-wheel. The Poet makes his gopis dance to the tune of his flute. I wander after my beloved Sita, the charkha, and seek to deliver her from the ten-headed monster from Japan, Manchester, Paris, etc. The Poet is an inventor—he creates, destroys and recreates. I am an explorer and having discovered a thing, I must cling to it. The Poet presents the world with new and attractive things from day to day. I can merely show the hidden possibilities of old and even worn-out things. The world easily finds an honourable place for the magician who produces new and dazzling things. I have to struggle laboriously to find a corner for my worn-out things. Thus there is no competition between us. But I may say in all humility that we complement each other’s activity. . . . The Poet thinks that the charkha is calculated to bring about a death-like sameness in the nation and, thus imagining, he would shun it if he could. The truth is that the charkha is intended to realize the essential and living oneness of interest among India’s myriads.” – [The Poet and The Charkha](#), Young India, 5-11-1925

Weaver's Non Co-operation

Charkha did not pick up to the scale that could make economic impact Gandhi Appealed, at Chirala, to lakhs of weavers to also take up Spinning. Weavers rejected it saying they cannot deviate from their Profession. It would also saddle them with carding and ginning too Gandhi accused them of being too profit-minded, not willing to join national cause and freedom struggle.

Two contrary Ethical Principles

Produce for Others first, then for Oneself: If best of clothes that we produce, we keep it for ourselves, profession will die. We only wear leftover cloths

Produce for One's need first, then for Others: Gandhi

Political Machine Design

If an integrated Machine can be made that straight turns cotton balls into thread then the problem will get solved

Weak point of indigenous cotton economy are segments from cotton ball to thread

Machine that takes in Cotton Balls and gives Thread

Integrates Ginning, Carding and Spinning



Mahatma Gandhi's announcement of Machine Design Contest dated 24th July 1929

एक लाख रुपयोंका अथवा ७,७०० पौंडका इनाम

अखिल भारत चरखा संघकी कार्यकारिणी समितिने यह निश्चित किया है कि जो शोधक नीचे लिखी शर्तोंके मुताबिक चरखा या कातने और धुननेका एक संयुक्त यंत्र तैयार कर देगा, उसे एक लाख रुपयों वा ७,७०० पौंडका इनाम दिया जायगा :

१. चरखा हल्का, आसानीसे लाने ले जाने योग्य और ऐसा होना चाहिए जो भारतवर्षके देहाती शोपड़ोंमें हाथ या पैरकी मददसे सहज ही चलाया जा सके।

२. चरखा बिना अधिक परिश्रमके लगातार ८ घंटों तक एक स्त्री द्वारा चलाने योग्य होना चाहिए।

३. चरखेमें हाथ बनी पूनीका इस्तेमाल हो सकना चाहिए, या चरखेके साथ धुननेका साधन भी होना चाहिए।

४. लगातार आठ घंटों तक काम करनेपर चरखेसे १२ से २० अंकका १६,००० गज सूत कतना चाहिए।

५. यंत्र ऐसा होना चाहिये कि वह अधिकसे अधिक ६० १५० की कीमतमें भारतमें ही तैयार हो सके।

६. यंत्रकी बनावट पक्की और मजबूत होनी चाहिए और समय-समय पर घिसे हुए पुर्जोंकी मरम्मत कराते रहनेसे २० वर्ष तक बिना रुकावटके काम देनेवाला होना चाहिए। मरम्मतमें ज्यादा खर्च लगानेकी जरूरत न रहे और हरसाल मशीनकी कीमतके ५ फीसदीसे ज्यादा खर्च मरम्मतमें न हो।

७. इस प्रतिद्वन्द्वितामें शामिल होनेवाले लोग अपनी मशीन अपने खर्चमें ३० अक्टूबर, १९३० को या उससे पहले साबरमती आश्रम भेज दें। परीक्षा-फल निकलनेके दरम्यान अगरचे वे चाहें तो अपने यंत्रोंकी रक्षाके लिए उन्हें पेटेन्ट करा ले सकते हैं। लेकिन जो पारितोषिकका अधिकारी हो जायगा, उसे अपनी मशीनके पेटेन्टका पूर्ण अधिकार अखिल भारत चरखा संघकी कौंसिलको देना पड़ेगा।

८. परीक्षकोंमें खादी प्रतिष्ठानके श्री सतीशचन्द्रदास गुप्त, बारडोली स्वराज्य आश्रमके टेकनिकल डायरेक्टर श्री लक्ष्मीदास पुरुषोत्तम और तिरुचेनगोंडू गांधी आश्रमके डायरेक्टर श्री चक्रवर्ती राजगोपालाचारी होंगे। परीक्षकोंमें मतभेद पैदा होनेकी हालतमें गांधीजीका निर्णय अंतिम होगा। गांधीजीकी गैरहाजिरीमें अखिल भारत चरखा संघके मंत्री श्री शंकरलाल बैंकरका निर्णय आखिरी होगा।

विषयका तमाम पत्र-व्यवहार मंत्री, अखिलभारत चरखासंघ मिरजापुर, अहमदाबादके पतेसे करना चाहिए।

ता० २४ जुलाई १९२९

शंकरलाल बैंकर
मंत्री

Parameters

Sjt. Seshagiri Rao, from East Godavri, sent his machine news to Gandhiji
- Forwarded letter to V.V. Dikshit, September 17, 1929

“The writer in the Textile World states that a machine meeting practically all the requirements of the contest was in use in America more than a century ago. The adverb ‘practically’ is a disturbing factor, but if there is such a machine in America in existence and if any American inventor will take the trouble of so adjusting it as to meet all the requirements of the contest, he will not only receive the prize offered by the Association, but he will earn also the thanks of the dumb millions.” - Young India, 21-11-1929

“When I was a young man, for instance, even the women in our own families spun and wove. At the time fully 100,000,000 Chinese women spun and wove. Then came cheap foreign cotton goods and these 100,000,000 women have no productive life, but must live on the labours of their menfolk.”

Mr. Ku Hung-Ming, one of the most prominent Chinese Interviewed by New York Times, Quoted by Gandhi,

A Different Spin on the Textile Industry

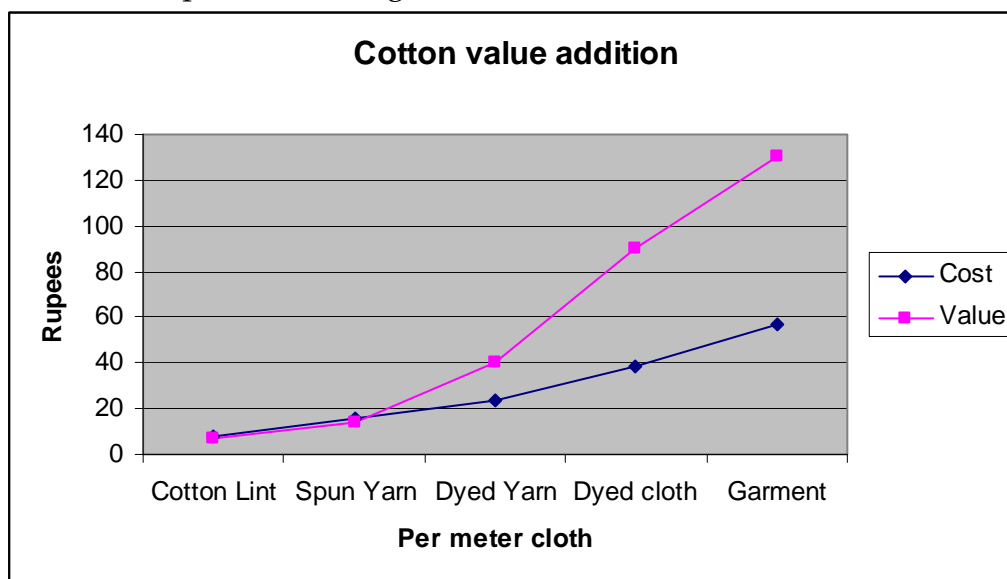
Technical Presentation

by

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The cotton textile industry comprises a succession of stages in the value chain. Each step is accompanied by (a) Cost addition (b) Lead time of conversion and (c) Value addition. The value addition dramatically outstrips the cost addition as one moves up the chain. This is depicted in the figure below.



However, the cost of holding huge volumes of stock over long times usually erodes the margins significantly. A feel for this can be had from the following facts:

- Long lead-times of manufacturing
 - Fibre to garment: 90 days, large batch-sizes
 - Need to 'forecast' 12 months ahead
 -
- Big inventories, in-process stock
 - Daily production at a mill: 15 tons (Rs. 20 lakh yarn)
- High cap-ex, in turn leading to over-production
 - A mill runs 24-hr/day, 360 days/yr
- Expensive marketing to push unsold stock
- Fragmented production
 - Extensive movement of stock at every stage

Vertical Integration: The Holy Grail

The industry in India is fragmented across different independent units spread far and wide. It is not uncommon to find that cotton from Punjab is spun at Coimbatore in Tamil Nadu, woven at Bhiwandi and made into garments in West Bengal. This leads to unproductive waiting time after each stage of production, apart from direct costs of aggregation, transportation and re-distribution of stock.

The huge pipeline of in-process stock also makes it difficult for the industry to quickly respond to changing market trends. Experts have argued that for the industry to be profitable, it is essential to be vertically integrated. This would, it is contended, enable the entire production chain to be better aligned to market fluctuations and reduce waiting time at different intermediate points.

Lean vs. Mass: The Question of Scale

However, to be truly efficient, the industry needs to move from the paradigm of mass production to lean. This should not be difficult when most of the industry is predominantly in the decentralized sector. About 95% of the output of weaving comes from small and tiny units even today, demonstrating clearly that economies of scale are not relevant to this industry.

Unlike industries like automobiles that have successively transitioned from the mass-production paradigm to approach 'single-piece flow' and 'zero inventory management', textiles have remained stuck in the 19th century mode of organization. Why?

Spinning – the operation of converting cotton into yarn – is carried out in units that are hundreds of times larger than the typical scale at which the rest of the stages in the value chain are organized. This sets the bar for the minimum scale at which vertical integration may be carried out. However, this scale is clearly un-competitive at other stages of value addition.

Hence, the scale of spinning is the key bottleneck preventing the re-organization of the industry in a vertically integrated manner.

Micro-spinning: The Breakthrough

The initiative of Micro-spinning has, for the first time in the world, breached the limitation of scale in cotton yarn spinning. While conventional spinning mills are of the order of 50,000 spindles in scale, the Micro-spinning line has demonstrated that it is possible to be technically and economically viable at 100-times smaller capacities. This opens up the possibility of an inclusive textile industry that is driven by the primary producers, artisans and tiny entrepreneurs. A textile industry built around this technology is characterized by

- Integrated cotton-to-garment chain
 - Lead-time: 6-times shorter
 - Scale: 100-times smaller
 - Quick style change
 - Small scale: 30-Kg/8-hr

- Collocated, low-overhead operations
- Customisation, differentiation
- Organic production
- Regional identity

Re-interpreting 'Quality Standards'

The evolution of post-industrial technology was accompanied by the definition and evolution of 'quality standards' which sought to define whether yarn was 'good'. Today, this has come to be understood exclusively in terms of its

- Strength and
- Uniformity

When we started our work, it seemed strange that these two parameters should monopolize the discourse on quality. After all, steel wires would score best on these criteria, but that would not imply that cloth woven from it is 'best' for the wearer!

