America’s Exceptional Violence

Nuclear weapons and the U.S. claim to the right to use them

David C. Hall, MD
Physicians for Social Responsibility
Ground Zero Center for Nonviolent Action

Trident D-5 nuclear missile test south of San Francisco 11/9/2015/Abe Blair photo
March, 1946. Eight months after the atomic bomb was dropped Hiroshima still stands in ruins.

Death or Life
Hiroshima destroyed or Family at play

THE AUTHOR’S FAMILY
Dedication

This work is dedicated to all those who fight for universal rights to life, liberty, and the pursuit of happiness and

To all those who know that nuclear weapons must be abolished for these values to endure

I salute you.

Persevere!
Acknowledgements

Drs. Judith Lipton and David Barash for keen insights and direction and my longtime colleagues working with Physicians for Social Responsibility, and Ground Zero Center for Nonviolent Action

Cover picture:

Trident D-5 test missile fired from U.S.S. Kentucky aimed for the Marshall Islands

This document was generated without specific permissions from authors or photographers, but all sources have been cited. The author requests credit for this ebook’s shape and content.
Table of Contents

Preface/Introduction

Chapter 1
Nuclear Weapons - devastation before detonation

Chapter 2
Detonation - what an 800 kiloton bomb does to a city

Chapter 3
Nuclear weapons threaten our security - militarily, economically, diplomatically

Chapter 4
Nuclear deterrence - a brief history and critique

Chapter 5
Changes since the Cold War - now 2.5 minutes to midnight

Chapter 6
Voices for elimination of nuclear weapons

Chapter 7
What the U.S. can and should do

Chapter 8
What we, dear readers, can do

Chapter 9
Organizations, Information, Contacts

Appendix A - Sample talking points for Congress
Appendix B - Mayors for Peace petition to ban nuclear weapons
Appendix C - World Medical Association call for nuclear abolition
Appendix D - Author’s oped on defunding Trident replacement
Appendix E - Author essay - How we got here, and how we stop nuclear war
Appendix F - A Mend-ship Friendship (a children’s allegory)
About the author
Endnotes
“There is little, if anything, in human history to compare with the enormity of what has been at stake in, or the bitter contradiction of, the notion that the preservation of civilization can be assured by the threat of the use of weapons that could destroy life as we know it and the planetary environment that supports it. Nothing compares to the age of nuclear weapons, our age....”


U.S. Trident Submarine & Missile System:
The Ultimate First-Strike Weapon
— Robert Aldridge,
Trident missile designer, 2009

"We have taken [protest] out of the national psyche,"
Rear Adm. Charles Richard to Navy Trident submariners
— Kitsap Sun, March 12, 2016

 Knowing is terrifying
Not knowing is terrifying,
But not knowing is hopeless
And knowing may save us

— a Brookline, Massachusetts 9th grader circa 1983
Preface (2018)

American exceptionalism has roots in our country’s founding. White male property owners, some of them slave owners, crafted two extraordinary documents in the history of citizen rights, the Declaration of Independence and the United States Constitution.

The Declaration of Independence repudiated the divine right of Kings, and argued that the thirteen colonies had the right to form their own government. The U.S. Constitution enshrined those rights in principals designed to protect propertied males in their rights to life, liberty, and the pursuit of happiness. President Monroe in 1853 issued his doctrine of colonial separation, declaring the Western Hemisphere under U.S. domination off limits to further European colonization. In 1865 following the U.S. Civil War African male slaves were Constitutionally elevated from 3/5ths of a person to full personhood. In 1920 women were Constitutionally granted full citizenship. The 1964 Civil Rights Act banned discrimination based on race, color, religion, sex or national origin, and together with the 1965 Voting Rights Act gave African-Americans and Native Americans the right to full citizenship. And in 2015, when Somalia and South Sudan finally ratified, the United States became the only country that has not ratified the United Nations Convention on the Rights of the Child.

Meanwhile, every day the United States maintains its sovereign right to threaten the world with nuclear war. Russia has succeeded in matching this threat, and seven other nations including North Korea have assumed their sovereign right to these massive weapons of terror.

Nuclear weapons are so integrated into the fabric of our lives that the vast majority of us don't see them or the risks they pose.

It’s like some charlatan hypnotist has lulled us to sleep, and we forgot to teach our children and grandchildren the lessons of Hiroshima and Nagasaki. Rear Admiral Richard seemed to boast that they, the planners and deployers of these weapons of mass destruction, have taken awareness of nuclear weapons out of America’s consciousness. Recent rhetoric seems to be changing this. I hear the drum rolls of nuclear Armageddon. That’s why I work to make sure nuclear weapons are never used again.
A quick look at the bigger picture

Three decades of advance warning about climate change has failed to curtail devastating climate extremes, predicted by climate warming models, so our polar ice caps melt faster, hurricanes grow more powerful, and drought driven wild fires burn ever wider.

President Trump backed by a Republican Congress continues a seven decade US policy of threatening nuclear war, a more aggressive denial of climate heating, an accelerated transfer of wealth to the already wealthy through tax and healthcare policy, and a more restrictive America-first policy for trade and immigration. This wasn’t always the case for Republicans, but now they are determined to reduce government regulation and oversight, and reduce the federal budget except (with widespread Democratic support) to fund unlimited military expenses. What’s being lost is a social safety net for citizens that puts the United States toward the bottom of developed countries in the care of our people. These are policy-driven outcomes that we as the American public need to understand. Corporate power is electing our decision-makers in Congress, the Supreme Court, and the White House with the clear goal of writing the rules they want. This will not be easily remedied, because they have gerrymandered election districts and own much of the public media. Why are we about to spend $1.2 trillion on new nuclear weapons when the federal minimum wage at $12/hour will hardly support one individual in our current economy, and our educational systems are failing our future work force?

My thanks to colleagues spending their lives working on these integrally related issues. My purpose in this book from here on is to expose the threat posed by nuclear weapons, then look at strategies to secure a future safe from nuclear war.

We Need Russia and China to join in eliminating nuclear weapons and remediating our warming climate

Here in the Northwest United States we live near the largest concentration of weapons of mass destruction anywhere outside of Russia at a time when we and Russia are in the most dangerous nuclear arms race since before the Berlin wall came down in 1989. The collapse of the Soviet Union two years
later ushered in “the most cataclysmic peacetime economic collapse of an industrial country in history.”

In response the United States and our NATO allies brought missile defense capabilities to Europe and acceded to pressure from former Soviet satellite countries to join NATO despite Russia’s clear notice that this was a direct challenge to their national pride and national security. These failures to respond to Russia's isolation, economic desperation, and political alienation are reminiscent of the Versailles Treaty following World War I that helped fuel the rise of Nazism in Germany. Our “reward” is a new nuclear arms race as Russia ramps up its conventional and nuclear capabilities to meet the challenges from U.S./NATO forces ever closer on their borders.

Through three Russian presidential terms Vladimir Putin has rallied the Russian people around a nationalist agenda to counter unrelenting American and NATO military pressure. He achieved 80% Russian public approval for retaking the Crimea in 2014, and has garnered widespread Russian acceptance for new nuclear weapon capabilities and threats to use them against NATO countries in Europe. In essence the Russians are saying they no longer respect Western economic sanctions or other Western efforts to counter their military plans to offset Western military strength. In 2015 the U.S. announced plans for 2020 to deploy air-launched B-61-12 nuclear capable gravity bombs for use by NATO countries in Europe. Almost simultaneously the Russians announced plans for 2020 for 40 new intercontinental ballistic missiles capable of carrying multiple nuclear warheads, and plans for a nuclear powered, nuclear-armed drone submarine that can travel 6,200 miles underwater.

It was the Soviets under Mikhail Gorbachev in the mid-1980s who first backed away from the massive overproduction of nuclear warheads as the inertia of fear, military doctrine, and political demand for nuclear parity led to 65,000 nuclear bombs in the world’s arsenals. With the collapse of the Soviet Union, the United States provided aid and expertise to the Soviet satellite countries of Belarus, Kazakhstan, and Ukraine as they dismantled their nuclear arms or returned them to Russia.

It is past time for United States policy makers to acknowledge the obscene overkill currently budgeted to upgrade (“modernize”) the U.S. nuclear
weapons complex to allow for continuous nuclear threats into the next century. The demand for parity in the numbers of nuclear warheads drove the development of omnicidal nuclear arsenals in both the Soviet Union and the United States through the 1980’s. Since then, new climate modeling predicts that the detonation of less than 1% of the nuclear arsenals allowed under the 2010 NewSTART treaty,¹³ would result in catastrophic declines in global agriculture. NewSTART modestly restrains U.S. and Russian nuclear weapon deployments.

The Congressional Budget Office estimates that the planned overhaul and upgrade of the U.S. nuclear weapons complex, planned during the Obama administration, would cost $1.2 trillion over the next 30 years.¹⁴ The new Trump administration budget plans even more nuclear weapons.¹⁵ How else might we spend these tax dollars? To reinforce the health of our U.S. workforce? Protect our global environment? Work out cooperative agreements with our global neighbors? Unify our divided country?

Plans to rebuild our nuclear weapons complex go forward despite widely held knowledge that hostile use of a tiny fraction of these new weapons could end civilized life on earth. Military-industrial-political complexes in both the U.S. and Russia drive this madness. They rely on the belief that if we have sufficiently massive retaliatory capabilities no one would dare attack us.

In 2018 we are back to the cartoon lifeboat filled with gasoline with Presidents Trump and Putin at opposite ends, matches in hand, threatening to ignite lifeboat Earth.¹⁶

The U.S. should take these steps toward a saner nuclear posture:

- Renounce the option of using nuclear weapons first;
- End the sole, unchecked authority of any U.S. president to launch a nuclear attack;
- Take nuclear weapons off hair-trigger alert;
- Stand down the Launch-on-Warning/Dead Hand system¹⁷;
- Sharply limit the plan to replace the entire arsenal with enhanced weapons;
- Actively pursue a verifiable agreement among nuclear armed states to eliminate their nuclear arsenals;
• Withdraw missile defense capabilities on Russia’s borders;
• Withdraw U.S. nuclear weapons from Europe;
• Commit to full implementation of Article VI of the 1970 Nuclear Non-Proliferation Treaty which calls on all signers “to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.”

Nuclear weapons and climate change

One consequence of the nuclear arms race is that in order to finance these enormously expensive arms, Russia has accelerated fossil fuel extraction projects, further boosting greenhouse gas emissions. Russia has major contracts to supply natural gas and petroleum to Europe and Asia. Together with China they are starting to drill for oil where global warming has melted the Arctic ice sheet, and they signed a $400 billion contract with China to build a pipeline for selling natural gas and petroleum to China over the next 30 years. The U.S., China, and Russia together account for nearly half of current emissions of greenhouse gases into the atmosphere further driving global warming. Coming soon with melting of Arctic tundra permafrost is release of huge amounts of carbon dioxide and methane, pushing us toward a tipping point where human actions can no longer stop the steady rise of global temperatures.

We owe it to our grandchildren’s grandchildren to work together with Russia and China for the sake of our common future. Rebuilding the entire Cold War nuclear weapon complex takes the U.S. and the rest of the nuclear armed nations in the wrong direction.

The balance of this ebook provides background on the nuclear arms race and describes how to join the campaign to limit and eventually eliminate the risk inherent to nuclear arsenals and to build an international regime to prevent terrorist use of a nuclear device. Developing cooperation among the U.S., Russia and China will be essential to these ends. A critically important outcome of such cooperation could be progress toward reversing global climate change, or perhaps the global campaign to reverse climate heating will open doors for nuclear disarmament.
Introduction

Once a week Trident nuclear-armed submarine crews practice pulling the nuclear trigger, reported in this 10-minute PBS report. Watch it and you will begin to understand why I am writing this book: (http://www.pbs.org/newshour/bb/many-ballistic-missile-submarines-u-s-really-need/)

Presumably the bomber and land-based silo teams have similar practice drills. The photo on the cover of this book captured a D5 intercontinental ballistic missile (ICBM) test launch from the U.S.S. Kentucky, a Trident nuclear-armed submarine, lighting the sky over

First of all let me say that I have no hope of clearing my conscience [about building the hydrogen bomb]…. If we have a slim chance of survival, it lies in the possibility to get rid of wars. Our only hope is in getting the facts of our results before the people.

— Edward Teller, father of the American hydrogen bomb
San Francisco on November 9, 2015. Fully armed the D5 missile can carry 8 nuclear warheads (12 in a special configuration), and the planned new Trident carries 16 missiles.

**This book looks at what this means.**

The scale of devastation a single Trident warship can impose on planet Earth may well exceed that of all wars in history put together. This is an insane level of destructive force and an insane way for us to live. Nevertheless, the U.S. and Russia deploy nuclear weapons on the assumption that their destructive capability will “deter” their use. The world’s major nuclear-armed cultures are trapped in hostile isolation from one another, walled off by memories of the suffering, betrayals, and horrors of war. Mistrust, fueled by propaganda and separation, makes us paranoid. We need to see each other eye to eye.

Two World Wars and multiple smaller ones teach us that life is not always precious to those whose desperation, arrogance, war experience, or greed for power outweigh their courage to meet.

If things are to change, we who believe that great cultures can thrive by sharing our sacred planet, will need to rise up and show those who profit from perpetual conflict that there are better ways to make a living.

In the United States as in other nuclear nations there is close cooperation between weapons contractors, military leaders, and governmental officials to maintain a stronghold on nuclear policy.

If the human family is ever to quarantine the use of nuclear weapons, we must understand the scale of their terror and stand up for cooperative global security agreements. The stark alternative is to see our world devolve into nightmarish realms of apartheid-like separation walls, survivalist scarcity, and epidemic death.

We can do better.
That’s what I hope to show.

It takes courage to reach out and maintain human contact with perceived enemies. There is no question but that some leaders will need pressure to meet with adversaries. We need patience, persistence, and plans that makes sense and bring hope. Consider how long it took for the Soviet Union to collapse, or for China to recover from civil war and join the international community. Consider how long it took to eradicate slavery. Across the globe we have more in common as humans seeking meaningful lives than anything that divides us by culture, ideology, or governance. Honest diplomacy has to be our determined objective. We’re all on lifeboat Earth together. Blowing up the other end of the boat won’t help. Nuclear fire must not be our legacy.

**How I got here.** I was a doctor married with two children in 1979 when I saw a documentary film of Hiroshima after the atomic bomb.

If you are not already convinced, take 15 minutes to view this film which shows what "small" atomic bombs did to the people of Hiroshima and Nagasaki: [https://www.youtube.com/watch?v=1MSKoSbqHq0](https://www.youtube.com/watch?v=1MSKoSbqHq0)  These “small” weapons have been replaced by thousands of weapons many times more powerful. Each Trident warship is built to launch over 5000 Hiroshimas. The existence of Trident exhibits a clear failure to comprehend the thousand-fold greater toxicity and destructiveness of nuclear weapons compared to conventional weapons, and a blinded policy that denies omnicidal risks through emotionally brutalized military planning and the amoral pursuit of corporate profits.

Life is sacred.

Except when you dehumanize the enemy.

Imagine how quickly our planet can be made uninhabitable. We can watch an apocalyptic movie, learn from it, and then turn it off. Not
so the real thing. With nuclear weapons our only real option is prevention built around robust collective security arrangements. We will not stay safe and whole indefinitely by threatening each other with annihilation. At some point we find ways to work with our “enemies” for mutual survival or we perish.

There is inspiring news at times. There are dedicated people in every country who share the burden of knowing and acting. After the Berlin Wall came down and the Soviet Union collapsed, hope bloomed with the Nunn-Lugar initiatives, which helped eliminate nuclear weapons in former Soviet satellite countries. The hoped for “peace dividend,” however, fell victim to powerful mistrust from past wars, impatience in Europe and the former Soviet satellite countries to join NATO, looting of the Russian infrastructure, and vested interests in the U.S. nuclear weapons enterprise. Then al Qaeda attacked the U.S. on 9/11/2001 and ended U.S. openness to international diplomacy. In 2002 the U.S. withdrew from the Anti-Ballistic Missile treaty. Russia saw this as a direct threat to its security, reigniting a nuclear arms race that is now getting hotter.

Nuclear weapon state signatories to the 1970 Nuclear Non-Proliferation Treaty, led by the United States and Russia, have stalled in their treaty commitment “to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date.”

In 2017, given the continuing refusal of nuclear-armed nations to reduce their reliance on nuclear weapons, a broad coalition that included 122 member nations of the United Nations and robust support from citizen activist organizations around the world birthed a treaty to ban nuclear weapons. The United Nations Treaty on the Prohibition of Nuclear Weapons (TPNW) takes a giant step toward making illegal these genocidal weapons. The United States is the principal nation still threatening Self-Assured Destruction. Russia is a close second, and has ramped up its nuclear posture in response to U.S./NATO military buildups in Europe. There is no question but that
negotiation has become more difficult and contentious. War with Russia, however, would be catastrophic. The nuclear nations so far are refusing to sign onto the TPNW. We have a long way to go.

New climate information and changed political circumstances around the world call us urgently to debunk nuclear weapons. As Albert Einstein warned in 1945, “The release of atom power has changed everything except our way of thinking...the solution to this problem lies in the heart of mankind.”

Background: Plans to build and deploy nuclear weapons drew credibility from the horrors of World Wars I and II - years of mechanized slaughter of millions of people and displacement of multi-millions more. Some of the most horrific genocidal operations of this era are only now coming fully to light. The Nazi Holocaust was well documented by meticulous German record-keeping. Records for Soviet civil wars and torture in the gulag which lasted well beyond Stalin’s death came available after the collapse of the Soviet Union. We now know of Soviet plans to follow nuclear war with biological war, including research to develop agricultural species that could survive in a post-nuclear-war environment. The Japanese invasion of China in 1937 followed by the Chinese civil war displaced nearly 100 million Chinese people. During the Great Leap Forward between 1958 and 1961 some 20 million people starved and many more were reduced to subsistence farm labor throughout the countryside.

What this means for us today.
These countries and cultures survived massive traumas leading to national free-fall into squalor and humiliation. Their leaders today are the survivors of these harsh legacies. What is surprising is not the militarism of current Russian and Chinese foreign policies, but their relative restraint.
The United States has developed the most sophisticated military capability in history. It has a thousand military bases located around the world and a similar number at home. U.S. bases encircle Russia, and the U.S. military “pivot toward Asia” since the Soviet Union collapsed now encircles China.

Both Russia and China have responded to the military threats they perceive from the United States and its allies by upgrading and expanding their military capabilities with new long-range missiles, nuclear warheads, and ballistic missile submarines. North Korean nuclear testing has shown how hard it is to stop a determined seeker of nuclear deterrence capabilities. The Iran nuclear deal shows how critical it is to nuclear weapon states that proliferation of nuclear weapons is stopped.

On the positive side, international trade has boosted opportunities for cooperation between China and the United States, helping to build relationships that support long term avoidance of military conflicts. We need similar trade relations with Russia. Current U.S./E.U. economic sanctions following Russia’s annexation of the Crimea have further alienated Russia, and driven Russia and China closer together as they react to U.S./NATO military pressures. When U.S. and NATO sanctions were strengthened in June 2017 in the face of continued Russian military presence in Ukraine, Russia responded by hardening its military posture.26

The 1980s. In the early 1980's high level leaders in America and the Soviet Union began to worry about the massive overkill packed into their nuclear arsenals. The number of nuclear warheads peaked at 65,000 in 1986 as the Soviets reached and exceeded parity with the U.S. in numbers of missiles and delivery systems. This coincided with Mikhail Gorbachev’s rise to the Soviet presidency. His scientists understood the insanity of the numbers game, and he resisted hardliner pressures to continue the arms race. Gorbachev's posture
almost led to a Soviet-American nuclear truce at the Reykjavik summit in 1986. However, U.S. insistence on pursuing missile defense technologies scuttled the deal. U.S. withdrawal in 2002 from the Anti-Ballistic Missile treaty ended the brief period of cooperative U.S.-Russian military initiatives and propelled a renewed U.S.-Russian arms race.

China pursued a policy of developing and maintaining a credible deterrent force in the 300-warhead range without attempting to attain parity in numbers of warheads and launchers.

The U.S. continues to drive the nuclear arms race. 
Supporters of U.S. “modernization” programs point out that other nuclear weapon states are also modernizing. This is true as far as it goes, but it requires explanation. U.S. military expenditures exceed those of the next seven nations combined, including Russia and China. This disparity has funded a supremacy of conventional and nuclear capabilities unmatched in history. Ironically, nuclear weapons have helped the lesser militarized nations to offset American conventional military superiority. Vladimir Putin has threatened to use nuclear weapons to offset NATO deployment of U.S., British, and French nuclear forces, the U.S. Global Strike Force (a non-nuclear rapid-response force), and anti-missile defense systems along Russia’s European borders. (Note: In the 1970s NATO placed nuclear forces along the Soviet border in order to offset any Soviet temptation to invade western Europe, given the U.S.S.R.'s three to one troop superiority at that time. In 1987 Presidents Ronald Reagan and Mikhail Gorbachev signed the Intermediate Range Nuclear Force (INF) Treaty to withdraw U.S. intermediate range nuclear-armed missiles from Europe.)

