

***Individual Responsibility in a Rapidly Changed World***

*We must be the change we wish to see in the world*

Mahatma Gandhi

**Mahatma Gandhi Commemorative Lecture**

**Thakore Visiting Scholar Award**

Institute for the Humanities

Simon Fraser University

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***Founder and President,***

***The Simons Foundation***

I am deeply honoured to be here this evening to deliver the Mahatma Gandhi Commemorative Lecture and also to receive the Thakore Visiting Scholar Award. I would like to thank the Thakore Charitable Foundation, the India Club of Vancouver, the Institute for the Humanities and the J.S. Woodsworth Chair in the Humanities at Simon Fraser University for this honour.

My personal connection to Mahatma Gandhi is almost lifelong – part of our family history – because my brother, when he was six years old and living in New Delhi, ran off with the servants' children and attended Gandhi's funeral.

I hold the founder of this award, the late Natverlal Thakore, in the highest esteem. I have many fond memories of him, of Mrs. Thakore and their family, particularly of Arvind and of Bhasker. I was a member of the original Nominating Committee for this Award and so I am particularly delighted to be a recipient many years after my intellectual contributions ended.

I would like at this time to commend and thank Professor Jerry Zaslove for his continued commitment to the Thakore family and to his fine stewardship of the Award from its inception. Professor Zaslove was also my supervisor, guide and mentor during my graduate studies and a strong influence on my work, and it is a pleasure to see him again after so many years.

We are here to celebrate Mahatma Gandhi and those like him – Nelson Mandela, Aung San Suu Kyi, Martin Luther King and Vaclav Havel - whose commitment to the dignity of the human rose above and beyond personal interest to combat the forces of domination and repression, under the conditions of their particular era in their own countries - yet of consequence for all humanity.

Mohandas Gandhi in India under the yoke of British colonialism, was an advocate for the rights of Indians, both at home and in South Africa. As leader of India's independence movement and willing to sacrifice all, he organized boycotts against British institutions in peaceful forms of civil disobedience and was responsible, ultimately, for the liberation of India.

Nelson Mandela, in South Africa, for years directed the anti-apartheid movement - a campaign of peaceful, nonviolent defiance against the South African government and its racist policies. He was sentenced to life imprisonment but was released to witness the result of his life's work - the end of apartheid in South Africa - and ultimately became the President of his country.

Aung San Suu Kyi in Burma – who I nominated for the Gandhi Award and which she accepted in 1995 - responded to the brutal rule of Burmese military dictator, U Ne Win, by initiating a nonviolent movement towards achieving democracy and human rights and was subjected to house arrest for 21 years. She has been released and continues her struggle for a free and democratic Burma.

Martin Luther King - inspired by Gandhi's success with non-violent activism - led the civil rights movement in the United States, the intent of which was to urge the United States to obey the 1954 Desegregation Act. His actions ended the legal segregation of African-American citizens in the Southern United States and other areas of the country, and also were primarily responsible for the creation of the 1964 Civil Rights Act and the Voting Rights Act of 1965. Martin Luther King was assassinated at the age of 39.

Vaclav Havel, Czech playwright and dissident, was one of three original signatories of the Charter 77 petition, in which Czechoslovakian intellectuals urged the government to observe its commitments to human rights as outlined in the 1960 Constitution of Czechoslovakia, the Helsinki Accords of 1975, and the UN covenants on political, civil, economic and cultural rights.

Havel “*Lived in Truth*” – that is, as though the government was observing its commitment to freedom of speech, freedom of assembly and freedom of action. He was prepared to suffer the consequences and was imprisoned, treated harshly, his health destroyed and only released when his life was at risk. Like Mandela, he was elected President of his country.

Martin Luther King and Vaclav Havel differed from Gandhi, Mandela and Aung San Suu Kyi in that their “civil disobedience” – rather than to change or make humane laws - was to urge their governments to observe existing laws.

These unique individuals whose willingness to practice civil disobedience - to sacrifice and to suffer - in order that humanity retains its inalienable right to life in peace and free from fear, reminds us of our own humanity and our individual responsibility to maintain this tradition for the promotion and protection human dignity. They provide us with hope and with the energy to continue on our road to a safe, free and peaceful life for all people; and as a consequence of their principled stands to focus our attention – and raise our awareness of – the forces of domination and repression – knowledge and understanding that tends to disappear into individual and collective amnesia in pursuing the day-to-day functions of everyday life.

