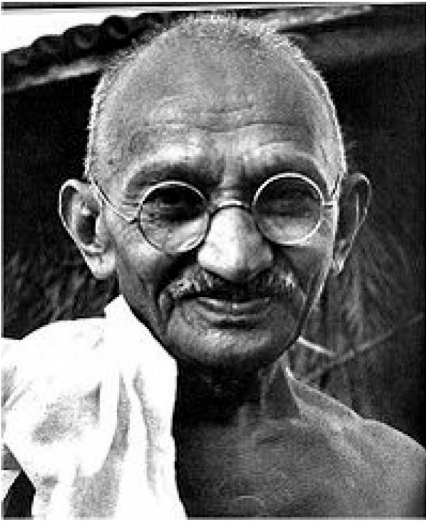


Knowledge Center Presents Report “Mahatma Gandhi – Pioneer of the Science of Nonviolence”

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"Be the Change You Wish to See in the World." Mahatma Gandhi

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Mahatma Gandhi attracted the attention of the whole world when he demonstrated the extraordinary powers of nonviolence in India's struggle for independence. The story of Gandhi's research into nonviolence is keenly identifiable with the struggle and success story of any curious researcher who uses the scientific method of seeking agreement between the theory and the experiment. Gandhi pioneered 'the science of non-violence' and influenced the whole world with this new model. The influence can be seen through his countless followers all over the globe including many who achieved triumph by applying the Gandhian model in their struggles.

The significance of Gandhi's impact can be felt in the words of Geir Lundestad, Secretary of Norwegian Nobel Committee in 2006, in his observation, "The greatest omission in our 106 year history is undoubtedly that Mahatma Gandhi never received the Nobel Peace prize. Gandhi could do without the Nobel Peace prize, whether Nobel committee can do without Gandhi is the question". When the Dalai Lama was awarded the Prize in

1989, the chairman of the committee said that this was “in part a tribute to the memory of Mahatma Gandhi”.

The Theory Takes Shape

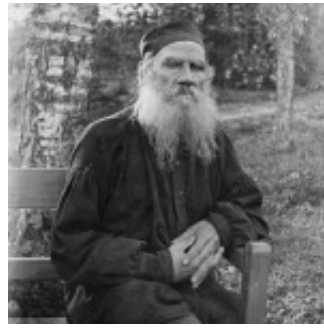
The seeds of the model of truth and nonviolence developed by Gandhi were sown in his early childhood through the *samskaras* which any average Indian household with cultural and religious roots tries to impart among its children – *samskaras* that value saving more than killing, tolerance more than torture, renunciation more than accumulation and penance more than pleasure. The *samskaras* were more deeply imbibed upon him by his pious mother Putlibai, who used to eat only after her daily prayers and undertook regular fasts and vows.

Like any other young mind Gandhi also went through the struggle of experiencing for oneself the correctness of what is taught to be correct by the elders. He narrates this struggle in his autobiography when he explains how his friends, while at high school, tried to mislead him to eat meat and visit a brothel and how the remorse and mental anguish it produced helped him to reinforce his faith in his *samskaras*.

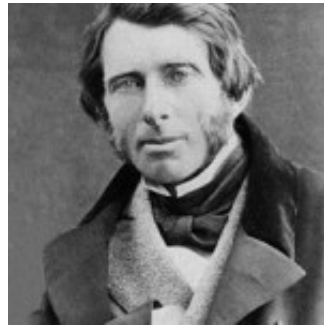
As these early *samskaras* led him in a right direction, he started listening more to his ‘inner voice’, which he found most effective and the theory of the science of nonviolence started taking shape. When he proceeded to London to qualify as a barrister he made a vow to his mother in the presence of a Jain monk to observe the precepts of abstinence from wine, women and meat. Adherence to these vows developed in him the rare virtues of strong will power, tenacity and truthfulness. The literature survey of Gandhi’s research included Holy Scriptures of almost all major religions of the world. His conviction into his theory deepened further when he came across a variety of good books and great souls. The prominent among them are listed in Table 1.