Following the collapse of the Soviet Union, the U.S. and NATO allies failed to grasp the opportunity to offer friendship and aid to the devastated Russian populace. Soviet Communist Party leaders and
oligarchs drained the new Russian economy as they bought up the Soviet state-owned infrastructure. NATO countries along Russia’s borders added U.S. missile defense programs, brought former Soviet satellite countries into NATO, and under U.S. pressure insisted on aggressive privatization as the condition for economic assistance. On the positive ledger one U.S. aid program accomplished the most significant reduction in nuclear weapons since the arms race started: the U.S.-sponsored Nuclear Threat Initiative organized the dismantling of huge nuclear arsenals in the Soviet satellite territories of Belarus, Kazakhstan, and Ukraine.\(^\text{27}\) Tragically, there was no ‘Russian Recovery Program,’ Marshall Plan\(^\text{28}\) or other recognition of the deepening economic calamity inside Russia. With help from Western economists, Russia built its first ever stock market, but recovery was too slow to avoid a crippling economic depression unknown in the West outside of the devastated German economy after World War II.\(^\text{29}\)

William Perry, former Secretary of Defense under President Clinton, describes the Russian economy after collapse of the U.S.S.R.:

“... the decade of the 1990s was terrible for most Russians. They were going through a deep economic depression, lawlessness was rampant, President Yeltsin’s behavior on the international scene was embarrassing, and they felt disrespected by other nations. Russians considered this a decade of humiliation. Many Russians blamed their problems on their new democracy or on the United States—feeling that we were taking advantage of their weakness to grind them down. Some Russians even yearned for the “good old days” of the Soviet Union.”\(^\text{30}\)
The result of the America’s failure to extend a hand of friendship to the Russian people in the early 1990s is the current reciprocal “modernization” of nuclear forces. Putin aroused a smoldering Russian nationalism with the invasion of the Crimea in 2014, an action precipitated in part by NATO and western Ukrainian pressures to enroll Ukraine into NATO.

In July 2015 former CIA bureau chief Robert Dannenberg learned from senior retired Russian military intelligence officers that President Putin was ‘perfectly willing’ to use nuclear weapons in Europe to counter NATO military support for Ukraine.

“Putin’s articulation of nuclear weapons doctrine is quite different from anything we have heard in recent history. He signed a revision of Russia’s nuclear doctrine last December [2014] that allows for the use of theater tactical nuclear weapons in Europe and just announced a decision to expand Russia’s nuclear arsenal.”

Nuclear weaponry, like slavery, persists in a climate of moral blindness. Like slavery in the past, nuclear weapons are accepted as a “necessary evil.” Like slavery, they must be abolished.

Chapter 1 describes how the development of nuclear weapons has produced a toxic legacy that has sickened or killed thousands. Chapter 2 explores the physical consequences of using a nuclear weapon. Chapter 3 documents ways nuclear weapons create threats to our security. Chapter 4 looks at nuclear deterrence doctrine and its flaws. Chapter 5 looks at how the nuclear arms race has heated up again. Chapter 6 showcases military, scientific, and religious voices for elimination of nuclear weapons. Chapter 7 outlines what the U.S. can and should do to reduce and eliminate nuclear dangers. Chapter 8 outlines what we as citizens and potential victims can do to keep the danger of nuclear fire in the public eye and before decision-
makers. Chapter 9 catalogues non-governmental organizations working to reduce the nuclear danger.

What follows is the case for speaking out and how to go about it

Artist John Lomberg’s picture of the smoke and soot covering the Northern Hemisphere after a small nuclear war.
Chapter 1

Nuclear Weapons: 
*devastation before detonation*

The vitrification plant on the Hanford Nuclear Reservation—a $12 billion project to glassify high level nuclear waste from Hanford's plutonium production. “[T]he pretreatment plant is scheduled to fire up in 2022 to handle about half of the 53 million gallons of radioactive wastes by 2048. Hanford has not decided on how it will deal with the rest.”

Photo credit: Hanford.gov

*Even without any hostile detonation of nuclear weapons*, the mining, refining, and fabricating of nuclear materials, and the development, manufacture, and testing of nuclear weapons have left a cascade of human suffering and Superfund sites around the world.
“The mining and milling of uranium has hit New Mexico particularly hard. 3,272 [uranium] mines are located in five western states. Because uranium is classified a 'hard rock' mineral, it falls under the auspices of the 1872 General Mining Act that allows mining companies to avoid responsibility for clean-up.” Native American communities have disproportionately suffered the toxic health consequences. Careful studies have documented a 28-fold increase in risk of lung cancer among Native American uranium miners compared to the general population.

**Processing uranium into highly enriched uranium or plutonium** to fuel these bombs required scaling up an industrial base in the 1940’s and beyond that exceeded anything ever attempted in human history. However, this momentous effort was necessary to generate compounds capable of sustainable nuclear chain reactions. The waste stream from the separation process left the Hanford Nuclear Reservation in Washington State with 56 million gallons of highly toxic and corrosive radioactive sludge. Parallel plutonium production in the Soviet Union at Mayak near Chelyabinsk created three major radiological disasters.

**Nuclear weapon tests since 1946 have released toxic radionuclides throughout the global ecosystem.**

Soviets: over 700 test detonations (214 above ground)
Americans: over 1000 test detonations (216 above ground, underwater, or in space)

**American radiation releases** from atmospheric tests in Nevada created a radiological hot spot in Troy, New York. The U.S. detonated
above ground tests of atomic and hydrogen bombs from 1946 to 1958 on the Marshall Islands, exceeding 7000 Hiroshima bomb equivalents. The 1954 Castle Bravo test of the largest hydrogen bomb ever produced in the U.S., yielded the equivalent force of 15 million tons of TNT on Bikini atoll, and a staggering plume of radioactivity that polluted the Marshall Islands. The yield was comparable to 1000 Hiroshima atomic bombs.  

In 2015 the Marshallese brought suit in the International Court of Justice (IJC) against the nine nuclear weapon states for failure to meet the terms of the Nuclear Non-Proliferation Treaty, which calls for reduction of nuclear weapons toward elimination. Since the U.S. does not recognize the jurisdiction of the IJC, the Marshallese also brought suit in U.S. federal court. Both suits were dismissed based on each court finding itself unable to rule.  

Soviet radiation releases from Soviet manufacture, testing, and civilian use of nuclear devices left 15% of the Soviet land mass unsafe for human habitation. Tsar Bomba in 1961, the Soviet’s and humanity’s largest ever nuclear test explosion, yielded a massive 50 megatons of TNT equivalent force. 

Nuclear testing above ground was banned by international treaty in 1963 for many reasons including the discovery of strontium-90 in the deciduous teeth of American children. 

Because plutonium production requires the processing of tons of uranium ore to produce ounces of plutonium, the procedure results in an enormous waste stream of highly toxic chemicals, including diverse radionuclides whose radioactivity can last one hundred
thousand years or more. Plutonium production programs for both the Soviet Union and the United States have been enormously expensive and neither nation has successfully processed any of its vast waste stream. Russia as recently as 2004 continued to dump hot waste from the Mayak plant in western Siberia into the Techa River.

A 2005 criminal case against Mayak's then-director, Vitaly Sadovnikov, revealed that the plant continued to dump at least 30 million cubic meters (1 billion cubic feet) of untreated nuclear waste into the river from 2001 to 2004.43

**A trip to Russia.**

Because Washington Physicians for Social Responsibility (WPSR) was involved in monitoring cleanup at the U.S. plutonium production facility at Hanford, Washington, WPSR (including the author and his wife) were invited in 1992 by our Russian colleagues44 to tour some of the radiological contamination sites left by Soviet plutonium production at the Mayak complex (once called Chelyabinsk-65 and now Ozersk). Mayak, located near Chelyabinsk, was a secret city not on any map until 1991. U.S. Secretary of State James Baker took the first American delegation to Chelyabinsk in February 1992.45 WPSR's delegation in May was the second.

It mid-May 1992 we arrived to snow in Chelyabinsk...

We were on the edge of Siberia in the former U.S.S.R.! Our hotel offered hard single beds and no hot water: the city’s central steam heating system had been shut down for its annual two week spring servicing, they
told us. My wife Anne and I were jet-lagged from traveling from Seattle to Frankfurt, Frankfurt to Moscow, Moscow to Chelyabinsk. (The Moscow domestic airport reeked of urine, and I was called into the men’s room to witness for the only time in my medical career an active seizure. The boy was about 6 years old. He survived, and his mother gestured that the seizure was not unexpected.)

Flying Aeroflot was like a carnival ride of swoops and dives. We cheered on landing safely and made it to our hotel in Chelyabinsk. Anne and I fell asleep long enough to miss our group heading out for the welcome dinner. We joined another lagard, and forayed out to find our companions. It was dark, and soon we were lost. How to find our welcome reception at City Hall? The one sign we saw had a hammer and sickle in Cyrillic writing without translation. We entered to find that no one spoke English, or seemed to know where the Amerikanskis were. We happened on young people pouring out of a building, perhaps college students leaving a lecture hall. With our Russian-English dictionary we tried to get directions to “City Hall,” but found no workable translation. The best we came up with was “restaurant.” They lit up, gestured for us to follow, and several young Russians led us through town.

In the moonlight we made out the squared, flat-faced, unadorned facades of building after building with closed doors. There were no shop windows, no lights, no signs, no
neon. Our guides eventually led us through an unmarked door and up a flight of stairs to a gymnasium-sized, mostly barren hall. At the far end were tables behind portable curtains with people seated around them. Our guides smiled and said, “Restaurante!” Patrons at dinner recognized us immediately as Americans. A couple in their forties greeted us enthusiastically and motioned us to their table. I don’t remember the fare, but do remember a warm and friendly dinner together. We exchanged family information via stick person drawings on paper napkins, including a series of questions to Anne about her two male companions. “You love?” they asked Anne as they pointed to the stick figures and to the other David and me. We all laughed, drank lightly of the offered vodka, declined their invitations to dance, and the woman gave Anne her earrings. It was the social highlight of our trip. We learned later that the building with the hammer and sickle sign was the local KGB headquarters!

With our delegation Anne and I toured two major radiological disaster sites and were told of a third. The first was the Techa River, twenty yards wide and filled with high level nuclear waste dumped directly from the Mayak plutonium reactors. Communities twelve kilometers downstream were evacuated years later after thousands of locals with no knowledge of Mayak had been drinking the water, bathing in the river, and drinking milk from local cows. (See Kate Brown’s recent account below). We visited a gorgeous wetland preserve nine miles downstream, and listened to the geiger counter
buzz the presence of radiation hot enough fifty years later to induce cancer in a child within four months.

During the conference we exchanged information about our respective plutonium production facilities, and our Russian colleagues shared research which had been done clandestinely on villagers living downstream on the Techa River, using an iron-lung-like whole body radiation scanner that documented widespread radiation exposures. Individuals told us personal stories. One man in his youth regularly waded across the Techa River downstream from Mayak as a shortcut to work.

The second site was made uninhabitable when a high level nuclear waste tank, similar to those at Hanford, exploded in 1957, sending out a 180-kilometer plume of toxic radioactivity. The site we visited was cordoned off as a “radioactive preserve.” We heard speculation that American pilot Gary Powers was shot down in his U-2 reconnaissance plane in 1960 trying to photograph the tank explosion aftermath (reports back home had him photographing missile sites). A poignant moment for me came when I met a seasoned pediatrician who told us about the radiological effects she was seeing after this tank explosion in first, second, and third generation patients. These effects included malaise, fatigue, chronic weakness, birth defects, and cancers. The obstetrics ward she showed us could have been in any third world country.

We only heard about the third site, Lake Karachay, a “dead lake“ with no outlet. Highly radioactive waste was dumped into Lake Karachay with the belief that it would stay there. However, in 1968 a lengthy drought was followed by a windstorm that aerosolized the
desiccated lake bed and created a plume of radioactive dust which far-exceeded that lofted by the Chernobyl disaster.47

Anne’s personal highlight developed from one of our bus trips when she sat next to a young Russian woman who lived on the outskirts of Chelyabinsk. The common language they found was rusty German good enough for Anne’s seat mate to invite Anne home on Anne’s birthday. I had another obligation, so missed our only home visit. Anne described the cozy bungalow of a Communist Party official, his wife, and 12 year-old daughter, and the warm welcome they gave her including a chocolate birthday cake and offer of a HOT bath! She shared with her hostess our Seattle souvenir booklet showing the skyline, Space Needle, Science Center, waterfront, and a Trident submarine. Both women realized that the submarine's missiles could quite possibly be targeted on Chelyabinsk. Anne told the family about protesting these submarines, and they shared hugs after a heart-filled evening of new friendship.

In 2009, eighteen years after the WPSR delegation, Kate Brown visited a village twelve kilometers downstream on the Techa River:

“No one has lived longer on contaminated terrain than people in the village of Muslumovo in the southern Russian Urals located downstream from the Mayak plutonium plant, built in 1948 to produce Soviet bomb cores....
“The Techa became a flowing radioactive reservoir in 1949 when engineers at the plutonium plant ran out of underground storage containers for high-level radioactive waste. A Dixie cup of this waste could kill everyone in a large ballroom. Compelled by the arms race, the plant director ordered it dumped in the Techa River. The men running the plant didn’t tell anyone about this decision. The 28,000 Russian, Bashkir, and Tatar farmers living on the river—drinking, cooking, and bathing with river water—had no idea. In the 1950s and ’60s special forces resettled most of the 16 contaminated villages on the Techa, but a few villages were too large and expensive to move, so they stayed. Muslumovo is one....

“For Soviet leaders, the river dwellers were a unique opportunity in the history of health physics—what scientists call “a natural experiment” that promised to answer an important civil defense question about how to survive a nuclear attack.”

U.S. radiation releases.
The Hanford Nuclear Reservation (HNR), located on the Columbia River near the Tri-Cities in eastern Washington state, is where the United States produced plutonium for the Nagasaki bomb and subsequent nuclear warheads. Radiological contamination from storage tank leaks, and in one case, intentional releases during “the Green Run,” included over one million curies of Iodine-131 plus cesium, strontium-90, ruthenium and other radionuclides. HNR has been called the largest Superfund site in the Western
Hemisphere with similar although not so extensive nuclear waste contamination as that surrounding Mayak.

I toured HNR once in the 1990’s with WPSR. The Hanford Reservation is located in a tumbleweed desert, a four and a half hour drive from Seattle. We were driven around the 200 Area, and shown huge empty concrete buildings where plutonium and uranium were once separated (the PUREX plant), open pit dump sites, and numerous sections of retired submarines that held the ships' nuclear reactors. In town we got to walk on the Richland High School Bombers logo (a mushroom cloud) tiled into the entryway floor of the high school.

Today one can visit the B reactor, set up as a museum, one of the nine defunct plutonium producing nuclear reactors built along the Columbia River for its cooling water. We were told in Chelyabinsk that the Soviets assumed that since the U.S. used the Columbia River, it was all right to use the Techa River not only to cool their reactors, but also to dump hot waste. (The Techa River flows up to 10 cubic meters per second; the Columbia River flow exceeds 50,000 cubic meters per second. No radioactive waste was dumped directly into the Columbia.)

The last plutonium produced at Hanford was in 1989. Cleanup is the watchword now, and it is a complicated mess. The original single-shelled tanks holding nuclear waste began leaking within 20 years. In 1971 AY101, the first of 28 one-million-gallon double-shelled tanks built to replace the 149 single-shell tanks, came into use. By then over a million gallons of high level waste had leaked from 67 single-shelled tanks. Tritium, the fastest traveler, was detected at the
Hanford townsite in 2009.\textsuperscript{53} AY-\textsuperscript{102}, one of the double-shelled tanks, is now leaking.\textsuperscript{54}

Oregon Department of Energy (ODE) is following the cleanup through a grant from the U.S. Department of Energy. In their 2009 20-year summary of the Tri-party agreement between the U.S. DOE (operator of the Hanford site), the U.S. Environmental Protection Agency (EPA), and Washington State Department of Ecology (overseers of Hanford cleanup), the ODE wrote, “We’re not yet at the halfway point and have not yet reached the point where everything seems doable and achievable.”

The Hanford cleanup bill runs to $2 billion a year.\textsuperscript{55}

**It all starts with mining uranium.**

The hazards from producing bomb-grade plutonium and uranium for nuclear weapons go on, in human time, forever. The process starts with uranium ore in the ground. Plutonium is a man-made element produced by bombarding uranium with neutrons. Uranium and plutonium are the only two elements that will sustain a chain reaction to release the atomic energy ($E=MC^2$) captured in nuclear power reactors or exploded in atomic and hydrogen bombs.

Uranium mining has left hundreds of square miles of contaminated lands, thousands of workers with serious health problems, multiple Superfund sites under long-term surveillance, and a national tragedy for the Navaho and Pueblo workers and families. Tribal members mined uranium on tribal lands with assurances from U.S. government
representatives that it was safe enough. The New Mexico Bureau of Geology & Mineral Resources now reports,

“Non-smoking [uranium] miners have a 100 times greater chance of getting lung cancer than the rest of the population.”

The National Institutes of Health National Center for Biotechnology Information reports deaths from lung cancer:

A 2000 study of Navajo miners reports that there were 94 lung cancer deaths documented from 1969 to 1993, that 63 of these individuals were former uranium miners, and that uranium miners had a relative risk of 28.6 compared with controls.

Nuclear waste is an expensive, unsolved toxic challenge.

In the 1990's Arjun Makhijani, a nuclear physicist and expert on issues of nuclear waste management, reported to Physicians for Social Responsibility (PSR) that not a single barrel of nuclear waste had been successfully placed in long-term storage anywhere on the planet. The French in 2006 hired him to evaluate their nuclear waste issues. In 2009 his associate (and one-time PSR staff member) Lisa Ledwidge wrote, “50 years after the first sustained fission reaction, and over 30 years after the first commercial reactor began operating ... there is still no demonstrated long-term solution to the million-year disposal problem presented by nuclear waste.”

Decommissioned military and civilian nuclear reactors and navy vessels that have reached their designed length of service have added to the waste stream. The vitrification plant under construction at Hanford (see picture on page 22) is intended to secure the nuclear
materials by mixing the highly toxic radioactive waste now in the storage tanks with molten glass, then cooling the molten mixture into glass rods that will contain the radioactivity and toxicity for the hundreds of thousands of years it will take for some of the radionuclides to decay to harmless levels. Construction of the $12 billion vitrification plant has been delayed by seismic design challenges and the technical difficulties attendant to handling the chemically and radiologically toxic and corrosive mixtures of sludge. The U.S. Department of Energy proposed in November 2017 to start the vitrification plant for low-level waste by 2022 and high-level waste by 2039, 17 years behind schedule.60

The French for over thirty years have been extracting plutonium and uranium from their waste stream to reuse in their nuclear reactors. They are now experimenting with a deep repository storage facility that will place glassified high level waste materials in steel tanks for hundred-year storage.61
Chapter 2

Detonation: what an 800 kiloton bomb does to a city

They contain the most important information you will need in order to understand the mind-boggling scale of devastation built into current nuclear arsenals, and why not even one such weapon can be used to win any peace.

Nuclear weapons generate the heat of the sun in nanoseconds through nuclear fission or fusion reactions. They vaporize dirt, pulverize landscapes, create fire storms, and poison everything with toxic radiation over vast areas.

The Bulletin of the Atomic Scientists published these four slides developed by physicist Theodore Postol, Professor Emeritus of Science, Technology, and Security policy at MIT to portray the physical and environmental effects from exploding a hydrogen bomb over a city, in this case, New York. He uses an 800 kiloton bomb
because it approximates the explosive power of the long-range nuclear warheads in the Russian and American arsenals.

An airburst explosion like the one shown above kills more people over a wider area than a ground burst explosion, which creates a denser, more radioactive downwind plume and leaves a crater at ground zero. Notice the extent of the fire and smoke at ground level. Notice, too, the accuracy of the Trident II (D5) missile. U.S. satellite navigation technologies can guide a D-5 missile to within 90 meters of its target at 4000 miles 50% of the time. Each D-5 missile is designed to carry 8 independently targeted warheads, which would fall in a cluster that could expand the area of devastation to an
approximate radius of 30 miles, possibly setting off a hundred-square-mile firestorm. The NewSTART treaty with Russia does not limit this possibility.

At 30 to 40 seconds the super-heated soot, smoke, and debris rise at hurricane speed in a fireball that carries vaporized living flesh, incinerated flammable objects, and pulverized rock and soil.
In two minutes the chimney effect, caused by super-heated air rising rapidly, shoots the smoke, soot, and debris through the troposphere into the upper stratosphere where it lingers for years above clouds.
that could rain it back to Earth, blocking sunlight and shortening growing seasons over wide areas of our planet.