I encourage you not to merely honour, or revere these exemplary persons but rather to look to them as models - to emulate, to equal, to become - to take to heart Mahatma Gandhi’s guiding counsel that *We must be the change we wish to see in the world*. As Albert Einstein said, *The world will not be destroyed by those **who do evil**, but by those **who watch them without doing anything**.*”

I am deeply honoured to be chosen as this year’s spokesperson for the values these persons epitomize.

These heroic figures have had a great deal of influence in my life. Another strong guiding force has been Albert Schweitzer and his melding of Eastern philosophy – the responsibility for all life - with Western philosophy - the responsibility to act.

My career choice was made at Simon Fraser University during the 1980s, Reagan-era of nuclear arms build-up on such a scale that if unleashed, in a war against the Soviet Union, would literally wipe out all life on earth and perhaps destroy the earth’s biosphere.

I was in graduate school and I decided to establish The Simons Foundation – an operating and granting organization – with a focus on education on nuclear disarmament, on human rights, international law, education for peace and global co-operation - with a specific mandate to work against the negative effects of technology, because I discovered that science and technological citizenship – that is *ethics-based science* - was not the subject of discussion or reflection in most Universities.

I was concerned about this *absence of thought* on the negative effects of science and technology; and concerned because many scientific and technological developments are exceedingly inhumane and work *against* life - instead of *for* life.

Robert J. Oppenheimer - Manhattan Project atom bomb lead scientist - epitomized such *absence* of thought. When questioned about his motivation, his response was: “When you see something that is technically sweet, you go ahead and do it.”<sup>1</sup> He struggled for years to respond to

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<sup>1</sup> J. Robert Oppenheimer testifying in his defence during 1954 security hearings

questions of the responsibility and an ethic for science. His conclusions were that the only responsibility for the scientist was to remain dedicated; and that the values of telling the truth, correcting error and commitment to the value of learning solved, he said, – and I quote - “the problem of finding an ethic.”<sup>2</sup>

Fellow atom bomb physicist, Sir Mark Oliphant commented that he "learned during the war that if you pay people well and the work's exciting they'll work on anything." There is "no difficulty", he said, “getting doctors to work on chemical warfare and physicists to work on nuclear warfare.”<sup>3</sup>

The historical precedent for this lacuna was, perhaps, established during the 17th Century. Scientific academies "decided that any discussion of political, religious or moral problems would not be permitted in their meetings, lest their pursuit of scientific truth be marred by dogma or human passions."<sup>4</sup>

This, perhaps, has enabled scientists to ignore the human dimension, and to research and develop with impunity with no responsibility for the consequences of their inventions. This may have made sense during the Greek Age when science was merely the observation of natural phenomena; or before knowledge of how the energies of nature could be utilized. However, once science became “applied” – the technological applications the primary focus of science - religious principles and the humane dimension for the sake of humanity ought to have become an essential element.

The triumphant rise of technology, beginning during the Second World War, has transformed our world and is now threatening our survival. While there are many benefits - education, greater food availability, communications, and particularly in medical science, - technology has progressed to the extent where in many cases the dangers outweigh the benefits. Technological developments in weaponry have made it possible to destroy all life on earth. And we are experiencing such dramatic changes to the balance of our climate and eco-systems that we may have reached the point of no return.

The pervading attitudes of the technological culture discourages humanity in individuals because technology is not just the instruments, the prostheses, made by and for man, it is also a new way of knowing and understanding; and both instruments and knowledge are affected by their mutual infusion. Canadian philosopher, George Grant, believes that “Technology is the ontology of the age.” He points out that technology shapes and is shaped by all aspects of human development, that is to say, our language, constructs, concepts, attitudes, and our belief systems. There is no longer a concept of the sacred, *ethics* are diminished to principles of survival, codes of behaviour, operational ways and functions of life; *morality* is diminished to an invention of organized society in its own interest; *and justice*, no longer related to truth and beauty is, in Grant's view, "the result of interested calculation."<sup>5</sup>

One is no longer valued for his or her humanness, but rather for his or her usefulness. One becomes a tool in human form, valued for his or her utility, valued as a human resource: as raw material, as cannon fodder, and as collateral damage. The moral imperative of human value, human dignity, has been transformed to a technological imperative, value as a commodity.