Table 1 They Influenced Gandhi

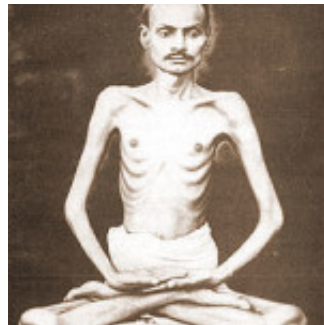
The book, *‘The Kingdom of God is within you’* (1894) by **Leo Tolstoy**, speaks of the principle of nonviolent resistance when confronted by violence, as taught by Jesus Christ. Gandhi wrote in his autobiography that this book ‘overwhelmed’ him and ‘left an abiding impression.’



The book, '*Unto This Last*' (1862) by **John Ruskin** is a book on economy that criticizes capitalist economists of the 18th and 19th centuries and the destructive effects of industrialism upon the natural world. Gandhi described the book as 'the magic spell' and paraphrased it into Gujarati as 'Sarvodaya' (Well being of All).



Shrimad Rajchandra (1867-1901), a prominent Jain poet, philosopher and scholar, was Gandhi's spiritual guide. Gandhi even went to the extent of equating him to Ruskin and Tolstoy. Gandhi discussed 27 most fundamental questions related to religion and spirituality with Raychandbhai between 1894 and 1896 that helped to resolve some of his basic doubts in the theory of nonviolence.



Gopal Krishna Gokhale (1866 – 1915) was Gandhi's political guru. He guided Gandhi on issues confronting common Indians and embodied the goal of spiritualizing in politics. Gandhi has devoted seven chapters exclusively to Gokhale in his autobiography.



Henry Thoreau (1817 – 1862), was an author and philosopher, known for his book *Walden*, about simple living in natural surroundings, and his essay, *Civil Disobedience*, about disobedience to an unjust state. Gandhi was impressed by Thoreau's arguments and called him 'one of the greatest and most moral men America has produced'.



Experimentation Takes Shape

With the solid theoretical background, Gandhi became more and more interested in experimenting with his model by putting his ideas into action to test the validity of his theory. He used to experiment on himself and learn from his own mistakes in search of discovering the truth of nonviolence. He was so much in resonance with this research that he called himself a practical idealist and named his autobiography as '*My experiments with truth*'. The autobiography is a rich saga of the different flavours of his research: lag and lead between theory and experiment, reexaminations of the assumptions in the theory and refinements of the experimental tools.

The journey of Gandhi starting from struggles on a small scale of his family and friends to a larger scale of fighting against the racial discrimination in South Africa to a still larger scale of fighting against the mighty British empire in the war of independence is akin to a journey of a young researcher seeking broader and coarser levels of agreement between theory and experiment to a mature researcher seeking deeper and finer levels of agreement between the two.

Gandhi adopted living in ashrams, which he used as laboratories for researching into how this agreement could be improved (see Table 2). Experimentation of the theory of nonviolence started taking shape with some crucial experiences in the life of Gandhi that proved to be turning points in the advancement of his journey from an ordinary person to an extraordinary fighter (see Table 3).

Table 2 Ashrams as Research Laboratories

To follow Ahimsa in totality Gandhi imbibed principles of asceticism, compassion for all forms of life, vegetarianism and *anekāntavāda* (the recognition of all perspectives and a humble respect for differences in beliefs).

He introduced several refinements in his model by experimenting with ideas such as self reliance, aparigraha, brahmacharya,

satyagraha, abhorrence for untouchability, and respect for all religions (sarvadharmā sambhava).

He started morning and evening prayers and undertook regular fasts for self purification. He also took vows and followed them with dogged determination to unite theory with practice.

Tolstoy Farm, founded in 1910, proved to be an ideal laboratory for Gandhi's educational experiments. He introduced vocational training and co-education for the 'all-round development to the boys and girls'.

Sabarmati Ashram (near Ahmedabad, Gujarat). It was from here that on 12 March 1930, Gandhi marched to Dandi, to protest against the British Salt Law, which increased the taxes on Indian salt in an effort to promote sales of British salt in India. While at the ashram, Gandhi also formed a tertiary school that focused on manual labour, agriculture and literacy, in order to advance his efforts for the nation's self-sufficiency.



