

Review of John Scales Avery's book
Nuclear Weapons: an Absolute Evil
by Anne Baring

The Bulletin of the Atomic Scientists has recently announced (25/1/18) that they have moved the hands of the Doomsday Clock to two minutes to mid-night. A few days before this announcement was made a statement by General Sir Nick Carter appeared in *The Times* in the United Kingdom: "Our ability to pre-empt or respond to threats will be eroded if we don't keep up with our adversaries." (*The Times* 22/1/2018) This statement encapsulates the mind-set that drives the Military-Industrial Complex in the nuclear nations and its interminable preparations for and anticipation of a future war. It could ultimately lead to one of these nations, whether deliberately or inadvertently, unleashing on the world the catastrophe of a nuclear war.

Many decades ago General Eisenhower warned America about the unwarranted power of the Military-Industrial Complex. Today, the entire planet is held hostage to this Complex whose lethal tentacles control the nine nuclear nations as well as those nations and corporations engaged in the lucrative arms trade. This Complex is one of the major causes of war and the persistence of war. Here is Eisenhower's comment on war in general:

Every gun that is made, every warship launched, every rocket fired signifies, in the final sense, a theft from those who hunger and are not fed, those who are cold and are not clothed. The world in arms is not spending money alone. It is spending the sweat of its laborers, the genius of its scientists, the hopes of its children... This is not a way of life at all, in any true sense. Under the cloud of threatening war, it is humanity hanging from a cross of iron. (1)

America paid no attention to his warnings and, in its hubristic will to power, continues to be complicit in expanding the greatest evil that has ever come upon this planet, threatening war with Russia and China and, most recently North Korea.

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Most of the planet's inhabitants, even those who are highly educated and working in governments and organizations like the United Nations have very little awareness of what an exchange of nuclear weapons would be like or what its immediate and long-term effects would be in terms of the massive numbers of civilian deaths and the rapid deterioration of the planetary environment. This is the lacuna that Professor Avery's book sets out to fill in

an admirably clear and comprehensive way, enriching it with photographs and quotations from men who have, from the outset, expressed their opposition to nuclear weapons. The book is an education in itself on the many facets of this complex subject including how these weapons first came into being in first five, then nine nuclear nations. It addresses both the amorality and the illegality of nuclear weapons. Many people like myself who are appalled by the existence of nuclear weapons but insufficiently informed of their history and the threat they pose to the planetary biosphere, could benefit by reading its highly informative chapters.

The Sacrifice of Civilians

The first chapter, “The Threat of Nuclear War”, explores the important subject of how existing ethical principles about avoiding the bombing of civilians were eroded during the Second World War with the carpet bombing of cities by German and British air forces, culminating in the incendiary raids on Coventry, Hamburg and Dresden that destroyed those and other German cities and many thousands of their helpless inhabitants. Not long after these, in August 1945, came the horrific obliteration of the cities of Hiroshima and Nagasaki by the first atom bombs, together with most of their civilian inhabitants. It is noteworthy that the First and Second World Wars cost the lives of 26 million soldiers but 64 million civilians. We live, Professor Avery comments, in an age of space-age science but stone-age politics.

Instead of drawing back in horror from the evil it had unleashed, America and then the Soviet Union embarked on an arms race that has led, step by step, to the current existence of nine nuclear nations and some 17,000 nuclear weapons, with the greater part of these situated in the United States and Russia. Thousands of these are kept on permanent “hair-trigger” alert. 200 of these nuclear bombs are situated in Belgium, Germany, Italy, and the Netherlands, available for use by NATO and placed there by the United States principally to deter a Russian attack. The danger of the launch of one of these weapons in error is a constant possibility and would precipitate a genocidal catastrophe.

His first chapter also addresses the important concept of nuclear deterrence and shows how, according to the historic 1996 decision by the International Court of Justice in the Hague, this was declared to be not only unacceptable from the standpoint of ethics but also contrary to International Law as well as the principles of democracy. The latter have been reflected in the pattern of voting at the United Nations (originally founded to abolish the Institution of War) which has consistently shown that the overwhelming majority of the world’s people wish to be rid of nuclear weapons.