Devastation at ground level leaves the terrain scorched and flattened, buildings pulverized, and total death in the red zone. Two W-88 warheads (475 kilotons) from a Trident submarine would likely exceed the devastation depicted in these four slides.
By Nukemap calculations this 800 kiloton daytime airburst bomb over New York City could kill over 2 million people and injure 2.7 million within 24 hours. A ground burst explosion could kill 1.5 million people, injure another 1.2 million people, and generate fallout with the radioactive plume reaching Hartford, Connecticut 110 miles away. The 9/11 attacks killed 2,977 people in a four-block area. You can see all their faces in the photo display at the 9/11 Memorial in lower Manhattan.

Try Nukemap yourself and go back to study the slides again.  
http://nuclearsecrecy.com/nukemap/)

Here is a slideshow of Hiroshima and Nagasaki after the bombings:

A “small” nuclear war
In 2006 climate scientists in the forefront of global warming research undertook to model a nuclear war between India and Pakistan, chosen for their longstanding hostilities and small nuclear arsenals. They modeled use of 100 of the likely 250 Hiroshima-sized atomic bombs in their two arsenals exploded on cities, each bomb roughly 15 kilotons compared to the 800 kiloton bomb you just studied. The soot, smoke, and debris generated by the explosions would circle the globe and cause declines in agricultural productivity over the next decade potentially putting more than two
billion people in South Asia and China at risk of starvation. Two hundred million people would likely die within weeks, this with well less than one one-hundredth of the world’s nuclear arsenals.\textsuperscript{66}

Another way to understand the scale of devastation that descends with a nuclear explosion is to compare what it took to incinerate Tokyo with conventional bombs. Building on the British experience of fire-bombing Hamburg in 1943, General Curtis Lemay ordered the first intentional U.S. fire-bombing of a city, on Tokyo on March 9, 1945. Robert Guillain was a French reporter who became trapped in Japan after Pearl Harbor.\textsuperscript{67} He watched from a spared area of Tokyo:

“They set to work at once sowing the sky with fire.... A force of 334 B-29s was unleashed—each plane stripped of ammunition for its machine guns to allow it to carry more fire-bombs. The lead attackers arrived over the city just after dark and were followed by a procession of death that lasted until dawn. The fires started by the initial raiders could be seen from 150 miles away. The results were devastating: almost 17 square miles of the city were reduced to ashes. Estimates of the number killed range between 80,000 and 200,000....”\textsuperscript{68}

This all-night fire-bombing raid was the largest conventional military raid in history. These multi-sortie fire-bombing raids were the only type of conventional weapon raids to approximate the immediate devastation from a single 15-20 kiloton atomic bomb. Radiation sickness and death came later only after a nuclear attack.
How do we make sense of these enormous numbers?
I think about my grandkids. The oldest is now 17 and recently reached 6 foot 3 inches tall. He loves to play the tuba and Magic, a complicated card game I have yet to comprehend. His younger brother recently reached 6 feet tall, catches for his traveling baseball team, maintains a crafty sibling rivalry with his brother, and stars on his father’s trumpet. Our other grandkids are 4-year-old twins who giggle and dance, and give big hugs. They are two little clowns in the mornings and while getting ready for bed, and sometimes howling protesters when tired.

These four precious human beings and their parents light up our family life. The death of any one of them would devastate our entire family. Just read the literature about soldiers dying in battle and the heartache back home for mothers, fathers, siblings, and friends. My grandmother never fully recovered when my uncle was killed in 1942 after his Navy ship was torpedoed by the Japanese. I was named after him and became a golden child for my grandparents.

Every human being has a family and a community.
Death of six children in a school shooting reverberates for weeks in the news and in our hearts. Death in the millions has been left to history, the imagination, and apocalyptic media. It’s hardly real today. But the Trident fleet on Hood Canal just 20 miles from Seattle is real, and they routinely train to launch missiles that risk the end of civilization on Earth.69
Chapter 3

*Nuclear weapons threaten our security*

Cuban Missile Crisis 1962

The closest the human community has come to a nuclear war since the 1945 atomic bombing of Hiroshima and Nagasaki was in 1962 when the Soviet Union moved nuclear-armed missiles and nuclear-tipped torpedoes into Cuba. Air Force General Curtis LeMay, who commanded the U.S. fire-bombing of 67 of Japan’s 71 major cities in 1945, called for an aerial assault on the missile sites in Cuba. Meanwhile, President Kennedy was in secret back-channel contact with Soviet Premier Khrushchev trying to seek a non-military solution. Robert McNamara, Kennedy’s Secretary of Defense, wrote in his memoir:
“These events seemed dangerous at the time. But it wasn’t until nearly thirty years afterward that we learned from General Gribkov’s testimony at a January 1992 conference here in this room in Havana, that the nuclear warheads for both tactical and strategic nuclear weapons had already reached Cuba before the quarantine line was established—162 nuclear warheads in all. If the president had gone ahead with the air strike and invasion of Cuba, the invasion forces almost surely would have been met by nuclear fire, requiring a nuclear response from the United States.”72

During the confrontation over Soviet weapons in Cuba, the world also came within a hair’s breadth of nuclear war when the U.S. used depth charges to surface a Soviet submarine. It was only the dissent of one of three Soviet officers that prevented the sub's nuclear-tipped torpedoes from being fired at American ships.73

In 2014 an allegation surfaced that during the Cuban Missile Crisis a senior U.S. officer ordered the launch of 32 nuclear armed cruise missiles from Okinawa, some targeted on Russia.74 Daniel Ellsberg discovered that President Eisenhower had delegated authority to launch nuclear weapons to theater commanders.75 In his autobiography My Journey at the Nuclear Brink William Perry, Defense Secretary under President Clinton, places the Cuban Missile Crisis at the pinnacle of risk of nuclear war:

“When we look back it is clear that the Cuban Missile Crisis was a signature event in the history of the nuclear era. Its most unforgettable and shattering
aspect is the historic enormity of what was at stake: the Cuban Missile Crisis arguably took us to the brink of a nuclear holocaust. Often in the incomparably dangerous crisis, U.S. decision-makers’ knowledge was imperfect, and sometimes just wrong.”

Repeated mishaps with nuclear weapons support the conclusion by General Lee Butler, Commander of U.S. strategic nuclear forces from 1991 to 1994:

“I remain convinced that we escaped the Cold War without a nuclear holocaust by some combination of skill, luck, and divine intervention, and I suspect the latter in greatest proportion.”

**The true story of the Cuban Missile Crisis:**

**Reactions to U.S. hegemony**

Sheldon M. Stern, the historian at the John F. Kennedy Library for 23 years and the first scholar to evaluate the ExComm (the Joint Chiefs of Staff executive committee) tapes, is among the numerous historians who have tried to set the record straight on what drove Khrushchev to risk nuclear war. Stern argues that Khrushchev acted in response to Kennedy’s aggressive nuclear policies, which included placing nuclear-armed missiles in Italy and Turkey in 1961. The Atlantic Monthly’s reviewer of Stern's book summarizes his findings:

“... the idea that a foreign power’s effort to counter the overwhelming strategic supremacy of the United States—a country that spends nearly as much on defense as does the rest of the world combined—ipso facto
 imperils America’s security is profoundly misguided. Just as Kennedy and his advisers perceived a threat in Soviet efforts to offset what was in fact a destabilizing U.S. nuclear hegemony [emphasis added]79, so today, both liberals and conservatives oxymoronically assert that the safety of the United States demands that the country must “balance” China by maintaining its strategically dominant position in East Asia and the western Pacific—that is, in China’s backyard. This means that Washington views as a hazard Beijing’s attempts to remedy the weakness of its own position, even though policy makers acknowledge that the U.S. has a crushing superiority right up to the edge of the Asian mainland.”

“[Kennedy] ordered the largest peacetime expansion of America’s military power, and specifically the colossal growth of its strategic nuclear forces. This included deploying, beginning in 1961, intermediate-range “Jupiter” nuclear missiles in Italy and Turkey.”

Kennedy agreed to remove the missiles from Turkey in a belated effort to gain Khrushchev’s agreement to withdraw Soviet missiles and warheads from Cuba.”

Looking back:
Stalin to Gorbachev—from state terrorism to brief sanity
Stalin’s purges followed by the Nazi invasion in 1941 left the Soviet people in a horrendous state of peril and poverty with much of their leadership enslaved or dead. After surviving World War II Stalin
ordered massive rebuilding of the Soviet military including a crash program building nuclear weapons. The rest of the economy stagnated under tightly centralized state controls for the next 30 years. Economist Thayer Watkins writes:

“In the middle 1980's ... Oleg Gordievsky, a KGB official who defected to Britain, asserted that at least one third of the total [Soviet economic] output was going to the military. British intelligence could not believe such a high figure but later Western intelligence sources estimated that it was at least fifty percent. One can only imagine what severe shortages of industrial goods there were for the rest of the economy.”

Soviet Communist Party leaders Andropov and Brezhnev maintained massive investments in military and space capabilities, including plans to follow a nuclear war with biological weapons. When Gorbachev took office in 1985 the Soviet domestic economy was mired in severe unemployment, which became more dire when Saudi Arabia flooded the petroleum market, undermining Soviet income. Yegor Gaidar had been acting prime minister of Russia from June to December 1992:

“Soviet agriculture had stagnated in the 1980's but the demand for grain in the cities was increasing. It was necessary to buy grain in the international market. While the price of petroleum was high it was feasible to finance the purchase of grain from internal sources. When the price of petroleum fell in the late 1980's the Soviet Union needed to borrow the funds from Western banks to purchase the needed grain. This severely restricted the international activities of
the Soviet Union. It could not send in Soviet troops to put down the rebellions against communism in Eastern Europe because such an action would have resulted in a refusal of Western sources to lend the money needed. Likewise the attempted coup d'état was doomed to failure because the coup leaders would not have been able to borrow the funds needed to stave off starvation in the major cities.”

Gorbachev responded with his policies of glasnost (political openness) and perestroika (economic incentives). The U.S.S.R. still collapsed, and a more democratic but impoverished Russia emerged along with liberated satellite republics.

Nuclear weapons create immense risks and failed to stop wars.

Nuclear weapons did not prevent the fall of the U.S.S.R., but they did create enormous risks during the transition to independent republics. The United States from the beginning of the Cold War maintained nuclear forces superior to any in the world and made repeated threats to use them, including during the Korean and Vietnam Wars. Nevertheless, these weapons added no benefit to fights against insurgencies in El Salvador and Nicaragua, Panama, and Haiti.

Nuclear weapons did not deter al Qaeda attacks on the World Trade Center or the Pentagon, but the attacks did bring a U.S. halt to nuclear arms reduction talks. Nuclear weapons did not benefit the U.S. in expensive and difficult conventional wars in Afghanistan and Iraq, nor did our nuclear arsenal, along with U.S. support of Israel's nuclear program, help recent negotiations with Iran over their
pursuit of a deterrent nuclear capability. Inconsistency about who should have these weapons is inherent in current nuclear “logic.” Our support of India’s nuclear program undermines negotiations with Pakistan and China.84

Economically, the U.S. defense budget was sacrosanct until the 2008 recession, which led to the 2011 sequestration agreement. In that accord Congress legislated across-the-board cuts in all discretionary spending including the defense budget. The Iraq and Afghan wars were largely funded by increasing the U.S. national debt,

![Chart: Tax Cuts, Wars Account For Nearly Half Of Public Debt By 2019](chart)

which was already growing as the result of President George W. Bush-era tax cuts.85 This chart is based on 2011 projections, but the Bush-era tax cuts were extended by congressional compromise and
signed by President Obama on January 2, 2013 as the American Taxpayer Relief Act of 2012. This act increased only the wealthiest tax bracket from 35 to 39.6%. All other tax cuts were extended. The U.S. federal debt recently exceeded the U.S. annual GDP.

Nuclear weapons risk mega-deaths.
In deaths and injuries a single hydrogen bomb could exceed 9/11 a thousand times. What provocation could ever justify such indiscriminate slaughter? We can never know for sure how the U.S. or any other country would respond to such an attack. Those in Congress arguing for continued deterrence through modernization need to answer this question:
What in detail would use of just one atomic or hydrogen bomb look like both at “ground zero” (the target) and in the reactions of other nations and nuclear wannabes?

A visit to the 9/11 memorial on lower Manhattan is sobering. The faces of nearly all the 2977 individuals who died from the attacks cover multiple walls in the exhibit. Although the loss of 2977 lives is overwhelming, we can almost comprehend this many deaths, and grieve for those whose lives were taken. A million, much less a billion deaths, are beyond comprehension, and should be beyond consideration. Nonetheless, nations that commit to nuclear deterrence necessarily declare their willingness to participate in such a global holocaust.

William Perry imagines the nightmare caused by use of a terrorist nuclear bomb between the White House and the United States Capitol building in Washington, DC:

“A suicide bomber drives the truck to a location on Pennsylvania Avenue midway between the Capitol (where Congress is in session) and the White House and at 11:00am triggers the detonator. The bomb explodes with a power of 15 kilotons. The White House, the Capital, and all buildings in between are destroyed. There are 80,000 instant deaths, including the president, the vice president, the speaker of the House, and the 320 members of Congress present when the detonation occurs….” Incalculable national and international consequences follow.88

Daniel Ellsberg in the early 1960’s wrote the U.S. nuclear war plan. If the scenario just described as Perry’s nightmare had occurred then
and was believed to have been caused by the Soviets, the United States response would have been an all-out nuclear assault on the Soviet Union and China.\textsuperscript{89}
Chapter 4

_Nuclear Deterrence: a history and critique_

Vladimir Putin’s televised command of a nuclear strike exercise – flanked by the presidents of Armenia, Belarus, Kyrgyzstan and Tajikistan in the Russian National Defense Command Center – made one thing very clear: Putin wanted to showcase his nuclear might to the world. Russian military news media showed the huge displays in the Command Center with the launch positions and impact areas of long-range nuclear missiles launched from road-mobile launchers and ballistic missile submarines. This map shows the launch points and impact areas of nuclear missiles launched across Russia. [https://fas.org/blogs/security/2014/05/nuke-exercises/](https://fas.org/blogs/security/2014/05/nuke-exercises/)

**Deterrence theory** has come to dominate the self-defense and survival strategies of all nine nuclear-armed nations. In the early years the unimaginable devastation that nuclear arsenals could unleash led to a standoff between the United States and the Soviet Union. Both
sides knew that the other could obliterate their country, and that retaliation could make the attacking country uninhabitable. They called it Mutual Assured Destruction or MAD. Later, climatologists discovered the likelihood of bringing on nuclear winter. In 2006 Alan Robock and Brian Toon (colleagues of Carl Sagan and partners in the original “nuclear winter” calculations\textsuperscript{90}), working from their updated climate impact models, renamed MAD as Self-Assured Destruction or SAD.\textsuperscript{91}

In response to the rising danger as more countries developed nuclear weapons, the Nuclear Non-Proliferation Treaty (NNPT or NPT) went into force with the U.S. signature on March 5th, 1970. The NPT is an international treaty whose objectives are:

1) To prevent the spread of nuclear weapons and weapons technology;

2) To promote cooperation in the peaceful uses of nuclear energy;

3) To further the goal of achieving nuclear disarmament and general and complete disarmament.\textsuperscript{92}

The NPT is the only multilateral treaty to limit nuclear weapons. Indefinitely extended in 1995, it has held nuclear abolition efforts in check as the US and Russia have slowly reduced their nuclear arsenals, even as they have upgraded the lethality of their smaller arsenals. However, in 2015 when the 5-year NPT review conference, despite “intensive consultations, ...was not able to reach agreement on the substantive part of the draft Final Document,”\textsuperscript{93} the non-nuclear weapon states came together in a United Nations Open-
Ended Working Group (OEWG) on nuclear disarmament. In 2017, while the nuclear weapon states boycotted this working group, the participant non-nuclear delegations drafted and adopted by near consensus the Treaty on the Prohibition of Nuclear Weapons (TPNW). The adoption of the TPNW is a seminal event in the history of nuclear weapons control.

**A brief look at recent treaty history**

The 1972 Anti-Ballistic Missile (ABM) Treaty between the U.S. and the U.S.S.R. was a mainstay of cooperation between these nuclear superpowers. The treaty was based on the understanding that allowing more than local anti-ballistic missile installations around Washington, DC and Moscow would encourage an arms race to overwhelm any defensive missile shield. Both governments agreed to employ anti-ballistic missile capabilities in no more than two locations in each country.

**How Gorbachev ended the Cold War.**

Mikhail Gorbachev rose to leadership of the U.S.S.R. in 1985, inheriting a stagnant economy and a centuries-long legacy of political repression that peaked under Joseph Stalin but continued in less repressive forms after his death in 1953. Gorbachev responded to pent-up social and economic pressures made worse by loss of access to Western capital. His policies of *glasnost* and *perestroika*, were intended to ease repression and gain access to Western loans. These policies, built on lesser liberalizations under Khrushchev, unleashed independence movements, and as the
economy failed to rebound, political unrest throughout the U.S.S.R..\textsuperscript{94}

**International Physicians for the Prevention of Nuclear War (IPPNW.org)** Nine months after Gorbachev’s inauguration, the Nobel Peace Prize was awarded to IPPNW and its co-founders, cardiologists Bernard Lown of Harvard\textsuperscript{95} and Yevgeniy Chazov, Soviet Deputy Health Minister.\textsuperscript{96} The two Nobel laureates immediately requested meetings with Presidents Reagan and Gorbachev. Gorbachev accepted. Lown and Chazov flew directly from Stockholm to Moscow to meet with him. The three men talked for three hours about research detailing medical and environmental consequences of a nuclear war, as well as other topics of grave human concern. The Nobel laureates encouraged Gorbachev to extend the Soviet moratorium on nuclear testing. President Reagan did not respond to the IPPNW request.

**Reykjavik** However, in October 1986, Presidents Gorbachev and Reagan met in Reykjavik, Iceland for a summit meeting at which they almost agreed to abolish nuclear weapons. The hurdle was the U.S. plan to deploy anti-ballistic missile defenses which could intercept incoming Soviet missiles. From the Soviet perspective, such defenses would allow the U.S. to initiate a first strike on the U.S.S.R. and be able to block retaliation, an assessment
confirmed now by new information about America’s first-strike plans. Reagan offered to share missile shield technology, but Gorbachev did not believe him. Gorbachev demanded a 10-year hiatus in U.S. missile shield development. Reagan refused. The agreement collapsed.

Reagan’s Star Wars - the dream and its consequences
President Reagan was deeply disturbed by the notion of nuclear retaliation and Mutual Assured Destruction. His answer was to promote the development of a missile interceptor system that was soon dubbed “Star Wars.” The idea was to give the U.S. a better option in defending the country than reliance on massive retaliation. Early critics of the program pointed out that an aggressor could easily overwhelm the missile interceptors by launching decoys.

Nonetheless the U.S. in 2002 withdrew from the ABM treaty in order to pursue missile defense initiatives. This pursuit became a major stumbling block in U.S.-Russian nuclear reduction talks.

Early efforts to develop missile defenses against the huge Russian arsenal were eventually abandoned. The U.S. focused instead on lesser enemies with minimal long-range ballistic missile forces such as Iran and North Korea.

March 19, 2015: Regarding the GMD [Ground-Based Midcourse national missile defense] system: “We have high confidence in the ability of this system to defeat an ICBM strike against the United States from an enemy with limited ICBM capabilities.” Admiral Bill Gortney, Commander

**A 95% effective missile defense shield.** Proponents of missile defenses claimed that the system would be 95% effective. In the 1980's an anti-Star Wars activist made a visual demonstration of a 95% effective shield by cutting holes in 5% of the fabric of an umbrella. If you shelter under this umbrella in a rainstorm, you still get wet.

**The Berlin Wall Comes Down**

In November 1989 the East Berlin Communist Party announced the opening of the Berlin Wall at midnight. The next day an estimated two million Berliners celebrated in West Berlin, and with hand tools started tearing down the wall. Independence movements among the Soviet republics led to the formation of the Commonwealth of Independent States (CIS) in early 1991. In August Gorbachev was arrested in an attempted military coup by hardliners trying to reestablish the U.S.S.R.. The situation was resolved three days later when Russian troops rallied to Boris Yeltsin, elected leader of the new Russian Federation. Gorbachev was released, and on Christmas Day resigned, disbanding the Soviet Union. The Russian Federation took over the former U.S.S.R.’s role in international affairs.

The Cold War ended and Mutual Assured Destruction took a back seat to celebrations in the West and grave hardships for those left behind in the former Soviet Union.