Sevagram Ashram (near Wardha, Maharashtra) Gandhi came to this ashram in 1936. Many decisions on important national matters and movements were taken here. Gandhian models of science and technology for rural masses and education (called as nai talim) that suited India were evolved here. Nai talim is based on the premise that knowledge and work are not separate in contrast to the British educational system which promoted disdain for manual work. For Gandhi education meant 'the moral development of the person'.



Table 3 Some Crucial Experiences

While travelling in South Africa Gandhi was thrown off the train by the railway staff at the Pietermaritzburg station when he refused to move from the first-class. He was asked to shift to

the van-compartment despite having a first-class ticket as a white passenger was not willing to travel with a coloured man in the same compartment. This was a crucial experience that changed the course of his life. The sleepless night that Gandhi spent at the station in the bitterly cold winter turned him into a bold and fearless person as he decided to stay back and fight the unjust system.

On his onward journey, he received blows at the hands of the train conductor who wanted him to vacate his seat to be used by a white passenger for smoking. However, this time Gandhi remained firm and calmly protested. Just as new observations in an experiment help a researcher to develop new insights into theory, this experience gave Gandhi an insight into how nonviolence can be effectively used for fighting against injustice. The insight was to protest firmly with readiness to suffer patiently and never to yield on one's own so that the oppressor is made to realize his mistake.

In August 1906, an ordinance was promulgated to restrict the entry of Indians in Transvaal. On September 11, 1906 Gandhi led Indian immigrants to oppose this ordinance. He urged Indians to protest the law nonviolently and thousands of Indians followed by suffering in protest. Finally the government was forced to negotiate a compromise and the practical side of the theory of nonviolence was demonstrated in the form of the first Satyagraha.

Gandhi's innovative experiment of Satyagraha against the tax on salt in Dandi in 1930, in which he marched 388 kilometres from Ahmedabad to Dandi to make salt himself, was one of his most successful experiments at upsetting British hold on India. Thousands of Indians joined Gandhi in this nonviolent campaign and over 60,000 people courted arrest.

A Thoroughly Scientific Approach

With the strong theoretical background and equally strong experimental side Gandhi worked with a thoroughly scientific approach. He considered himself more of a scientist than a politician or a saint. In his own words, "It (saint) is too sacred a word to be lightly applied to anybody, much less to one like myself who claims only to be a humble searcher after truth, knows his limitations, makes mistakes, never hesitates to admit them when he makes them, and frankly confesses that he, like a scientist, is making experiments about some of 'the eternal verities' of life." Table 4 includes few more Gandhi quotes that bring out his scientific approach.

Table 4 Gandhi Quotes on Science of Nonviolence

I have been practicing with scientific precision non-violence and its possibilities for an unbroken period of over fifty years. I have applied it in every walk of life — domestic, institutional, economic and political. I know of no single case in which it has failed.

Ahimsa is a science. The word 'failure' has no place in the vocabulary of science.

I have stated a simple, scientific law which can be verified by anyone who will undertake the necessary preparations, which are again incredibly simple to understand and easy enough to practice.

Non-violence ... is the only thing that the atom bomb cannot destroy.

Non-violence in its dynamic condition means conscious suffering. It does not mean meek submission to the will of the evil-doer, but it means putting of one's whole soul against the will of the tyrant. Working under this law of our being, it is possible for a single individual to defy the whole might of an unjust empire to save his honour, his religion, his soul, and lay the foundation for that empire's fall or its regeneration.

It (non-violence) is meant for the common people as well. Non-violence is the law of our species as violence is the law of the brute. The spirit lies dormant in the brute, and he knows no law but that of physical might. The dignity of man requires obedience to a higher law, to the strength of the spirit.

That atomic energy though harnessed by American scientists and army men for destructive purposes may be utilised by other scientists for humanitarian purposes is undoubtedly within the realm of possibility. ... An incendiary uses fire for his destructive and nefarious purpose, a housewife makes daily use of it in preparing nourishing food for mankind.