The basic premise of this chapter and indeed, the entire book, is that nuclear weapons are an absolute evil and that no defense can be offered for them, particularly the defense that they act as a deterrent. He brings evidence

to show that the effects of even a small nuclear war would be global and all the nations of the world would suffer. Because of its devastating effects on global agriculture, even a small nuclear war could result in a 'nuclear winter' and in an estimated billion deaths from famine. A large-scale nuclear war would completely destroy all agriculture for a period of ten years. Large areas of the world would be rendered permanently uninhabitable because of the 'nuclear winter' and the radioactive contamination affecting plants, animals and humans.

Summarising at the end of this chapter Professor Avery writes: "In the world as it is, the nuclear weapons now stockpiled are sufficient to kill everyone on earth several times over. Nuclear technology is spreading, and many politically unstable countries have recently acquired nuclear weapons or may acquire them soon. Even terrorist groups or organized criminals may acquire such weapons, and there is an increasing danger that they will be used."

To believe that deterrence is a preventive to their being used is to live in a fool's paradise. It only needs one inadvertent mistake, one mis-reading of a computer, one terrorist nuclear bomb to unleash unimaginable horror on the world. There have already been several near disasters. (2) Governments claim to protect their populations by holding these weapons. Instead, they offer them as hostages to the greed and will to power of the giant corporations, of arms manufacturers such as BAE and the Military-Industrial Complex in general. Professor Avery refers to the greed for power that drives each of these as "The Devil's Dynamo".

As an example of this will to power, concealed beneath the mask of deterrence, there is the existence of a Trident submarine which is on patrol at all times, armed with an estimated eight missiles, each of which can carry up to five warheads. In total, that makes 40 warheads, each with an explosive power of up to 100 kilotons of conventional high explosive—eight times the power of the atomic bomb dropped on Hiroshima in 1945 which killed an estimated 240,000 people from blast and radiation. One nuclear submarine can incinerate more than 40 million human beings. This capacity for mass murder is presented as essential for our defense but it begs the question: 'How many people are we prepared to exterminate in order to ensure our security?' We would have no protection against a reciprocally fired nuclear missile directed at us. The concept of deterrence puts us at risk of instant annihilation.

In subsequent chapters, "Lessons from the Two World Wars", "The Social Responsibility of Scientists" and "The Illegality of Nuclear Weapons", Professor Avery expands on the different aspects of the danger that nuclear weapons present as well as the concerted efforts of many individuals and nations to eliminate them, culminating in the Treaty on the Prohibition of Nuclear Weapons that was passed by 122 nations in the United Nations

General Assembly in July 7th, 2017. “Today”, he writes, “War is not only insane but also a violation of international law.”

The Illegality of War

Many people are not aware that the illegality of war was established in 1946 when the United Nations General Assembly unanimously affirmed “The principles of international law recognized by the Charter of the Nuremberg Tribunal and the judgment of the Tribunal.” These set out the crimes that henceforth were punishable under international law. It is obvious that the nine nuclear nations, in developing and holding their weapons, have ignored and violated these principles.

In 1968 there was a further attempt to contain the growing nuclear threat. The Nuclear Non-Proliferation Treaty (NPT), drawn up during the Cold War and signed by 187 countries, was designed to prevent nuclear weapons from spreading beyond the five nations that already had them. It has now been in force as international law since 1970 and is convened every five years to pursue further negotiations towards total nuclear disarmament. In Article VI of the Treaty, the non-nuclear states insisted that definite steps towards complete nuclear disarmament would be taken by all states, as well as steps towards comprehensive control of conventional armaments. These steps have not been taken by the nuclear states. Israel (which has still not acknowledged that it holds them), India and Pakistan have not signed the Treaty and North Korea, having originally signed, withdrew in 2003. (3) Pakistan, a dangerously unstable country, presents the very real danger of nuclear technology or bombs falling into the hands of Islamic Fundamentalists. (4) The 2015 meeting of the NPT ended in disarray with no agreement reached on further commitments to disarm.