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<sup>2</sup> S.S.Schweber, *In the Shadow of the Bomb*, Princeton, 2000., 180

<sup>3</sup> Sehdev Kumar, *A Snake in the Garden*, Globe & Mail, Aug.7, 2000

<sup>4</sup> Sehdev Kumar, *Globe & Mail, A Snake in the Garden of Eden*, August 7<sup>th</sup>, 2000.

<sup>5</sup>George Grant, *Technology & Justice*, Concord, Ont. 1986, 61

The products of technology are not benign, not neutral, not outside morality. They are created, manufactured and used by human being capable of distinguishing between right and wrong – moral beings.

A former Judge and Vice-President of the International Court of Justice questions whether a scientist can shut his mind to the purposes for which his expertise is required and reminds us that “the same rules of engineering that will construct a church will construct a torture chamber.”<sup>6</sup>

Technological inventions and their application for use requires a reordering of society and culture in all its aspects and are, as well, taken into account in the creation of new devices. An example of this is the atomic bomb, the nuclear weapon. The populations and sizes of cities, were factored into the calculation of the impact of the bomb. To have the largest psychological impact on the enemy you need a sizeable city to drop a sizeable weapon and so on. That the cities were human habitats must surely have been in the conscious awareness of the scientists as they conducted their experiments, and made their calculations when developing and constructing the bomb.

It is not only the scientists! It is also the government war planning ministries. In 2010, British Top Secret documents from 1978 came to light and revealed that top level officials in the Defence and Foreign Ministries, were arguing about the number of deaths in the Soviet Union it would take to deter the Russians. And the decision was made that because 20 million Russians died in World War II nothing less than 10 million Russian deaths would deter them. It is made quite clear in the document that the British must be prepared to follow through with this.

The Permanent Secretary of the Ministry of Defence, Sir Michael Quinlan – whom I met in the late 1990s and who seemed a quiet, genial, gentlemanly Englishman - won this argument. It is hard for me to imagine him advocating genocide. And he went further and promoted the advantages of ground-bursts, which would kill 55-60% of the people, over air-explosions which would kill *only some 40%*.

In the United States, nuclear operations are in complete control of the Pentagon and kept so secret that it is thought that, *even now*, the President does not have the full picture.

In fact, during President Kennedy’s first year in the White House, he attempted find out from the Joint Chiefs of Staff how many people would be killed in the Soviet Union from a US nuclear strike. The Joint Chiefs of Staff would not provide him with the number and so Kennedy resorted to other means to find out. Daniel Ellsberg, of *Pentagon Papers* fame was assigned to the task.

The numbers President Kennedy received are as follows: **275 million killed outright**; and another **50 million deaths in the following 6 weeks** from radiation poisoning and radioactive fallout; plus **another 275 million deaths** in countries bordering the Soviet Bloc, including China. So we have here **500 million killed** without taking into account an automatic counter-strike by the Soviet Union! It was learned later that this estimate did not factor in the inevitable between 10 to a 100 million killed in the Hiroshima-like firestorms that would follow the detonations.<sup>7</sup>

This is the danger to which we were – and are still on a lesser scale – exposed: the danger of Mutually Assured Destruction – the policy and strategy of the Cold War – its appropriate

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<sup>6</sup> C.G. Weeramantry, *The Lord's Prayer: Bridge to a Better World*, 1998,156)

<sup>7</sup> Ron Rosenbaum, *How the End Begins: The Road to Nuclear World War III*, Simon & Schuster, 2011. 76-7. Daniel Ellsberg was assigned to get number Rosenbaum

acronym MAD - the strategy to deter the enemy, but also subject to mistakes and accidents. This plan is still in place.

This is not war planning though. This is mass murder of civilian populations. And this is what nuclear weapons are intended for - to target mass populations and kill the maximum number of people at one go. It is actually suicide because of the counter response. Humane considerations do not enter into the strategic planning equation of military security, thus differing little from those of September 11<sup>th</sup> terrorist attacks by non-state actors and other suicide bombers, for whom the sanctity of even their own lives has no meaning.

Weapon development has changed the nature of war from predominantly military to military killing to killings - on an immense scale - of civilians. In World War I the civilian death toll was 5%. In World War II the civilian death toll rose to 50%, with 100,000 killed in one night by the chemical weapon Napalm bombing of Tokyo; and some 200,000 men, women and children killed by just two atomic bombs on Hiroshima and Nagasaki.