Where there is only a choice between cowardice and violence, I would advise violence.

It is a common misunderstanding that Gandhi was opposed to science and technology. What Gandhi opposed was British technology that sought to make India a poorer nation. He was in support of appropriate technology that would remove human drudgery and uplift rural masses. He conducted many experiments in this regard at Maganwadi, Wardha and constituted the All India Village Industries Association (AIVIA) in 1934 that worked towards producing a scientific model of village development. He invited eminent scientists like C V Raman, P C Ray, J C Bose and Sam Higginbotham to join the board of advisers of AIVIA.

He even instituted prizes for innovating the Amber Charkha. The prize money was Rs 5,000 in 1921 that was increased to Rs 1 lakh in 1929. For Gandhi, the Charkha was also a 'grand and noble science'. He said, "I call it grand because the more closely we study it the more we discover in it. And we need as much skill to attain proficiency in it as any other major craft. I call this noble because it touches millions of people". Gandhi emphasised that the ashram was a "scientific and prayerful experiment" and coined new terms like the 'science of the spinning wheel', 'khadi science' and 'satyagrahi scientist' in pursuit of his science.

Shambhu Prasad, in his exhaustive paper, 'Towards An Understanding Of Gandhi's Views On Science' (http://www.mkgandhi.org/articles/views_on_sci.htm), elaborated how Gandhi was not anti-science but defined a space for an alternative science for civil society that would operate with different methods. Few excerpts from this paper are included in Table 5.

Table 5 Gandhi's Views on Science

Gandhi often quoted the scientist Alfred Wallace to argue that people's moral sense had in no way improved as a result of scientific discoveries. The advance of science had added "not an inch to the moral stature of Europe". It had not reduced hatred and injustice.

However, despite his critique of modern science, he was appreciative of the spirit of modern scientists. Amongst the largely Indian readers of Indian Opinion (begun in 1903), Gandhi sought to inculcate the courage and spirit of inquiry of the scientist. The journal carried examples of scientists that Gandhi felt were worthy of emulation. Gandhi was deeply appreciative of modern scientists' humility and spirit of inquiry, a spirit that he felt traditional people solely lacked.

He exhorted the science students to work with their hands, as science was one of the few things that involved accuracy of thought and accuracy of handling: "— Unfortunately for us and unfortunately for our country, the middle classes have almost lost the use of their hands.....Science is essentially one of those things in which theory alone is of no value whatsoever... Unless our hands go hand in hand with our heads we would be able to do nothing whatsoever."

"A science to be science must afford the fullest scope for satisfying the hunger of the body, mind and soul".

"Attainment of world peace is impossible except for greater

scientific precision, greater travail of the soul, greater patience and greater resources than required for the invention and consolidation of the means of mutual slaughter.”

Unlike many reformers and secular scientists, Gandhi did not see science as outside of religion. On the contrary, he tried updating religion to include science and science too to include faith.

His understanding of the scientific method is perhaps best summarized in his own words on khadi:

“It must be borne in mind that to make the spinners self-reliant and through their activity to achieve India’s freedom is, and ought to be, the Association’s goal. That we may not reach that goal should not cause undue worry. It is enough for us to know that it is the correct goal and, having started the activity, we have to correct our mistakes and go forward. That is the essence of the scientific method. No science has dropped from the skies in a perfect form. All sciences develop and are built up through experience. Perfection is not an attribute of science. Absolute perfection is not possible either for man or for the science that he creates.”

However, in pioneering the science of nonviolence, Gandhi was sublimely modest. He said candidly, “I do not claim to have originated any new principle or doctrine. I have simply tried in my own way to apply the eternal truths to our daily life and problems... The opinions I have formed and the conclusions I have arrived at are not final. I may change them tomorrow. I have nothing new to teach the world. Truth and nonviolence are as old as the hills.” On another occasion he mentioned, “I have ventured to place before India the ancient law of self-sacrifice. For Satyagraha and its offshoots, non-cooperation and civil resistance, are nothing but new names for the law of suffering.”