Professor Avery draws attention to the significant fact that NATO’s nuclear weapons policy violates both the spirit and the text of the NPT. An estimated hundred and eighty US nuclear weapons, all of them B-61 hydrogen bombs, are still on European soil with the air forces of the nations in which they are based regularly trained to deliver the US weapons. These nations are Belgium, Germany, Italy and the Netherlands as well as the United Kingdom with its Trident submarines. Turkey, one of the 29 nations that have joined NATO holds about 50 hydrogen bombs at a US base at Incirlik. (5) (6) The aim of all these weapons is to intimidate Russia. This “nuclear sharing” as he points out, “violates Articles 1 and 11 of the NPT, which forbid the transfer of nuclear weapons to non-nuclear-weapon states.” And, he continues, “The principle of no-first-use of nuclear weapons has been an important safeguard over the years, but it is violated by present NATO policy, which permits the first-use of nuclear weapons in a wide variety of circumstances. This is something that every citizen of the EU should be aware of.

The Danger of Nuclear Reactors

In another most important chapter “Against Nuclear Proliferation” Professor Avery draws attention to the danger of nuclear reactors, a danger that is very rarely reflected on by the governments who have committed vast sums to building them and is virtually unknown to the general public. Nuclear reactors constructed for “peaceful” purposes to generate electricity nevertheless constitute a danger in that they generate fissionable isotopes of plutonium, neptunium and americium and, are not under strict international control. Since 1945, more than 3,000 metric tons (3,000,000 kilograms) of highly enriched uranium and plutonium have been produced, of which a million kilograms are in Russia, where they are inadequately guarded. A terrorist could create a simple atom bomb, capable of killing 100,000 people if he were able to access a critical amount of uranium. He notes that “no missile defense system can prevent nuclear weapons falling into the hands of terrorists since these weapons can be brought into a country via any one of the thousands of containers loaded onto ships whose contents cannot be exhaustively checked.” This fact, as he says, undermines the argument in favor of deterrence.

More specifically, the danger lies with the fact that reactors can be used to manufacture both uranium and plutonium from the fuel rods that are an intrinsic part of every reactor and these elements can be used by anyone with sufficient expertise to create a nuclear bomb. Because this is such an important subject and largely unknown to the layman, it is worthwhile quoting his exact words:

By reprocessing spent nuclear fuel rods, a nation with a power reactor can obtain weapons-usable Pu-239 (a fissionable isotope of plutonium that was used to create the bomb dropped on Nagasaki). Even when such reprocessing is performed under international control, the uncertainty as to the amount of Pu-239 obtained is large enough so that the operation might superficially seem to conform to regulations while still supplying enough Pu-239 to make many bombs... Fast breeder reactors are prohibitively dangerous from the standpoint of nuclear proliferation because both the highly enriched uranium from the fuel rods and the Pu-239 from the envelope are directly weapons-usable... If all nations used fast breeder reactors, the number of nuclear weapons states would increase drastically... If nuclear reactors become the standard means for electricity generation [as is planned in Saudi-Arabia, for example] the number of nations possessing nuclear weapons might ultimately be as high as 40.

At the moment, there are no restrictions pertaining to the control of the enrichment of uranium and reprocessing of fuel rods in the reactors

throughout the world. In Professor Avery's view, this is a very dangerous situation which invites the manufacture of nuclear weapons by default. (7)

The Effects of Radiation

There were 2053 nuclear tests that took place between 1945 and 1998, the majority by the United States and the Soviet Union. All of them emitted radiation. The United States used the Pacific chain of islands as the site of 67 nuclear tests from 1946 to 1958. Of these the hydrogen bomb dropped on Bikini Atoll in 1954 was 1300 hundred times more powerful than the bombs that destroyed Hiroshima and Nagasaki. It gave rise to devastating radiation that affected and still affects the inhabitants of the Marshall Islands, 120 miles from Bikini. They experienced radiation sickness and deaths from cancer and women still give birth to babies who do not resemble humans and have no viable life.

