

Sifting & Winnowing

Volume 8 Number 1

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April 2017

National security states disregard nuclear and climate science consensus

When the unthinkable happened over Hiroshima August 6, 1945, Albert Einstein was shocked and saddened that his urgings against using atomic bombs in wartime had failed to prevent Harry Truman from dropping them. The Federation of American Scientists argued for civilian control, but instead, the US and USSR settled into the deterrence mode known as Mutually Assured Destruction (MAD), without civilian control or assurance that one of them wouldn't cheat.

In the early 1960s the Soviets stored nuclear warheads in Cuba. The Joint Chiefs of Staff tried to convince President John Kennedy to initiate a first strike on Cuba or the USSR. Kennedy had favored nuclear disarmament while still a senator and, as president, had not changed his views. He had also, according to documents declassified April 21, 2016 and published by the National Security Archive, met with Israeli Prime Minister David Ben-Gurion to discuss more comprehensive inspections of Israel's Dimona facility's plutonium separator reactors. Its design was suspected of having weapon capability. Ben-Gurion had earlier been influenced by the pro-nuclear physicist Edward Teller.

Kennedy saw proliferation as the path to nuclear war. Weeks before his inauguration, his predecessor Dwight Eisenhower reminded him of Israel's unreported Dimona plutonium separator reactor; he also warned that other Middle Eastern countries that felt threatened by Israel's plans might seek help from the Soviets, or might encourage other Arab countries to develop their own nuclear programs.

Understanding this, Kennedy took seriously his responsibility to persuade Ben-Gurion to agree to more rigorous inspections by the International Atomic Energy Agency. They met several times, but the pressure Kennedy was under from high-ranking US advisers to use first strike nuclear weapons was enormous. When he and Fidel Castro finally agreed that neither would take that step, nuclear war between the US and USSR was averted. But on November 22, 1963, another unthinkable event took place: Kennedy's assassination.

To this day, Israel has 80 nuclear warheads and resists inspections. Indeed, Kennedy's assessment was correct; Nuclear weapons have proliferated in altogether nine countries. Lyndon Johnson's ties to Israel prevented him from following up on Dimona. Nor have succeeding presidents done so. Proliferation has rendered obsolete the two-country MAD.

Meanwhile, as the space era progressed, astronomer Carl Sagan's calculations that Venus did not have Earth-like temperatures were vindicated by Mariner 2: Venus temperatures were found to be 864F because greenhouse gases there are trapped by the sun hitting its surfaces. The finding found application in CO₂'s presence on other planets, including Earth, as an invisible pollutant. A depleted ozone layer and chlorofluorocarbons also were found to pose threats to the Earth's climate.

In 1983 Ronald Reagan, also under Teller's influence, came up with the Strategic Defense Initiative (SDI), known by critics as Star Wars, to send nuclear weapons into space. The Union of Concerned Scientists opposed it, as did Sagan, who dictated a letter objecting to it from his hospital bed following a serious operation. Shortly afterwards, Sagan and four colleagues released a comprehensive paper they had been working on known as TTAPS, the letters representing Turco, Toon, Ackerman, Pollack, and Sagan. Using meteorological volcano models to calculate the effects of significant nuclear explosions on light and temperatures that would upset the delicate balance of life on Earth, TTAPS predicted "nuclear winter." Burning cities would produce dust, soot, and smoke, which would shade the planet's surface, cool the Earth, and prevent crops from growing, causing starvation. Sagan convened a meeting of the American Academy of Arts & Sciences, sent TTAPS drafts to every scientist he knew and to long-time Soviet expert George Kennan, who was impressed by his "clear and irrefutable demonstration of the enormity of danger presented by these vast nuclear arsenals."

Sagan's popular 1980 TV series *Cosmos* had already awakened the public's interest in science. Sagan felt a responsibility similar to Einstein's, who had said, "To the village square we must carry the facts of atomic energy." But the 1980s were not the 1960s. Reagan was not Kennedy. Although Reagan himself later decided that nuclear weapons were a "global threat," his advisers thought otherwise, including Teller, who accused Sagan of exaggerating the certainty of nuclear winter with computer models by calling it "speculative," even though SDI used computer models as well. The country was entering the era of public relations when tobacco companies called science into question by creating doubt.

Disarmament resistance was strengthened by the George C. Marshall Institute, founded in 1984 by NASA to discredit nuclear winter. Institute policy makers persuaded PBS to withdraw a documentary critical of SDI, citing the fairness doctrine, even though only three scientists urged the show's cancellation and 6,500 scientists favored showing it. PBS was intimidated and most stations did not air the show.

Marshall's S. Fred Singer, former tobacco lobbyist and today active in the ultra-right Heartland Institute, has shifted his policy goals from nuclear winter denial to climate change denial. Both nuclear winter and climate change have the overwhelming support of scientific community members that have not been influenced by industries threatened by climate action. A steady stream of Koch brothers propaganda has convinced considerable numbers of Americans that the science isn't settled yet, or that it's a hoax. Successful efforts of Sagan and his peers to make people love science have been replaced by skepticism that is only justified if what passes for science is underwritten by industry. Sorting this out is a

challenge, but it has been quite firmly established that recent advanced climate models confirm Sagan's initial computer models on nuclear winter.