The Vietnam War civilian death toll rose to 90% with 400,000 killed by the chemical weapon, Agent Orange. And at present, in Vietnam, there are more than three million Agent Orange victims, including children of the second and third generations.

In the recent Israeli- Gaza war according to U.N. figures, the civilian death toll was 72%. And in Syria, the government is using chemical weapons and other indiscriminate weapons – cluster munitions and barrel bombs - killing its citizens. All these civilian deaths are euphemistically labeled “collateral damage.”

I chose nuclear disarmament as my specific area of focus because the blast effect of one contemporary nuclear weapon was of a magnitude far greater - a thousand times greater – than the atomic bombs used on Japan at the end of the Second World War.

Depending on the density of the target population centre, **only one** – the size of these currently on-alert, targeted weapons - will kill one to two million people immediately. And within a week the same number - another one or two million people - will die. Deaths and illness (radiation sickness and cancers) will continue for the generation. The following generations will be affected with numerous mutations and birth defects.

My goal was to eliminate these devastating weapons of mass destruction which I believe were – and still are – one of the greatest dangers faced by humanity.

There are now sixteen thousand, four hundred (16,400) nuclear weapons. The numbers are down considerably from Cold War levels. However, there remain enough to destroy all human life on the planet.

The United States and Russia possess most of these weapons. Four thousand, two hundred (4,200) nuclear weapons are deployed, operational and ready to go. The United States and Russia have one thousand, eight hundred (1,800) of these on high-alert status and targeted on each other.

Pakistan is rapidly expanding its nuclear arsenal far exceeding that of its nuclear rival India, and within ten years could be the third largest nuclear power.<sup>8</sup>

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<sup>8</sup> [www.washingtonpost.com/world/asia\\_pacific/report-pakis](http://www.washingtonpost.com/world/asia_pacific/report-pakis), August 27<sup>th</sup>, 2015

The International Physicians for the Prevention of Nuclear War undertook a study on the effects of a limited nuclear war between India and Pakistan - with each country detonating 50 small nuclear bombs, each the size of the bomb used on Hiroshima<sup>9</sup> which is large enough to destroy a city.

The results of the study were that the bomb itself, the subsequent fire, and the radiation from 100 small nuclear weapons would kill 20 million people in less than a week. As well, the fires would inject about 5 million tons of soot into the upper atmosphere and cause a decade-long radical drop in temperature - “a nuclear winter”. This would affect food-growing regions in most parts of the world, and the lives of over 2 billion people would be at risk from famine – one billion of whom would be in China.<sup>10</sup>

The United States, Russia, France, The United Kingdom, China, India, Pakistan, Israel and North Korea, are not only nuclear-war-ready, but as well, are **upgrading their arsenals**. They are creating new capabilities for their nuclear weapons; and planning and budgeting for years ahead to continue to modernize their programmes for nuclear weapons, their delivery systems and the infrastructure required for their maintenance. This is a clear violation of the commitment made by five nuclear weapons states - the United States, Russia, The United Kingdom, France and China - to eliminate these weapons under the Nuclear Non-Proliferation Treaty. These five states are also veto-wielding members of the U.N. Security Council.

**Because** the United States and Russia have 1,800 of these nuclear weapons on hair-trigger alert and targeted for immediate launch; **because** there is no guarantee that India and Pakistan will not engage in a war, and **because** all the weapons are stockpiled, we are at great risk. These 16,400 weapons pose great danger to humankind.

The risks are high from nuclear accidents, from an accidental or mistaken launch; and from inadequate command/control and warning systems. We are at risk because of the inadequate security of fissile materials and warheads which terrorists have been attempting to acquire.

Another great danger is the risk of malicious launch - of hackers penetrating the nuclear command/control systems which are highly automated. There is also the possibility of “spoofing” an attack which would set off an automated retaliatory response.

There is no ban on nuclear weapons. The two other named weapons of mass destruction – chemical and biological – are banned. There *are* three treaties banning nuclear weapons in specific places and interestingly, they are places where there are no humans as though *it is forbidden* to use nuclear weapons *where there are no people* – no centres of populations.