In April 2014, the Republic of the Marshall Islands filed actions in the International Court of Justice in The Hague against the United States and the eight other nations that possess nuclear weapons. The actions focus mainly on the Nuclear Nine's alleged failure to "fulfill the obligations of customary international law with respect to cessation of the nuclear arms race and nuclear disarmament." As of March 2014 only the cases against the UK, India, and Pakistan have reached the current preliminary stage of proceedings before the court, because the other six nations have refused to participate. True to form, the United States has filed a motion to dismiss the lawsuit.

In addition to the radiation emitted by nuclear testing there has been the radiation emitted by the Chernobyl (1986) and Fukushima (2011) disasters. At Fukushima, between 300 and 400 metric tonnes a day of this radioactive water has been and still is flowing into the Pacific, contaminating the fish, algae and the birds who feed on the fish — and ultimately affecting humans. Contaminated fish have already been found off the coast of Alaska and the west coast of America. According to a report by the French Institute for Radiological Protection and Nuclear Safety, the initial breakdown caused "the largest single contribution of radio-nuclides to the marine environment ever observed."

In support of the graphic description of what would happen to the world in the event of a nuclear exchange, elaborated in Professor Avery's chapter "The Social Responsibility of Scientists," Professor Chris Busby, one of the world experts on the effects of ionising radiation, now living in Latvia, has warned about the catastrophic effects of nuclear radiation. He says that even a limited nuclear exchange between the US and Russia would have these effects. "We know from the nuclear test effects of radiation on the veterans exposed to the fall-out from them that the damage to the human genome and the genome of all species on earth will be terminal." People exposed to radiation will become infertile and their children will be genetically damaged and this includes the millions of cancers that will also be part of these effects. He says that generals such as General Shirreff, a former head of NATO, who has written a book published in 2016 with the title *2017 War with Russia*, are not aware of the

catastrophic long-term effects of nuclear radiation. They don't understand that nuclear radiation contaminates a huge area of ground, rendering the people and animals living on it infertile or genetically damaged. Constantly ramping up the threat of Russia to the West, they themselves constitute one of the major dangers confronting us.

Professor Busby exposes the fallacy behind the currently accepted model of exposure hazard adopted by governments and the nuclear industry since the 1950's. He says the ICRP (International Commission on Radiological Protection) is in error by about 1,000 times. Through nuclear testing (over 2,000, see above) and the accidents at Windscale, Three Mile Island, Chernobyl and Fukushima, the world has been increasingly bathed with radioactivity since 1945. We are now seeing the result in a virtual epidemic of cancer in many parts of the world. These cannot all be set at the door of lifestyle and diet or genetic inheritance. In the 1950's one in nine people developed cancer. In the 1990's it was one in five. In the last few years it is one in three and in 2020 it is estimated by WHO that it will be one in two. The chief underlying cause of this increase in cancers is, according to Professor Busby, ionising radiation. All this is not known to the general public. (8)

Summing up the effects on the world of a nuclear war, Professor Avery writes:

The danger of a catastrophic nuclear war casts a dark shadow over the future of our species. It also casts a very black shadow over the future of the global environment. The environmental consequences of a massive exchange of nuclear weapons have been treated in a number of studies by meteorologists and other experts from both East and West. They predict that a large-scale use of nuclear weapons would result in fire storms with very high winds and high temperatures [similar to what happened in Hamburg and Dresden] ... The resulting smoke and dust would block out sunlight for a period of many months, at first only in the northern hemisphere but later also in the southern hemisphere. Temperatures in many places would fall far below freezing, and much of the earth's plant life would be killed. Animals and humans would then die of starvation.

The Expenditure on Weapons and the Impoverishment of the world

In subsequent chapters, Dr. Avery draws attention to the colossal sums that are spent on weapons and preparations for war on the part of the Military-Industrial Complex and how these impoverish the nations that are committed to them and impoverish the people of the world as a whole. "War," as he says, "creates poverty". If even a small fraction of these sums were directed by an organization such as WHO or UNICEF towards improving health, eradicating disease, providing education and technical assistance such as basic hygiene,

access to water and electricity in the poorer parts of the world, the lives of billions could be immeasurably improved. \$1.7 trillion dollars is currently spent by the richest nations on armaments. An enormous river of money, he says, buys the votes of politicians and the propaganda of the media that continually announces the existence of a new enemy and the defensive preparations needed to counteract its menace.