The 1991 thaw in U.S.-Russian relations, which included Russian efforts to broker peace between the U.S. and Iraq, cooled
dramatically a decade later when al Qaeda attacked the World Trade Center and the Pentagon. The U.S. war on al Qaeda supporters in Afghanistan followed. Russia joined the U.S. alliance to fight al Qaeda and the Afghan Taliban, but nuclear arms reduction talks were put on hold.\textsuperscript{103} Two years later the U.S. attacked Iraq with the justification that Iraq had supported al Qaeda and was developing nuclear weapons, despite early evidence that neither accusation was true.\textsuperscript{104}

In 2010 U.S.-Russian negotiations resumed toward a NewSTART treaty that was ratified in February 2012. This was the first nuclear arms reduction treaty between Russia and the United States to be ratified since the START I treaty in 1991.\textsuperscript{105}

The White House reported NewSTART limitations in a comparison to the START I treaty, which limited each side to 6,000 deployed warheads:

- 1,550 warheads...
  - This limit is 74\% lower than the limit of the 1991 START Treaty and 30\% lower than the deployed strategic warhead limit of the 2002 Moscow Treaty.
- [Launchers] A combined limit of 800 deployed and non-deployed ICBM launchers, SLBM launchers, and heavy bombers equipped for nuclear armaments.
- [Missiles] A separate limit of 700 deployed ICBMs, deployed SLBMs, and deployed heavy bombers equipped for nuclear armaments.
- This limit is less than half the corresponding strategic nuclear delivery vehicle limit of the START Treaty.\textsuperscript{106}

In 1991 the U.S. had a total of 18,306 nuclear warheads and the U.S.S.R. had 28,595.\textsuperscript{107}

The Moscow Treaty of 2002 followed the collapse of the ABM treaty in an attempt to limit the aggregate number of warheads to 1700-2200 for each party. It provided for semi-annual talks, but no new means of verification.

NewSTART is the current nuclear arms limitation treaty between the U.S. and Russia. It contains enhanced verification measures, but no limitations on missile defense systems.\textsuperscript{108}

Unrevealed in the White House report on NewSTART was the deal the Obama administration made with Congress: In return for Congressional ratification of NewSTART the administration would commit to the \textit{full modernization of the U.S. nuclear weapons complex.}

In 2009, all 40 Republican senators at the time, along with independent senator Joe Lieberman (I-Conn.), tied U.S. nuclear weapon modernization to the ratification of a new U.S.-Russian arms control agreement in a December 15 letter to Obama.\textsuperscript{109}

Based on NewSTART reductions in numbers of warheads, the U.S. and Russia claim compliance with Article VI of the Non-Proliferation Treaty:
“Each of the Parties to the Treaty undertakes to pursue negotiations in good faith on effective measures relating to cessation of the nuclear arms race at an early date and to nuclear disarmament, and on a treaty on general and complete disarmament under strict and effective international control.”

With “modernization” programs in every nuclear weapon state, driven to no small degree by U.S. initiatives, we are not seeing a “cessation of the nuclear arms race at an early date.” Indeed, quite the opposite. We’re seeing hotter rhetoric on building, deploying, and using nuclear weapons. Critics contest the “good faith” of these decisions to rebuild nuclear complexes and upgrade nuclear weapons in ways to make them “usable.” Andrew J. Bacevich, Professor of history and international relations at Boston University, writes in January 2016:

With remarkably little fanfare, the administration is embarking upon an ambitious, long-term program aimed at enhancing U.S. nuclear striking power. Upon its completion, roughly expected to coincide with the hundredth anniversary of Hiroshima, U.S. forces will possess a vastly improved suite of nuclear ordnance and delivery systems. New, stealthier, missile-firing submarines; new land-based ballistic and air-launched cruise missiles; new long-range bombers; and steerable, “dial-a-yield” bombs will endow the United States with nuclear capabilities of unprecedented precision and flexibility. The new nukes will stand in relation to those they replace as a smart phone stands in relation to an old IBM mainframe computer [emphasis added].
The Critique: From MAD to Modernization

General Lee Butler was a singular figure at the heart of deterrence decision-making as the U.S. faced the nuclear threat from the Soviet Union. He was the Pentagon expert on the U.S.S.R. through the 1980’s, speaking Russian and evaluating all the available intelligence relating to that country. As Strategic Air Commander in 1991 in charge of strategic nuclear weapons, he inherited the insane situation of the U.S. holding 19,000 nuclear warheads, and Russia holding another 29,000.\footnote{113}

When Butler retired in 1994 the U.S. arsenal was down to 10,900 warheads and the Russian arsenal to 18,000. In 1997 he met with Physicians for Social Responsibility leaders and told us that he oversaw the reduction of U.S. targets in the U.S.S.R. from 35,000 at its peak to 12,000. Single bridges had been targeted with 5 nuclear weapons, and the U.S. Navy and Air Force had independent targeting plans. Under his leadership, the Strategic Air Command (SAC) was disbanded in 1993 and control over nuclear weapons was consolidated in a new single Strategic Command (STRATCOM).\footnote{114}

By 1999, Butler had founded his own non-profit organization, the Second Chance Foundation, and began to travel the world. He spoke to journalists, military officers, defense officials, and scholars from the U.S., Canada, Western Europe, Russia, Pakistan, India and China. The U.S. Congress, he told us, barely gave him an audience.

Jonathan Granoff interviewed Butler in 2002:
“It was all Alice-in-Wonderland stuff,” Butler says. The targeting data and other details of the war plan, which are written in an almost unfathomable million lines of computer software code, were typically reduced by military briefers to between 60 and 100 slides that could be presented in an hour or so to the handful of senior U.S. officials who were cleared to hear it: “Generally, no one at the briefing wanted to ask questions because they didn’t want to embarrass themselves. It was about as unsatisfactory as could be imagined for that subject matter. The truth is that the President only had a superficial understanding” of what would happen in a nuclear war, Butler says. Congress knew even less because no lawmaker has ever had access to the war plan, and most academics could only make ill-informed guesses.115

In January 2015 Butler wrote to Norwegian parliamentarians urging them to support a ban on nuclear weapons.

“[As] the principal nuclear advisor to the President,... my responsibility was to inform the President of an attack, review the array of options, and seek his decision, all of this in a period of ten to twelve minutes. In most of the cases, the scenario employed to test this decision process postulated an all-out attack from the Soviet Union, virtually demanding a similar response.

“... in the event of an actual attack, the consequence would have been the employment of some twenty thousand thermonuclear warheads covering a vast
array of targets in both countries: leadership, military, industrial and urban areas without restriction.

“I discovered that the potential damage of such an attack was calculated by considering only blast effects – the other effects of heat, fire and radiation, short and longterm were not taken into account as they could not be measured with sufficient precision. [emphasis added]

“In fact, those effects can now be estimated to a high degree of accuracy and the results are chilling. Indeed, Carl Sagan referred to them as introducing Nuclear Winter, a prolonged period of well below average temperatures that, in conjunction with the impact of deadly fallout carried around the globe by upper level winds, held at risk the very survival of life on this planet.”116

Deterrence: a deeply flawed policy

“The Emperor Deterrence may have no clothes, but he is still Emperor.” - Lawrence Freedman, the dean of British military historians and strategists, from his conclusion in Evolution of Nuclear Strategy (1989).117

In a June 2015 interview General Butler ripped into deterrence:

“Of the several things that deterrence did not do, it did not serve as any sort of guide for force levels. To the contrary, in service to deterrence, force levels constantly increased almost exponentially. At its height we had 36,000 weapons in our active
inventory. Imagine that. Thirty-six thousand. We had warheads on artillery shells that could be launched from jeeps. We had dozens of warhead types and delivery systems. We had landmines and sea mines....

“Fifteen hundred nuclear warheads is still a mind-boggling amount of destructive potential. Mind boggling. I can’t think of anything that underscores that better than how concerned we are about one falling into the wrong hands. We still readily accept 1,500 as a reasonable number. That’s the kind of ‘logic’ that we get locked into, in the nuclear era....

“If I could strike one word from the lexicon of the nuclear weapons enterprise, it would be ‘deterrence.’ Because it’s easy. It’s lazy. It’s using rhetoric for a replacement of really rigorous thinking about what is exactly implied by your actions. I would force people to actually describe what it is they think they’re doing [by holding on to nuclear weapons] in very detailed terms, and then defend it on that basis.”

What is striking is how many thoughtful military minds recognize the atrocities that must be accepted in order to pursue deterrence. Their assumption is that modern nuclear nations want to expand their territories like Hitler’s Germany did in 1939. Hence the need for an overwhelming military (including nuclear) presence in the world. Many retired military leaders have misgivings about the proper role, if any, for nuclear weapons. A few, however, speak
out. Daniel Ellsberg spoke powerfully in The Doomsday Machine (December 2017).

**The Doomsday Machine**

In 1961, on his 30th birthday, Ellsberg finished his draft of a revised U.S. all-out war plan for use of nuclear weapons against the Soviet Union. He was working for the RAND Corporation as a highest-level civilian consultant to the Air Force and Department of Defense when President John F. Kennedy took office. Kennedy inherited from the Eisenhower administration a basic national security plan (BSNP) that called for an all-out nuclear first strike on the Soviet Union and China before the U.S.S.R. could develop intercontinental ballistic missiles capable of reaching the United States. The Eisenhower plan called for “unleashing the full fury of the SAC [Strategic Air Command] war plan against both the Soviet bloc and China” in the event of a major conflict with the U.S.S.R., which was primed to happen over Berlin. The definition of “general war” on which the Eisenhower plan was built “was not confined to Europe. It implied that any conflict pitting U.S. forces against any more than several battalions of Soviet troops anywhere in the world—Iran, Korea, the Middle East, Indochina—would lead to instant U.S. strategic attacks on every city and command center in the Soviet Union and China.”

There was no alternative plan, nor any way to exclude China even if the initiating conflict was solely with the Soviet Union.

Background for this extremity of nuclear force was spelled out in a top-secret RAND document from 1956: U.S. strategic force as planned at that time [principally nuclear-armed bombers] “cannot ensure a level of destruction as high as that which Russia
sustained in World War II—a destruction from which it has more than recovered in a few years.”

“The implication—never questioned by anyone at RAND while I was there [Ellsberg writes]—was that adequate deterrence for the United States demanded a survivable, assured second-strike capability to kill more then the twenty million Soviet citizens who had died in World War II.”

Shortly after he finished his draft nuclear war plan, Ellsberg learned that the Joint Chiefs of Staff was asked: “If your plans for general [nuclear] war are carried out as planned, how many people will be killed in the Soviet Union and China?” The answer came back in the form of a graph labeled fatalities ranging from 0 to 300 million deaths against a 6-month time frame: 275 million immediate deaths, 325 million within 6 months, and eventually “the extermination of over half a billion people” due to bombing more than 125 cities in Russia and China.

This was before anyone knew about nuclear winter. This is what the Kennedy administration inherited, and what Daniel Ellsberg set out to restrain by not targeting cities. This was the war plan created by military leaders who led the all-out war against Nazi-fascist aggression in World War II. They foresaw grave threats from rising Communist regimes in Russia and China. They planned, if necessary, to use a thousand nuclear bombs each a hundred times more powerful than the Hiroshima and Nagasaki atomic bombs. Kennedy fueled the expansion of U.S. nuclear capabilities when he falsely claimed a “missile gap” with China during his campaign against Richard Nixon. Ellsberg
warns us that today we are still faced with nuclear doomsday machines in both the United States and Russia.

**Decision-makers who tout “deterrence”** — civilian leaders in industry, members of Congress, civic leaders of communities benefiting from military contracts, war veterans, hardcore Cold Warriors, and senior commanders under orders — focus on the risks presented by perceived “enemies” in order to deflect attention away from U.S. military dominance. What they fail to do (besides completely missing the scale of nuclear devastation they support) is to insist on meaningfully robust meetings with these “enemies,” who are responding to hegemonic U.S. strategic forces, both conventional and nuclear, and to find common ground for reconciliation or at least co-existence short of threats to obliterate whole regions of Earth. There needs to be a new story about true national security that builds relationships and cooperation rather than military standoffs. Standoffs support the dominant story put out by the military-industrial complex that risking omnicide is acceptable in pursuit of national security. President Eisenhower authorized the build up to 18,000 nuclear weapons and then as he left office warned us against the military-industrial complex.

The U.S. commitment to *full spectrum dominance*\(^1\) fuels the arms races in weapons and technology. The U.S. is most often the nation to accelerate technology and weapons upgrades.\(^2\) Planners for current “modernization” cite the buildups taking place in all the other nuclear nations. There is no question but that Russia under Vladimir Putin has been aggressively increasing its reliance on nuclear weaponry and threats of nuclear use. This stance makes more sense when you look at the first-strike nuclear
war plans the U.S. has maintained against Russia and China since the start of the Cold War, and the history of advances in force levels and sophistication of technologies that has kept the U.S. ahead with ongoing plans to always stay ahead.

If you haven’t already done so, take the time to view this 4-minute PBS report on current plans for use of U.S. nuclear weapons. We’re still in the Eisenhower era of Mutual Assured Destruction in July 2015:

(http://www.pbs.org/newshour/bb/many-ballistic-missile-submarines-u-s-really-need/)

This history puts the opportunity and responsibility squarely on the United States to initiate serious talks between nations.

Civil society and most non-nuclear nations have struggled to make it at least as critical for nuclear nations to develop diplomatic strength as it has been to develop military strength. We need world leaders to see that reliance on nuclear deterrence, built on the threat of mutual assured destruction, is a false promise of national security. An aroused citizenry can impact war plans. Records from the time show that an aroused U.S. public protest kept Richard Nixon from escalating the Vietnam War.

Daniel Ellsberg: “People didn’t understand the Joint Chiefs were pressing throughout this period for a bigger war, and Nixon was threatening and planning a bigger war.

“[public protest] did not shorten the war significantly, but it did keep a lid on the war. Without the Moratorium [massive public protests], there would have been an escalation,
possibly the use of nuclear weapons in November 1969.”

The myth of deterrence
Conventional deterrence theory was built in the 1960s on game theory, assuming that two rational opponents were in a relationship in which one could win and the other lose; both could lose; or both could win. The nuclear world still had only two players, the U.S. and the U.S.S.R. There was and is no model for multiple players, and there is no model that assumes that one or both players is irrational or crazy. Yet both multiple nuclear players and leaders who appear irrational exist on the world stage today. A key element in deterrence planning is projecting to your enemies the “craziness” it would take to launch your weapons. Nine nations are now known to have nuclear weapons, yet we have limited data on the mental status of the many leaders who might authorize a launch. They may be psychopaths, sociopaths, narcissists, or ideological fanatics, and may not play the game of deterrence by the rules devised by computer scientists in their laboratories, or to match our Western cultural expectations.

Three dangerous myths dominate the “logic” that drives the current nuclear arms race:

- Myth #1: Nuclear arsenals are necessary to deter war.
- Myth #2: Nuclear deterrence requires parity in numbers of nuclear weapons.
- Myth #3: Missile defenses enhance deterrence.

Myth 1: Professor David Barash argues that “Even a brief examination ... reveals that deterrence is not remotely as compelling a principle as its reputation suggests.... Singling out nuclear weapons as the reason why the Cold War never became hot is somewhat like
saying that a junkyard car, without an engine or wheels, never sped off the lot only because no one turned the key. Logically speaking, there is no way to demonstrate that nuclear weapons kept the peace during the Cold War, or that they do so now. Perhaps peace prevailed between the two superpowers simply because they had no quarrel that justified fighting a terribly destructive war, even a conventional one. There is no evidence, for example, that the Soviet leadership ever contemplated trying to conquer western Europe, much less that it was restrained by the West’s nuclear arsenal.”

Barash goes on to name the numerous wars that have occurred despite the presence of nuclear weapons, often wars lost by the nation with nuclear weapons. And the closest we have come to a nuclear war was because of the presence or feared presence of nuclear weapons as in Cuba in 1962.130

Myth 2: Given the global climate changing capacity of small nuclear arsenals, the push for parity in numbers lacks any rational basis. Britain, France, and China all maintain arsenals near or under three hundred warheads. North Korea’s arsenal now may have reached twenty nuclear warheads.

Myth 3: U.S./NATO missile defense installations near the Russian border have pushed Russia to escalate their nuclear preparedness and nuclear threats. U.S. military experts have acknowledged that the missile shield would not deter the Russians, so they have designated Iran as the target for the missile interceptor installations.

Kim Jong-un cites deterrence against the United States as the reason North Korea had to develop its nuclear weapons program. “His father and grandfather tested weapons to make a political point. Mr. Kim, however, turned the program into North Korea’s version of the Manhattan Project, the race to develop the atomic bomb in the United States. He made the development of a nuclear arsenal one of the state’s top priorities, on equal footing with economic
development. Only with a nuclear deterrent, he argued, would the nation be secure enough to focus on growth.”\textsuperscript{131}
Chapter 5

The Cold War heats up: Now 2½ minutes to midnight

“It was a colossal failure of imagination not to see where this was leading.”
— William Perry, referring to the nuclear arms race in the 1970s and beyond.

In 1947 the Bulletin of the Atomic Scientists (BAS) introduced the “Doomsday Clock” to represent the threat that nuclear weapons pose to human civilization. The clock compresses the 2.4-million-year-span of human history into a 24-hour clock. Civilization ends at midnight.

In 1953, as the United States and the Soviet Union tested hydrogen bombs, BAS set the Doomsday Clock to 2 minutes to midnight.
Tensions eased to 12 minutes to midnight in 1963 with the Partial Nuclear Test Ban Treaty. In 1984 BAS advanced the Clock to 3 minutes to midnight as the U.S-U.S.S.R. arms race culminated in 65,000 nuclear weapons ready for use. With the collapse of the Soviet Union in 1991 BAS moved the Clock hands backward to 17 minutes before midnight.

The collapse of America's superpower adversary was an historic opportunity for the U.S. and NATO allies to offer aid to the new Russia as its economy went into free-fall. That opportunity was largely missed when the West insisted on neoliberal privatization policies instead of a Marshall Plan. The common people of the former USSR were destitute. Russian oligarchs and Communist Party leaders bought up state-owned properties in a fire sale with apparent indifference to the public suffering. President Putin later blamed the severe economic depression on Western economic policies and the flailing movement for Russian democracy.

Putin consolidated his political power as “the new Tsar” by focusing Russian security fears on NATO expansion into former Soviet territories, nuclear weapons within easy range of Russia in five NATO countries, and U.S./NATO missile defense capabilities in Europe.

The immediate danger of nuclear confrontation between superpowers diminished dramatically with the weakening of the former Soviet Union. Observers gave a sigh of relief and BAS scientists reset of the Doomsday Clock to 17 minutes to midnight, the greatest reprieve since the Clock was created in 1947.134
That reprieve ended abruptly on September 11, 2001 with the attacks on the World Trade Center and Pentagon. Anti-Communist Cold Warriors reclaimed positions of dominance over U.S. military policy. In 2002, the George W. Bush administration withdrew the U.S. from the Anti-Ballistic Missile treaty, ending major nuclear arms control discussions with Russia. Although the Moscow Treaty of 2003 and the NewSTART treaty of 2010 decreased the allowable number of warheads and delivery systems, still the lethality and usability of the two arsenals grew.

**Doomsday Clock now at 2½ minutes to midnight.** Since 1991 the Doomsday Clock has moved steadily toward midnight. In 2015, due to stalled nuclear weapons reduction and inaction to reverse climate change, the BAS moved the clock to 3 minutes to midnight. In January 2017 they moved it to 2½ minutes to midnight. Rachel Bronson, executive director and publisher, *Bulletin of the Atomic Scientists*, explained their decision:

> As we marked the 70th anniversary of the Doomsday Clock, this year’s Clock deliberations felt more urgent than usual. In addition to the existential threats posed by nuclear weapons and climate change, new global realities emerged, as trusted sources of information came under attack, fake news was on the rise, and words were used by a President-elect of the United States in cavalier and often reckless ways to address the twin threats of nuclear weapons and climate change.  

**Here’s the recent history in more detail.**
**June 2015 - Tensions with Russia escalate in Ukraine.** In 2014 Vladimir Putin sent Russian troops to support ethnic Russian separatists in Crimea (annexed by Russia in the 18th century) as they fought to return Crimea to Russia. The U.S. and NATO saw the Russian invasion as a treaty violation, and an action confirming fears that Russia had expansionist objectives in Europe. In response, the U.S./NATO alliance supported Ukrainian troops fighting to maintain an independent, undivided Ukraine. This proxy war exacerbated tensions between Russia and the U.S.

**“New U.S. Atomic Weapons to Be Stationed in Germany”**

In September 2015 this announcement on Germany’s ZDF public television network caused an uproar of protest in Germany. Nonetheless, Chancellor Angela Merkel accepted the decision. Since 2005 the U.S. had deployed in five NATO countries from Turkey to Germany an estimated 180 U.S. B-61 nuclear earth penetrating “dial-a-bombs” with yields adjustable from 0.3 to 340 kilotons. New plans called for 20 upgraded B-61-12 adjustable yield nuclear bombs on German aircraft under U.S./NATO command beginning in 2020. The B61-12 is an aircraft-launched nuclear gravity bomb with an enhanced guidance tail that allows remote in-flight accuracy adjustments. “The maximum destructive potential of the B61-12 against underground targets is equivalent to the capability of a surface-burst weapon with a yield of 750 kt [kilotons] to 1,250 kt.”
A B61 bomb trainer is loaded onto an F-16 somewhere in Europe, probably at Aviano Air Base in Italy. Some Eastern European NATO allies argue that the nuclear weapons provide important reassurance, but request deployment of additional non-nuclear assets to deter Russia.  