The rich cultural and spiritual heritage of India was the foundation of Gandhi’s inspiration. Majority scriptures of Indian ethos are replete with rich references to truth and nonviolence as basic tenets necessary for refinement of humanity. The phrase, ‘Ahimsa Paramo Dharma’, meaning – non-violence is the highest moral virtue – finds frequent mention in many of these scriptures and is preached as one of the cardinal principals by

almost all the prophets, tirthankars, seers and saints. Gandhi was greatly influenced by the premise of the principle that just as you want to live you should let others live; just as you don't like to be hurt you should not hurt others. The principle does not restrict the boundaries of Ahimsa only to humans but extends it to all living beings including animals and plants.

Success of the Science of Nonviolence

Gandhi's weapon of nonviolence stunned British rulers and found them at their wit's end. They were very well equipped for violence but they had no weapon in their armory to counter this new and novel weapon. Followers of Gandhi were inspired not to kill but to die, to defeat the enemy not by force but by friendship. This new technique got unprecedented success and its influence could be felt over the whole world (see Table 6). His admirers did not include only the leaders but people from all walks of life (see Table 7). This novel technique and its exceptional use by Gandhi evoked admiration even from the British judges who sentenced him to imprisonment.

Table 6 Gandhi Influenced Them

In 2010, The US President Barack Obama said in an address to the Parliament of India, "I am mindful that I might not be standing before you today, as President of the United States, had it not been for Gandhi and the message he shared with America and the world". In 2009, when Obama was asked by a ninth grader, "If you could have dinner with anyone, dead or alive, who would it be?", Obama answered: "Well, dead or alive, that's a pretty big list. You know, I think that it might be Gandhi, who is a real hero of mine."
Nelson Mandela , leader of the South African people and giant of the 20 th century anti-colonial struggle, often cited Gandhi as one of his greatest teachers: "Gandhi's ideas have played a vital role in South Africa's transformation and with the help of Gandhi's teaching, apartheid has been overcome."
"Christ gave us the goals and Mahatma Gandhi the tactics," said Martin Luther King Jr. , the civil rights leader in the USA, who adopted non-violence as the weapon of choice to help millions of African Americans fight for their

rights. He said, "Nonviolence is a powerful and just weapon. Indeed, it is a weapon unique in history, which cuts without wounding and ennobles the man who wields it."

Aung San Suu Kyi, the prominent Burmese freedom fighter, said while addressing students at Columbia University in New York in 2012 that Gandhi had been one of the major influences in her life and she urged the students to read his works.

The former US Vice-President and environmentalist, **Al Gore**, appreciated Gandhi's influence, especially in his fight against global warming in words, "Mahatma Gandhi's philosophy of satyagraha can be translated to mean truth force. It is this truth force which can help us to fight this battle honestly and with people's participation."

Dalai Lama, monk and exiled leader of the Tibetan people, said, "I have the greatest admiration for Mahatma Gandhi. He was a great human being with a deep understanding of human nature. His life has inspired me".

Khan Abdul Ghaffar Khan, also known as the 'Frontier Gandhi', was a political and spiritual leader of pathans known for his belief in nonviolent methods of opposition to the British. He and Gandhi remained close friends and worked together right up to 1947.

Table 7 Admirers of Gandhi from Different Walks of Life

John Lennon, British musician	Romain Rolland, French pacifist	Richard Attenborough, English film producer	Albert Einstein, One of the greatest scientists of all time
Steve Jobs, American IT entrepreneur and inventor	George Bernard Shaw, Irish playwright	<i>Albert Schweitzer</i> , French- German philosopher and physician	Maria Lacerda de Moura, Brazilian anarchist and feminist

U Thant, 3 rd Secretary- General of the United Nations	Louis Fischer, Jewish- American journalist	Pearl Buck, American writer and novelist.	Will Durant, American Historian
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Albert Einstein was very much influenced by Gandhi. He said, "I believe that Gandhi's views were the most enlightened of all the political men in our time". Einstein and Gandhi corresponded frequently and were great admirers of each other. Table 8 includes letters exchanged between them and the notes by Einstein on Gandhi.