On *Democracy Now!* April 4, highly respected author Noam Chomsky pointed out that in 1994 Bill Clinton agreed to reduce hostile acts if North Korea stopped nuke development. This worked until 2001 when George Bush quashed the deal because one of his "axis of evil" countries was North Korea, which promptly resumed its nuclear weapons program. In 2005, a non-aggression pact in which the US would provide for North Korea to use low-enriched uranium for medical purposes was voided by Bush again, with the same result. A recent proposal remains on the table: China and North Korea would end further nuclear weapons development in return for the US ending threatening military maneuvers on South Korea's border. Obama dismissed it, and now Trump says, "We've tried everything." Actually, we haven't. These agreements were not perfect, but were not given a chance. The concept of agreement implies mutual advantage.

Although hating North Korea is sometimes tempting, Chomsky reminds us of the US Air Force's early 1950s response to the North Korean invasion that started the Korean War, when the country was bombed and napalmed mercilessly. According to Secretary of State Dean Rusk, "We bombed everything that moved in North Korea, every brick standing on top of another." After running low on urban targets, US bombers destroyed hydroelectric and irrigation dams, flooded farmland, and destroyed crops. These are forgotten parts of a forgotten war that North Koreans remember. "It is still the 1950s in North Korea and the conflict with South Korea and the US still goes on," says Kathryn Weathersby, Korean War scholar. "North Korea feels backed into a corner and threatened."

In 1946, the newly-formed United Nations passed Resolution #1 for the purpose of eliminating nuclear weapons. A scientific consensus supported it, but the US did not. In 2016, 70 years later, a similar consensus of 3,000 independent scientists, including Nobel Laureates and experienced nuclear weapons experts, came together to craft a new UN Resolution to ban nuclear weapons. It is backed by 123 nations whose people worry that their safety is threatened by the increasing use of nuclear materials in NATO defense buildups in their backyards. The US strongly opposes the resolution, and sent a memo to NATO allies: "Don't support this resolution at the United Nations. And if the Resolution passes, don't go, or else." The memo is classified because public opinion in some NATO countries supports the resolution.

How effective can this resolution be when powerful countries vote no? Princeton physicist Zia Mian, in a *Democracy Now!* interview March 30, said that "the world has banned slavery, chemical and biological weapons, cluster munitions, and genocide." This doesn't mean that no countries ever commit these crimes, but when they do, "they know they're

bad actors. You can't wait for the worst actors in the world before you pass laws on what's right and wrong. If there's no standard, there's no moral power of the majority." Six nuclear states refuse to participate in resolution talks (US, Britain, France, Israel, North Korea, and Russia), but three others (China, India, and Pakistan) are neutral, leaving future options open. Up to now, nuclear negotiations involved only the US and Russia to marginally reduce warheads. US UN representative Nikki Haley said she'd "love to ban" nukes, but the US must defend itself "to keep the peace." Mian calls that "unsustainable and fundamentally immoral and illegal. We want the right to commit mass murder to keep the peace, but deny that right to anyone else wanting to have the same right. Mass murder is no way to keep the peace.

"Scientists have an obligation to tell everyone what nuclear weapons mean. It's part of a longstanding effort to make democracy work. Powerful military states should not be deciding what happens in the world." The resolution will be discussed and finalized this summer. Most US scientists who signed plan to participate in the March for Science April 22.

Global Network Against Weapons & Nuclear Power in Space correspondent Dave Webb (www.space4peace.org) writes that NATO and its corporate backer Raytheon are nuclear partners who have already deployed 188 tactical B61 nuclear bombs in Europe under the NATO nuclear sharing arrangement. Bombs are stored in Belgium, Netherlands, Estonia, and Romania. NATO claims that fear of Iran and North Korea require such preparations, but Russia's Putin, the suspected target, has pulled out of arms control talks.

Europe is regarded as a potential staging ground for a conflict with Russia. NATO has been expanding missile deployment almost to Russia's doorstep, ignoring a 1990 agreement made between the newly-formed Russia and the US, never to come any nearer to Russia. This agreement has been broken by all succeeding presidents as NATO gradually expanded. In 2014, when the US initiated a coup against Ukraine's democratically-elected president, the US goal to surround Russia's borders with NATO countries was clearly exposed. Since NATO's ballistic missiles are now in Germany, Spain, Turkey, and Romania, resistance groups are growing. "No to War/No to NATO" signs often followed by "Yes to Refugees" have appeared at protests and in shop windows. Warsaw NATO Summit 2016 organizers were anxious enough about protesters to deploy more than 10,000 security forces.

The US is encircling Russia and China with interceptor missiles, based on Navy warships with ground-based launchers. Their purpose is to defend against retaliatory strikes by China or Russia following a US first-strike attack. Weapons in space may account for Trump's military budget increase. House member Trent Frank (R-AZ) considers it "a big payday for programs that develop weapons to be deployed in space." Stockholm International Peace Research Institute (SIPRI)

reports that US military expenditures comprise 34% of the world's defense spending. NATO countries together push the total to over 50%. Russia spends 4% of the world's total.