Here’s a highly informative CNN news clip on the Russian reaction to the German B61-12 announcement  [https://youtu.be/pBE37YROzrI](https://youtu.be/pBE37YROzrI)

Here’s Charlie Rose’s intriguing 2015 interview with President Putin  [https://youtu.be/r8k2pWbCjrw](https://youtu.be/r8k2pWbCjrw) ("Putin wants influence, not territory")

World Wars I and II, including the Nazi Holocaust.

[HISTORY FROM THE BUSINESS INSIDER IS A SEPTEMBER 2014 MAP SHOWING THE PLACEMENT OF RUSSIAN AND NATO NUCLEAR WEAPONS WITH THE EURASIAN ECONOMIC UNION IN PINK AND NATO COUNTRIES IN BLUE TO SEE ITS DETAILS.](#)  

Historically the prohibition against any use of nuclear weapons derives from a widespread understanding that the use of a nuclear weapon cannot be justified under any code of ethics or just war theory, because nuclear weapons are not “proportionate” to any conceivable provocation, and their use invites escalation to levels of destruction that threaten life on Earth. Deployment of small yield
“tactical” nuclear weapons like the B61 bomb invites military planners and commanders to breach this firewall in hopes that retaliation will be limited.

Former STRATCOM Commander and Air Force 4-Star General Lee Butler, commander of all U.S. long-range nuclear forces in the early 1990’s, wrote in *Death by Deterrence* in 2002 that use of a nuclear weapon by the United States was “inconceivable”:

What could possibly justify our resort to the very means we properly abhor and condemn? Who can imagine our joining in shattering the precedent of
non-use that has held for over fifty years? How could America's irreplaceable role as leader of the campaign against nuclear proliferation ever be re-justified? What target would warrant such retaliation? Would we hold an entire society accountable for the decision of a single demented leader? How would the physical effects of the nuclear explosion be contained, not to mention the political and moral consequences? In a singular act we would martyr our enemy, alienate our friends, give comfort to the non-declared nuclear states and impetus to states who seek such weapons covertly. In short, such a response on the part of the United States is inconceivable. It would irretrievably diminish our priceless stature as a nation noble in aspiration and responsible in conduct, even in the face of extreme provocation.142

November 27, 2015 — Shortened Russian launch times
Bruce Blair, a former missile launch officer and now a research scholar at the Program on Science and Global Security at Princeton and the co-founder of Global Zero writes:

“Russia has shortened the launch time from what it was during the Cold War. Today, top military command posts in the Moscow area can bypass the entire human chain of command and directly fire by remote control rockets in silos and on trucks as far away as Siberia in only 20 seconds.”143
January 2018 — The 2018 Nuclear Posture Review will be the Trump administration’s first official decision on nuclear weapons. Initial reports include the increased reliance on tactical nuclear weapons, and “parity” with Russia’s threatened drone submarine. The challenge for us is to recognize the strategy game going on. Russia’s weaker position drives Putin to make threats he believes will counter U.S.NATO military superiority. The total disregard for global consequences on both sides is insane.

During the first phase of the Cold War (1945-1991) the logic for building and deploying nuclear weapons was a global game of chicken, and the U.S. war plan was for all-out war against Russia and China. Any nation that attacked the U.S., the Soviet Union, the North Atlantic Treaty Organization (NATO), or Warsaw Pact allies would be committing suicide, because even if military targets and cities were destroyed, mechanisms were in place to decimate the attacker’s entire country or continent in retaliation. Mutual Assured Destruction, the promised threat at the very heartlessness of nuclear deterrence, is a suicide pact, developed by powerful nations beginning with the United States to repel aggression by guaranteeing massive retaliatory slaughter of the aggressors’ civilian as well as military populations.

This was President Reagan’s stated reason to call for ballistic missile defense capabilities: to have an answer to possible incoming nuclear missiles that could incinerate American cities and not be dependent on massive retaliation alone.¹⁴⁴

The problem is that missile defenses are highly vulnerable to offensive strategies that overwhelm the interceptor missiles, and thus
they fuel a boundless arms race of offensive and defensive weaponry. This was the understanding behind the 1972 Anti-ballistic Missile Treaty (ABM), which the U.S. exited in 2002.

William Perry again:

“Shortly after President Reagan’s speech [March 24, 1983] that inspired the Strategic Defense Initiative, I was invited by the Washington Post to write an op-ed debating the merits of SDI in which I criticized his proposal, pointing out that ‘If we spent two decades developing, testing, and then deploying a system to defeat the Soviet ICBM [land-based] and SLBM [submarine-based] forces, they certainly have ample time to consider, develop, and deploy a variety of countermeasures.’ In a later scientific journal article I argued that in SDI, what is feasible is not desirable, and what is desirable is not feasible.’… The SDI would be vulnerable to what chess players call ‘the fallacy of the last move.’”

“Star Wars” and Russia’s answer to European missile defense In November 2015 Russian television, in timing which the U.S. Central Intelligence Agency believes was intentional, revealed Russian plans for a nuclear-powered, nuclear-armed drone submarine to be operational in 2020. The program was broadcasting President Putin’s response to strengthened U.S./NATO missile defense capabilities deployed near Russia’s borders when TV cameras caught a glimpse of plans for a drone nuclear submarine capable of delivering nuclear weapons. This drone reportedly would have a 6,200 mile range
underwater.\textsuperscript{146} This “leak” coincided with repeated comments by Putin about Russian unease with both U.S. missile defenses and U.S. Prompt Global Strike capabilities with non-nuclear forces.\textsuperscript{147} 2020 is the same year the U.S. plans to deploy the B61-12 upgrade in Europe.\textsuperscript{148} Coincidence?

William Perry, commenting in 2013:

“The big problem in moving forward with Russia on nuclear arms is not the human rights issue, but concern over our Ballistic Missile Defense (BMD) deployment in Europe. We either have to concede some on that or accept that we’re not going to make any progress with Russia on nuclear arms reductions. We need to find a way to deal with the BMD problem in Europe so that it doesn’t scuttle our attempts to move forward on nuclear arms.”\textsuperscript{149}

The so-called “logic” of nuclear deterrence is still with us, and now, in what might be called Phase 2 of the Cold War, it is back with a lower threshold that makes it easier for planners and commanders to believe that nuclear weapons can be used to win some advantage. We experienced brinksmanship negotiations during the Cuban Missile Crisis in 1962. Will we be so lucky again, now that U.S. and North Korean leaders are trading insults and nuclear threats? Nuclear nations rely on deterring enemies by threatening to unleash massive nuclear retaliation. This would bring on the real apocalypse. Do we humans care enough about the survival of our planet to focus on meeting each other?
The fallacy of nuclear parity

A major argument for rebuilding the U.S. nuclear weapons complex is the need to match the number and variety of nuclear weapons held by major adversaries, especially Russia. The fallacy of parity lies in failure to acknowledge climate research in the 1980’s by both Russian and American scientists that predicted “nuclear winter,” the general devastation of life, along with worldwide darkness and extreme cold, that climate models showed would result from a global dust cloud screening out sunlight following large-scale nuclear detonations,150 and later work in 2006 that modeled a “small” nuclear war with only 100 Hiroshima-sized warheads targeted on cities, well less than one percent of the world’s current arsenals. India and Pakistan were modeled by senior U.S. climate scientists to fight such a war, given their atomic arsenals and their longstanding hostilities with military and terrorist clashes. The climate models currently in use to monitor global warming predict such a war could kill 200 million people by direct effects of blast, heat, and radiation and up to 2 billion people once agricultural impacts bring on starvation over the following decade.151 This global climate response to relatively few regional nuclear explosions on cities underpins the Humanitarian Impacts of Nuclear Weapons campaign that drove the campaign to ban nuclear weapons and led the United Nations non-nuclear states to draft and adopt the Treaty on the Prohibition of Nuclear Weapons (September 2017). Ratification by the 50 signing countries could occur by the end of 2018.152 A single Trident submarine armed only with the warheads allowed under the 2010 NewSTART agreement with Russia could launch 2500 Hiroshima equivalents. That’s 25 times the small war just described that could leave 2 billion starved to death. Yet the parity
argument is being used to justify building twelve new Trident warships, raising the fleet firepower to 30,000 Hiroshimas with no heed to the global climate catastrophe this fleet is built to inflict on all of us.

Nuclear weapon states are rebuilding their capacities to slaughter or starve out billions of people and other living things. The driving force behind this renewal of nuclear threat comes in major measure from American military policy and deployments. Our Global Strike Force and ballistic missile defense forces on the peripheries of Russia and China beg a reciprocal upgrade of their own nuclear and conventional forces. The other nuclear weapon states are in similar contests leading to modernization of every national nuclear arsenal and the projection of nuclear threats for another century.

**Russian Jet Buzzes US Navy Spy Plane Over Black Sea**

Over the past 18 months the European Leadership Network logged more than 60 incidents of near confrontations between Russian military and U.S./NATO or civilian craft, including near collisions between Russian fighter jets and civilian airliners in international air space over Europe, and between U.S. and Russian jets over Syria.

By way of contrast, Ian Kearns in his article on “Avoiding War in Europe” (November 2015) notes that the U.S. and China have an explicit Memorandum of Understanding (MOU) to avoid these confrontations in the South China Sea or elsewhere. The MOU “sets out the principles and procedures for communication during encounters between military vessels and aircraft and requires each side to give
timely hazard warnings if military exercises and live weapons firing are to take place in an area where the military vessels and aircraft of the other may be operational.”

He cites the resistance among NATO allies to a similar MOU between U.S./NATO and Russian military leaders. He concludes:

“Looking at the current absence of dialogue between NATO and Russia and at arguments against negotiating a new instrument to manage close military encounters, one is struck by what appears to be nuclear amnesia, nuclear complacency, or both.”

Perhaps President Obama was listening. In December 2015 he and President Putin met at the United Nations. The handshake was formal. The words were contentious. Yet this is how dialogue could start.

**Cultural rifts.** *Our challenge in 2018 is to heal the cultural rifts that threaten civilization.*

As a psychiatrist I am especially mindful of emotional trauma and its impact on how people see the world. The severe traumas experienced by huge populations absolutely impact the politics and decisions made by those who ascend to national leadership. Adolf Hitler’s childhood traumas figure prominently in understanding his megalomania and xenophobia. Alice Miller wrote about Hitler as a child being locked in the meat closet with the corpses of freshly dead cattle hanging up to be cut by his father, the butcher. The German
population after World War I was desperately poor and isolated by a punitive peace settlement, ripe for a rage-filled charismatic leader.157

Watch this astonishing 8-minute video clip of a 10-year-old Palestinian boy whose playmates were killed right next to him by an Israeli drone missile, and ask the question: What kind of national leader will this boy turn into, if he doesn’t kill himself first?


(A similar video could have been made following the U.S. “Shock and Awe” assault on Iraq, perhaps predicting the rise of ISIS.)

We know that the initial plans for use of nuclear weapons were created by generals, scientists, and civilian leaders who led the campaigns to win World War II. These men accepted the slaughter of millions of innocent civilians in order to win the war. Daniel Ellsberg and General Butler both speak to the cultural constraints on U.S. planners and military personnel living inside national security establishments. Who knows what traumas these men and their counterparts in Russia, China, North Korea and elsewhere have lived through before planning for use of modern nuclear weapons?

We live in a multicultural, multi-centric world. Our Declaration of Independence defines for the world what freedom means. It is time for the U.S. to lead the way to a cooperative global security that prevents a return to the slaughters of the 20th century. We must understand the traumas that dominate the decision-making of our own leaders and the leaders of our “frenemies” (a New York Times neologism that refers to adversaries with whom we have common
interests). Serious emotional traumas predispose to exaggerated mistrust or outright paranoia, over-reaction, diminished compassion, shortened life expectancies, all-or-nothing thinking, and impulsive actions and reactions. What is lost is empathy, patience, generosity, emotional savvy, creative problem solving, resilience, and understanding our frenemies’ fears and need for dignity.

The two nations/cultures most capable of ending life on Earth are Russia and the United States. China and India have key roles to play in creating cooperative global security. Today North Korea could conceivably bring on a nuclear war.

Vladimir Putin was five years old when his older brother died in the German siege of Leningrad and was later buried with over 400,000 others in a mass grave. Kim Jong-un grew up through the famine that followed the collapse of the Soviet Union and its financial support for the North Korean economy. Xi Jinping grew up during the Maoist years of the Great Leap Forward when perhaps 20 million Chinese peasants died of starvation. We in the United States have little experience to compare with these catastrophes in the lives of other nations’ leaders.

The summary “elevator speech”: The U.S. from the beginning has driven the global nuclear arms race. The Eisenhower retaliatory war plan called for wiping out the Soviet Union and China. The U.S. nuclear weapons have been designed with first-strike capability. Current plans to modernize/upgrade our entire nuclear weapons complex are forcing Russia and other nuclear nations to rebuild, threatening wholesale destruction of life on earth. We, the U.S., are the ones to change course. We must lead by respecting our enemies'
fundamental concerns, understanding their perspectives and history, and finding common ground in our common humanity. (See Appendix F)

Chapter 6
Voices for abolition

"If we have a slim chance of survival, it lies in the possibility to get rid of wars. Our only hope is in getting the facts of our results before the people."
— Edward Teller in answering the question of conscience about creating the atomic and hydrogen bombs

The campaign to abolish slavery may be our best model for a campaign to abolish nuclear weapons. Nuclear weapons are lethally enmeshed in the culture, just as slavery was. Like slavery, nuclear weapons are
driven by economic profitability. As with slavery, the continued existence of nuclear weapons depends on denial of heinous violence.

Slavery in the United States lasted over 300 years and took an estimated two to ten million lives\textsuperscript{17} before Article 13 of the U.S. Constitution was adopted in 1865 (Senate celebration above\textsuperscript{158} - see the movie \textit{Lincoln}). Three quarters of a million Americans died in the battle to abolish slavery and save the Union. The Civil War ended slavery’s legalized economic benefit, but the tolerance and promotion of racial violence continues. Despite efforts to redress pervasive injuries from institutional and personal racism, we have yet to eliminate its injustices.\textsuperscript{159} (Witness the continuing mark of racism on poorer health outcomes for African-American patients in U.S. emergency rooms,\textsuperscript{160} and the surfacing of white supremacy in the recent U.S. Presidential election.\textsuperscript{161})

Economic benefits that are still justified by “deterrence” will someday ring as hollow as justifications for slavery. Here is pre-Civil War correspondence between two slave owners:

“We both know that the mills of New England would shudder to a halt without our cotton. And I wonder how they would respond if we suddenly asked them to pay twice as much for raw cotton. That is what would happen if the abolitionists had their way.” \texttt{http://www.pbs.org/wnet/slavery/teachers/readings7.html}

\textbf{Deterrence, Jobs, Morality}
The truly heinous nature of nuclear weapons was revealed in July 1945 with the Trinity test, the first successful atomic explosion, and the scientists who developed the technology knew it. Oppenheimer, Szilard, and Teller all recognized the horror they were unleashing. Edward Teller is quoted in Richard Rhodes, *A History of the Atomic Bomb*:

“First of all let me say that I have no hope of clearing my conscience. The things we are working on are so terrible that no amount of protesting or fiddling with politics will save our souls. . .

“But I am not really convinced of your objections [to using the bomb]. I do not feel that there is any chance to outlaw any one weapon. If we have a slim chance of survival, it lies in the possibility to get rid of wars. The more decisive the weapon is the more surely it will be used in any real conflicts and no agreements will help.

“Our only hope is in getting the facts of our results before the people. This might help to convince everybody that the next war would be fatal. For this purpose actual combat-use might even be the best thing.”

(https://prezi.com/b92tcdsppowt/edward-teller/)
Rhodes again:

“To avert a vast, indefinite butchery,” Winston Churchill summarizes in his history of the Second World War, “to bring the war to an end, to give peace to the world, to lay healing hands upon its tortured peoples by a manifestation of overwhelming power at the cost of a few explosions, seemed, after all our toils and perils, a miracle of deliverance.”

There were only two nuclear weapons in the world in 1945. Who knows what Churchill would say about 65,000 nuclear weapons in 1986, or nearly 15,000 warheads in 2018, most of which are many times more powerful than the Hiroshima bomb, and a few of which unleash a thousand Hiroshimas within seconds.

*Our task in 2018 is to understand the importance of ending war before nuclear weapons wreck our chances for a peaceable global future. Heed these men whose lives were spent deciding their use.*

“*Ours is a world of nuclear giants and ethical infants.*”

— General Omar Bradley

He warned us right after World War II: “We know more about war than we know about peace, more about killing than we know about living.”
“We seek the total elimination one day of nuclear weapons from the face of the Earth.”
— President Ronald Reagan, Inauguration, 1985

“I can’t believe that this world can go on beyond our generation and on down to succeeding generations with this kind of weapon on both sides poised at each other without someday some fool or some maniac or some accident triggering the kind of war that is the end of the line for all of us.”
— May 16, 1983

“A nuclear war cannot be won and must never be fought. The only value in our two nations possessing nuclear weapons is to make sure they will never be used. But then would it not be better to do away with them entirely?”
— 1984 State of the Union

“It is my fervent goal and hope...that we will some day no longer have to rely on nuclear weapons to deter aggression and assure world peace. To that end the United States is now engaged in a serious and sustained effort to negotiate major reductions in levels of offensive nuclear weapons with the ultimate goal of eliminating these weapons from the face of the earth.”
— October 20, 1986
“My central arms control objective has been to reduce substantially, and ultimately to eliminate, nuclear weapons and rid the world of the nuclear threat. The prevention of the spread of nuclear explosives to additional countries is an indispensable part of our efforts to meet this objective. I intend to continue my pursuit of this goal with untiring determination and a profound sense of personal commitment.” - March 25, 1988 Message to Congress on the NPT

“The environment has been greatly damaged by the nuclear arms race.”
—President Mikhail Gorbachev

President Gorbachev learned from his own nuclear scientists and from IPPNW physicians about “nuclear winter,” the blocking out of the sun for months after an exchange of U.S. and Soviet nuclear weapons.

“Models made by Russian and American scientists showed that a nuclear war would result in a nuclear winter that would be extremely destructive to all life on Earth; the knowledge of that was a great stimulus to us, to people of honor and morality, to act in that situation.” (http://www.simulconference.com/clients/sowf/interviews/interview1.html)
“Deterrence invokes death on a scale rivaling the power of the creator” — General George Lee Butler challenges the very notion of deterrence he once believed in and led.

“This abiding faith in nuclear weapons was inspired and is sustained by a catechism instilled over many decades by a priesthood which speaks with great assurance and authority. I was for many years among the most avid of these keepers of the faith in nuclear weapons.

“These are powerful beliefs. They cannot be lightly dismissed.... I professed them and I put them into operational practice. And now it is my burden to declare with all of the conviction I can muster that in my judgement they served us extremely ill. They account for the most severe risks and most extravagant costs of the U.S.-Soviet confrontation. They intensified and prolonged an already acute ideological animosity. They spawned successive generations of new and more destructive nuclear devices and delivery systems. They gave rise to mammoth bureaucracies with gargantuan appetites and global agendas. They incited primal emotions, spurred zealotry and demagoguery, and
set in motion forces of ungovernable scope and power. Most importantly, these enduring beliefs, and the fears that underlie them, perpetuate cold-war policies and practices that make no strategic sense. [emphasis added] They continue to entail enormous costs and expose all humankind to unconscionable dangers. I find that intolerable. Thus I cannot stay silent. I know too much of these matters: the frailties, the flaws, the failures of policy and practice.163

“The gravest security threat of our time is the danger of a nuclear weapon being detonated in one of our cities.” —Former Defense Secretary William Perry

“It was a colossal failure of imagination not to see where this was leading.”
— referring to the arms buildup in the 1980s and 90s

“... the Cuban Missile Crisis was a signature event in the history of the nuclear era. Its most unforgettable and shattering aspect is the historic enormity of what was at stake: [it] arguably took us to the brink of a nuclear holocaust.... U.S. decision-makers’ knowledge was imperfect, and sometimes just wrong.”
Moral leaders speak out

“No minimally morally justifiable possession of nuclear weapons” — Pope Francis

The Catholic Church hierarchy has hedged on the issue of deterrence for decades, as have many other mainstream religious leaders, allowing for deterrent use of nuclear weapons. Not anymore.

“Today there is no more argument, not even the argument of deterrence used during the Cold War, that could ‘minimally morally justify’ the possession of nuclear weapons. The ‘peace of a sort’ that is supposed to justify nuclear deterrence is specious and illusory.”

“International relations cannot be held captive to military force, mutual intimidation, and the parading of stockpiles of arms. Weapons of mass destruction, particularly nuclear weapons, create nothing but a false sense of security. They cannot constitute the basis for peaceful coexistence between members of the human family, which must rather be inspired by an ethics of solidarity.”

“Nuclear weapons are an obscenity.” — Archbishop Desmond Tutu
Archbishop Tutu, architect of the South African Truth and Reconciliation Commission:

“[Nuclear weapons] are the very antithesis of humanity, of goodness in this world. What security do they help establish? What kind of world community are we actually seeking to build when nations possess and threaten to use arms that can wipe all of humankind off the globe in an instant?