Soon enough, we discovered that strength and uniformity of yarn had little correlation with what the end-user perceived as good quality in cloth. The user was really concerned about the drape, feel, handle and other parameters. In a tropical country like ours, how the fabric 'breathes', its absorbency, the color-holding capability were all of great importance. All of these have nothing to do with either the strength or uniformity of the yarn. Even durability of the fabric has little relationship with yarn-strength, since it is derived primarily from the structure of the weave - not the strength of individual strands of yarn.

Then how did strength and uniformity become so overriding in their importance? This is because these two parameters define how much the machinery can be speeded up without frequent stoppage due to breakages. Thus, quality is now completely divorced from user-perceived attributes and merely a technology-driven imperative!

Gandhi's warnings about humans becoming puppets in the hands of technology weren't too far-fetched, we realized. We decided that, in developing our machines, we will stay close to the fundamentals and not let the tyranny of 'standards' lead us astray.

Conventional spinning technology is premised on cotton being compressed into dense bales, which are then violently torn open at the spinning mill. Further, yarn is seen as a commodity whose defining qualities are uniformity and strength. These parameters assume importance from the need to minimize downtime due to yarn-breakages in downstream processes where it is handled at ever increasing speeds to maximize productivity.

However, we recognize the virtues of flexibility, diversity, customizability and continuous improvement, over mere maximization of throughput.

Micro-spinning marks a departure from this thinking of yarn-as-a-commodity, leading to a fundamental shift in the criteria of quality by which yarn is judged. The significant features of Micro-spun yarn are:

- The cotton is never compressed into bales
- The machines touch the fibers gently, to keep alive its springiness
- The fabric displays a distinctive softness, swing and drape

This dimension to quality has found spontaneous acknowledgement from customers of the cloth, who readily perceive the enhanced feel and comfort of this fabric that is not to be had in conventional cloth. A feel for the customer response can be had from the reactions elicited at a recent exhibition-cum-sale, which was attended by a cross-section of youth, middle-class, designers, traders and boutique-owners. Some of the entries from the visitors' book are reproduced in the next section.

Excerpts from Visitors' Book : Exhibition of Micro-spun cloth at Dilli Haat, New Delhi. December 2008

Natural feeling!!	Good attempt to preserve Gandhian ideology
Feels, smells & looks "real"!	Amazing I bought 3 years back it is still going on
What a quality!	Very imp -local development
Love the stuff from concept to cloth!	Well conducted journey thro' nature Keep it up!
Good fabric & texture also	Great work, Great cotton!
Close to natural fabric	[hindi] bahut achhi -yeh jaari rahe
Human compliment to Nature	Would like to have it in more colours
Great discovery! Waiting to see what you get the next time	It was a pleasure to see so much of natural cotton
Wonderful cloth & project I wish you very much success	A very beautiful cloth Keep up the good work!
Beautiful colours & textures!	When is yr next exhibition? Where?
Wonderful beautiful rustic back to earth	Very good fabric, soft
I am very excited to be able to wear these fabrics	What subtle colours & textures
Gorgeous material	Nice innovation very soft cloth
Bought material for my wife. Fantastic stuff; great price!	Your fabrics, the natural undyed cotton, is really lovely
You ran out of the cloth I want!!	Looking forward to your next exhibition
Beautiful! I want it all!!	I believe this 'seedling' will grow into a sheltering tree when the rain begins to fall hard
Beautifully woven fabrics - art	Glorious! Will wear with pleasure

Harnessing Biotechnology for Rural Prosperity

Technical Presentation

by

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Introduction

The evolution of man's intelligence led him to dive into the depths of logic and reasoning, thinking and imagining, creating and experimenting with his surroundings in order to comfort his living pattern. He acquired the highest position in the animal kingdom and hence lives as a super-being ruling the mother earth.

Modern human behavior includes four aspects:

1. Abstract thinking (concepts free from specific examples),
2. Planning (taking steps to achieve a further goal),
3. Innovation (finding new solutions), and
4. Symbolic behaviour (such as images and rituals).

Among concrete examples of modern human behavior, anthropologists include specialization of tools, use of jewellery and images (such as cave drawings), organization of living space, rituals (for example, burials with grave gifts), specialized hunting techniques, exploration of less hospitable geographical areas, and barter trade networks. Debate continues as to whether a "revolution" led to modern humans ("the big bang of human consciousness"), or whether the evolution was more gradual.

Scientists all over the world have hit upon inventions, while working on a solution for a burning problem in his or her surrounding or to satisfy the human mind's inquisitiveness of how nature works. How then can the application of the invented technology be the same all over the world which contains a variety, be it in the flora or fauna or geography or the human race as such of a given area? From the need for a solution for existence, science and research today has become a means of gaining accolades from the society despite their ambivalence regarding their 'social' responsibility. Large amounts of funds are sent to the renowned institutions by the government only to see papers published in journals and awards won for great work done, but a very small percentage of this research is put in immediate application. Laboratory trials and results often fail when they reach to field trials. This is because nature has its ways of selection. 'Evolution' is a proof for the selection of the fittest in nature.

Indian Engineers and Scientists have several challenging issues that are unique to the Indian society and the Indian demography. Hence the need for looking beyond the western aspect of science and technology is of prime concern now. We need to apply

the modern Science and Technology with a mix of our traditional and conventional methods to befit our standards and lifestyles. And this is possible when we are able to bring this sort of a scientific revolution in our villages. Rural reconstruction is a must in order to decrease the migration of villagers to towns.

This step is very crucial keeping in mind the decrease in farmers and the decrease in agricultural land due to industrialization and lack of interest in farming by the youth. This is where Gandhiji's views come in.

Gandhiji's Hind Swaraj

HIND SWARAJ, the title of the first definitive writing of Mahatma Gandhi, and which continues to evoke critical interest the world over even now, literally means 'self-rule in India'. It is also the Eye opening Title of our workshop today.

Gandhiji's Hind Swaraj is not rejection of the liberative contribution of modernity. Rather his effort can be interpreted as an attempt to integrate these positive elements with a liberating re-interpretation of tradition. Indian culture and tradition is the oldest and most scientific. Our Vedas and scriptures hold the meaning and logic for all the scientific queries that the youth today asks for, when told to follow a family tradition or the Indian Culture.

In my view, I feel that Gandhiji wanted India to progress in science and technology thinking in terms of its people's needs and the resources that it carries rather than 'ape' the western thinking.

Science & Technology

The progress of Science and Technology in India is often applauding by many also the youth crave for high ranks in schools and colleges. But I would like to know from the youth here as to what percentage of science has benefited our poor. How many of them live in comfort because of our scientists working hard in the laboratories? The economic condition of India's poor and of the poor in other third world countries in particular, has become worse and continues to worsen. Just as the material prosperity was identified with science, it is fair to expect the poor to feel that Science has not been helpful to them and perhaps even to hold Science responsible for their sorry state. And it appears to have some justification since science and technology, with their 'bigness' and centralizing nature, seem to favor the rich, and the 'appropriate technologies' have really had little impact in generating income for the poor, and more importantly, in enlisting active involvement of the 'conventional' scientific community. Added to this, issues connected with warfare and ecological damage, are being viewed everywhere as being the result of science and technology. There is a growing feeling that scientists are proposing increasingly complex technological 'fixes' as solutions to these problems and that these fixes have a way of generating their own complications. For e.g 1) the satellite channels for Television, 2) the usage of mobile phones, 3) computers and internet facility have led to more of crime, greed and polluted violent minds rather than wisdom, knowledge, peace and brotherhood.

While scientists may view themselves as experts only in science and therefore not responsible for these social problems, public at large will view scientists as a

community, and thus responsible as a whole. This too with justification perhaps since, in discussing the effects of scientific work, scientists have been tardy in sounding warning bells while being very forth coming in holding out tantalizing prospects. Thus one should not be surprised if Science & Technology is seen not as an agent of change and liberation, but more as a prop of a structure burdensome on the less fortunate.

Gandhiji's view on Science and Technology

Gandhiji showed an indifference and even hostility towards Modern science and Western technology but interestingly he served the cause of modern Science in a very indirect manner. His success in transforming the freedom struggle into a mass movement and his great emphasis on rural reconstruction brought into focus the enormity of the material problems the country was faced with. He always stressed on action that would decrease/remove the inequality present between the rich and the poor of the country and wished to see a positive revolution bringing smiles in the lives of the poor.

His fight with the British government through movements like 1) Namak Satyagraha, 2) the weaving of ones own cloth using the 'charkha' (khaddar), and 3) cleaning of toilets of the lower class, project that self reliance at this level can make India free. True freedom is when every Indian citizen has his meal three times a day, has a clothing to cover him-self and has a shelter on his head thereby exemplifying the ideal self reliant society. He always stressed on the progress of our farmers and weavers.

Need of the hour:

What we need today is to work upon Gandhiji's programme of rural reconstruction based on traditional indigenous technology using modern Science and Technology as a tool and work for progress in true sense. There is a need for the Government and the youth to realize this fact and work together in these lines along with NGOs and Small Scale Industries.

Brain drain and the horizon of opportunities to grow rich shown by the west are taking away our intelligence and youth to far off lands leaving our country.

Agriculture:

India is an Agricultural based country and farmers used conventional farming methods since olden times. Organic farming using crop rotation and biopesticides such as neem, turmeric, cowdung, garlic, Karanjn etc. maintained soil fertility as well as pest control. Though these methods were time consuming the soil fertility is restored and the ecological niche was well maintained. These conventional farming methods allowed the crops to produce rather than irregularity in yields. Irrigation and farming methods were very scientific.

Western Science and technology has brought great revolution agriculture after the II World war when there was a shortage of food-grain supply world over. The Green revolution then, brought in several semi-dwarf varieties of wheat which met the rising demand. Since then 'Genetic Engineering' has been an area of continuous research with welcoming field results and it has brought light to World Agriculture till date. Inspite

of this progress, today Indian as well as the world agricultural produce per annum is coming to a stand.

Present Scenario:

The irrational use of chemical fertilizers and pesticides, have left our soils infertile and our farmers in debt. Unthoughtful and continuous use of new cultivars and cross-breeding led to the extinction of many indigenous local crop varieties. Usage of hybrid varieties and increasing dependence on buying seed every year has led the farmer to large debts. Indian farmers live in a state of poorest of the poor always in debts and unable to feed the family ending in suicides. Their better-halves and children are left behind to be exploited by the land-owners, and the so-called rich society all beared in the hope of a new bright day in life.

In this long race neither the farmers nor the scientists ever gave a thought to the importance of the indigenous local varieties which existed this long only after being selected by nature as the survival of the fittest. The new varieties of foreign origin can never substitute the original ones as they are not compatible to the Indian soil types. Artificial environment can be supplied to them by use of chemical fertilizers but not for long. Indian farmers had been working out with several farming techniques since time immemorial which were eco-friendly and productive. The present quick result techniques have left our soils barren and not fit for cultivation. With the rising population and demand for produce, decreased suitable agricultural land is a challenge.

Textiles:

Traditionally, Indian textile industry is composed of four sectors, viz., composite mill sector, decentralized power-loom, hosiery and handloom sectors. Indian textile industry was dominated by the composite mill sector in the post-independence period. Technical textiles did never find a place of priority in this sector, though a few mills produced a limited range of industrial textiles in their product mix. However, facing stiff competition from the power-loom sector, gradually the composite mill sector suffered various set backs. Even in their revival effort, technical textiles did not find a strategic place as it deserved. They still focused their priority in modernization in conventional apparel and home textile products, yarn manufacturing etc.