Article V of the Antarctic Treaty forbids nuclear explosions or disposal of radioactive waste in the Antarctic. So the penguins are protected! Article I of the Seabed Treaty prohibits the emplacement of nuclear weapons and other weapons of mass destruction on the seabed and the ocean floor. However, there is no ban on nuclear-powered submarines loaded with nuclear weapons.

Article IV of the Outer Space Treaty prohibits nuclear weapons on the moon and other celestial bodies. So Martians and other extra-territorial beings, if they exist, are protected. Actually the treaty was written in a pre-Copernican mindset because Planet Earth is not the centre of the

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<sup>9</sup> 16 kilotons

<sup>10</sup> [www.ippnw.org/nuclear-famine-html](http://www.ippnw.org/nuclear-famine-html)

universe surrounded by celestial bodies. Earth is a celestial body thus nuclear weapons would actually be forbidden on our planet. However, when I have broached this I have been told that law takes *the intention* into account.

It is illegal - under Article 56 of the 1977 Geneva Protocols – to attack a nuclear power plant with any kind of weapon. Yet it is not illegal to target a city with nuclear weapons.

Nuclear weapons are not illegal. It is not illegal to manufacture, stockpile or target a city deemed of military interest. Nor is it illegal to threaten, and to use nuclear weapons if it is believed the survival of the state is at risk. They are not banned in these circumstances.<sup>11</sup>

Since I began my work in 1985, the risk of nuclear war and the weapons numbers have dropped. However, humanity is still at great risk from a nuclear detonation. My greatest fear is that the catalyst for the elimination of nuclear weapons and a ban, will be a nuclear detonation in a city in the United States. Eric Schosler, investigative journalist and author of *Command and Control*,” said in a recent interview that – and I quote him - “The odds of a major city, somewhere in the world, being destroyed by a nuclear weapon are probably greater today than ever before. Unlike global warming, that sort of catastrophe will occur instantaneously and won’t be reversible.”<sup>12</sup>

“Politically” according to Hannah Arendt, “the modern world, in which we live today, was born of the first atomic explosions.”<sup>13</sup>

Prior to World War II, to paraphrase former U.S. President Eisenhower, when weapons were needed, ploughshares were turned into swords. But massive investment in weapons manufacture in World War II transformed the pre-war industrial society into a *military* industrial society, in which the military establishment and arms industry became the primary economic driving force – thus underpinning society and culture. The “conjunction of an immense military establishment and a large arms industry”, said Eisenhower, “is new in the American experience. The total influence – economic, political, even spiritual – is felt in every city, every State house, every office of the Federal Government.”<sup>14</sup>

With the militarization of politics, the symbiotic, concurrent forces of technology and the globalized market economy, and their rapidly accelerated pace since World Word II, we have reached the point at which man has triumphed over Nature to the detriment of humanity.

No-one in the global nuclear disarmament movement has had the stature, the charisma or the power of a Gandhi, in India, a Mandela in South Africa, or a Martin Luther King in the United States, to marshal forces on a *global scale* to effect significant change on an issue such as nuclear disarmament.

There have been hundreds of anti-nuclear small scale non-violent acts of civil disobedience around the world and some noteworthy ones – for example, the women’s camp on Greenham Common protesting U.S. nuclear weapons on British soil; and in the United States, the Gandhi-

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<sup>11</sup> See Geoffrey Robertson, *Crimes Against Humanity*, 1999.

<sup>12</sup> Mark Hertsgaard, “3 Minutes Until We all Die”, *The Nation*, January 23<sup>rd</sup>, 2015

<sup>13</sup> Hannah Arendt, *The Human Condition*, University of Chicago Press, 1958, p.6

<sup>14</sup> Public Papers of the Presidents, Dwight D. Eisenhower, 1960, p. 1035- 1040

*Military-Industrial Complex Speech*, Dwight D. Eisenhower, 1961



like Plowshares Movement. Catholic priests Philip and Daniel Berrigan and nuns, Sister Megan Rice and members of the Dominican Order, accompanied by media, many times broke into nuclear weapon facilities, poured blood and - symbolically turning swords into ploughshares - hammered on silos, and prayed until they were arrested.