“Unimaginative leaders continue to believe that eliminating this ultimate menace is impossible – a hopeless, utopian goal. But how often have we heard politicians say “this will never happen over my dead body”, and then it happens because people rise up and take action to make it happen? Politicians should have learned by now never to say never!”

Our task is to get the attention of policymakers, military leaders, and the public in this age of heat-of-the-sun missile-delivered incinerators of cities.

What might a retaliatory nuclear strike look like? U.S. nuclear weapons most likely to be used are those on bombers or submarines, many times more devastating than the Hiroshima or Nagasaki atomic bombs. Let’s imagine that Kim Jong-un of North Korea decided to drop an atomic bomb on Seoul, South Korea. How would the U.S. respond? Would we drop a 100 kiloton hydrogen bomb on
Pyongyang or their nuclear facility 90 kilometers north of Pyongyang and 90 kilometers east of the Chinese border, killing perhaps a hundred thousand civilians? What reactions could we expect from allies? From other countries less favorable to U.S. interests? What would stop suicidal jihadists or hostile governments from following suit? What happens when U.S. deterrence policy breaches the firewall and thereby opens the door to others to use nuclear weapons?

Here’s the North Korean atomic bomb scenario that climate scientists Toon and Robock have been researching since 2006, assuming escalation after the first bombs are dropped. This scenario assumes the equivalent of 100 atomic bombs or perhaps 20 hydrogen bombs detonated on cities:  

It’s winter, 2018, in Iowa, five months after the last of the nuclear bombs detonated across megacities in northeast Asia, from Seoul to Tokyo to Shanghai. Radioactive fallout was the initial concern, but now something else is going awry: the weather.

American farmers accustomed to snow and cold during the winter would be forgiven for mistaking their corn and wheat fields for the Arctic tundra, as temperatures dip well below zero at night, and barely recover above 10 degrees Fahrenheit during the day, under a milky, leaden sky.

Forecasters say the corn and wheat harvest may be significantly shortened this year, and for the next several years. In fact, fears of a famine on an international scale are settling in.
This is what our world could look like just a few months to years after a regional nuclear war breaks out on the Korean Peninsula and spreads to include China and possibly Russia.

Whether from a deliberate strategy or a terrifying miscalculation, such a war could trigger a global climate catastrophe, experts warn, that is not being factored into leaders’ planning.

Such a war could cause the planet to cool by up to ...18 degrees Fahrenheit... “It is alarming that there are people who don’t know this who are in charge of our nuclear arsenal,” [climate scientist Brian Toon told this reporter.]

It seems likely that the upgraded B-61-12 bomb has been another push for North Korea to develop their nuclear capabilities.

How much do we really know about the mindset of Vladimir Putin, Kim Jong-un, or others who could authorize a nuclear attack against us? Have we alienated the Russians by our privatization demands, minimal response to their economic free-fall, and disrespect for their national pride? How do we calculate the consequences erupting from use of a single nuclear weapon? If we ever get into a nuclear confrontation with Russia or China the numbers of warheads available would exceed 600 hydrogen bombs, easily 100 times the explosive force used in the 2006 climate model of a South Asian war. What would the Earth look like? And 600 bombs is still only 1/20th of the hydrogen bombs in the world’s arsenals.
A brief note of hope: Former U.S. Defense Secretary William Perry, who has been outspoken about reducing U.S. reliance on nuclear weapons, met with current Defense Secretary Jim Mattis on June 14, 2017, and later tweeted, "Very wide ranging, candid, and productive discussion with Sec Def Mattis at the Pentagon today." \(^{168}\)

**"It’s the economy, stupid!"** Americans seem to vote first and foremost for what is good for our pocketbooks. The government provides for huge military expenditures in every Congressional district, and we elect officials who keep that money flowing.

Commander Mark Olson of Naval Base Kitsap-Bangor in 2009 brought six senior officers with him to meet with a dozen of us from the Ground Zero Center for Nonviolent Action in a bridging conversation over GZCNA’s persistent peace vigils and nonviolent direct action. He and I found much in common - our fathers were both Navy medical officers during World War II, and we both desire to serve the best interests of the United States. Commander Olson shared a slide presentation that included environmental projects on the base - logging with horses, a deer sanctuary, shellfish restoration with the Squamish tribe - and the information that the base brings $3.5 billion to Washington State each year in contracts and salaries. In 1989 Navy brass and guests welcomed the U.S.S. Pennsylvania on its arrival in Hood Canal, Washington,\(^{169}\) celebrating the premier doomsday machine on planet Earth.

There are major military installations in every one of the 435 Congressional districts, and these installations hire private
contractors, some of whom are totally dependent on U.S. government funding, so not really private companies at all.

The U.S. military, which is exempt under Kyoto climate protocols, is the largest consumer of fossil fuels in the U.S., employs a huge global workforce, and is expanding some of its fossil fuel consuming deployments (locally NAS Oak Harbor will nearly double its Boeing EA-18G Growler fleet.) On the upside for military reasons the US military is forging ahead with renewal energy despite Trump administration abandonment of renewable energy programs.\textsuperscript{171}

Competition for military contracts to rebuild the U.S. nuclear weapon complex involves hundreds of billions of dollars. The U.S. Government Accounting Office (GAO) estimates it will cost $1.2 trillion over the next thirty years to replace the current Trident fleet of 14 submarine warships with 12 upgraded ones, replace the bomber fleet, upgrade the land-based missile complexes, and upgrade command and control. Congress has already passed legislation that allows the Navy a separate $60 million fund to accommodate the overruns expected from rebuilding the Trident fleet.\textsuperscript{172} The American Enterprise Institute, influential business-oriented think tank, writes about this extra fund (which Congress has not yet funded):

\textbf{“Congress’ National Sea-Based Deterrence Fund is just an accounting gimmick—even in the words of Pentagon officials. The real effort to buy the boats smarter and with better contracting tools that favor the government customer and save taxpayer money is sound. The secret no one’s talking about}
is that this can be done without the existence of any “special fund.”

One Trident submarine currently can deploy 2500 Hiroshima equivalents in hydrogen bombs. How do we justify this mind-boggling overkill when use of ONE such warhead could create a global crisis and risk nuclear retaliation? How do we justify a trillion dollar investment in weapons of mass incineration? What real human benefits are we forfeiting by this diversion of our moral, scientific, and economic resources away from strengthening cooperative security, citizen diplomacy, scientific, technical, and economic problem solving? We live in a multipolar world where trust must be built through cooperative initiatives that address the fundamental needs of each country and culture, and of our shared environs.

We can do this. We must do this. The alternative scenarios for military “solutions” continue to risk global catastrophe. We need a new paradigm that recognizes that the problems facing life on Earth require global cooperation.
The United States holds the key to the nuclear arms race. We are still trapped in the “logic” of deterrence, which sets no limits on armaments, and relies on threats of omnicide. At its core, deterrence theory is never satisfied that one’s armaments are enough. We are locked in a dance with other nationalist military establishments still threatening each other with Self-Assured Destruction (SAD). Ending the dance will require dedicated and unrelenting outreach to build confidence in Mutual Assured Security and a Globally Assured Future.
How We Get Out:

The United States must lead the way through intensive investment in military, diplomatic, and civilian conversations with potential adversaries and non-state actors seeking nuclear weapons. Actions begin with numbers 1, 2, and 3 below, and work toward 4 through 11.

1. Declare **No First Use of nuclear weapons.** No use against non-nuclear aggression.

2. **De-alert** the deployed nuclear arsenal. Take the warheads off the launchers.

3. **End Launch-on-warning.** We cannot risk allowing a rogue attack or false weather event to start a nuclear war. This will require trust-building between adversaries to ease back on the speed of retaliatory plans.

4. **Safeguard fissile materials** (bomb-grade uranium and plutonium). Pursue robust international controls over fissile materials in all countries that have nuclear power plants and/or nuclear research facilities.

5. **Abandon Mutual Assured Destruction.** Adopt a non-nuclear cooperative global security system.

6. **Stop “modernization” of the U.S. nuclear weapons complex.** This is a trillion dollar welfare program for the military-industrial complex. Building weapons of mass murder is not a legitimate jobs program, and it fuels a global
nuclear arms race. Stop the LRSO [what do these letters stand for?] and cut back the Trident rebuild. Defense contractors gain 1,000 to 1 on their political investments [what does this mean?] in defense contracts from Congress.  

7. **Join the UN Treaty on the Prohibition of Nuclear Weapons (TPNW).** If Congress needs a step-down, military experts have calculated that 300 warheads is enough to destroy any attacker. (300 is still a criminally mind-numbing level of destructive capacity!)

8. **Invest in global surveillance agreements** and robust facilities for detecting nuclear explosions.

9. **Hold high level meetings with every nuclear capable country,** especially Russia. Foster familiarity and understanding at military, economic, and diplomatic seniority levels commensurate with the size of the risks.

10. **Phase out jobs contributing to the design, manufacture or deployment of weapons of mass destruction.** Where possible convert them to living wage jobs in the non-nuclear weapons economy.

11. **Focus military and diplomatic policies on shared security** arrangements that protect a global inalienable right to life, liberty, and the pursuit of happiness. Restore and protect a beautiful and sustainable world for future generations.
(intentionally blank page)
Chapter 8

*What we, Dear Reader,*

*can do*

---

America legally enforced three centuries of slavery built on kidnapping, imprisonment, torture, lynching, and flagrant prejudice before this abominable policy was abolished.

Nuclear weapons can exceed that slaughter and suffering within minutes. Hundreds of thousands have already died or suffered the ravages of radiation poisoning.

We can face unconscionable plans for global suicide and say,*

*Not in my America, you don’t!*  

*We can:*

1. **Understand what modern nuclear weapons do** (Professor Postol’s slides in Chapter 2). Understand the environmental and human devastation from exploding even one modern warhead in attack or retaliation.

2. **Support organizations focused on nuclear disarmament** with your attention, money, and time. There are creative groups doing amazing work near you and around the world. (See Chapter 9)

3. **Support the United Nations Treaty on the Prohibition of Nuclear Weapons.** These Weapons of Mass Destruction violate humanitarian law and any notion of “just war.” Help to amplify the international call to ban them. Legal bans already in force outlaw chemical and biological weapons and land-mines. Nuclear weapons must be next. Call on the U.S. and other nuclear nations to join this treaty.

4. **Challenge deterrence.** Ask those who still believe in deterrence to spell out what the consequences of retaliation with a modern warhead would be. Once the firewall between conventional and nuclear armaments is breached, deterrence has failed, and the doctrine of retaliation and Self-Assured Destruction takes over. Deterrence relies on adversaries being sufficiently afraid of retaliation that they will not attack. But what do we really know about our adversaries’ beliefs, motives, mental stability, or criteria for attacking us? What about accidental nuclear explosions? Against whom does one retaliate?
5. **Challenge the double standard.** World leaders understand the impact of a single nuclear warhead. That’s why we have seen nations come together to guarantee that Iran will not build even one. The NewSTART treaty allows Russia and the U.S. 1550 nuclear warheads each, and most are many times more powerful than the atomic bomb. This double standard will not keep the peace indefinitely. North Korea has already succeeded in becoming a nuclear nation.

6. **Advocate for global safeguards over uranium and plutonium stockpiles** to minimize opportunities for bomb-usable nuclear materials to be diverted for hostile use.

7. **Contact your representative decision-makers.** Congress decides U.S. budget priorities, and the Senate ratifies treaties. The U.S. commitment to nuclear weapons is a driving force in the global nuclear arms race. Cities are likely targets in every nuclear war scenario. Diversion of national resources to unusable weapons of mass destruction undermines culture-enhancing job possibilities, access to education and healthcare, and domestic and international efforts at violence prevention. Get involved. See contacts, next chapter.

8. **Make it political.** Work for candidates, especially Senators and Congresspeople, who pledge to eliminate these draconian weapons, to work for cooperative security measures, and to keep our government focused on goals that serve restoration of a sustainable planet home. Cities, ports, and military installations are prime targets for MAD
retaliation: try city council resolutions - ballot initiatives at local and state levels - professional society resolutions - creative initiatives to highlight the present and growing danger (bus ads, flash mobs, Facebook, Twitter, Instagram).

9. **Talk it up. Bring it up with friends and family.** Bring it to the groups you belong to: religious, social, athletic, business, professional, and advocacy groups. These weapon systems hang over all of us like swords of Damocles. If the firewall against nuclear weapons is breached, the world could end in less time than you have just spent reading this book. We can speak out now to keep this cataclysm from happening.

10. **There is No Cure for Nuclear War, Only Prevention.**

I close with Daniel Ellsberg’s “bottom line” regarding the state of the world’s current risks for nuclear war:

The bottom Line is that arrangements made in Russia and the United States have long made it highly likely, if not virtually certain, that a single Hiroshima-type fission weapon exploding on either Washington or Moscow — whether deliberate or the result of mistaken attack (as in *Fail Safe* or *Dr. Strangelove*) or as a result of an independent terrorist action — would lead to the end of human civilization (and most other species). That has been, and remains, the inevitable result of maintaining forces on both sides that are capable of causing nuclear winter, and at the same time are poised to attack each other’s capital and control system, in response to
fallible warnings, in the delusion that such an attack will limit
damage to the homeland, compared with the consequences of
waiting for the actual explosions to occur on more than one
target.

Here, then, is the actual situation that has prevailed for
more than half a century. Each side prepares and actually
intends to attack the other’s ‘military nervous system,’
command and control, especially its head and brain, the
national command headquarters, in the first wave of a general
war, however it originates. This has become the only hope of
preempting and paralyzing the other’s retaliatory capability in
such a way as to avoid total devastation; it is what must above
all be deterred by the opponent. But in fact it, too, is
thoroughly suicidal unless the other side has failed to delegate
authority well below the highest levels.177 [He shares evidence
that both Russia and the United States have delegated below.]
Chapter 9

Resources

The UN Treaty on the Prohibition of Nuclear Weapons has been signed by 50 countries as of November 2017. The treaty requires 50 countries to ratify the treaty for it to become law for those
who ratify it. It includes provisions for nuclear weapon states to join the treaty with timelines to elimination of nuclear weapons to be negotiated with the governing authorities of the treaty.

(https://www.un.org/disarmament/ptnw/)

The Austrian Pledge to Ban Nuclear Weapons


“Austria calls on all states parties to the NPT to renew their commitment to the urgent and full implementation of existing obligations under Article VI, and to this end, to identify and pursue effective measures to fill the legal gap for the prohibition and elimination of nuclear weapons and Austria pledges to cooperate with all stakeholders to achieve this goal. Austria calls on all nuclear weapons possessor states to take concrete interim measures to reduce the risk of nuclear weapon detonations, including reducing the operational status of nuclear weapons and moving nuclear weapons away from deployment into storage, diminishing the role of nuclear weapons in military doctrines and rapid reductions of all types of nuclear weapons, Austria pledges to cooperate with all relevant stakeholders, States, international organizations, the International Red Cross and Red Crescent Movements, parliamentarians and civil society, in efforts to stigmatize, prohibit and eliminate nuclear weapons in light of their unacceptable humanitarian consequences and associated risks.”

118
Nuclear Abolition Initiatives

The international Campaign to Abolish Nuclear Weapons (ICAN)  

“I can imagine a world without nuclear weapons”

Nobel Peace Prize 2017  

ICAN was launched in a dozen countries in 2007, including at a meeting of parties to the nuclear Non-Proliferation Treaty (NPT) in Austria, where they presented an updated model Nuclear Weapons Convention to representatives of more than 180 nations. Since its inception, ICAN has developed strategies and strengthened networking between national and international campaigners, broadening the abolition movement and building understanding of why a Nuclear Weapons Convention is the most realistic path to zero.

To date, more than 500 organizations in 140 countries have joined the campaign, with International Physicians for the Prevention of Nuclear War and Mayors for Peace among the first partners. Notable figures have also come on board as
ICAN ambassadors — including the Dalai Lama, anti-apartheid leader Desmond Tutu, Nobel Peace Prize-winning anti-landmines advocate Jody Williams, jazz legend Herbie Hancock and cricket champion Ian Chappell. With their support, we have taken our message to new constituencies.

Reframing the nuclear weapons debate:


Here is a 2-page summary: [http://www.psr.org/assets/pdfs/humanitarian-impact-of.pdf](http://www.psr.org/assets/pdfs/humanitarian-impact-of.pdf)

The Nobel Peace Prize 2017 was awarded to International Campaign to Abolish Nuclear Weapons (ICAN) "for its work to draw attention to the catastrophic humanitarian consequences of any use of nuclear weapons and for its ground-breaking efforts to achieve a treaty-based prohibition of such weapons”.[178]

Global Zero [http://www.globalzero.org](http://www.globalzero.org)

Global Zero is the international movement for the elimination of all nuclear weapons. It has grown to
300 leaders and more than 450,000 citizens worldwide, developed a step-by-step plan to eliminate nuclear weapons, built an international student movement with 100 campus chapters in ten countries, and produced an acclaimed documentary film, **Countdown to Zero**. President Barack Obama, President Dmitry Medvedev, Prime Minister David Cameron, Prime Minister Manmohan Singh, Prime Minister Yoshihiko Noda and UN Secretary-General Ban Ki-moon have endorsed Global Zero, with Obama declaring, “Global Zero will always have a partner in me and my administration.” His Secretary of Defense Chuck Hagel belonged to Global Zero and co-authored the report below. Leading newspapers have backed Global Zero’s plan, the Financial Times concluding that, “Global Zero’s plan has shown the direction to be travelled; the world’s leaders must now start moving.”


“No sensible argument has been put forward for using nuclear weapons to solve any of the major 21st century problems we face – threats posed by rogue states, failed states, proliferation, regional conflicts, terrorism, cyber warfare, organized crime, drug trafficking, conflict-driven mass migration of refugees, epidemics or climate change.”
“The Global Zero report proposes the U.S.: Eliminate all ICBMs. Eliminate all tactical nuclear weapons. Eliminate the nuclear cruise missile inventory. Retire the B-2 bomber decades before its service life is reached. Dismantle or convert all B-52 bombers to carry only conventional munitions. Eliminate four of the 14 Trident submarines and download the rest to 45 warheads per boat. Ultimately, the Global Zero report suggests the U.S. cut its nuclear force to 900 total warheads, only half of which would be available for use at any time. The “dealtered” remainder could be restored to operational status only weeks or months after a decision to regenerate them. Overall, the proposals would reduce the current U.S. strategic nuclear inventory by more than 75 percent in terms of available warheads.”

International Physicians for the Prevention of Nuclear War

IPPNW is a non-partisan federation of national medical groups in 64 countries, representing tens of thousands of doctors, medical students, other health workers, and concerned citizens who share the common goal of
creating a more peaceful and secure world freed from the threat of nuclear annihilation.

IPPNW was awarded the 1985 Peace Prize for performing "a considerable service to mankind by spreading authoritative information and by creating an awareness of the catastrophic consequences of atomic warfare."

In 2007 IPPNW led the formation of ICAN, which won the 2017 Nobel Peace Prize.

Physicians for Social Responsibility

http://www.psr.org

PSR is the United States affiliate of IPPNW. It has been working for more than 50 years to create a healthy, just and peaceful world for both the present and future generations. PSR advocates on the issues you care about by addressing the dangers that threaten communities, using our medical and public health expertise to:

- Prevent nuclear war and proliferation;
- Reverse our trajectory towards climate change;
- Protect the public and our environment from toxic chemicals;
• Eliminate the use of nuclear power (waste, risk, road to weapons).

I was president of PSR in 1997 and served on the PSR board from 1991 to 2008. PSR/Washington is our statewide chapter headquartered in Seattle. I was chapter president in 1991-2 and 2003-4.  

The Nuclear Age Peace Foundation serves as a source of hope and inspiration, and promotes active engagement in the creation of a just and peaceful world in which:

• Conflicts are settled equitably and without violence

• Security is based on meeting human needs, preserving the environment and ensuring the rights of future generations;

• Human dignity is respected and human rights are universally upheld and advanced; and

• International, national and local institutions and legal structures support these aims.
Their monthly online newsletter *The Sunflower* tracks a wide variety of nuclear issues. David Krieger is an indefatigable author, organizer, and advocate for nuclear abolition.

Council for a Livable World  
[http://www.clw.org](http://www.clw.org)

For more than 50 years, the Council for a Livable World has been advocating for a more principled approach to U.S. national security and foreign policy. Our mission is to increase peace and security and to reduce the threat of war and nuclear weapons by representing our members in Washington and electing congressional candidates who support our goals.

You can support progressive candidates. John Isaacs is a peace guru in Washington, DC.

No to New Trident - a project of the Ground Zero Center
for Nonviolent Action

We are working to stop or at least limit production of the U.S. Navy's next generation ballistic missile submarine. The SSBNx, as it is called by the Navy, will cost nearly $100 billion just to build 12 new Trident warships. Built to replace the existing Trident fleet, these new warships will continue to hold the world under the threat of massive nuclear war to the end of this century.