As proof of what he has described in his book which was published before he could include it, it was announced in 2015 that the Pentagon plans to spend \$1 trillion over the next 30 years on a new generation of nuclear bombs, bombers, missiles and submarines, including a dozen submarines carrying more than a 1,000 warheads. During his presidency Obama ordered 200 new nuclear bombs to be deployed in Europe. Russia has revealed plans for a new kind of weapon – a hydrogen bomb torpedo – that can traverse 6,000 miles of ocean just as a missile would in the sky. On impact, the bomb would create a “radioactive tsunami” designed to kill millions along a country’s coast.

A World Federation of Nations

In his final chapter, “Against the Institution of War”, Professor Avery suggests that “the tribalism deeply embedded in the concept of the sovereign nation-state makes it an anachronism in a world of thermonuclear weapons, instantaneous communication and economic interdependence.” He puts forward the idea of a United Nations developed into a stronger World Federation of Nations with a legislature having the ability to make laws which are binding on individuals, and to arrest and try individual political leaders for violation of these laws. Such a strengthened United Nations would need to be independent of the income currently given to it by the most affluent nations which generally falls far below what is required to run such an institution effectively. He suggests this income could be provided by a “Tobin tax” raised from international currency exchanges at a rate between 0.1 and 0.25% – an amount that would hardly be noticed by those involved in today’s enormous currency transactions. It could provide the new World Federation of Nations with between 100 and 300 billion dollars annually. Endowed with this amount, the World Federation could strengthen all the current UN agencies that suffer from a chronic lack of funds and make their intervention in conflicts more effective. In the recent Syrian catastrophe, the world has seen how ineffective the United Nations has been, mainly due to the blocking of proposed humanitarian action by the Security Council.

Appendices

In the first of a number of important Appendices, Professor Avery has included the awarding of the Nobel Peace Prize to ICAN (The International Campaign to Abolish Nuclear Weapons) which took place on December 10th, 2017. He has also included the Nobel lecture given at the Award ceremony by

Beatrice Fihn, the Executive Director of ICAN, together with the lecture by Setsuko Thurlow, one of the very few survivors (hibakusha) of the 1945 atomic bombing of Hiroshima whose deeply moving words everyone concerned about nuclear weapons should read.

Another Appendix gives a review of a highly important book on Hiroshima by Josei Toda which gives the testimonies of the survivors and the memorable statement: “Nuclear Weapons are an absolute evil. Their possession is criminal under all circumstances.”

A third Appendix is devoted to a book review of an important book: *The Path to Zero*, (2012) by Richard Falk and David Krieger in which these two men engage “In a stunningly eloquent dialogue on a range of nuclear dangers, and our common responsibility to put an end to them.” This book should be essential reading for citizens, scientists, policy-makers and above all, political leaders whose so-called ‘rational’ decisions too often take nations into war. Dr. Krieger is founder of The Nuclear Age Peace Foundation which is actively supporting the ‘David and Goliath’ suit of the Republic of the Marshall Islands against the Nuclear Nations.

The fifth Appendix gives the text of the important Russell-Einstein Manifesto of 1955 and the last one is a Call for an Arctic Nuclear Weapons Free Zone.

In summary, Professor Avery says that we live at a crucial time of choice. We have the innate capacity for both good and evil but lack the moral awareness of how far down the path of evil our nuclear technology has taken us. Will we choose to continue down the fatally dangerous nuclear path or will we choose to free our beautiful planet and our children and grandchildren from the scourge of these weapons.

He calls for a new global ethic, “where loyalty to one’s family and nation will be supplemented by a higher loyalty to humanity as a whole... We know that nuclear war threatens to destroy civilization and much of the biosphere. The logic is there. We must translate it into popular action which will put an end to the undemocratic, money-driven, power-lust-driven war machine. The peoples of the world must say very clearly that nuclear weapons are an absolute evil, that their possession does not increase anyone’s security; that their continued existence is a threat to the life of every person on the planet; and that these genocidal and potentially omnicidal weapons have no place in a civilized society... Civilians have for too long played the role of passive targets, hostages in the power struggles of governments. It is time for civil society to make its will felt. If our leaders continue to support the institution of war, if they will not abolish nuclear weapons, then let us have new leaders... What is needed is the universal recognition that nuclear weapons are an absolute evil, and that their continued existence is a threat to human civilization and to the life of every person on the planet.”