Eighty-five year old Sister Megan Rice's latest action was to demonstrate how easy it would be for terrorists to gain entrance to a nuclear weapons plant and its fortified highly-enriched weapons grade Uranium Materials facility. She and two fellow activists, undisturbed by any of the "armed guards authorized to use lethal force" cut through four fences, evaded alarms, threw blood on the building and sprayed anti-war slogans on the walls.<sup>15</sup>

These actions were intended to draw attention to the presence and dangers of these weapons of mass destruction and to arouse the public into taking action. Yet despite the publicity, the many courtroom trials and imprisonments, the Plowshares members' actions have not resulted in any change in nuclear policies and practices.

There is no doubt that the non-violent actions - *what Gandhi called Satagraha, truth-force* - around the world in pursuit of nuclear disarmament had *some* effect. In 1980s the United States saw the largest political peace demonstrations in its history, which drew support from 70% of the public. At the same time, five million Europeans demonstrated against the planned deployment of United States intermediate range nuclear missiles on their territories.<sup>16</sup>

U.S. President Reagan was stunned and decided he had to propose nuclear disarmament. Soviet President Andropov, Mikhail Gorbachev's predecessor, was not ready. But Gorbachev, influenced by both the Western peace movements and the Chernobyl disaster willingly joined with Reagan and began to disarm.<sup>17</sup> The results were the Intermediate Range Nuclear Forces (INF) Treaty banning and removing from Europe all nuclear missiles with a range between 500 and 5,000 miles; followed, in the H.W. Bush-Gorbachev era, by the Strategic Arms Reduction Treaty I [START I] which cut strategic intercontinental nuclear weapons, and was to eliminate all tactical nuclear weapons. However, the elimination of tactical weapons remains incomplete and, at present, the United States is accusing Russia of violating the INF Treaty.

At the historic Reykjavik meeting between Gorbachev and Reagan on October 12<sup>th</sup>, 1986, President Reagan proposed to eliminate all nuclear weapons.

This caused alarm bells to ring in Washington, and aroused a storm in the Pentagon; and State Department officials went into damage control mode and successfully backtracked.<sup>18</sup> Here was a US President whose authority included the control *to trigger* the nuclear button, yet, actually *lacked the control to disconnect* it - the situation I imagine, of all heads of democratic states.

Following many years of behind the scenes activity on the part of individuals, lawyers' groups and non-governmental organizations such as the International Red Cross, language was accepted

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<sup>15</sup> Eric Schlosser, "A Nun Wals Free: The Government's Sabotage Case Dismissed", *The New Yorker*, May 18<sup>th</sup>, 2015

<sup>16</sup> Lawrence S. Wittner, *Historians Against War Newsletter #4*, "The Role of Peace Activism in Ending U.S. Wars, 2007)

<sup>17</sup> Shultz Memoirs copyright Margaret Thatcher Foundation, 2006

<sup>18</sup> (Cold War: Reykjavik (Gorbachev-Reagan) Summit (Shultz Memoirs) copyright Margaret Thatcher Foundation, 2006)

into the 2010 Nuclear Non-Proliferation Treaty Final Document on the catastrophic humanitarian consequences of any use of nuclear weapons. This allowed member states to take on this issue as a legitimate Treaty-based activity to further nuclear disarmament as a moral, humane issue in the interests of humankind.

Since then the governments of Norway, Mexico and Austria have hosted conferences attended by governments, academics and experts, a broad range of UN organizations, the Red Cross and Red Crescent and civil society organizations. Participation grew from 127 governments in Oslo, to 146 in Mexico, to 158 in Vienna. The outcome was hoped to be the prelude to a treaty or convention banning nuclear weapons. The conferences were boycotted by the United States, the United Kingdom, France, Russia and China, disparaging them as a distraction. And without their participation a treaty or convention eliminating and banning nuclear weapons will never come to fruition.

With Russia's annexation of the Crimea and its destabilization of the Ukraine, the clock has returned to East-West divisions reminiscent of the Cold War with President Putin flaunting his nuclear option. Regardless of whether or not it is merely nuclear gamesmanship or serious threat, this provocative behaviour has raised the level of discord between the United States and Russia, threatens current arms control regimes; and creates the very real danger of nuclear incident which could lead to nuclear war.

The elimination of nuclear weapons remains a seemingly intractable issue, floundering in the quagmire of international politics, competitiveness, mistrust and fear.

Despite the deteriorating situation, it still seems imperative that I continue with my goal for a world free of nuclear weapons by 2030 because I am mindful of the fact that nuclear weapons are the creation of men – *no women were involved!* And because politics and economics are relations between human beings it *is possible* to change minds, to effect policy change, to work for a diplomatic resolution to eliminate these suicide weapons.