The main objective of institutions like ATIRA (Ahmedabad Textile Industry's Research Association), BTRA (Bombay Textile Research Association), SITRA (South India Textile Research Association), NITRA (Northern India Textile Research Association) are registered under the Societies Registration Act, 1860 (XXI of 1860), is to carry out research and render consultancy services to the textile industry on various aspects of textile technology with a view to reducing the cost and improving the quality and durability of fabrics, reducing pollution, conserving energy and utilizing waste, adopting new technology and improving the technology in the decentralized handloom sector. A large number of projects of considerable importance were undertaken and the studies made by these Associations have helped to improve the efficiency and productivity of the textile Industry.

HARNESSING BIOTECHNOLOGY FOR RURAL PROSPERITY: An Attempt by Sri Sai Agri Bio Labs. Pvt. Ltd.

There are several viable commercial projects which we at Sri Sai have initiated with a view to convert the so called 'waste' to wealth using current advances in biotechnology and related fields as a tool to bring prosperity and employment to our rural areas.

Projects proposed and Initiated:

1. Conversion of Municipal waste to Energy, Construction materials & Biofertilizers

a) At present most of the Municipal solid wastes (MSW) in the country is disposed off unscientifically (no 'sanitary landfill' exists) (Pachauri and Sridharan 1998). This has adverse impacts on not only the ecosystem but also on the human environment. Unscientific disposal practices leave waste unattended at the disposal sites that attract birds, rodents, fleas, etc. to the waste and create unhygienic conditions (odour, release of airborne pathogens, etc.). The plastic content of the municipal waste is picked up by rag pickers for recycling either at primary collection centers or at dumpsites. Plastic is recycled mostly in factories which do not have adequate technologies to process them in a safe manner. This exposes the workers to toxic fumes and unhygienic conditions. Moreover, since the rag picking sector is not registered, not all the recyclables, particularly plastic bags, get picked up and are found littered everywhere, reaching the drains and water bodies ultimately and choking them.

We propose to evolve and perfect a model, at once replicable & scalable to convert the Municipal Solid Waste to energy and construction material so that the problem of waste disposal could be curbed and we leave a healthy environment for our future generations instead of a polluted and sickening environment. This would also decrease the huge investments needed to deal the waste problem. The conversion of 100% waste in to useful materials like low cost building materials & power pellets, the cost-effective solution to the traditional Landfill and Incineration methods, eliminates massive social, environmental and economic problems, such as bacteria outbreak, noxious odours, disease-carrying vermin and flies, and significant leeching of hazardous chemicals and human waste into drinking water supply, lakes, rivers and oceans. The process used therein is highly modified solidification and stabilization treatment technology which is considered to be a widely established treatment procedure for the management and disposal of broad range of Contaminated Waste (both toxic & non toxic) and particularly those which are contaminated with substances classified as hazardous. This Process passed all U.S. EPA, TCLP and CEP-proof regulatory levels for all waste streams tested.

b) Conversion of Municipal waste (kitchen garbage) to biocompost which in turn to be used as bio-fertilizer for kitchen gardening/gardening at homes and gardens in corporates and commercial centers.

2. Conversion of Sugar factory waste to bio-fertilisers for use in sugarcane and other crop fields.

Sugarcane is one of the major cash crops of our country and is well grown in states like Maharashtra, Uttar Pradesh and Andhra Pradesh. The 'pulp' which was once considered waste is now being put to usage in several ways. We at Sri Sai have tie-ups with the local sugar mills which encourage farmers to grow selected cane varieties on a buy-back arrangement. The farmers are encouraged to use biofertilizers and bio-pesticides. We decompose the sugarcane press mud using agri-degrading organisms for further reduced composting period. A comprehensive bio-nutrient formulation is prepared (Sri Sai Samvardhini) containing micro-organisms mainly Azato-bacter, PSB, VAM fungi, T. Viride, along with rock phosphate, chelated micro-nutrients, mixed with compost from sugarcane press-cake. This bio-nutrient is supplied to the farmers and the results are amazing. Soil fertility is restored.

3. Conversion of Cashew apple juice into fuel (bio-ethanol)

World petroleum reserves are fast decreasing with the increased petrol demand. All governments and scientist are working towards usage of other biofuels. Ethanol derived from crops (bio-ethanol) is a demonstrably sustainable energy resource that may offer environmental and long-term economic advantages over fossil fuel. Bioethanol is obtained from the conversion of carbon based feedstock. With this in mind we looked out for one such natural source.

The North-coastal districts of Andhra Pradesh are rich in Cashew plantations. The crop is well grown in large areas and is a good source of income. Once the nut is separated the cashew apple is thrown, not put to use. Large quantities of this fruit fall to ground and decompose. The fruit has a pungent smell and the juice contains an astringent principle, poly-phenolic in nature. The juice though one of the richest sources of vitamin C is not acceptable as a soft drink on account of its high astringency. The juice is a good media for alcoholic fermentation, as it contains all the nutrients for growth of yeast. With 9-10gms of carbohydrates/100gms of Cashew apple and 88gms of water and other nutrients like proteins, calcium, phosphorus, iron, thiamine, riboflavin and niacin, this can be a good substrate for bio-ethanol production without any addition of nutrients. Extraction of the juice within 24 hrs of harvesting of the fruit and applying the preservation techniques to the extracted juice for storage (6 months-1 yr) is a challenge. For the ethanol to be usable as a fuel, water has to be removed. Most of the water is removed by distillation. But the purity is limited to 95-96% due to the formation of a low boiling water-ethanol azeotrope. The 96% ethanol, 4% water mixture may be used as a fuel and is called hydrated ethyl alcohol fuel. For blending with gasoline, 99.5-99.9% is required depending on temperature to avoid separation. The most widely used purification method is a physical absorption process using molecular sieves. Successful bio-ethanol process depends on the integration of technologies that can be economically commercialized. Viability of the process will be analyzed in terms of technology for the production of bioethanol from Cashew apples and downstream processes for the separation, purification and concentration of bioethanol. Viability of the process will also be analyzed in terms of economics. Economic viability depends on

yield of bioethanol from Cashew apple and acceptability by the Governments and local public. *(We propose to work on Conversion of Cashew apple juice to Hyaluronic Acid)*

4. Algae in saline waters along coastal areas are rich source for bio-fuels production

Algae Bio-diesel is a good replacement for standard crop biodiesels like corn, soy and canola. Up to 70% of algal biomass is usable oils. It does not compete for land and space with other agricultural crops. It can survive in water of high salt content and use water that was previously deemed unusable. It needs Sunlight, CO₂ and nutrients for its growth. It stores energy in the form of lipids, fats and oils. The oil production is reduced in cold climate (under reduced sunlight) and if inadequate doses of Nitrogen and Silicate are supplied. *Botryococcus braunii* (chlorella sps.) is known to convert 61% of its biomass into oil and drops to only 31% oil under stress. It grows best between 22-25°C (71-77°F). It can be easily grown tanks containing saline waters or sea back water areas. Extraction of Oil from the Algae contains 1) Dry the algae and press the oil from it, 2) Can retrieve up to 70% of the oil. 3) While drying must prevent the algae from becoming contaminated. This is the cheapest and simplest method. There are 3 ways to produce biodiesel:

1. Base catalyzed transesterification with alcohol.
2. Acid catalyzed esterification with methanol.
3. Convert the oil to fatty acids. Then acid catalyze to alkyl esters.

5. Setup of Bio-gas plants, Bio-fertilizers and Bio-pesticides in tie-ups with local NGOs

We are working towards the set-up of Bio-gas plants using in partnership with goseva sanghs in Hyderabad & Warangal. The slurry is to be converted to bio-fertilizer to be used in their kitchen gardens and grass lands and the cow-urine is to be used in bio-pesticide formulations.

6. Soil re-generation & restoration devastated by industrial effluents and afforestation

We at Sri Sai undertake Plantations at industrial belts in and around Visakhapatnam. These Industries have areas that were used for dumping their waste and thus turned to barren lands. Such lands are taken up by us for restoration and development of Green belt. Our tie-ups are with the Indian Navy, Eastern Command, Visakhapatnam Base, Coromandal Fertilizers etc.

We are working at the above mentioned projects but need the co-operation of the Government for funds and the intelligent youth to come forward and take up these projects to great heights by implementing their knowledge and skill in making these projects successful.

Community Initiatives on Decentralized Solid Liquid Waste Management based on Gandhian Principles

Technical Presentation

by

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Abstract

This paper explains what relevance can be drawn from simple Gandhian principles and practices. All these were in-fact practiced and forms testimony of time-tested methodologies that centralized approaches to waste management have had limited success and there is a need to make solid and liquid waste treatment people-centric and effective through the use of decentralized systems such as DEWATS (Decentralized Waste Treatment Systems). The paper looks at a few initiatives which uses natural bio-remediation methods DEWATS for use in Sewage Treatment Plants (STPs) with household, colony and urban effluents, composting of bio-wastes to compost- manure. These initiatives have been successful after broad issues such as funding were looked after. There is a need for capacity building of community institutions and participation by citizen-centric local bodies in order to scale up and replicate such innovative approaches using concept- "Waste to Resource" for a sustainable solid-liquid waste management in both urban and rural areas.

Relavance to Gandhian principles and practices on decentralized initiatives:

Gandhiji's Hind Swaraj (Indian home rule), coined on board a steamer on an ocean voyage from London to Cape Town invoked the spirit of community which he believed to be intrinsic to traditional peasant cultures and adhering to ecological limits, He quotes "What can be the fate of India trying to ape the West?". And cites that Western culture has pro-found implications for the way we live and relate to environment today. The present is an indefinite multiplicity of wants, whereas the traditional systems had in built mechanisms for imperative restrictions and a strict regulating of the wants which the citizens adhered to through a process of self- realization (1) One of Mahatma's best known aphorisms - "the world has enough for everybody's needs, but not enough for everybody's greed" - this has been considered by many environmentalists world over as the best one- line environmental ethic. (2) Mahatma Gandhi himself practiced resource recycling. minimization of wants were integral to his life with practices on reducing, re-using of wastes - a doctrine for NRM- Natural Resource Management .

There are many vivid examples, to cite a few of the practices that were followed at Sabarmati Ashram:

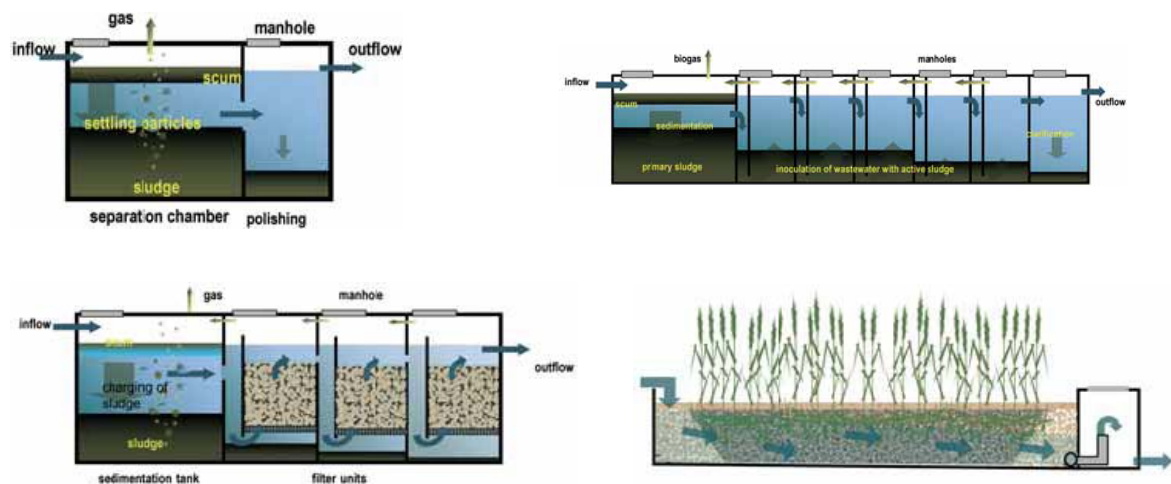
1. Cow-dung cakes mixed with leaf litter used as fuel in cooking, modified *chulhas*, use of ash.
 2. All leaf- litter, bio-mass to be composted in pits to make manure and grey-water for vegetable farms.
 3. Yarn- wastes from charkhas made as cotton wicks, wax-waste from oil mills for lamps and candles
- (3) Applying Gandhian principles and practices is simple and we have all practiced it one way or the other, at some time or the other and have experienced positive results. With some adaptation these time- tested practices can be applied for ideal Natural Resource Management.