The picture above shows one of a series of peaceful blockades on the entrance road to Naval Base Kitsap-Bangor, home port for 8 of the 14 U.S. Trident warships. I am on the right wearing an all-orange vest, not risking arrest this time.

No to New Trident (http://www.notnt.org)

Ground Zero Center for Nonviolent Action (http://www.gzcenter.org)

More Information

Union of Concerned Scientists

“Our scientists and engineers develop and implement innovative, practical solutions to some of our planet’s most pressing problems—from combating global warming and developing sustainable ways to feed, power, and transport
ourselves, to fighting misinformation and reducing the threat of nuclear war.”

UCS provides credible research and commentary on the global nuclear arms race, and especially on U.S. nuclear policy.  
http://www.ucsusa.org

**Bulletin of the Atomic Scientists**

“The Bulletin of the Atomic Scientists engages science leaders, policy makers, and the interested public on topics of nuclear weapons and disarmament, the changing energy landscape, climate change, and emerging technologies. We do this through our award winning journal, iconic Doomsday Clock, public access website and regular set of convenings. With smart, vigorous prose, multimedia presentations, and information graphics, the Bulletin puts issues and events into context and provides fact-based debates and assessments. For 70 years, the Bulletin has bridged the technology divide between scientific research, foreign policy and public engagement.”  
http://www.thebulletin.org

**Arms Control Association**

Information. Ideas. Influence. Working to eliminate the threats posed by the world’s most dangerous weapons This is an excellent source of current information about nuclear weapons policy.
Their monthly magazine Arms Control Today may well be your best way to stay informed on these issues.
http://www.armscontrol.org


The Nuclear Threat Initiative

NTI is a nonprofit, nonpartisan organization with a mission to strengthen global security by reducing the risk of use and preventing the spread of nuclear, biological, and chemical weapons and to work to build the trust, transparency, and security that are preconditions to the ultimate fulfillment of the Non-Proliferation Treaty’s goals and ambitions.

"The Nuclear Threat Initiative is a role model for me of a private-public partnership in issues of security and of survival... NTI has been a trailblazer."

—Mohamed ElBaradei, Nobel Peace Prize winner and former IAEA director-general

Friends Committee on National Legislation

FCNL is a reliable source of information about national legislation addressing nuclear weapons and other peace issues. Founded in 1943 by members of the Religious Society of Friends (Quakers), FCNL's nonpartisan, multi-issue advocacy connects historic Quaker testimonies on peace, equality, simplicity, and truth with peace and social justice
issues. FCNL fields the largest team of registered peace lobbyists in Washington, DC. (http://fcnl.org)

Faith-based statements on nuclear weapons:
http://fcnl.org/issues/nuclear/faith_based_statements_on_nuclear_disarmament/

Lawyers Committee for Nuclear Policy

LCNP and the International Association of Lawyers Against Nuclear Arms, in association with the International Physicians for the Prevention of Nuclear War and International Network of Engineers and Scientists Against Proliferation, released a Model Nuclear Weapons Convention (MNWC) drafted by an international consortium of lawyers, scientists, disarmament experts, physicians and activists.

The Model NWC (April, 1997) became the working document from which the TPNW developed in 2017

Western States Legal Foundation

WSLF develops and distributes information about nuclear weapons and other high-technology weapons research and development activities. An important aspect of WSLF’s work is assessment of the legal status of nuclear weapons policies and programs. A main focus of WSLF work over the last
several years in this area has been the “Stockpile Stewardship and Management” Program, and in particular ongoing and new nuclear weapons research, development, testing and production activities at the Department of Energy (DOE) nuclear weapons laboratories, the Lawrence Livermore National Laboratory (LLNL), the Los Alamos National Laboratory, Sandia National Laboratories and the Nevada Test Site. WSLF provides analysis of the impacts of U.S. nuclear weapons programs on both the test ban and nonproliferation regimes. WSLF also is exploring the connections between the nuclear weapons laboratory facilities claimed necessary for Stockpile Stewardship, and other high technology weapons programs, including directed energy weapons, ballistic missile defenses, and space-based weapons research and development.

**Videos of Interest**

**Dr. Ira Helfand: The case for nuclear disarmament - TEDx**  [https://youtu.be/mUm82W7B2BY](https://youtu.be/mUm82W7B2BY) (9 minutes)

**Professor Alan Robock: Climate consequences of a small nuclear war - winter - TEDx**  [https://youtu.be/qsrEkroZ-54](https://youtu.be/qsrEkroZ-54) (8 minutes)

The author’s summary argument for elimination of nuclear weapons - 2017 YouTube narrated slideshow  [https://youtu.be/naUL1dkvSYo](https://youtu.be/naUL1dkvSYo) (11:14 minutes)

**JFK: A President Betrayed**, Corey Taylor’s film on Kennedy, Vietnam, Cuba, and the Soviet Union - 91 minutes

**Articles of Special Interest**

From The New York Times: “Let’s End the Peril of Nuclear Winter” - Climate scientists Alan Robock and Brian Toon:  [http://nyti.ms/1Rsa6FZ](http://nyti.ms/1Rsa6FZ)

*Overview of nuclear weapons* - Bulletin of the Atomic Scientists (BAS)  [http://thebulletin.org/overview](http://thebulletin.org/overview)

*A call to millenial generations* -  [http://thebulletin.org/game-changers-how-next-generation-can-tackle-nuclear-weapons-problem8693](http://thebulletin.org/game-changers-how-next-generation-can-tackle-nuclear-weapons-problem8693)

*Tracking international nuclear arsenals* - Hans Kristensen of BAS and Robert Morris of NRDC are the two civilians who track global nuclear weapons: policy, numbers, deployment, and agreements based on their close monitoring of defense news around the world.  [http://bos.sagepub.com/content/70/5/96.full.pdf+html](http://bos.sagepub.com/content/70/5/96.full.pdf+html)

*General Butler on deterrence* - “Death by Deterrence”  [http://dwij.org/forum/statesperson/general_lee_butler.htm](http://dwij.org/forum/statesperson/general_lee_butler.htm)

Climate impacts from nuclear weapons (computer model for 100 atomic bombs dropped on cities) “Two Billion at Risk” (4 page summary)  
http://www.psr.org/assets/pdfs/two-billion-at-risk.pdf

Modeled India-Pakistani War - Scientific American, “Local Nuclear War: Worry has focused on the U.S. versus Russia, but a regional nuclear war between India and Pakistan could blot out the sun”  

Alan Robock 18-minute TEDx talk on nuclear famine after India-Pakistani 100 atomic bomb war on cities  
https://www.youtube.com/watch?v=qsrEk1oZ-54

“Self-Assured Destruction”  
http://climate.envsci.rutgers.edu/pdf/RobockToonSAD.pdf

“12 Events That Will Change Everything, Made Interactive” - Scientific American  
http://www.scientificamerican.com/article/interactive-12-events/

Wisconsin Project +
http://www.wisconsinproject.org/countries/israel/nuke.html  
http://bos.sagepub.com/content/70/6/97

Israel's secret weapons program  

Iran's Nuclear Weapon Capability: An Overview (August 2015)  
http://www.iranwatch.org/our-publications/articles-reports/irans-nuclear-timetable

Ambassador and nuclear arms negotiator Thomas Graham looks beneath the bellicose rhetoric on North Korea  

Kennedy librarian’s retelling of the Cuban Missile Crisis based on records released 25 years later


Contacts

Contact your Senator

https://www.senate.gov/general/contact_information/senators_cfm.cfm?OrderBy=state&Sort=ASC

Contact your Congressperson

http://www.house.gov/representatives/find/

Physicians for Social Responsibility

http://www.PSR.org

Washington Physicians for Social Responsibility

http://www.WPSR.org

Ground Zero Center for Non-Violent Action

http://www.GZcenter.org

The author

http://www.familyhealing.com/abolition.html

Feedback, corrections, ideas, stories all welcome. Email: dchall@familyhealing.com
Talking points for Congress - a sample

Evan Kanter MD of Washington Physicians for Social Responsibility (WPSR) developed this summary as a starting place for our conversation with Congressman Adam Smith (WA-D), ranking member of the House Armed Services Committee

WPSR meeting with Congressman Adam Smith - August 10, 2015

President Obama’s grand vision of a “world without nuclear weapons” has been undermined. Instead we are set to spend a trillion dollars over the next 30 years on upgrading or replacing all three legs of our nuclear triad. This is a giant step backward and represents a dangerous new arms race.

New research incorporating advances in climate science extends our understanding of the aftermath of a nuclear exchange from “Nuclear Winter” to “Nuclear Famine.” An exchange of 100 Hiroshima sized weapons between India and Pakistan is projected to cause a worldwide drop in food production that could kill 2 billion people. (This represents less than 1% of the world’s nuclear arsenals. A single Trident submarine carries the explosive power of thousands of Horiushimas.) It is critical for Congress to understand the implications of this research.

The Humanitarian Impact Movement has dramatically changed the debate at the international level. 113 nonnuclear states have endorsed a legal ban on nuclear weapons, in line with chemical, biological, and landmines bans. 159 nations signed a Joint Statement in April 2015 in support of a ban. Similar resolutions have been passed in recent months by the International Committee of the Red Cross, the U.S. Conference of Mayors, and the American Medical Association.

Nuclear weapons are:

Immoral

They are indiscriminate weapons of mass murder. Pope Francis has declared nuclear weapons to be ethical abominations and has made a compelling case for banning them.

Illegal

In a landmark 1996 opinion the International Court of Justice held that not only the use, but the threat of use of nuclear weapons was contrary to international law.
Intolerably Expensive

Colossal expenditures on weapons that must never be used are an appalling injustice in the face of unmet societal needs. This money could be directed toward education, energy transition, infrastructure, debt reduction, or sensible military expenditures that would actually help our armed forces accomplish critical missions.

Unacceptably Dangerous

It is miraculous that an accidental nuclear detonation has not occurred to date. The recent book “Command and Control” by Eric Schlosser details a frightening history of near-misses. Acquisition of a nuclear weapon by a terrorist group is an even more terrifying prospect.

Militarily Useless

Nuclear weapons are too massively destructive to convey any real advantage to their possessors. They do not deter ISIS or prevent Russian aggression. They don’t help us in Afghanistan, Iraq, or Syria. Our insistence in maintaining our bloated arsenal does not deter nuclear proliferation, it actually drives it.

We respectfully request that Congressman Smith:

1) Cosponsor the SANE Act introduced by Rep. Blumenauer
2) Call House Armed Services Committee hearings on the humanitarian impact of nuclear weapons
3) Include Generals Lee Butler and James Cartwright, former Strategic Commanders, in HASC hearings on nuclear weapons modernization
4) Work to substantially reduce funding for the Trident replacement as well as for new land and air based missiles. Specifically oppose the Air Force’s plans for 1000 new air-launched cruise missiles.
5) Advocate removing U.S. nuclear weapons from high alert status

Washington Physicians for Social Responsibility
4500 9th Ave NE, Suite 92
Seattle, WA 98105  (206) 547-2630

We are pleased that Congressman Smith has responded positively to many of these points and encouraged a continued conversation.
APPENDIX B

Mayors for Peace Petition to Ban Nuclear Weapons

In August 1945, atomic bombs dropped on Hiroshima and Nagasaki brought unspeakable tragedy to both cities. Many survivors still suffer the aftereffects, and yet nuclear weapons continue to threaten the very survival of human life on this planet.

To avoid any repetition of the tragedies of Hiroshima and Nagasaki, people around the world must work hand in hand to build a culturally rich, environmentally sustainable, safe and peaceful nuclear-weapon-free world.

Mayors for Peace seeks the total abolition of nuclear weapons by 2020.

Mayors for Peace was founded by the cities of Hiroshima and Nagasaki in 1982. As of November 1, 2015, we have 6,893 member cities in 161 countries and regions. Through intercity solidarity, we pursue a peaceful world without nuclear weapons.

One of our concrete actions is the 2020 Vision Campaign (an Emergency Campaign to Ban Nuclear Weapons), which seeks the total elimination of nuclear weapons by 2020.

A GLOBAL MOVEMENT HAS BEGUN!

Mayors for Peace is helping to build the momentum. Let’s tell our leaders we want a nuclear weapons convention.

The most effective way to abolish all nuclear weapons by 2020 is a nuclear weapons convention (NWC). A nuclear weapons convention will comprehensively prohibit the development, production, testing, stockpiling, or use of nuclear weapons and providing for their elimination. Mayors for Peace will work with other civil society organizations to build momentum and urge Japan, the only A-bombed nation, to work with other nation states to quickly commence negotiations and conclude a nuclear weapons convention without further delay.

Please participate in this project by signing the petition below, then signing up your friends and neighbors. Mayors for Peace will deliver your signatures to the United Nations. Let’s tell our leaders that we expect them to sign a nuclear weapons
convention that will lead us to a peaceful world that can never be destroyed by nuclear weapons.

【The roadmap to the abolition of nuclear weapons】

Raise public consciousness through the petition and other activities
Influence the Japanese and other national weapons convention governments
Commence negotiations for a nuclear weapons convention
Conclude a nuclear weapons convention
Achieve “a peaceful world free from nuclear weapons!”

The online petition:  https://www.ssl-z.cityhiroshima.jp/pcf/signature_en/
World Medical Association Statement on Nuclear Weapons

Adopted 17 October 2015

The WMA Declarations of Geneva, of Helsinki and of Tokyo make clear the duties and responsibilities of the medical profession to preserve and safeguard the health of the patient and to consecrate itself to the service of humanity. The WMA considers that it has a duty to work for the elimination of nuclear weapons.

Therefore the WMA:

2.1 Condemns the development, testing, production, stockpiling, transfer, deployment, threat and use of nuclear weapons;

2.2 Requests all governments to refrain from the development, testing, production, stockpiling, transfer, deployment, threat and use of nuclear weapons and to work in good faith towards the elimination of nuclear weapons;

2.3 Advises all governments that even a limited nuclear war would bring about immense human suffering and substantial death toll together with catastrophic effects on the earth’s ecosystem, which could subsequently decrease the world’s food supply and would put a significant portion of the world’s population at risk of famine; and

2.4 Requests that all National Medical Associations join the WMA in supporting this Declaration, use available educational resources to educate the general public and to urge their respective governments to work towards the elimination of nuclear weapons.

2.5 Requests all National Medical Associations to join the WMA in supporting this Declaration and to urge their respective governments to work to ban and eliminate nuclear weapons.
The Nobel for peace brings focus on work to urge nations to abandon their suicidal game of chicken.

By David C. Hall

The Nobel Peace Prize for 2017 was awarded to the International Campaign to Abolish Nuclear Weapons (ICAN) “for its work to draw attention to the catastrophic humanitarian consequences of any use of nuclear weapons and for its ground-breaking efforts to achieve a treaty-based prohibition of such weapons.”

This award comes as a welcome surprise for those of us pleading with world leaders to heed the humanitarian call to never allow these weapons to ever be used again.

ICAN is the global extension of the campaign I have worked on since 1983, Physicians for Social Responsibility. PSR is the US affiliate of International Physicians for the Prevention of Nuclear War, which in 2007 convened the ICAN coalition. I have vivid memories of times with Dr. Bernie Lown, co-founder of international group, and more recently served on the U.S. affiliate’s board with Dr. Ira Helfand, who is now one of four co-presidents of IPPNW.

“There is no cure for nuclear war, only prevention.” This is the core message from the international physicians group and ICAN.

The ICAN coalition worked with non-nuclear weapon states in the United Nations General Assembly through three U.N. conferences on the humanitarian impacts of the use of nuclear weapons, followed by a U.N. working group to draft a treaty. In the final vote 122 U.N. states approved the treaty language. Only the Netherlands, a member of NATO, voted against it.
The U.N.’s International Court of Justice in 1996 ruled unanimously (including the American judge) that the use or threat of use of nuclear weapons “would generally be contrary to the rules of international law applicable in armed conflict.” However, this ruling was not binding on anyone. This treaty will bind its signatory states. The U.S., Britain and France stated during deliberations for this treaty that they would never sign it despite a clear path laid out for nuclear-weapon states to join.

The U.S. Congress has already authorized an estimated $1.5 trillion plan to rebuild the entire U.S. nuclear weapons complex over the next 30 years. This has Russia, China and North Korea on edge and looking to rebuild their own nuclear arsenals. Meanwhile U.S. nuclear weapons remain on hair-trigger alert. Our 2nd District congressman, U.S. Rep. Rick Larsen, is a truly committed American citizen at the center of federal decision-making about American security in a dangerous world. We need to support him in working to persuade the international community to abandon this suicidal game of nuclear chicken.

The Treaty on the Prohibition of Nuclear Weapons already has the required number of nations signed on to bring the treaty into force after formal ratifications are complete. It places us in a new chapter of global efforts to manage international conflicts without the threat of global catastrophe.

Most U.S. citizens and many military planners still fail to understand the crimes against humanity that will follow any use of a nuclear weapon. In 1945 one small nuclear weapon destroyed Hiroshima as completely as Tokyo was destroyed five months earlier by 1,665 conventional bombs dropped by 279 B-29 bombers. Each of our eight local Trident submarines is built to carry the equivalent of more 5,000 Hiroshima atomic bombs on ballistic missiles with accuracy from a distance of 4,000 miles.

We of Washington Physicians for Social Responsibility and the Ground Zero Center for Nonviolent Action in Poulsbo, members of the ICAN coalition, will continue to work for abolition. We hope that saner minds in nuclear weapon states will prevent the use of these weapons while informed citizens and leaders worldwide work out the mutual security agreements that will allow their elimination.

APPENDIX E - Author essay on how we got here, and how we stop nuclear war

The Soviet Union collapsed in 1991 under the weight of its internal repression and economic stagnation. Its demise was cause for great rejoicing in the West and catastrophic levels of renewed suffering and political chaos in the former Soviet Union.

America’s response to wartime brutality unleashed in the early 20th century is embodied in the huge size and number of American military bases around the world and the policies, expenditures, and alliances that support them in encircling Russia and China.

Both Russia and China in the 20th century emerged from imperial rule, fought peasant revolutions, coalesced divergent ethnic communities, and suffered foreign invasions. Their Communist insurgencies won their civil wars and installed brutal dictators. Both countries saw massive physical and emotional trauma and millions of lives lost due to internal totalitarian brutality and foreign invasion. Their transitions from state-controlled economies to modified free markets were wrenching and fraught with economic power grabs.

The Soviet Union under Stalin signed a non-aggression pact with Germany in 1939, then faced the Nazi invasion in 1941. The Eastern Front of World War II was brutal to both soldiers and civilians, and millions were shot, starved, gassed, or incarcerated.\textsuperscript{179}

During World War II China fought a civil war while still fighting the Japanese invasion of 1937. Casualty figures vary from 20 to 35 million dead and wounded, and 95 million refugees.\textsuperscript{180} Their civil war heated up leading to another estimated 6 million military and civilian deaths before Mao’s Red Army won out in 1949.

A three-decade Indian civil war and independence struggle from Britain led to the creation of India and Pakistan. Nearly a million civilians died and ten million migrated as Hindus and Muslims crossed paths in a race for safety in 1947.

The American Civil War took the lives of an estimated 750,000 combatants.\textsuperscript{181}
It’s understandably hard to put this all in perspective.

**The United Nations was born to prevent future holocausts.**

The framework for the United Nations charter developed out of international conferences from 1941 to 1945, culminating in the Yalta Conference where the United States, Soviet Union, Great Britain, and China resolved to establish "a general international organization to maintain peace and security.” The UN Charter was adopted unanimously on 25 June 1945.

It’s first resolution called for “Establishment of a Commission to Deal with the Problems Raised by the Discovery of Atomic Energy.” The Commission was charged to “make specific proposals:

a) for extending between all nations the exchange of basic scientific information for peaceful uses;

b) for control of atomic energy to the extent necessary to ensure its use only for peaceful purposes;

c) for the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction;

d) for effective safeguards by way of inspection and other means to protect complying States against the hazards of violations and evasions.\(^{182}\)

The UN Charter in order to ensure ratification enshrined a veto power in the hands of the United States, the Soviet Union, Great Britain, China, and France, all nations that developed nuclear arsenals and have used their veto powers to enable the nuclear arms race.

**The Cold War began before WWII ended.**

On August 6, 1945 the U.S. dropped the atomic bomb on Hiroshima. On August 8th the Soviet Union entered the war against Japan, and on August 9th the U.S. dropped the second atomic bomb on Nagasaki, sending a message both to Japan and to the U.S.S.R..

While Allied countries quickly demilitarized, Stalin ramped up Soviet military spending and continued to send millions of Soviet citizens into the gulag (over 400 concentration camps in Siberia). At its height
military projects dominated the Soviet economy by some estimates as high as 50% of the economy. With the death of Joseph Stalin in 1953, succeeding leaders slowly nudged the U.S.S.R. away from the secrecy, paranoia, economic centralization, and repression of the Stalin years. Khrushchev startled his Communist Party colleagues in his now famous denunciation of Stalin in the first Party Congress after Stalin’s death, denouncing “the cult of personality [Stalin] had fostered and the crimes he had perpetrated, including the execution, torture and imprisonment of loyal party members on false charges. He blamed Stalin for foreign policy errors, for the failings of Soviet agriculture, for ordering mass terror and for mistakes that had led to appalling loss of life in the Second World War and the German occupation of huge areas of Soviet territory.”