In fact, the probability of their elimination is greater than the possibility of the restoration of the Earth and its biosphere – the ecosystems - to their earlier state – essential for the life and health of the planet.

Much of the damage that has been done cannot be reversed. The burning of fossil fuels responsible for global warming is leading to potentially catastrophic changes in the earth's climate and we may have actually reached the point for which there is no remedy. The West Antarctic Ice Sheet has collapsed and is melting and according to scientists has "passed the point of no return." This collapse is attributed to climate change.<sup>19</sup>

Species – essential for biodiversity health – are becoming extinct at a rate one thousand times fast than normal, "with literally dozens going extinct every day".<sup>20</sup> attributed, for the most part, to climate change and human-caused habitat destruction.<sup>21</sup>

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<sup>19</sup> quoted by Becky Oskin, "Catastrophic Collapse of West Antarctic Ice Sheet Begins." [www.livescience.com/45534-west-antartica-collapse-starts.html](http://www.livescience.com/45534-west-antartica-collapse-starts.html)

<sup>20</sup> Christine Dell'Amore, [National Geographic](http://National Geographic), May 30, 2014

[www.biologicaldiversity.org/programs/biodiversity/elements\\_of\\_biodiversity/extinctoncrisis/](http://www.biologicaldiversity.org/programs/biodiversity/elements_of_biodiversity/extinctoncrisis/)

<sup>21</sup>

Drought is becoming commonplace as are temperatures at extremes never recorded before – for example the heat index rose to 163 degrees Fahrenheit which is almost 73 Centigrade in Bandar Mahshahr, Iran. And extreme heat this year killed some 2,200 people in India. 2015 is almost certain to be the hottest year on record, breaking that of last year's.

As Fellow Gandhi Award Recipient, Ursula Franklin says, "Nature is retaliating and we'd better understand why and how this is happening."<sup>22</sup>

The massive extraction and exploitation of the earth's natural resources, concentration of greenhouse gases in the biosphere, environment degradation of the land, low-level pollution of the air; the destruction of the rain-forests, the warming, the growing acidity and overfishing of oceans, the loss of biodiversity and disappearance of thousands of species have resulted in the ecological catastrophe we are facing.

Forests act as carbon sinks and are still being destroyed at a rate faster than they are replanted. A recent study estimates that some 15 billion trees are removed each year with perhaps only five billion a year being planted back.<sup>23</sup>

In the short term there is a greater opportunity to *ameliorate* the conditions of climate change than to effect nuclear disarmament.

Hundreds, perhaps thousands of non-violent actions have been taken – and are being taken on a daily basis – by citizens around the world to protect humanity from the consequences of mining, deforestation, and extraction, transportation and burning of fossil fuels. It is essential that this be an on-going process without cease - a continuing battle for as long as it takes in order to halt the technological-market-economic forces of destruction.

We are proud of our SFU Professors Lynn Quarmby and Stephen Collis, and other members of the Burnaby Mountain Caretakers and Burnaby Residents Against Kinder Morgan Expansion, engaged in civil disobedience and non-violent action on Burnaby Mountain in order to prevent the proposed doubling of the pipe line, the transmission, storage and shipping of the tar sands product, the burning of which is a lead cause of global warming.

Though no Gandhi-like figure for the 21<sup>st</sup> century has emerged to take action for the nuclear disarmament, we may have such a luminary in pursuit of radical action on climate change. Pope Francis has emerged as truly a man of the people, for the people; and his encyclical, *Laudate Si* is a call to the world's people to unite to save the planet and its inhabitants, especially the poor and most vulnerable. It has been called "one of the most influential documents of recent times"<sup>24</sup>

Pope Francis is accountable to no-one but God so he is the best person on earth to lead this revolution unlike President Obama who though doing his utmost for the good of world is subject to many political and politico-economic constraints.