Twenty years ago, General Lee Butler, former head of the U.S. Strategic Command (Stratcom) which controls nuclear weapons and strategy, wrote this:

By what authority do succeeding generations of leaders in the nuclear-weapons states usurp the power to dictate the odds of continued life on our planet? Most urgently, why does such breathtaking audacity persist at a moment when we should stand trembling in the face of our folly and united in our commitment to abolish its most deadly manifestations? (9)

I cannot recommend this book too highly. It has given me what I wanted to know and what I had no immediate access to: the complete picture of how we have lost our humanity and how we could regain it by ridding the earth of these demonic weapons.

Notes:

1. Address by President Dwight D. **Eisenhower** “The Chance for Peace” delivered before the American Society of Newspaper Editors, April 16, 1953.

2. Notably the night of September 26th, 1983, when a young software engineer, Lt. Col. Stanislav Petrov was on duty when suddenly, the computer screen turned bright red with alarms going off simultaneously, indicating that the United States had launched a missile strike on the Soviet Union. Miraculously, Petrov disobeyed orders and reported the incident as a computer error, which indeed it was.

There is also the terrifying accident at a missile silo in Arkansas, recorded in Eric Schlosser’s book, *Command and Control* (2013) where a handful of men struggled to prevent the explosion of a ballistic missile carrying the most powerful nuclear warhead ever built by the United States.

A third example is the US air force B-52 bomber carrying four nuclear weapons that crashed in Palomares in south-eastern Spain. On 19 Oct 2015 – Nearly 50 years after the crash – Washington finally agreed to clean up the radioactive contamination that resulted from it.

3. On January 6th, 2016 Kim Jong-un triumphantly announced that North Korea had detonated a hydrogen bomb and in December 2017 threatened to detonate one over the Pacific.

4. Most of Pakistan’s nuclear weapon storage facilities are located in the north western part of the country, near the border with Afghanistan and Pakistan’s lawless tribal areas.

5. According to Hans M. Kristensen, the director of the Nuclear Information Project at the Federation of American Scientists, underground vaults at Incirlik hold about fifty B-61 hydrogen bombs—more than twenty-five per cent of the nuclear weapons in the NATO stockpile. The nuclear yield of the B-61 can be adjusted to suit a particular mission. The bomb that destroyed Hiroshima had an explosive force equivalent to about fifteen kilotons of TNT. In comparison, the “dial-a-yield” of the B-61 bombs at Incirlik can be adjusted from 0.3 kilotons to as many as a hundred and seventy kilotons.

6. See the article by Eric Schlosser in the *New Yorker*, July 17th, 2016 about the danger and also the ease of a terrorist attack on this base.

7. 449 reactors already exist in the world and 60 are currently under construction.

8. article by Chris Busby in Caduceus magazine issue 93, Spring 2016
9. quoted in Noam Chomsky's book *Who Rules the World?* 2016

Professor Avery's official title at the University of Copenhagen is Associate Professor Emeritus. He has a Ph.D. and D.I.C. degrees from Imperial College of Science and Technology (theoretical chemistry, 1965). He also has a B.Sc. (physics, MIT, 1954) and an M.Sc. (theoretical physics, University of Chicago, 1955). He is a Foreign Member of the Danish Royal Society of Sciences and Letters, and a Fellow of the World Academy of Art and Science. Since 1990 he has been Chairman of the Danish National Group of Pugwash Conferences on Science and World Affairs (Nobel Peace Prize, 1995).

Nuclear Weapons: an Absolute Evil can be purchased at <http://www.lulu.com/home> and on <http://www.fredsakademiet.dk/library/nuclear.pdf>

See also his articles at <https://human-wrongs-watch.net/2016/03/15/peace/>

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