A pool of concepts have been developed with appropriate technology for an effective solid liquid waste management. These are have been conceptualized as DEWATS by our organization.

Introduction to DEWATS :

Decentralized Waste Treatment Systems (DEWATS) is rather a technical approach than merely an echnology package. In general, DEWATS was initially applied for bio-remediation of waste- water. These are locally organized and people-driven systems that typically comprise of simple components as described below:

Figure 1: Schematic diagram of DEWATS



The system operates without mechanical means and sewage flows by gravity. Up to 1,000 cubic metre of domestic and non-toxic industrial sewage can be treated by this system (*Tency Baetens, 2004(1)*). DEWATS applications are based on the principle of low-maintenance since most important parts of the system work without technical electrical energy inputs and cannot be switched off intentionally (*BORDA(2)*)

DEWATS applications provide state-of-the-art-technology at affordable prices because all of the materials used for construction are locally available. DEWATS approach is an effective, efficient and affordable waste treatment solution for not only small and medium sized enterprises (SME) but also for the un-served (rural and urban)

households in developing countries, especially South Asia. For instance, DEWATS can operate in individual households, at the neighborhood level and even in small and big town-ships not connected to sewage lines. The recycled water is used for irrigation or for growing plants and is absolutely safe for human use. DEWATS can also treat municipal waste and convert it to usable manure.

The need for decentralized initiatives in solid and liquid waste management

A large amount of human excreta generated in urban India, is unsafely disposed. And in the rural context it is much more. Also there is no safe-disposal mechanism for solid wastes. This imposes significant public health and environmental costs that causes losses to country's GDP. Impacts of poor sanitation are significant both in the rural and also for the urban poor. Inadequate discharge of treated domestic/ municipal wastewater has resulted in contamination of almost all surface water across India.

The Millennium Development Goals (MDGs) enjoin upon the signatory nations to extend access to improved sanitation and safe disposal of solid wastes to at least half the urban population by 2015, and 100% access by 2025. This implies extending coverage to households without sanitation and providing proper sanitation facilities in cities and villages.

The quantity of wastes is increasing in India because of: i) Rapid urbanization, continuously widening the gap between waste generation and waste treatment; ii) Pollution of land and groundwater water resources because of inadequate infrastructure for treatment and management of both solid and liquid wastes and (iii) Inadequate financial resources and capacity for infrastructure required for treating wastes through a centralized approach.

Specifically in India, domestic wastes, including sewage that is often not even collected, is a major source of pollution of surface water and land. This contributes to contamination of groundwater - an important or only source of drinking water for many urban and peri-urban areas (Decentralised waste water management - Adarsh College, 2006(3)). In addition, the economies of scale required for using conventional technologies would not be achieved in all settlements for various reasons, including: i) different climatic conditions; ii) topography; iii) geological conditions and water tables; iv) levels of urbanization; and v) population densities and size of settlements.

Further, centralized approaches have had limited success to make waste management people-centered and effective. For instance, large areas in most cities are not served by formally provided sewerage. Facilities are often overloaded and poorly maintained and the wastewater flow is often re-directed to by-pass them. (C.Heymans-2004(4)) Even where sewerage systems exist, they often collect only a small proportion of the wastewater produced, and the remainder is discharged to open drains or disposed of locally. Thus, in India, decentralized and low-cost wastewater treatment and waste management provide more appropriate solutions in several situations (Tency Baetens, Down to Earth 2004(5)).

In India, small-scale decentralized composting plants are also found frequently at community level (Wesnet replies, 2006(6)). Numerous initiatives have developed, in particular, as a result of the unbearable solid waste accumulation in residential areas. Such initiatives have also been taken at city level, e.g. the cities of Pune and Mumbai have adopted promising composting approaches at community level (together with primary waste collection), which are actively promoted by the authorities (Zurbrugg *et al*, 2004(7))

Appropriate Wastewater Treatment Technologies Available

Five wastewater treatment technologies, are available namely, i) waste stabilization ponds; ii) wastewater storage and treatment reservoirs; iii) constructed wetlands; iv) chemically enhanced primary treatment; and v) up flow anaerobic sludge blanket reactors.

A single wastewater treatment technology would be inappropriate for a country like India which has several different geographical and geological regions, varied climatic conditions and levels of urbanization. It is more appropriate to address the potential of identifying appropriate solutions for different regions. In addition, the solutions for wastewater treatment are a response to several factors including: i) the volume of wastewater; ii) type of pollutants; iii) the treatment cost; iv) extent of water scarcity; and v) dilution in the water.

A significant opportunity available in India is to introduce decentralized systems through which the resources generated from the wastewater, including recycled water and manure etc., can be utilized locally at much lower costs. All these solutions for wastewater treatment aim at innovations across a broad range of environmental issues including: i) reuse of wastewater; ii) removal of nutrients from effluent; iii) management of storm water; iv) managing solid wastes; v) flood mitigation; vi) tackling erosion at water bodies, including ponds, lakes and riverbanks.

However, from the sustainability aspect, the selection of the apt solution must be between simple systems that do not require use of chemicals and those that have high pathogen removal

Innovative approaches applying DEWATS for Waste water treatment :



Figure 2: IIT-Delhi WWT R&D Plant

The Foundation has been involved in over 130 urban decentralized initiatives such as solid waste management, rain-water harvesting, waste-water treatment, bio-gas from kitchen waste.

Its initiatives in waste water treatment include - initiatives for decentralized treatment of waste-water and its reuse for horticultural or landscaping purpose, also leading to ground-water recharge. For instance, the Foundation established a plant in Vasant Vihar, New Delhi which helps to treat waste water to a standard sufficient for landscaping. This plant was set up in coordination with the local Residential Welfare Association and the Municipal Corporation of Delhi (MCD). The plant has a 40 KLD (Kilo-litre per day) capacity with 75-80% remediation efficiency and the water supplied meets the desired municipal standards and is supplied to 5-6 acres (25,000 sq. m.) of parks. The driver of this innovative venture was the need to build a cost-effective plant which would help to reduce the flow of waste water into the Yamuna.

Waste water Treatment Plant- WWT (Vasant Vihar drain, outer ring road)

Technical specifications of the plant are as below:

Project Concept:

Urban waste water in open drain sourced for bio-remediation. Processed water used in parks and lawns easing the water shortage situation with benefits.

Project Design:

Waste water inflow quantity: 45 KL per day
General parameters quality at in-flow: 300 ppm
Processed water available for re-use: 40 KLD
General parameters at out-flow: <30 ppm

Project Data:

Cost of all elements (mid 2003): Rs. 8.0 lakh
Process used - simple technology: DEWATS, anaerobic, part aerobic filters, settlers.

Prospects feasible:

Both for smaller and larger flows at local-level, the concept of "constructed wetlands" can be applied for very large flows at polluted river/ canal flows.

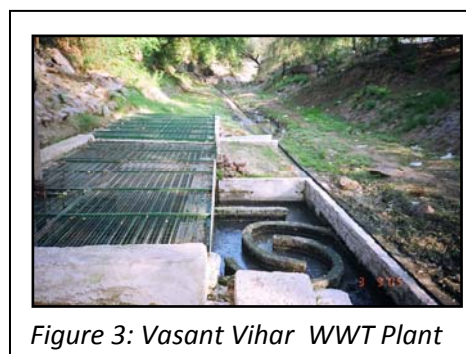


Figure 3: Vasant Vihar WWT Plant

Kitchen-waste based biogas plant BGP, All India Women's Conference (AIWC), New Delhi

Project Concept:

Kitchen and bio-wastes sourced for bio-methanation. A 2 cubic metre (cbm) Fixed Dome Deenbandhu Type biogas plant is being used. Evolved gas used in rural hut for making fruit preserves. Slurry converted into compost/ manure. Herbal/ medicinal plants such as *aloe-vera*, *brahmi*, *haldi*, flowers - *gulab*, *mogra* are used. Holistic plantation management carried out using green initiatives for self-help groups - income generation and training programs on food preservation and renewable energy concepts being used.

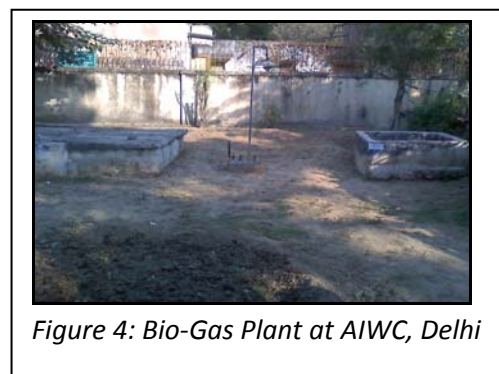


Figure 4: Bio-Gas Plant at AIWC, Delhi

Project Design:

Kitchen-waste inflow quantity: 60 Kg/ day, Other bio-wastes from garden: 10 Kg/ day
Biogas made/ Lpg equivalent 1btl: 20 Kg/ month, Compost/ manure evolved: 600 Kg/
month.

Project Data:

Cost of setting up all elements - 2000: Rs. 1.0 lakh for Holistic BWM process.
Operation of BWM process: 1 daily labour employed, others giving support.
Process - simple labour, technology: Anaerobic process in BGP with open composting.
Prospects feasible: For smaller and larger campus with hostel, mess.

Good alternative for municipal / house-hold bio- wastes, and bio-methanation process
at urban landfills producing Land Fill Gas LFG, for use as energy / fuel.

Decentralized Approach for Urban Services - DAFUS:

The basic philosophy behind these community based initiatives is conversion of *waste into resource* (as far as possible), by reusing or recycling, and rendering this philosophy practically possible by using less-costly methodology. While a normal STP requires large amounts of power, chemicals, and has a high-cost element, waste-water treatment (to make it up to the mark for landscaping or farms), is a cost-effective and sustainable initiative (NUSP. Min. of UD, GOI (8)

The Foundation believes that decentralized initiatives promise easy maintenance, low cost and efficiency and have proven to be successful *if the community shows interest and participates actively*. Even in instances when the power supply fails, these natural treatment plants continue to work. The concepts/methodology used in these initiatives using principles and practices of bio-remediation are sustainable and do not fail.

The ventures developed and implemented by the Foundation are in general quite cost effective. They yield benefits such as: i) reduced use of manure; ii) reduced use of fresh surface water and drawing of ground water; iii) reduced load on ground water, hence low cost of infrastructure; iv) reduced pollution of rivers; v) re-charge of rain-water effluents when clean water flows in urban drains; vi) production of biogas and manure; vii) low emissions.