Table 8 Einstein – Gandhi Correspondence and Notes by Einstein on Gandhi

Einstein's letter to Gandhi	Gandhi's letter to Einstein
Respected Mr. Gandhi ! I use the presence of your friend in our home to send you these lines. You have shown through your works, that it is possible to succeed without violence even with those who have not discarded the method of violence. We may hope that your example will spread beyond the borders of your country, and will help to establish an international authority, respected by all, that will take decisions and replace war conflicts. With sincere admiration, Yours A. Einstein. I hope that I will be able to meet you face to face some day.	October 18, 1931 DEAR FRIEND, I was delighted to have your beautiful letter sent through Sundaram. It is a great consolation to me that the work I am doing finds favour in your sight. I do indeed wish that we could meet face to face and that too in India at my Ashram. Yours sincerely, M. K. GANDHI LONDON, October 18,

Courtesy: Saraswati Albano-Müller

1931

(Source: Collected Works of Mahatma Gandhi, vol. 54)

Notes by Einstein on Gandhi

Mahatma Gandhi's life achievement stands unique in political history. He has invented a completely new and humane means for the liberation war of an oppressed country, and practised it with greatest energy and devotion. The moral influence he had on the consciously thinking human being of the entire civilized world will probably be much more lasting than it seems in our time with its overestimation of brutal violent forces. Because lasting will only be the work of such statesmen who wake up and strengthen the moral power of their people through their example and educational works.

We may all be happy and grateful that destiny gifted us with such an enlightened contemporary, a role model for the generations to come.

Source: The Hebrew University of

Jerusalem <http://www.gandhiserve.org/streams/einstein.html>

Gandhi became an all time great due to the stupendous success of his model of nonviolence. This can be witnessed in a myriad number of organizations and places named after him and statues and monuments built in his honour all over the globe. The sentence, "Nonviolence is the essence of all religions", adorns his monument in [New Belgrade](#), Serbia.

In 2007, the UN General Assembly declared Gandhi's birthday 2 October as 'the International Day of Nonviolence.' UN General Assembly also declared the first decade of the 21st century as a decade for the Promotion of a Culture of Peace and Non-Violence for the Children of the World. In 1948, it was first proposed by UNESCO that

his death anniversary on 30th January be observed as the School Day of Nonviolence and Peace. Today several schools of many countries observe this day.

Table 9 lists some of the rare honours that were bestowed upon Gandhi by the *Time Magazine*.

Table 9 Honours by *Time Magazine*

Named the 14th Dalai Lama, Lech Wałęsa, Martin Luther King, Cesar Chavez, [Aung San Suu Kyi](#), Benigno Aquino, Jr., Desmond Tutu, and Nelson Mandela as *Children of Gandhi* and his spiritual heirs to nonviolence.

Named Gandhi the Man of the Year in 1930.

Gandhi was the runner-up to Albert Einstein as “Person of the Century” at the end of 1999.

Named Gandhi as one of the top 25 political icons of all time in 2011.

Science of Nonviolence Inspires Further Research

The success of nonviolence attracted and motivated many across the globe to carry out further research in this area, as can be seen in the myriad number of organizations, institutes and websites devoted to such studies. One such center, the Metta center for nonviolence, USA promotes the science of nonviolence in the words, “Science at its best entails a rigorous approach to observation and the testing of hypotheses. The science of nonviolence is no exception. While science in the West has been practiced as mainly an observation of the outside world, the science of nonviolence must embrace an internal component as well. Gandhi, for whom nonviolence was entirely a science, was

thoroughly convinced that there are laws of spiritual behavior just as rigorous, reliable and predictable as the laws that govern the material world.” In the following a glimpse is provided into some of the recent work that brings to fore the immense scope of research in the science of nonviolence.