Linking Russia to Trump's electoral victory should be independently explored. But the current demonization of Russia turns out to be good business for the military-industrial complex. Obsession about Putin detracts from the need to negotiate nuclear weapons issues, with disarmament topping the agenda. Russia and the US must agree to no first strike. If either attacked the other, with their current arsenals, it would kill everyone on both sides, known as SAD, or Self-Assured Destruction; a first attacker would be a suicide bomber. An attack by a nuclear nation with Hiroshima-sized warheads (Israel, India, Pakistan, North Korea) could produce enough smoke for an unprecedented climate change that would sentence one to two million people to death by starvation.

Often overlooked is the spent uranium from nuclear power plants to build nuclear weapons. These plants can themselves become weapons. Fukushima is a nuclear power disaster that persists. Prime Minister Shinzo Abe's hyping of the Olympics distracts from the vain attempts of the Tokyo Electric Power Company (TEPCO) to figure out what to do with melted reactor floors and how to stop burning fuel rods from needing 400 tons of water poured over them daily. Radiation levels in reactor #2 are 530 sieverts instead of the expected 73. One sievert causes acute poisoning and 10 causes death.

This is not just a Japan problem. Fukushima's toxins pollute the Pacific Ocean and reach North American shores. Chernobyl was an unprecedented disaster, but enough land exists to sequester spent fuel rods for centuries, the half-life of radioactive isotopes. Japan has nowhere to store the rods. Abe's plan to return the 60,000 displaced people to their "cleaned-up" homes would expose them to radiation levels that Greenpeace claims are not at projected safe levels; and the testing procedures were substandard. Tests measured only cesium, omitting uranium, plutonium, and strontium. Those who object to returning to this mess are dubbed "radiophobes."

Such sacrifice zones have existed since 1930, when uranium mining began in Hanford, Montana, to provide fuel for the first atomic weapons. Today, Hanford is a toxic waste super-site, with some of the world's most dangerous radioactive wastes. Hanford citizens are desperate for a cleanup they will probably never get. The cost would be \$2 million annually for 30-40 years. This is a fraction of our military budget but would not qualify under Trump's austerity plans. Nor has any president seen fit to fund a cleanup. These were problems not foreseen in the 1970s when most of these plants were built.

New-generation nuclear reactors in Georgia and South Carolina are several years behind schedule and over \$5 billion over budget. On March 30 *USA Today* reported that Toshiba's Westinghouse Division filed for Chapter 11 bankruptcy. "The

Westinghouse projects in GA and SC are in jeopardy. They threaten to bring down Toshiba itself. US nuclear power generating capacity has been flat since 1990, according to the Energy Information Administration." The Japanese government will not bail out Toshiba, which has warned its US customers in GA and SC that their viability is being reassessed. Physicist Amory Lovins writes, "Long before Fukushima, "nuclear power was dying of an incurable attack of market forces. Wind and solar devices now offer more flexibility at half the cost, or less. Just as computing no longer needs mainframes, electricity no longer needs giant power."

The responsible actions performed by Greenpeace in monitoring contaminated areas near Fukushima for air, water, and soil radiation levels comprise a part of the group's many climate change actions. Greenpeace regards both nuclear weapons and nuclear power plants as threats to the climate. Those defending power plants because they don't emit CO2 fail to consider the full cycle of constructing the plants, transporting the spent fuel rods, and disposing of uranium mining tailings, all of which make extensive use of fossil fuels. Carbon may not radiate from the plants, but dangerous radiation that includes strontium, plutonium, and strontium does.

Fossil fuel companies have declared nuclear power a "bridge" to renewable energy, but no bridge is needed. Renewables are ready to run. Fossil fuel companies use the bridge excuse to influence public opinion. Gov. Cuomo won his campaign to keep aging nuclear plants open with very little pushback from environmental groups. But we might still stop it. The state budget continues to be negotiated and Cuomo can still stop it if enough people call him 1-866-772-3843 and urge him to cancel the nuclear bailout. It's wrong for the climate, wrong for NYS finances, and wrong for jobs. It puts our tax money into the hands of Exelon, a corporation that is dumbfounded that New York actually agrees to keep its dying industry alive. Nuclear power and climate change are still as inseparable as Carl Sagan said they were. But now more than ever.

Breaking news: Rep. Barbara Lee (D-CA) and Sen. Rand Paul (R-KY) immediately spoke out against Trump's Syrian missile attack, but did not mention nuclear war as a potential consequence. Only Rep. Tulsi Gabbard (D-HI) warned that "the attack could escalate into a nuclear war. President Trump has taken the advice of war hawks and escalated our illegal regime change war to overthrow the Syrian government." Now war hawks comprise the sudden US political consensus. Incredibly, leaders of both parties got behind the attack, as did Hillary Clinton, who had laid out an even more hawkish plan for Syria during the campaign. Trump might have figured that war could prop up his low poll numbers, along with reassuring Congress and constituents of his ability to snub Putin. But he may have jeopardized a potential nuclear weapons agreement between the US and Russia.

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