The plants are usually easy to maintain and do not need highly skilled - labour. The only drawback is that the plants require space. Funds are usually raised within and by the community through contributions and are sustained.

With communities/ organizations participating actively, there is also a possibility of earning carbon credits through such projects. (Case study, SSA, 2008(9)

Examples of Decentralised Approach for Urban Services (DAFUS) developed include:

Urban Storm-water management / Rain-water harvesting : At certain sites old dug wells have been deployed for rain-harvesting for recharging of groundwater. These old village dug-wells amidst urban areas have proven to be very useful in conveying rain water to aquifer- regimes.

This is especially true for institutions where rain-water harvesting has been very useful. For instance, certain institutional campuses are adopting water-initiatives under the guidance of NGOs, such as the TATA Chemicals Township

Solid waste management: Small level interventions have been initiated and all waste is handled and safely disposed off. Bio-wastes are composted to make manure while non bio-wastes are led on the re-cycling mode. E.g. kitchen- waste from certain sectors is led for feeding for bio-methanation in biogas plants. This yields biogas for energy and compost-manure as bio-fertilizer for parks and greens.

Ecological sanitation: At Agra, just behind the Taj Mahal, an NGO - CURE has planned an initiative for treatment of a waste-water stream of flow 50-60 Kl per day using DEWATS. And the recycled water will be used for irrigating crops, vegetables growing in the fields and allowing cleaner effluents to be discharged into the river.

Water-less urinals-WLUs:

Eco-San approaches have been practiced, in association with IIT- Delhi for research, development and implementation of water-less urinals, and urine used as manure for greens- parks, trees and plants.

Information Education & Communication - IEC Programs:

These micro-level projects can be scaled up to macro-level watersheds or river basins for enhanced benefits with cost-effective mechanisms. The first issue faced in scale-up (in terms of treatment of more quantity) was funding, but it was resolved due to support from residents and the MCD. Another issue is that certain urban local bodies are not keen to try out innovative practices that have worked.

All these programs and activities have been backed up by awareness and participation efforts to core-communities and other communities. Students from schools and colleges partake in these environmental programs and facilitate out-reach activities in the respective institutions.

These initiatives also serve as demo-models for attending participants for various training programs on the Water and Sanitation (Watsan). The Foundation has been chosen as a Member-partner with DEWATS Main facilitator BORDA Forum-Consortium of DEWATS Dissemination Society- CDD having its Head Office at Bangalore.

Conclusion and Way-forward:

Given the urban sanitation situation in India, there is a need to promote decentralized initiatives in waste water treatment by providing incentives and a supporting policy environment and through capacity building of implementing institutions. Further, there is a need to support implementation of pilots and projects which demonstrate not only the decentralized and low-cost treatment of wastewater, but also demonstrate how communities and local administration can partner to implement the interventions in ways that make the facilities more durable and sustainable in time to come.

Further, as decentralized and low-cost options are commonly viewed as solutions for the poor and / or for underdeveloped areas, raising of the profile of low-cost options

and alternative technologies as well as of making it 'fashionable' to minimize waste going out of the premises/ buildings etc., of the private sector can go a long way in changing mindsets towards the environment and waste (A. Dzikus, 2009(10))

More specifically, there is a need for exchange of information and innovations, and technical support for introducing alternative technologies and processes. Intensive capacity building programs, appropriate IEC materials, technical manuals and documentation, and sharing of best practices amongst facilitators are required urgently so that the DEWATS movement can become the default solution to the many sanitation crises that are unfolding in India.

Finally, DEWATS present a significant opportunity to change the dialogue in the waste management sector away from "flush and forget" systems to recycling in the form of "waste to resource" systems and concepts are replicated in sites.

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Gandhi: Civilization, Technology and Education

Technical Presentation

by

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Gandhiji on Technology

Of all the aspects of Gandhian thought, his views on technology are arguably some of the most contentious. On reading Hind Swaraj, many people find it difficult to agree with Gandhiji's condemnation of Doctors, Lawyers and Railways. If anyone were to ask, was Gandhiji pro or anti technology, hardly anyone would call him pro it; the discussion, if at all, would only happen in the space of various shades of anti it.

However, Gandhiji's ideas always go deeper and beyond superficial polarities. At the risk of repeating what has been said before elsewhere, I wish in this paper to begin with his views on technology, to explore his nuanced take to begin with, and through a series of inter-connected observations, to build the case eventually for another way of looking at education.

Quoted from Preface to the New Edition, written in 1938, by Gandhiji's secretary Mahadev Desai:

Begin Quote...

The Attack on Machinery and Civilization: What is a common feature of all the other appreciative reviews of the book is in the reviewers' opinion Gandhiji's unwarranted condemnation of machinery. "He forgets, in the urgency of his vision," Says Middleton Murry, "that the very spinning wheel he loves is also a machine, and also unnatural. On his principles it should be abolished. "This," says Prof. Delisle Burns, "is a fundamental philosophical error. It implies that we are to regard as morally evil any instrument which may be misused. But even the spinning wheel is a machine; and spectacles on the nose are mere mechanisms for 'bodily' eyesight. The plough is a machine; and the very earliest mechanisms for drawing water are themselves only the later survivals of perhaps ten thousand years of human effort to improve the lives of men... Any mechanism may be misused; but if it is, the moral evil is in the man who misuses it, not in the mechanism." I must confess that in "the urgency of his vision" Gandhiji has used rather crude language about machinery, which if he were revising the book he would himself alter. For I am sure Gandhiji would accept all the statements I have quoted here, and he has never attributed to mechanisms moral qualities which belong to the men who use them. Thus in 1924 he used language which is reminiscent of the two writers I have just quoted. I shall reproduce a dialogue that took place in Delhi. Replying to a question whether he was against *all* machinery, Gandhiji said:

"How can I be when I know that even this body is a most delicate piece of machinery? The spinning wheel is a machine; a little toothpick is a machine. What I object to is the craze for machinery, not machinery as such. The craze is for what they call labor-saving

machinery. Men go on 'saving labour' till thousands are without work and thrown on the open streets to die of starvation. I want to save time and labour not for a fraction of mankind but *for all*. I want the concentration of wealth, not in the hands of a few, but in the hands of all. Today machinery merely helps a few to ride on the backs of millions. The impetus behind it all is not the philanthropy to save labour, but greed. It is against this constitution of things that I am fighting with all my might... The supreme consideration is man. The machine should not tend to atrophy the limbs of man. For instance, I would make intelligent exceptions. Take the case of the Singer's Sewing Machine. It is one of the few useful things ever invented, and there is a romance about the device itself."

"But," asked the questioner, "there would have to be a factory for making these sewing machines, and it would have to contain power-driven machinery of ordinary type."

"Yes," said Gandhiji, in reply. "But I am socialist enough to say that such factories should be nationalized, State-controlled... The saving of the labour of the individual should be the object, and not human greed the motive. Thus, for instance, I would welcome any day a machine to straighten crooked spindles. Not that blacksmiths will cease to make spindle; they will continue to provide spindles but when the spindle goes wrong every spinner will have a machine to get it straight. Therefore replace greed by love and everything will be all right."

"But," said the questioner, "if we make an exception for the Singer's Sewing Machine and your spindle, where would these exceptions end?"

"Just where they cease to help the individual and encroach upon his individuality. The machine should not be allowed to cripple the limbs of man."

"But, ideally, would you not rule out *all* machinery? When you except the sewing machine, you will have to make exceptions of the bicycle, the motor car, etc."

"No, I don't," he said, "because they do not satisfy any of the primary wants of man; for it is not the primary need of man to traverse distances with the rapidity of a motor car. The needle on the contrary happens to be an essential thing in life, a primary need."

But he added: "Ideally, I would rule out all machinery, even as I would reject the very body, which is not helpful to salvation, and seek the absolute liberation of the soul. From that point of view I would reject all machinery, but machines will remain because, like the body, they are inevitable. The body itself, as a I told you, is the purest piece of mechanism; but if it is a hindrance to the highest flights of the soul, it has to be rejected."

I do not think any of the critics would be in fundamental disagreement with this position. The machine is, like the body, useful if and only to the extent that it subserves the growth of the soul.

... *End Quote*

Essence of the Criterion: From the above quote, it is clear that Gandhiji's criterion for measuring Technology is *Sarvodaya*: The good of all. What is perhaps not as obvious is how he would measure *Sarvodaya* in the first place.

Gandhiji hardly ever bothered with sketching out the details of a Utopia. To the accusations that he was an impractical idealist, he protested vehemently. His views were always grounded in morality and ethics – philosophy if you will – but he was always interested in things the way they actually are and can be. His *Sarvodaya* was similarly '*the good of All as is evident and not as it is supposed to be in some abstract notion of how things will work if a well thought out system is established*'.

When pressed for his views on which system - Capitalist or Socialist - is better - and mind you, this was at a time when the jury was still out and the 'fight' between the two was much more equal in people's minds than it is today - he responded with, "Everybody is looking for a system that does not require people to be good. I am afraid there is no such system". What did he mean? When people are asked to choose between the two, and I assume here that they are able to free themselves from their own vested preferences, what their answer really gives us is a glimpse of their dominant assumption about human nature.

Capitalism operates on the assumption that human beings are inherently selfish and mainly respond to incentives for personal gain, and believes that instead of fighting this trait, it makes more sense to allow the operation of the 'unseen hand' of markets to turn out the greatest good of the greatest number of people. Socialism says, yes, precisely because human beings are inherently selfish and may make personal choices harmful to greater public good, we need to exercise control over markets.

Even though the prescriptions are polar opposites, both the isms 'stand' on the same worldview about humankind - that we are all selfish. Empirically, we see both isms fail to take care of everyone of us (the essence of *Sarvodaya*).

So where does that leave us? Talking about his new book *The Idea of Justice* published in July this year (2009), Amartya Sen posed a little quiz to his audience at the London Literature Festival. Three children - Anne, Bob and Carla - are quarrelling over a flute: Anne is the only one of the three who knows how to play it, and stakes her claim on that ground. Bob says that it will only be fair if it's given to him, as he is so poor that - unlike others - he has no other toys to play with and it would therefore mean a lot to him. And it is Carla who has made it with her own labor, and doesn't it therefore rightfully belong to her?

The important thing to note here is that none of the claimants questions their rival's argument but claims that his or hers is the most persuasive. So, who deserves the flute? Should it go to the child for whom it represents the only source of entertainment as he has no other toys to play with? Or to the one who can actually make practical use of it; or to the child to whom it must belong by virtue of her 'right' to the fruits of her labour?

Amartya Sen resolves his own poser by an approach that appears similar to Gandhi's response about economic systems. "The idea of justice demands comparisons of actual lives that people can lead rather than a remote search for ideal institutions," said Amartya Sen, pointing out that his quarrel with contemporary political philosophy is its rigid insistence that there could only be one precise combination of principles that could serve as the basis of ideal social justice. The 'perfect system' that Gandhi seems to be warning us against getting our vision stuck in? Just to leave you with an interesting thought worth pondering over – the root of the word Utopia is 'No Place'!!