Quantum Mechanics and Nonviolence

In the paper, ‘The Nonviolent Principles of Nature’ (Cal Peace Power Magazine: Volume 3, Issue 1, Spring 2007; <http://mettacenter.org/science-2/nonviolent-principles-nature/>), Scott Riley explains how the alternative worldview based on the science of nonviolence coordinate better with laws of nature than the “realist” worldview around which the dominant human culture is currently organized. The realist worldview, which describes the universe as a collection of disconnected entities, has produced rampant problems such as environmental degradation, state-sponsored violence, terrorism, warfare, violence in schools, and unprecedented economic inequality. The alternative worldview, on the other hand, considers the universe to be fundamentally interconnected and seems to mimic nature much more accurately than realism.

The paper further elaborates how heart unity, which Gandhi called the core concept of nonviolence, fits very nicely with quantum mechanics and non-locality. Just as non-locality recognizes that everything in the universe—from the smallest to the largest scale—affects everything else, heart unity unites everyone and everything in the deepest and most intense sense of the term and implies that we should treat all beings as we would like to be treated ourselves. Heart unity bridges the gap between the oppressor and the oppressed; it finds a common ground where they both can stand. In this sense, non-locality can explain why Gandhi, who worked only in India, affected United States history.

The author concludes that just as Newtonian science crumbled when challenged by Einstein’s theories, the realist framework cannot stand against principled nonviolence. With its dedication to interconnection and flexibility, nonviolence can lay the groundwork for a new relationship between humans, the earth, animals and each other.

Nonviolence and Swarm Theory

Stephanie explored the relation of nonviolence with “swarm theory”, the theory that some species like bees, ants or birds, behave more intelligently in a group than

individually (<http://mettacenter.org/science-2/swarm-theory/>). Computer scientists and engineers have developed computational approaches and algorithms based on the swarm theory. Applications based on swarm theory have yielded impressive improvements in efficiency. Stephanie attributes the efficiency of the swarm to the harmony among its members and their focus on the group intent rather than their own, ensuring the success of the group and hence their own success. Gandhi acknowledged and taught this kind of intuitive sense and behavior for nonviolent action.

Microbial Universe and Nonviolence

Stephanie Van Hook cites the work of evolution biologist and futurist Elisabet Sahtouris, regarding the microbial universe, in support of nonviolence (<http://mettacenter.org/science-2/returning-home-daily-metta/>). Sahtouris maintains that life has been discovering and re-discovering cooperative or collective effort for billions of years. Bacteria, for instance, tried everything they possibly could to avoid working together, iteration after iteration, experiment after experiment over all that time until they finally turned to one another and became capable of greater feats of amazingness from that effort. The author opines that if bacteria can discover the power of nonviolence, we are sure to make it there one day, too with Gandhi's vision of humanity.

Nonviolence and Self-Organization in the Cosmos

In the post, 'Self-Organization in the Cosmos and in Our Lives' (<http://mettacenter.org/science-2/self-organization-in-the-cosmos-and-in-our-lives/>), Kari Risher explains how just as an ionized particle succeeds when it comes together with other ionized particles, guided by electromagnetic fields, to create something greater such as a star, we as humans succeed when we come together with other beings, guided by intuitive wisdom, to contribute nonviolently to our communities – social, ecological, and spiritual.

Success of nonviolence

The following excerpt from the work of the Christian theologian, Walter Wink (<https://en.wikipedia.org/wiki/nonviolence>) drives home the success of the science of nonviolence. "In 1989, thirteen nations comprising 1,695,000,000 people experienced nonviolent revolutions that succeeded beyond anyone's wildest expectations ... If we

add all the countries touched by major nonviolent actions in our century (the Philippines, South Africa ... the independence movement in India ...), the figure reaches 3,337,400,000, a staggering 65% of humanity! All this in the teeth of the assertion, endlessly repeated, that nonviolence doesn't work in the 'real' world."

Ecological scope of nonviolence

In a paper, 'Environmental Thoughts of Gandhi for a Green Future'(www.mkgandhi.org/articles/green_future.htm) , Sasikala articulates upon how the ecological scope of nonviolence is unlimited and how the green thoughts of Gandhi give us a new vision to harmonise nature with the needs of people. Gandhi's faith in non-violence and vegetarianism made him a votary of conservation of all diversity including all forms of life, societies, cultures, religions, and traditions. Many thinkers considered the Indian Environmental Movements like Chipko movement, Narmada Bachao Andolan as the living examples of Gandhian Environmentalism. Gandhi is often described as an "apostle of applied human ecology" and his idea that "nature has enough to satisfy every one's needs, but not to satisfy anybody's greed" became one line ethic to modern environmentalism.