Khrushchev was ousted by Leonid Brezhnev, another participant/survivor of Stalin’s purges, who supported Khrushchev’s denunciation of Stalin, but reinstated severe restrictions on freedom of speech while investing heavily in military and space programs.

There was much talk in the U.S. during the Reagan era of “spending the Soviets into submission.” The severity of the economic depression that followed Stalin’s death for decades was clearly a factor for Soviet leadership, and so was the fall of global petroleum prices, which undercut the U.S.S.R.’s principal source of revenue. Successive Soviet leaders stifled political and economic freedoms in the process of maintaining tight Communist party controls.

By the time Gorbachev became President of the Soviet Union, the stagnant Soviet economy and accumulated sufferings of the Soviet people under Stalinist repression and afterward convinced him to order greater political and economic freedoms, unleashing independence movements and economic power grabs as the U.S.S.R. collapsed.

In both China and the U.S.S.R. consolidation of power in the Communist Party was a driving force behind domestic policy-making. In Russia it led to collapse of the nation while party leaders privatized lucrative state-owned enterprises. The Chinese Communist Party succeeded in maintaining tight controls while opening their economy to modified free market motivations that have made China’s economy the second largest in the world after the United States. By 2015 they had raised three
hundred million people out of extreme poverty since Mao’s death in 1974.185

The Cold War ended with the fall of the Soviet Union.
When Gorbachev resigned in December 1991, relative international peace reigned for a decade. Russia became a republic of sorts with an elected President in Boris Yeltsin. However, the Soviet people got left behind. In 1999, the year Vladimir Putin became Russian Prime Minister the first time, Seamus Milne wrote for The Guardian:

For all the action on the streets, the changes [brought on by demise of the U.S.S.R.] were mostly engineered by sections of the nomenklatura that realised the old system was in crisis and saw the opportunities for enrichment.

Far from opening the way to emancipation, these changes led to beggary for most citizens, ushering in the most cataclysmic peacetime economic collapse of an industrial country in history....

Some of the more startling facts are set out by U.S. Russian studies professor Stephen Cohen in his book Failed Crusade....

By the late 1990s, national income had fallen by more than 50% (compare that with the 27% drop in output during the great American depression), investment by 80%, real wages by half and meat and dairy herds by 75%. Indeed, the degradation of agriculture is, Cohen argues, in some respects worse even than during Stalin's forced collectivisation of the countryside in the 1930s.

The numbers living below the poverty line in the former Soviet republics had risen from 14m in 1989 to 147m even before the 1998 financial crash. The market experiment has produced more orphans than Russia's 20m-plus wartime casualties, while epidemics of cholera and typhus have re-emerged, millions of children suffer from malnutrition and adult life expectancy has plunged.
As this human tragedy was unfolding, western politicians and bankers harried Russia's leaders to push ahead more energetically with the "reform" and privatisation treatment producing it: a transition in many areas to a premodern age.

Only with the rise in oil prices, devaluation of the rouble and the merciful departure of Boris Yeltsin has the economic slide begun to be reversed. And in eastern Europe, only star performers like Poland have managed to return to the output levels achieved before 1989 - and even then at a cost of millions of unemployed, widespread poverty and social regression.

My one trip into the U.S.S.R.

In 1988 I skimmed the surface of this poverty when I visited Tashkent, Uzbekistan with a Peace Child delegation of American teenagers to put on the Peace Child musical with a companion group of Russian teenagers. We displaced a group of young orphans in the Czar's former summer palace for our three weeks together. Someone told us of a Soviet sunglasses factory nearby that met all its quotas for production, but the lenses were too dark to see through!

There was much talk at that time about the power of citizen diplomacy. Tashkent was Seattle's sister city. A delegation of Seattleites was building a peace park in the center of Tashkent while we were there. Our troop of 15 American teenagers and their Russian counterparts lived together, working up songs and roles and practicing for two performances of the Peace Child musical. The teenagers slept on cots in the garden. Grape vines covering the walkways provided shade. We lounged in a huge swimming pool to conquer the 100 degree central Asian heat. Several of us slept on 5-foot beds in the orphans' dorm. I tried to slip a little vodka to our older teenagers at our cast party, but they stole the bottle and next day almost missed the show. We came away with a rich experience meeting a new culture in a third world country much less developed than our own.
About the author

David Hall MD is the grandson and son of physicians who served in World Wars I and II. He graduated from Harvard College in 1968, served three years of alternative service during the Vietnam War, then trained as a Child Psychiatrist at the University of Washington. He was introduced to nuclear weapons in a grand rounds in 1979 that showed film footage of Hiroshima after the atomic bombing. Upon completion of his medical/psychiatric training in 1983 he joined the board of Washington Physicians for Social Responsibility (WPSR.org), a physician-led non-profit organization dedicated to prevention of nuclear war. “There is no cure for nuclear war. Only prevention.” He writes, “That fall our family watched The Day After, a dramatization of the aftermath of a nuclear war that haunted us (and President Reagan) as the Reagan years brought our country and the world to awareness that Soviet and American nuclear weapons were poised for a war that would destroy both countries, regardless of who started it.” He joined national Physicians for Social Responsibility’s board of directors in 1991 (PSR.org) and served as board president in 1997. “We hoped for a ‘peace dividend’ that would reinvest the world’s precious resources for positive human benefit and away from preparations for war.” He continues to serve on the WPSR board and as a member of the WPSR task force dedicated to preventing any use of a nuclear weapon in ongoing hope that this scourge on the human conscience can be contained by the savvy dedication and human heart of the world’s caring peoples.


His personal website: http://www.familyhealing.com/abolition.html and email address: dchall@familyhealing.com
A Mend-ship Friendship
(see below)
A Mend-ship Friendship
(with a nod to Gary Larsen's cartoon)

Once upon a time there were huge evil man-made monsters people kept locked in their basements. Everyone knew about them, but no one wanted to talk about them. The monsters’ appetites were *gi-normous*. People went hungry because food prices soared. Schools got over-crowded because there was no money to build new schools. Desperate fathers landed in jail for stealing food or protesting the monsters. Desperate mothers locked the doors in fear that other hungry people would steal their food.

The bosses were happy, “It’s peace through strength.” But neighbors stopped talking. And mistrust grew stronger.

One day a curious child snuck out to see for herself what the neighbor’s monster looked like. She heard it was terrifying, but she had never seen it.

She peaked in the window and saw an enormous black machine with steam coming out, and she saw a boy near her age sneaking around it.

She tapped on the window. The boy jumped back frightened, saw her, and waved her away. She knocked again. He signaled her to get away. She signaled him to come and play.

He came out angry. “Go away!” But she just smiled and said, “Come with me. I have a machine like yours in *my* basement. Wanna see?”

They crept to her window and peaked inside.

“It looks a lot like ours,” he said.

“Yeah,” she replied, “I think they make our parents hide.”

“Ours eats a lot. It gives me nightmares.”

“Ours is like that. It rules our lives.”

“I’d love to get rid of them.”

“So would I!”

“Let’s wake up our parents and get together.”

“And trash all our monsters forever and ever.”

“I say, Amen! and amen again!”
And that was the start of a beautiful mend-ship.

© 2016 David C. Hall, MD Endnotes
1 First edition titled Nuclear Danger: Trillions for mass murder
2 http://i.dailymail.co.uk/i/pix/2015/11/09/17/2E45A14400000578-3310577-image-a-32_1447089321500.jpg
3 http://www.history.com/topics/world-war-ii/world-war-ii-history/pictures/hiroshima-and-nagasaki/hiroshima-aftermath
8 https://www.ed.gov/k-12reforms
9 http://www.theguardian.com/world/2001/aug/16/russia.comment
10 http://carnegie.ru/commentary/61236
13 http://www.scientificamerican.com/article/local-nuclear-war/
14 https://www.armscontrol.org/factsheets/USNuclearModernization
16 Salute to Jules Pfeiffer, I believe
17 See my acknowledgement of interim concerns about international trust-building


https://www.nasa.gov/topics/earth/features/earth20130610.html#.VxFapWPxXF1


2012 summary of progress: http://www.state.gov/t/isn/rls/fs/187071.htm

NNPT, Article VI.

https://www.un.org/disarmament/ptnw/


William Perry, My Journey at the Nuclear Brink, Stanford Security Studies, 2015, p. 91ff

The **Marshall Plan** (officially the European Recovery Program, ERP) was an American initiative to aid Western Europe, in which the United States gave $13 billion (approximately $130 billion in current dollar value as of August 2015) in economic support to help rebuild Western European economies after the end of World War II - wikipedia.

Professor Stephen Cohen, Failed Crusade

William Perry, ibid, p. 147.


Note: In 1969 President Nixon threatened the U.S.S.R. with B-52 bombers armed with nuclear weapons in hopes of leveraging Soviet help to end the Vietnam War. See Professor Jeremi Suri’s article to compare with Putin’s decisions about Ukraine. http://archive.wired.com/politics/security/magazine/16-03/ff_nuclearwar?currentPage=all

http://images.huffingtonpost.com/2014-02-20-LombergSmoke1Small.jpg

https://en.wikipedia.org/wiki/Hanford_Site
The U.S. Environmental Protection Agency’s Superfund program is responsible for cleaning up some of the nation’s most contaminated land and responding to environmental emergencies, oil spills and natural disasters. To protect public health and the environment, the Superfund program focuses on making a visible and lasting difference in communities, ensuring that people can live and work in healthy, vibrant places.


Personal communication with formerly Soviet physician members of Russian Physicians for the Prevention of Nuclear War during the 1992 Chelyabinsk trip. They showed us a published book, but did not have a copy to give us.

See IPPNW.org. Russian and American cardiologists founded International Physicians for the Prevention of Nuclear War in 1980 and were awarded the Nobel Peace Prize in 1985. The Soviet Union boasted 55,000 physician members of their affiliate of IPPNW. PSR is the U.S. affiliate. Slava Sharov, a radiologist from Chelyabinsk, Russia spent 1991 in Seattle working with the Group Health Cooperative, met with WPSR, and arranged the invitation to visit Chelyabinsk in 1992.

...[http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3222290/](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3222290/)

Arjun Makhijani is an electrical and nuclear engineer with 37 years' experience in energy and nuclear issues. He is President of the Institute for Energy and Environmental Research. IEER has been doing nuclear-related studies for twenty years and is an independent non-profit organization located in Takoma Park, Maryland. Makhijani has a Ph.D. in Engineering from the Department of Electrical Engineering and Computer Sciences of the University of California, Berkeley, where he specialized in the application of plasma physics to controlled nuclear fusion. He has studied the French reprocessing and nuclear energy system and was the director of a team that analyzed ANDRA's plans for a geological repository for high level radioactive waste in France on behalf of a French government-sponsored stakeholder committee (2004). [http://www.ieer.org](http://www.ieer.org)
Fission: Uranium-235 and plutonium-239 are the only two elements that can sustain a fission chain reaction, where the atoms are split, releasing neutrons, that go on to split more U-235 or P-239 atoms, releasing energy according to Einstein’s equation $E = MC^2$ (squared). Atomic bombs are fission bombs.

Fusion bombs take hydrogen atoms (deuterium and tritium, ie, heavy water) and force the molecules together with heat from a fission reaction to form new larger molecules with the release of massive amounts of energy. Thermonuclear or hydrogen bombs are fusion bombs. To understand fission vs fusion bombs:

http://chemwiki.ucdavis.edu/Physical_Chemistry/Nuclear_Chemistry/Fission_and_Fusion/
Nuclear_Fission_vs_Nuclear_Fusion

See also: https://prezi.com/b92tdsppowt/edward-teller/


https://youtu.be/qsrEk1oZ-54 Alan Robock presents nuclear famine climate model - 18 minutes


http://www.eyewitnesshistory.com/tokyo.htm

http://www.pbs.org/newshour/bb/many-ballistic-missile-submarines-u-s-really-need/

http://nsarchive.gwu.edu/nsa/cuba_misCri/photos.htm

http://www.ditext.com/japan/napalm.html

Bordne was serving at one of four secret missile launch sites on the U.S.-occupied Japanese island of Okinawa. There were two launch control centers at each site; each was manned by seven-member crews. With the support of his crew, each launch officer was responsible for four Mace B cruise missiles mounted with Mark 28 nuclear warheads. The Mark 28 had a yield equivalent to 1.1 megatons of TNT—i.e., each of them was roughly 70 times more powerful than the Hiroshima or Nagasaki bomb. All together, that’s 35.2 megatons of destructive power. With a range of 1,400 miles, the Mace B’s on Okinawa could reach the communist capital cities of Hanoi, Beijing, and Pyongyang, as well as the Soviet military facilities at Vladivostok.

“There were eight crews on DEFCON2 alert, and it was averted when the Captain in charge refused to launch without a DEFCON1 order, which allowed time to clarify the launch order.

“Bruce Blair, a research scholar at Princeton University's Program on Science and Global Security, and one-time launch officer, states, “It strikes me that a first-hand account from a credible source in the launch crew itself goes a long way toward establishing the plausibility of the account. It also strikes me as a plausible sequence of events, based on my knowledge of nuclear command and control procedures during the period (and later). Frankly, it's not surprising to me either that a launch order would be inadvertently transmitted to nuclear launch crews. It's happened a number of times to my knowledge, and probably more times than I know. It happened at the time of the 1967 Middle East war, when a carrier nuclear-aircraft crew was sent an actual attack order instead of an exercise/training nuclear order. It happened in the early 1970s when [the Strategic Air Command, Omaha] retransmitted an exercise ... launch order as an actual real-world launch order. (I can vouch for this one personally since the snafu was briefed to Minuteman launch crews soon thereafter.) In both of these incidents, the code check (sealed authenticators in the first incident, and message format validation in the second) failed, unlike the incident recounted by the launch crew member in Aaron's article. But you get the drift here. It just wasn't that rare for these kinds of snafus to occur. One last item to reinforce the point: The closest the U.S. came to an inadvertent strategic launch decision by the President happened in 1979, when a NORAD early warning training tape depicting a full-scale Soviet strategic strike inadvertently coursed through the actual early warning network. National Security

“Adviser Zbigniew Brzezinski was called twice in the night and told the U.S. was under attack, and he was just picking up the phone to persuade President Carter that a full-scale response needed to be authorized right away, when a third call told him it was a false alarm.”


PDF by search for “I remain convinced that we escaped the Cold War without a nuclear holocaust” brings up his letter to the Norwegian Parliament an January 23, 2015

Emphasis in original text

http://www.sjsu.edu/faculty/watkins/sovietcollapse.htm


[T]here was a more immediate explanation for the collapse of the Soviet Union provided by Yegor Gaidar, who had been acting prime minister of Russia from June of 1992 to December of 1992 and a key figure in the transformation of the Russian economy. In his last work, Collapse of an Empire: Lessons for Modern Russia, published in 2007 Gaidar provides a powerful explanation for the collapse of the Soviet Union. Soviet agriculture had stagnated in the 1980’s but the demand for grain in the cities was increasing. It was necessary to buy grain in the international market. While the price of petroleum was high it was feasible to finance the purchase of grain from internal sources. When the price of petroleum fell in the late 1980’s the Soviet Union needed to borrow the funds from Western banks to purchase the needed grain. This severely restricted the international activities of the Soviet Union. It could not send in Soviet troops to put down the rebellions against communism in Eastern Europe because such an action would have resulted in a refusal of Western sources to lend the money needed. Likewise the attempted coup d’état was doomed to failure because the coup leaders would not have been able to borrow the funds needed to stave off starvation in the major cities.

Although Gaidar’s book does not delve into the reason for the decline in petroleum prices in the late 1980’s there is evidence that this occurred because of a conspiracy between the American Central Intelligence Agency (C.I.A.) the leaders of Saudi Arabia to punish the Soviet Union for its invasion of Afghanistan. Saudi Arabia increased its production of petroleum drastically and consequently the price of petroleum fell. http://www.sjsu.edu/faculty/watkins/sovietcollapse.htm


https://www.fas.org/sgp/crs/misc/RL34424.pdf
http://www.cbpp.org/blog/whats-driving-projected-debt


https://fred.stlouisfed.org/series/GFDEGDQ188S
In 1997 Bernie Lown poked his finger into my chest and declared, “Burnout is immoral.”

CIA Information officer in Iraq at the time, Elizabeth Murray, told us the White House called three times asking for evidence that Saddam Hussein had a nuclear weapons program. The calls only stopped when she asked who was asking? (personal communication)
https://www.commonwealmagazine.org/new-nukes


Internet search “General Butler Letter to Norwegian Parliament January 23, 2015”

Ellsberg, *The Doomsday Machine*, p. 94

Ibid, p. 39

Ibid, p. 2

See NYTimes ... http://www.nytimes.com/2016/01/12/science/as-us-modernizes-nuclear-weapons-smaller-leaves-some-uneasy.html?emc=edit_th_20160112&nl=todaysheadlines&nlid=51773383&r=0

...http://www.globalresearch.ca/the-pentagons-strategy-for-world-domination-full-spectrum-dominance-from-asia-to-africa/5397514

...http://www.historytoday.com/john-swift/soviet-american-arms-race

https://en.wikipedia.org/wiki/Moratorium_to_End_the_War_in_Vietnam


http://thebulletin.org/timeline

ibid. Perry, p 55.

https://thebulletin.org/timeline


https://en.wikipedia.org/wiki/Nuclear_sharing Belgium, Netherlands, Germany, Italy, Turkey

https://fas.org/blogs/security/2016/01/b61-12_earth-penetration/

https://fas.org/blogs/security/2014/05/nuke-exercises/

Moldova, Ukraine and Georgia have offers from both the European Union and the Eurasian Economic Union to join their integration unions. All three countries opted for the European Union by signing association agreements on 21 March 2014. However, break-away regions of Moldova (Transnistria), Ukraine (Donetsk and Lugansk) and Georgia (South Ossetia and Abkhazia) have expressed a desire to join the Eurasian Customs Union and integrate into the Eurasian Economic Union.

http://dwij.org/forum/statesperson/general_lee_butler.htm

http://www.politico.com/magazine/story/2015/11/russia-us-tensions-nuclear-cold-war-213395#ixzz3w9oGfTLZ


W. Perry, ibid, p. 66.

...http://freebeacon.com/national-security/Russia-reveals-secret-nuclear-armed-drone-sub/


http://www.fletcherforum.org/2013/03/11/williamperry/

New York Times 12-minute video reporting the history of nuclear winter


https://www.un.org/disarmament/ptnw/


...http://www.naturalchild.org/alice_miller/adolf_hitler.html

https://www.sethkaller.com/freedomdocuments/13th-amendment/
Slavery persists in 21st century Africa, and trafficking in persons persists all over the world. The pernicious institution of slavery, which probably existed for thousands of years before the Roman era, still penetrates cultures all over the world and it has not been abolished or eliminated. And it is possible that certain people or countries will persist in thinking that violence prevents “bad behavior,” whether in criminal codes or international relations.

The pernicious institution of slavery, which probably existed for thousands of years before the Roman era, still penetrates cultures all over the world and it has not been abolished or eliminated. And it is possible that certain people or countries will persist in thinking that violence prevents “bad behavior,” whether in criminal codes or international relations.


http://dwij.org/forum/statesperson/general_lee_butler.htm


U.S.N. photo # DN-ST-90-00150 by PH2 E.E. Crawford, Department of Defense Still Media Collection, Department of Defense Still Media Collection, courtesy of dodmedia.osd.mil. & submitted by Bill Gonyo.


http://news.usni.org/2015/12/02/cho-special-ohio-replacement-program-fund-could-save-up-to-10-billion-over-construction


20 missiles x 4 warheads/missile = 80 warheads @ 455kt each = 36,400kt/14kt = 2600
This was the epic command that US Mother of the year Ruth Youngdahl Nelson made to the youthful US Coast Guardsman who was about to waterhole her small boat that was protesting the arrival of the first Trident Submarine to Naval Base Kitsap-Bangor in 1981. He put down his hose and went below.

Ellsberg, ibid, pp. 305-6

...http://www.nybooks.com/articles/2011/03/10/hitler-vs-stalin-who-killed-more/

...https://www.nobelprize.org/nobel_prizes/peace/lauraeates/2017/

https://books.google.com/books?id=xYrFCwAAQBAJ&q=pA84&dq=95+million+chinese+refugees&source=bl&ots=CeXtnWam6i&sig=liDctqOdg9EFPRAZ12Kleitec&hl=en


http://www.historytoday.com/richard-cavendish/stalin-denounced-nikita-khrushchev

...https://en.wikipedia.org/wiki/List_of_countries_by_GDP_(nominal)


http://peacechild.org/our-history/

http://seattle-tashkent.org/history-2/