Contemporary times: I am always a little uncomfortable with academic debates. The question that always gnaws at the back of my mind even as my mind wanders off in these philosophical spaces - what is the relevance of all these musings in contemporary contexts? Why is this understanding of Gandhiji's views on technology important in the world today? Because far from being left behind a long time ago, it has taken on an even more imperative urgency. It is clear that we have not paid heed to the man's warning. We just couldn't get ourselves to agree with the bland old man. Perhaps we genuinely didn't agree with him after having properly considered the argument, perhaps we couldn't understand the easy-to-miss, fine nuance that was being articulated (even if crudely), perhaps we didn't want to understand for what the implications of that would be to our many conveniences. Over time, much of the world has gotten divided, on this account, into Gandhi worshippers and those who consider him a Luddite. Neither group seems to be willing to examine him sufficiently.

I wish to try again. Let's take Amartya Sen's advice and, leaving the theoretical deliberations and constructs aside, look at some of the empirical evidence of technological change.

Quoted from Dancing at the edge of the abyss? (Globalization Booklet for Infochange), written in 2006, by Economist Aseem Shrivastava:

Begin Quote...

It may be noted here in passing that – short of deliberate distributional interventions by the state through such means as direct taxation of the rich – all the promises of trickle-down benefits of economic growth rest on its capacity to generate employment. However, the recent experience with automation and jobless growth suggests that output and growth can be raised nowadays without creating too many new opportunities for labor. A labor-rich country like India is caught in the paradox of modern economic growth which generates wealth without creating much employment. In one extreme example in Maharashtra, one worker was observed to be in charge of 27 machines!

The number of jobs that the government claims the SEZs will create may be up to 500,000 (from 2006-09). The number of "jobs" (livelihoods would be a more accurate term) lost may have added up to well over that number (possibly double that number), for not only are people displaced by such "development" projects, many others (such as barbers, cleaners, vendors) whose livelihoods are dependent upon the rural agricultural economy, suffer permanent losses too. The government claims to compensate the losers but, in practice, this often does not happen. Even if it does, the payments made for the transfer of land and resources are rarely adequate and, in any

case, can never compensate for the loss of social consumption (for example, loss of use of rural infrastructure, like roads or irrigation) and the breaking down of a whole way of life and culture.

Can the manufacturing sector generate employment in India?

"Of the major constraints that the Indian manufacturing model is faced with, the infrastructure gap is the most serious. Not only does it risk crimping the efficiencies of supply-chain management and nationwide delivery capabilities. It also raises serious questions about the transportation requirements of a dynamic export sector.

"Services, by contrast, need none of the above. Moreover, India's new services dynamic plays to some of the nation's greatest strengths – education, entrepreneurial spirit and IT literacy.

"Services also rest on a platform of e-based connectivity – offering an important end-run round a massive physical infrastructure deficiency.

False hopes of job-creation

"But I have long felt that there is another glaring shortcoming of India's manufacturing solution – a mistaken impression of its job-creating potential.

"Two of the plant visits I made in Pune drove this point home. First, there was the Bajaj motorcycle factory – a most impressive facility that was using state-of-the-art technology – Japanese robotics enabled with Indian IT – and Japanese production techniques.

An Indian Detroit

"The factory turns out 2.4 million two-wheel vehicles annually with approximately 10,500 workers. "By contrast, in the mid-1990s, Bajaj needed a workforce of some 24,000 to produce only one million vehicles. Then there was Tata Motors – a jewel in the crown of one of India's oldest and greatest companies.

"The vast 510-acre Pune facility felt like an Indian Detroit – complete with a university-like training campus, design, engineering and testing facilities and vertically-integrated production and assembly lines for cars, light- and heavy-trucks, buses – and, of course, SUVs.



Source: http://news.bbc.co.uk/2/hi/south_asia/3703140.stm

"Yet, the Tata Motors workforce has also shrunk significantly over the past decade as its vehicle output has soared. In early 2004, about 21,000 workers produced 311,500 vehicles, whereas in early 1999, it took some 35,000 workers to produce 129,400 vehicles.

"These examples are indicative of the tough uphill battle India faces in achieving a manufacturing-led solution to its daunting unemployment and poverty problem..."

Stephen Roach, Chief Economist, Morgan Stanley "Dateline India: From Mumbai to Pune", *The Globalist* October 25, 2004

[http:// www.theglobalist.com/StoryId.aspx?StoryId=4226](http://www.theglobalist.com/StoryId.aspx?StoryId=4226)

Recent growth in India has a very narrow base in a few lead sectors of the economy. Consensually acceptable figures indicate that of the 400-550 million employable people in the country only about 1.3 million (well under 1%) are employed in the IT and BPO segments. If one adds up the number of people employed in all parts of the organized private sector (including manufacturing, mining, transport, energy, services) the number of employed people is still under 10 million. Add to this the almost 20 million Indians employed by the public sector (the Indian Railways being the largest employer in the world) and you end up with about 30 million Indians employed in the entire organized sector of the economy.

How do the other 400 or 500 million help their families survive? We already know that over 60% of the workforce remains engaged (more or less unproductively) in agriculture. A little over 10% are employed in the manufacturing sector. The remainder is absorbed by the black-hole of the informal service sector which is growing rapidly in both urban and rural areas.

... *End Quote*

Why is this happening? To understand why this is happening, it is vital to understand the inter-relationships between capitalist economies, competition and technology.

Corporations do not primarily exist to employ labor. If labor is profitable to employ, it will be hired. If not it will be fired or neglected. As a matter of fact modern corporations do not like to have a stable workforce, preferring to sub-contract or outsource as and when necessary. As many as 3 million jobs were lost in the US during the first two years of the Bush Presidency. A leading corporate intellectual Gurcharan Das recently quoted Nobel laureate Milton Friedman with some admiration: "the social responsibility of business is to make a profit." (The Times of India, December 16, 2006). [Aseem Shrivastava]

It is a no-brainer that corporations exist to make profits. But what can be easily missed if one is not careful, is that corporations are not interested merely in profit, but in constantly and fast growing profits. The distinction is important, because this desire is at the very root of competition in a way that the mere need to be profitable - for viability and sustainability, and as an incentive for enterprise - is not. Infinite Growth is the *mantra*.

Growth is desired for the reasons of economic expansion and power. The real competition in the world is over power to which - unlike to material human needs - there is virtually no limit (this, in the end, explains why no absolute amount of money satisfies so many people). In a competitive market the goal is to increase sales and market share. Monopoly power would be ideal, though in a world with several competent competitors, oligopolistic power is the realizable, though naturally shifting, goal.

Even a good-natured capitalist, not particularly greedy for wealth and power, is compelled to invest in a capitalist world. He usually has no option in a dynamic economy. Why? Because growth is a survival imperative in a competitive world. The company will lose market share in an expanding market unless it invests and grows. Hence the constant push to create and exploit opportunities. There is no standstill possible when there is a relentless 24-7 race for dominance

in the field of power. And in the end power in a capitalist society is not achievable without growing wealth.

If corporations are allowed the freedom to grow unimpeded, we are given to believe, they will in the long run create opportunities and employment which will drive down poverty. But life is a series of short runs and, as the great economist Keynes once observed, "in the long run we are all dead." In the short run technological improvements under capitalism inevitably cut jobs, as do "corporate restructuring" to create more "lean and mean" outfits.

Capitalist societies inevitably associate progress with technological improvement since its consequences for greater efficiency (more "lean and mean" companies), cutting costs, winning over the competition and expanding profits and growth are quite dramatic.

Anything that stands in the way of profits, investment and growth – the rights and wages of labor, environmental standards, taxes, human rights of communities whose survival resources are often appropriated – is thus naturally seen as an obstacle to progress. Any serious conception of substantive democracy (for instance one that involves worker participation in decision-making within the company, or the entitlement of affected communities to defend their right to livelihood and way of life) thus naturally stands in the way of capitalist progress.

Competition vs Swaraj: How does this relentless pursuit of power over others square up with Swaraj. Sarvodaya & unending competition for power lie clearly in opposite camps.

Every economic system known to humanity has its foundations in political power. By power one means command of men and materials (natural resources, physical and financial capital and humanity's labor-power), not merely the holding of public offices and the legitimacy that they confer on certain institutions and forms of economic activity. A corporate boss needs to have managerial authority over his/her employees and is normally only accountable upwards to his/her boss, who is a more senior manager or even the CEO of the corporation. There is a system of "managerial hierarchies" by which corporate establishments are run. In addition to the control of people's labor, a corporation has to have control over technology, natural resources and inputs required for production processes. An aluminium plant needs to have access to bauxite mines, and so on. All this presumes power.

Capitalism is also premised on exclusive private property in the means of production. Private property is very different from personal property. If I buy a car and use it for my own ends, it is my personal property. If I hire a driver to run the vehicle as a taxi, the same object becomes my private property. Why? Because I now use it to command the labor of another individual and make a profit from the enterprise. Why should he work for me? Because he does not have property of his own! This is crucial to the workings of capitalism: there have to be available property-less people whose labor can be counted upon. How has this been ensured in the past? Usually by force, even conquest.

If I want your land for purposes of profit-making production, if I want you to work for me, and to buy the products that my company produces and sells, all I need to do is to make sure that you are dispossessed of any resources – especially land – which can allow you to subsist on your own. Reality is of course more complex but this, in a nutshell, has been the history of the origins of capitalism in Western Europe. The Enclosure movement in Britain in the 16th and 17th

centuries dispossessed peasants of their direct access to land and resources by force. It was denounced by the Church. Laws were passed to resist it. But ultimately the power of rising capitalist elites prevailed. [Aseem Shrivastava]

Not very *Swaraj*-like. Applying the *Sarvodaya* criterion, is not what Gandhiji said even more true today than it was at the time he said it? An interesting Gandhi-search exercise in the context of an even more technology driven contemporary world – take different technologies one by one, and discuss whether it passes the *sarvodaya* criterion (imp: avoid the temptation of worship-mode Gandhi-followers to ask the question whether he would have approved of it or not) – would perhaps help develop a deeper understanding of the essence of how Gandhiji measured the acceptability of any given technology.

Gandhiji on Civilization: *Quoted from the Hind Swaraj:* Let us first consider what state of things is described by the word "civilization". Its true test lies in the fact that people living in it make bodily welfare the object of life. We will take some examples. The people of Europe today live in better-built houses than they did a hundred years ago. This is considered an emblem of civilization, and this is also a matter to promote bodily happiness. Formerly, they wore skins, and used spears as their weapons. Now, they wear long trousers, and, for embellishing their bodies, they wear a variety of clothing, and, instead of spears, they carry with them revolvers containing five or more chambers. If people of a certain country, who have hitherto not been in the habit of wearing much clothing, boots, etc., adopt European clothing, they are supposed to have become civilized out of savagery. Formerly, in Europe, people ploughed their lands mainly by manual labor. Now, one man can plough a vast tract by means of steam engines and can thus amass great wealth. This is called a sign of civilization. Formerly, only a few men wrote valuable books. Now, anybody writes and prints anything he likes and poisons people's minds. Formerly, men traveled in wagons. Now, they fly through the air in trains at the rate of four hundred and more miles per day. This is considered the height of civilization. It has been stated that, as men progress, they shall be able to travel in airship and reach any part, of the world in a few hours. Men will not need the use of their hands and feet. They will press a button, and they will have their clothing by their side. They will press another button, and they will have their newspaper. A third, and a motor-car will be in waiting for them. They will have a variety of delicately dished up food. Everything will be done by machinery. Formerly, when people wanted to fight with one another, they measured between them their bodily strength; now it is possible to take away thousands of lives by one man working behind a gun from a hill. This is civilization. Formerly, men worked in the open air only as much as they liked. Now thousands of workmen meet together and for the sake of maintenance work in factories or mines. Their condition is worse than that of beasts. They are obliged to work, at the risk of their lives, at most dangerous occupations, for the sake of millionaires. Formerly, men were made slaves under physical compulsion. Now they are enslaved by temptation of money and of the luxuries that money can buy. There are now diseases of which people never dreamt before, and an army of doctors is engaged in finding out their cures, and so hospitals have increased. This is a test of civilization. Formerly, special messengers were required and much expense was incurred in order to send letters; today, anyone can abuse his fellow by means of a letter for one penny. True, at the same cost, one can send one's thanks also. Formerly,

people had two or three meals consisting of home-made bread and vegetables; now, they require something to eat every two hours so that they have hardly leisure for anything else. What more need I say? All this you can ascertain from several authoritative books. These are all true tests of civilization. And if anyone speaks to the contrary, know that he is ignorant. This civilization takes note neither of morality nor of religion. Its votaries calmly state that their business is not to teach religion. Some even consider it to be a superstitious growth. Others put on the cloak of religion, and prate about morality. But, after twenty years' experience, I have come to the conclusion that immorality is often taught in the name of morality. Even a child can understand that in all I have described above there can be no inducement to morality. Civilization seeks to increase bodily comforts, and it fails miserably even in doing so.