Gandhi was Able to Marry Science and Religion

In the post, 'Spirit and Science in the Vedanta' (<http://mettacenter.org/science-2/spirit-and-science-in-the-vedanta>), Michel Nigler, founder and president of Metta Center, points out that Gandhi was able to marry science and religion because for him they had never been divorced. He explains this using the Vedantic vision of Supreme Reality according to which science, philosophy and religion were one. With this vision Indian science reached great heights. The Vedanta developed a quantum theory of mind 5,000 years before Planck discovered that energy comes in discrete packets (or quanta). It even came close, perhaps as close as words can, to accounting for the fundamental mystery of modern physics: how the strange quantum world of infinite potentialities becomes the "concrete" world of our ordinary experience; or in broader terms how the unchanging, infinite Reality becomes or in any way interacts with the flux of spacetime in which we live.

He elaborates further that with the discovery, or rediscovery of ahimsa, Gandhi was able to rescue India – and in her wake countless other countries, including imperialist ones – from the scourge of colonial domination. But it's worth realizing also that he

rescued an ancient civilization from cultural domination, because that civilization contains other important gifts that we need and are free to claim.

Scientific Inaccuracies of the Theory of Violence

An important document created by scholars from around the world and from relevant sciences with the help from UNESCO in Seville in 1986[<http://mettacenter.org/science-2/Seville-statement-on-violence-spain-1986/>], addresses the scientific inaccuracies of the alleged biological findings that have been used to justify violence and war. According to this document, it is scientifically incorrect to say that

(1) we have inherited a tendency to make war from our animal ancestors. Although fighting occurs widely throughout animal species, only a few cases of destructive intra-species fighting between organized groups have ever been reported among naturally living species, and none of these involve the use of tools designed to be weapons. Warfare is a peculiarly human phenomenon and does not occur in other animals.

(2) war or any other violent behaviour is genetically programmed into our human nature. — Except for rare pathologies, the genes do not produce individuals necessarily predisposed to violence. Violence is neither in our evolutionary legacy nor in our genes.

(3) humans have a 'violent brain'. While we do have the neural apparatus to act violently, it is not automatically activated by internal or external stimuli. Like higher primates and unlike other animals, our higher neural processes filter such stimuli before they can be acted upon. How we act is shaped by how we have been conditioned and socialized. There is nothing in our neurophysiology that compels us to react violently.

(4) war is caused by 'instinct' or any single motivation. The emergence of modern warfare has been a journey from the primacy of emotional and motivational factors, sometimes called 'instincts', to the primacy of cognitive factors.

We conclude that biology does not condemn humanity to war, and that humanity can be freed from the bondage of biological pessimism. The same species who invented war is capable of inventing peace.

Though Gandhi fell to assassin's bullets and some people cite it as a triumph of violence his countless followers all over the globe have made him immortal and his science of

nonviolence eternal. Pearl S. Buck said after Gandhi's assassination, "He was right, he knew he was right, we all knew he was right. The man who killed him knew he was right. However long the follies of the violent continue, they but prove that Gandhi was right. 'Resist to the very end', he said, 'but without violence'. Of violence the world is sick. Oh, India, dare to be worthy of your Gandhi."

Louis Fischer whose book on the life of Gandhi inspired Attenborough's award-winning film on Gandhi, said on Gandhi's assassination: "Just an old man in a loin cloth in distant India. Yet when he died, humanity wept." Einstein condoled Gandhi's death in the words, "Generations to come will scarce believe that such a one as this walked the earth in flesh and blood".

Will Durant spoke some of the most inspirational words ever about Gandhi: "Not since Buddha has India so revered any man. Not since St. Francis of Assissi has any life known to history been so marked by gentleness, disinterestedness, simplicity of soul and forgiveness of enemies. We have the astonishing phenomenon of a revolution led by a saint."

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