At a recent conference in the Arctic he expressed his concern that climate change was already playing havoc with the agriculture and ecosystems, food, water supplies, energy, infrastructure, affecting human health and impacting economic and security trends.<sup>25</sup>

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<sup>22</sup> Ursula Franklin, *The Real World of Technology*, CBC Massey Lectures, 1990, p.88

<sup>23</sup> Jonathan Amos, BBC Science Correspondent, *Earth's Trees number three trillion*, September 3, 2015

<sup>24</sup> Bill McKibben, "Pope and the Planet," *NYRB*, August 13, 2015

<sup>25</sup> President Obama Remarks, GLACIER Conference, Anchorage, Alaska, September 1<sup>st</sup>, 2015

Yet ten days earlier he signed permits allowing Shell to drill for oil in the Arctic citing the need for a transition process to renewable sources of energy. Yet, Exxon Mobil president has said that the United States will be self sufficient in oil and gas by 2020. Earlier this week, Shell Oil abandoned its search for oil and gas citing disappointing results and high costs.

Pope Francis is characterizing climate change as a moral issue, and is encouraging us “to dare to turn what is happening to the world into our own personal suffering and thus to discover what each of us can do about it.” Human beings, he says, are “capable of rising above themselves, choosing again what is good, and making a new start, despite their mental and social conditioning.”<sup>26</sup>

“All it takes” he points out “is one good person to restore hope,” and it is the “mutual responsibility between human beings and nature.” There is a need, he says, for a “bold cultural revolution” - “society, through non-governmental organizations and intermediate groups, must put pressure on governments to develop more rigorous regulations, procedures and controls,” he says. “Unless citizens control political power – national, regional and municipal – it will not be possible to control damage to the environment.” “A great cultural, spiritual and educational challenge stands before us, and it will mean that we set out on the long path of renewal.”<sup>27</sup>

This is an exciting and inspiring development and corresponding to the moral stance – the conviction - that was the driving force behind the actions of Gandhi, Mandela, King, Aung San Suu Kyi, and Havel - and instills hope for the future.

Climate Change and nuclear weapons are considered to be the greatest dangers faced by humanity. There is immense ignorance about nuclear weapons and their dangers, immense denial, rejection of climate change and its dangers – all in the cause of a false progress of a consumerist economy and frankly, greed. There is immense pressure from all sides brought to bear on people to consume. In fact, in 2010 during a recession in Japan, the government accused its people of not consuming enough.

We are at a critical juncture - engaged in a struggle to maintain the delicate balance between progress achieved and permanent destruction of this delicate balance. Continuing dependence on fossil fuels and other depredations of the earth and the oceans has catastrophic long term environmental and ecological consequences which endanger the lives of present and future generations.

Cambridge University Theoretical Physicist, John D. Barrow warns of the "prospect that scientific cultures like our own inevitably contain within themselves the seeds of their own destruction [and] will be the end of us. Our instinctive desire for progress and discovery," he says, “will stop us from reversing the tides in our affairs. Our democratic leanings will prevent us from regulating the activities of organizations. Our bias towards short-term advantage, rather than ultra-long planning, will prevent us from staving off disasters. In projecting "a future of increasing technological progress", he continues, "We may face a future that is increasingly hazardous and susceptible to *irreversible* disaster”<sup>28</sup>

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<sup>26</sup> *Laudate Si*, p.6, p.54

<sup>27</sup> *ibid*, p.19,p.18,p.31,p.47,p.53

<sup>28</sup> John D. Barrow, *Impossibility: The Limits of Science and the Science of Limits*, Oxford, 1998, 112,150,74; my emphasis)

We are confronted with a situation in which a realistic destiny of civilization is nuclear genocide and ecological degradation unless we find the ways and means to divert the course established by science, technology and its rationale in the name of progress.<sup>29</sup>

The notion of the human as merely a part of an extremely complex, interdependent ecological system which he has spent two hundred years or so degrading and destroying, is an essential focus for *reflective thought, for a new philosophy* which places man at the *centre of his technologies*, but *not the centre of the universe*, in which *science sees its leading role as caretaker of the universe, as nurturer of human life*.

Only when human beings *understand the degree of their responsibility* will our world be saved from all that threatens it today. I urge you to keep these fundamental issues in your minds as you pursue your everyday lives, for your sake, for the sake of your children, and for the sake of future generations.

As Albert Einstein affirms: “*Gandhi, the greatest political genius of our time has shown the way, and has demonstrated the sacrifices man is willing to bring if only he has found the right way. His work for the liberation of India is a living example that man’s will sustained by an indomitable conviction is stronger than apparently invincible material power.*”

Thank you!

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<sup>29</sup> (Grant, 16)