This civilization is irreligion, and it has taken such a hold on the people in Europe that those who are in it appear to be half mad. They lack real physical strength or courage. They keep up their energy by intoxication. They can hardly be happy in solitude. Women, who should be the queens of households, wander in the streets or they slave away in factories. For the sake of a pittance, half a million women in England alone are laboring under trying circumstances in factories or similar institutions. This awful act is one of the causes of the daily growing suffragette movement. This civilization is such that one has only to be patient and it will be self-destroyed. According to the teaching of Mohammed this would be considered a Satanic Civilization. Hinduism calls it a Black Age. I cannot give you an adequate conception of it. It is eating into the vitals of the English nation. It must be shunned. Parliaments are really emblems of slavery. If you will sufficiently think over this, you will entertain the same opinion and cease to blame the English. They rather deserve our sympathy. They are a shrewd nation and I therefore believe that they will cast off the evil. They are enterprising and industrious, and their mode of thought is not inherently immoral. Neither are they bad at heart. I therefore respect them. Civilization is not an incurable disease, but it should never be forgotten that the English are at present afflicted by it. ... *End Quote*

Civilization, Technology and Values: It is clear from the above quote that for Gandhiji, Civilization is synonymous with Values, and the two are primary. Technology can only follow. In the mainstream contemporary view, if we really look at it from this lens, Civilization is synonymous with its Technology ('Advanced Civilization', Star Trek style), and the two are primary. Values are derived. And the one value underlying all those values seems to be: Can do, therefore will do. If it is technologically possible, why not? (And look how smart and powerful we are!)

Our arms have grown so long that we can no longer see what our hands are doing.

...Helena Norberg-Hodge, International Society for Ecology and Culture

The more complex the workings of a society, the harder it is to see the harmful effects of the choices people make. In the brilliant Canadian documentary, *The Corporation*, Michael Moore interviews Phil Knight, the co-founder and Chairman of Nike, and it turns out that Knight hasn't ever set foot on many of his own company shop floors. Actually to come to think of it, that shouldn't be that surprising. Modern corporations are unimaginably large, and much-evolved though our abilities to handle scale may be today, there is still a human limit to the direct connect a person can handle. The

corporations, meanwhile, never stop growing. They are not necessarily more efficient, as the brilliant economist E. F. Schumacher convincingly showed in 'Small is Beautiful' and many other writings. But it is the sub-text of the title 'Small is Beautiful' that really expresses what ever-larger scales mean for our humanity - 'A study of Economics as if people mattered'.

When Gandhiji uses the word *Swadeshi*, the *desh* in the word isn't Country. What it really refers to is giving preference to the more local over the more distant in our use of material resources. Local economies is what we would call them in modern parlance, and his is a moral argument deriving from *Sarvodaya*. In Helena's quote lies the missing link that wasn't quite visible in his time.

Education: All the above linkages and ways of seeing that we have been talking of all along in this paper can only be understood through Education (when I use the word Education, I mean it really as Learning, and not as Schooling. What's the difference? If we carefully examine our own experiences of schooling, it is not hard to notice that often the two don't overlap. And learning is a continual process and not something that begins and ends with school).

Further, and more importantly, we have to learn to keep seeing things on our own, as they unfold, lifelong. Education is what we would obviously count on to expose us to things beyond our immediate circle of experience. But is education serving this goal that we are, or at least ought to be, calling it to. It is in that sense that we need to re-think Education.

Let me share some experiences from my work at Manzil. Part of Manzil runs from my home in Khan Market, where I live with my mother and special sister. We live surrounded by the richest and the most powerful people of Delhi. The children and youth that over the last 10 years we have come to regard as our family - my buddies - grow up in their servant quarters. They are children of housemaids and cooks and electricians and barbers and drivers and servants. That's about 120 young people at any given point of time, and more that have flown from the nest, and return as they feel, like one returns home.

All this began with a chance encounter, when two children looking for help with their school maths approached me. Hemant - a washerman's son studying in class 8th - and his friend Pramod - a gardener's and a class younger. I was trying to reorganize family affairs while I was in an in-between stage with what I wanted to do with my life, so I had some time, and I agreed. Ten minutes with the children unraveled their totally sketchy understanding of numbers. 2 - 5. Is it 3, -3, or can't be done. Ten more minutes imagining how numbers would look if the current decimal system of representation were to be replaced by the binary one, and to my amazement, I found an incredibly sharp comprehension of this utterly alien concept (we are so used to seeing 'Ten' written as 10). There was something completely contradictory there. The children were clearly bright and intelligent, but somehow they had been dumbed down by how they were taught at school.

Over the weeks and months that followed, two things happened. Hemant and Pramod asked to include another of their friends, then another, then yet another, again and again... and I found myself acquiescing... each time. Soon there were 20 children, from various classes, all together because irrespective of the class they were in school, all lacked the same basic understanding of what they had been doing for years. But when I was explaining BODMAS for the 3rd time for the benefit of a new-comer, Hemant protested. He had already understood it well, and was hungry to move on. This was getting repetitive for him. 'In that case', I said to Hemant, 'I invite you instead to explain BODMAS to your friend'. Hemant was confident of his learning, but hesitated to teach. Years of conditioning had taught him. A teacher was a 'position' and he wasn't in that position - went his unarticulated thinking. A teacher was a 'role-for-the-time-being', and he was ready for it as far as BODMAS was concerned - went my unarticulated thinking. Besides, unlike him, I needed to carry everyone along in the class, and I wasn't ready to start a separate class... yet... After some persuasion and promises of back-up support, Hemant reluctantly agreed to try his hand at teaching and, unknowingly to us then, together we laid the foundations of a crucial aspect of life at Manzil today.

The second thing that happened was to me. I had grown up in this home in Khan Market. As a child, I had played cricket in the neighbourhood, with children from all backgrounds (even though we had the 'good' sense to discern who of our friends we could take home and who we couldn't). Now I was old enough to understand the context of my 'don't-take-home' friends, through which I 'saw' their lives anew. Why had these children submitted to a farce perpetrated on them in the name of education? Do children, anywhere, have much of a choice anyway? I understood, over the months and years that followed, that their parents, whether under the sway of a widespread modern myth that schooling equals education, or having observed that any schooling, good or bad, still brings respect and status (unfortunately that's true) and better earnings (surprisingly, often not true), put their children in the only affordable schools accessible to them - those run or aided by the State. The schools leave much to be desired; their characteristics in the main are:

1. Apathy, often visible in the form of absenteeism or no teachers assigned or books available for months into the academic session.
2. Over-emphasis on blind obedience and a generally stultifying environment.
3. Questions measure rote-learning ability rather than any understanding.
4. Blatant cheating, including in the form of letting children know in advance the questions that the teacher plans on asking them in the exam, having also supplied in advance - verbatim - the answers sought.

At this point, it may be useful to examine two distinct goals of education that are frequently mixed up. The classical ideal of education is that it makes us better human beings, both within and in our *lok-vyavhar* (conduct in society), brings out our best potential, makes us active and constructive members of society, teaches us *jeene ki kala* in community (the art of living; they stole the phrase from the public domain and branded it) etc. The other goal - a utilitarian one - is how it helps us earn personal wealth and status.

The parents of my children have at least one clarity. They are interested in education's utilitarian benefits. They do not even bother to pay lip-service to the classical ideal, and so in this way they are clearly more grounded in today's reality of what schooling actually pursues as opposed to what it likes to say it does.

But to their utter bewilderment, even the promise of jobs on which 'Education' (schooling really) was primarily 'sold' to them turns out to be hollow when they leave its portals with the much coveted certificate in their hands. Too many people enter the job market, certificate in hand, unprepared with the skills, knowledge and attitudes that modern jobs demand. Nobody taught them what they really needed to know. Nobody even told them what it was. We used to call them the educated unemployed. Some now call them the educated unemployable.

Interestingly, in their frustration, they often return to even higher studies. But all this does is drive a kind of 'education inflation' where young people pursue progressively higher and higher degrees, or courses, in the hope of out-pursuing others, thereby seeking to thin the crowd of competitors for any given job. Few really acquire the skill-set needed to perform the available jobs through their education. If and when they do, it is through experience, often accidental.

All this understanding evolved, of course, over the years, in parallel with the evolution of the work. It was clear that trigonometry was not going to serve my buddies in any way, except only as a passport to class 11th where the first thing they were going to do was run as far away as possible from maths. Yet a life awaited them, beyond school and college, for which they had dreams and aspirations. Unlike them, I realized that if there was one thing that would give them a real shot at what they wanted, it was the ability to converse confidently in English.

English. Funny thing is, as far as official information goes, it's spoken only by 5% in India. Yet it is treated as our lingua franca. Not a sign on a shop in Khan Market is in any language other than English. Not a programme is announced or introduced at Delhi's cultural hubs like India Habitat Center in a language other than English. Big business, higher education, higher judiciary - all completely monopolized by English. Our slavish attitude towards what should otherwise be *just a language* is betrayed by oft-heard phrases like, "He is dumb, he doesn't even know how to speak English". And in spite of having learnt English as a subject for years in school, my children could not have a simple, meaningful, independent conversation in the language. If there was one thing that would not only dramatically improve their chances of landing good jobs, but also generally address the diffidence they felt in dealing with things outside their ordinary spheres of experience, it was learning Spoken English. We started classes.

But first some analysis. It clearly wouldn't do to do as had been done in school to teach English. Being creative is often about clearing out what already exists, often about being prepared to reinvent the wheel and not condemn that as waste of time. We cleared out the books. We felt that, in the main, they had distracted both the teacher and the students from the real task of the learning of English. As teachers covered the chapters in English, there was no time nor inclination to discover a language. It was more a race to complete the syllabus in time. The best students could only keep pace

with an externally imposed agenda and speed. With no books and no syllabus, and an hour to talk freely about anything that caught our collective fancy, but strictly forbidden at the same time to use Hindi, we had managed to recreate the conditions of that most complex of learnings that almost every human being is destined to master – the learning of his or her first language or mother tongue.

And when I bought my first computer for self use, it was obviously available for the children to learn. When friends and relatives visited, they interacted with the children. All went away changed, their respective prejudices dented. When I traveled outside Delhi, I took them with me. When I met someone interesting, I invited them home to meet the children. When one of them told me he wanted to be an Air-Force pilot, in searching for one I met someone interesting. Cause and effect interloped, until their separateness and sequencing could no longer be discerned. Years later, I read a Sri Lankan social worker's words, "You build the road, and the road builds you". Bull's eye! I knew because I had already experienced its truth.

And that's how Manzil grew, in numbers of young people sure, and more importantly in the richness and diversity of our experiences that we lived together, but not in the size of its buildings or coffers. As a matter of fact there were no coffers. Renting out the shop that my father used to run when he was alive, coupled with an old habit of keeping our personal expenses under control, allowed us to give all our time to Manzil, without having to draw any salaries. Rent and salaries are usually the two major costs of running something like Manzil, and we were burdened with neither. For 6 years we were able to claim, not entirely accurately, that it takes no money to run Manzil. We didn't seek any funding. Some came of its own accord.

If I were to speak now about the essence of what we are trying to do at Manzil, what we are really interested in is 'Education for Responsibility'. And like when a pebble hits a still pond, the waves travel outward in countless concentric circles larger and larger in size even as they turn feebler and feebler in intensity, so is the circle of influence of each one of us in society. The circle of influence is in fact the circle of our responsibility. It is theoretically limitless, for it goes beyond what is visible. Nevertheless it starts at the Self. Learning with a view to equip oneself to earn an honest livelihood can be seen usefully as one's responsibility to oneself. But beyond self, the circles extend to family, neighbourhood, village, country, world, and cosmos in ever larger if feebler circles.

Circle of Influence. Isn't that connected with Helena's quote – Our arms have grown so long that we can no longer see what our hands are doing? It is a fact of the sheer complexity of modern life that it is impossible to easily 'see' the circle of our influence. We need to learn of these things, and we have to learn further to see them lifelong on our own. The challenge of good education is to create and nurture multiple spaces; spaces that encourage discussions to deepen our understanding of these and other concepts, imagining ways to do things better and more compassionately, and taking everyone along. And all this while being rooted in our actual experiences in reality, and not in some utopian ideal. It is in that sense that we need to re-think Education.

My Experiments in Design, Craft & Development of Human Mind

Technical Presentation

by

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Mohandas Karam Chand Gandhi was a versatile man, a great intellect, a creative genius, a lover of quality, giver of minute attention to details. He was equally at home with form & values.

They say God is in details.

In details he would see if he is still in touch with God.

Gandhi's quest for freedom was a quest for an India built on primordial values.

The vision of civilization was at the root of his efforts. It was also the underlying thread in his book "Hind Swaraj".

To better understand his concern about civilization it is important to understand the values that drives man's creativity and the man made world of product, systems, services and environment. While doing this we have to be non-partisan and non-parochial in our approach. In other words we should be able to map the entire diversity of human efforts and creation.

On the centenary of Hind Swaraj, I share with you a framework that has evolved over a rather unusually long period of practice as a design educationist.

Viewpoints of nature

There are basically two extreme philosophical viewpoints of nature and it would be sufficient to restrict our self to these, to paint an introductory picture.

The first philosophical viewpoint toward nature is that of the Indian tradition. We see it in its extreme in Jain doctrine of 'Ahimsa parmo Dharma', not to kill is the ultimate teaching. It assumes that nature is complete in wisdom, knowledge and action and it requires no further up gradation. It is enough that we do not kill, hurt or harm. The Hindu's also believe that Brahman is self contained and complete. It is man who is incomplete and can become complete not by tinkering with nature but by merging with it. The Jain view is the extreme of ascetism. In this viewpoint from the design viewpoint 'less is more'

The second is western mechanistic view of nature, it stems from ancient Greek science as well as from the Bible in which God made man out of clay and breathed life into

him. In this viewpoint everything is made and can be made, in the same way as God created man out of clay. Descartes summed up the modern spirit well when he said that the goal of its devotees was to become nothing less than "the masters and possessors of nature." This viewpoint has also led to amazing discoveries and an amazingly new way of living. This way of living has become a justification of the viewpoint itself. It has also led to traumatic environmental degradation. It has encouraged a hedonistic approach to life. It is an approach that is pro-mankind but perhaps only in the immediate present. From the Design viewpoint 'more is less'.

While these viewpoints may have evolved in different regions, may have a religio-cultural origin, nevertheless there were subscribers to them in different measures in all places. In Europe itself different countries as a consequence of their historical evolution subscribe to different mixes of these viewpoints. This is reflected in country specific design styles and concerns.

The above viewpoints are crucial to the design solution space as they govern the attitude towards design. One axis of design solution space is provided by the two orientations toward the body and the senses: the ascetic and the hedonistic.

There is no need to attach value judgement to the ascetic or hedonistic philosophy. Because there is none for a detached observer. Both are inherent in human biology and human psychology and have played an equally important role to human survival and development. Hedonist operates in the shorter time frame, the ascetic in the longer time frame. The hedonist is concerned with the immediate environment and this environment is for its immediate gratification. The ascetic is concerned with the larger environment and this environment exists in its own right and is much bigger, better and important than man himself.. The ascetic would like to live in tune with this environment. The environment is the bigger and better player. Human race would not have survived if either of them were not there.

The Design Solution Space

Hedonist & ascetic attitude, though two extremes, they together provide a vast solution space for design creativity. In any design creation there is a measure of both.

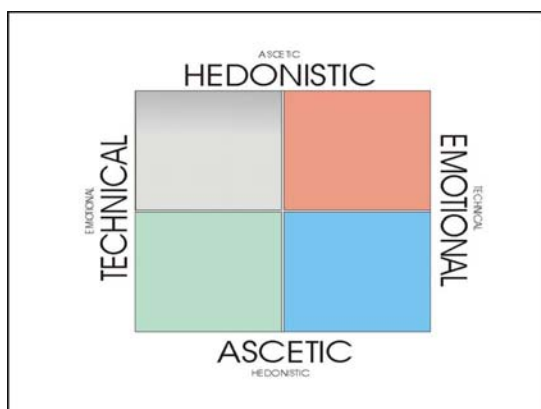


Fig. 1 The space matrix of design

The two sides of the human brain, the logical and the emotional provide the other axis of the solution space. This may be termed as the technical and the emotional. Mathematics, physics, chemistry, technology, engineering, modern medicine emerges from the rational and empiric thinking. Emotional creativity encompasses poetry, art, music, dance, etc. Architecture and industrial design would lie some where in between.

We try to map the systems of healing that have evolved over millenniums in different continents on such a solution space. Figure 1.

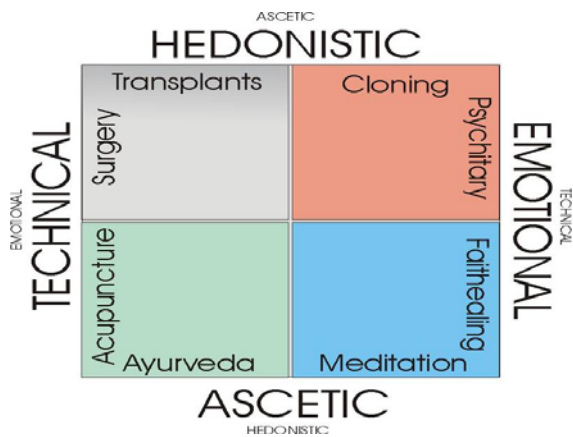
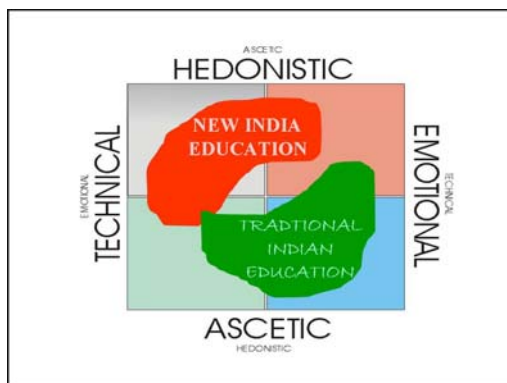


Figure 2: Mapping the different systems of healing

Similarly one could map our present emphasis on education and the emphasis that was there in ancient India.



The challenge before us is to create a healthy blend of both the system. The two are needed for survival and for the enfoldment of every Indian in their varied diversity.

My Experiment in Design & Craft

Over the years it has been my experience that creativity finds nourishment in care. Care must be understood in the larger framework of caring for self, caring for the environment, caring for the intellect and caring for feelings.

In the presentation we show you a glimpse of students work at the Master of Design Programme at IIT Delhi.




It was my experience that design & creativity enhanced the intellectual capabilities of the students. Students who otherwise were seen as mediocre could emerge as brilliant and an asset for the society as soon as they became creative.

We tried experiments with traditional artisans. The experience was similar. Though design & creative orientation, the traditional artisan could suddenly become more usefully productive. Their marketability could improve significantly.

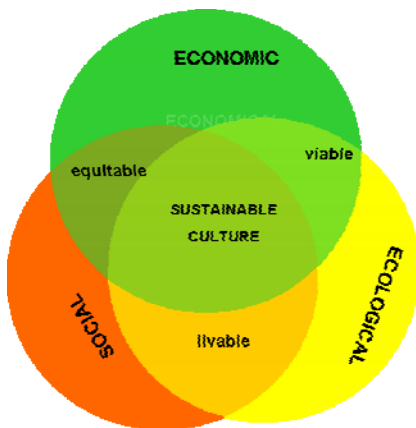
Unfortunately in India we have not appreciated the importance of creativity and innovativeness in our education system. We have given too much emphasis to analytic thinking and we expect innovations to emerge from analysis alone. This seldom happens.

It is very clear that a more intelligent person is not necessarily more creative. Intelligence implies seeing the existing relationship. Creativity empowers a person to see further and several possible relationships. Inventiveness implies seeing relationships which are original and have a potential to be advantageous. Innovation implies distinguishing those advantageous relationships that would also be seen as advantageous by a large number of people. This leads to ovation! This is the essential aspect of an invention being recognized as an innovation. An intelligent person can become more productive by becoming creative, inventive and innovative and by practicing the same as often as possible.

We discovered something more. A lower intelligence is able to work with objects. A higher intelligence can work with values. No wonder our *rishis* and *munis* understood values so well. The purpose of Indian civilization became propagation of values as the underlying thread. Here of course enfoldment of human spiritual potential got the maximum importance.

Cognition	Ability to perceive	Improved ability to perceive Improves Intelligence	OBJECTS  VALUES
Intelligence	Ability to see relationships or configurations	Improved ability to see use intelligence from different viewpoints leads to greater creativity	
Creativity	Ability to see many different relationships or configurations	Ability to critically evaluate relationships and configurations leads to Inventiveness	
Inventiveness	Ability to see new, viable and meaningful relationship	Ability to critically imagine and evaluate inventions in a socio-cultural context leads to innovativeness	
Innovation	Ability to see new socially and culturally meaningful relationships	Synergy with society & culture leads to OVATION	

Modern engineering education in India is more concerned with objects. It is still very far from exploration of values. This is the challenge before us. There is a need to create a sustainable culture. A sustainable culture was at the root of Gandhi's vision of a civilization that he dreamed off for India. He was very futuristic in his vision. He wanted India to provide leadership in a world of the future that he could visualize so vividly when he wrote Hind Swaraj.



Today the world grapples with this challenge of bringing social values, business values and ecological values together to synthesize a sustainable culture.

What we need, is to understand the Gandhi's vision, capture its essence and develop it further. We have to explore the concept Hind Swaraj through our actions that unify body mind and spirit in harmony with fellow beings and the environment.