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destroy this instrument -- to lift its use from death to life -- if the world will join in a pact to that end." Nations under the Baruch Plan would be barred from acquiring, developing and possessing nuclear weapons, and all nuclear materials and production plants would be placed under international control. The Soviets countered with their own ban of nuclear weapons, but the icy chill of the impending Cold War polarized discussions until, in 1949, the Soviets test exploded their first nuclear weapon.

The Cold War did not completely freeze out the idea of eliminating nuclear weapons. In September 1961, the U.S. and USSR issued a joint statement agreeing to the "elimination of all stockpiles of nuclear, chemical, bacteriological, and other weapons of mass destruction, and cessation of the production of such weapons; (and the) elimination of all means of delivery of mass destruction." This effort, however, was a victim of the increased heating up of the Cold War which culminated the following year with the Cuban Missile Crisis, the closest the world has so far come to nuclear war.

Still the worst moment of the Cold War (and perhaps of human history, which might have ended there), it is now said that our planet and species were not as close to obliteration as the participants thought, and a number of other brushes with nuclear oblivion followed, most publicly unknown, others from well-publicized systems failures -- in particular a few frightening instances of computer malfunctions averted breathtakingly close to the point of no return. (A 13 cent part was at fault in one glitch, an interesting comment on the price of civilization.)

The Cuban crisis started when the U.S. discovered Russian nuclear missiles being emplaced on the island in late October 1962. The Russians claimed they thought the U.S. was about to invade Havana, which the U.S. denied (though the previous year it sponsored the Bay of Pigs fiasco and attempted several times to assassinate Fidel Castro). President Kennedy and his advisors demanded the missiles be removed and a naval blockade was set up to prevent Russian vessels from delivering any more of the weapons. In a very short time the dispute reached for the doomsday button. The American myth is that the Soviet Union backed down from the brink of extinction and removed its missiles from Cuba. In reality U.S. and Soviet political leaders cut an 11th hour deal (the Soviets to withdraw their missiles from Cuba, the U.S. to remove some obsolete missiles from the Soviet border with Turkey) because the military juggernauts of both countries were moving inexorably toward nuclear confrontation.

At a time when the U.S. and USSR were settling into a Cold War *status quo* and recognizing a balance of terror that made it absurd to initiate a nuclear war because both would be obliterated, communist China, which joined the nuclear club (which also included at that time England and France and probably Israel) to the consternation of the two primary superpowers, was accepting the discarded notion that nuclear war was not only inevitable but winnable. This contradiction, and Maoist China's adoption of Stalinism just as Russia was abandoning it, produced an ideological schism which is considered more profound than any since Catholicism split between Rome and Constantinople.

The nuclear arms race quickened in the Reagan years. The U.S. readopted its formerly repudiated policy of arming for a winnable war. The balance of terror became a rapidly shifting teeter-totter during the early 1980s. New generations of horror were poked like chips -- including plans for a space-based ABM system in violation of the 1972 treaty that was quickly parodied as 'Star Wars' -- and psychologically it seemed in the upper levels of government that denial matched the pace of reality: the more bizarre and dangerous the arms race got, so equally were official dismissals of the fears of holocaust their actions precipitated.

Though the Reagan policy was irresponsible and skirted oblivion, the renewed and more vigorous than ever arms race broke the Soviet Union which was already fatally strained by internal contradictions and ruptures. Russian Premier Mikhail Gorbachev's remarkable personal appeal might have been a singular factor that put the brakes on the virtually out of control rush toward nuclear confrontation. Attempting to save his crumbling empire, Gorbachev tapped into the great worldwide angst about nuclear weapons in order to slow down the arms race which was bankrupting the USSR. He succeeded in ending the Cold War but the Soviet empire imploded.

The arms treaties made during the Cold War were worthless in themselves, as are all treaties. After all, there is no court of accountability for nations short of war. Treaties exist only as long as they are convenient to their signers, and have been used more often as justification for warfare than for peace. The importance of the nuclear arms treaties was not their ratification but the process (although ratification continued the process) of negotiation.

Suspensions, sanctions, thunderous denouncements and intense renewals of nuclear arms competition were not unique in the history of negotiations between the USA and USSR. If anything, it was that sort of aggressive behavior that originated the Strategic Arms Limitation Treaty (SALT) talks in 1969. At issue were anti-ballistic missile systems (ABMs) that were being developed by both countries as defense against incoming missiles. The ABM systems brought sharply divided views on their possible destabilization of the mutually assured destruction concept and to a persistent malignancy about nuclear weapons -- not radiation, but the belief that a nuclear war can be fought and won despite substantial evidence that mutual annihilation will be its only result.

The combined threats of newly developed ICBMs and ABMs set up in defense of them prompted the first round of SALT talks in Helsinki in November 1969. Two and a half years later, the SALT 1 talks ended on May 26, 1972 when President

Richard Nixon and Soviet General Secretary Leonid Brezhnev signed the 'Anti-Ballistic Missile Treaty' and the 'Interim Agreement of Strategic Offensive Arms'.

The ABM Treaty specified that each of the belligerents could have only two ABM deployment areas, which were subsequently reduced to one area apiece. This was to be so restricted and so located that neither the USA nor the USSR could provide a nationwide ABM defense or could form the basis of developing one, which left penetration by the other's offensive missiles virtually unchallenged. The intent was to limit development of offensive nuclear weapons that would be deployed against ABM systems and provoke a new cycle of proliferation and stockpiling of such weapons. The Soviet Union chose Moscow, which was already curtained, as its ABM site, and the U.S., which initially planned to protect Washington, D.C., selected an ICBM site in North Dakota.

Precise quantitative and qualitative limits were imposed on the allowed ABM systems. At each site there was to be no more than 100 interceptor missiles and missile launchers.

Although deployment of radars intended to give early warning of missile attacks was not prohibited, they were to be located only along the territorial boundaries of each country and oriented outward so that they would not contribute to an effective ABM defense of the interior.

The treaty prohibited surface-to-air missiles (SAMs), intended for defense against aircraft, to be used against ICBMs and submarine-launched ballistic missiles (SLBMs), and also prohibited developments and improvements that would make such attacks possible.

Neither side was to develop, test or deploy ABM launchers capable of launching more than one interceptor missile at a time or modify existing launchers to give them this capability, and systems for rapid reload of launchers were similarly barred. Interceptor missiles with more than one independently guided warhead were also banned.

Both parties agreed to limit qualitative improvement of their ABM technology and to prohibit the development, testing or deployment of sea-based, air-based or space-based ABM systems, which is at the heart of the current attempt by President George Bush Jr. to scrap the treaty and resurrect Reagan's 'Star Wars'. And should future technology develop new ABM systems "based on other physical principles" than those employed at the time of the treaty, it was agreed that limiting such systems would be negotiated.

At some point in the SALT 1 talks the negotiators must have concluded that one of their primary subjects was to prevent nuclear war. A year after the SALT Treaty was signed President Nixon and Soviet General Secretary Brezhnev signed an 'Agreement on the Prevention of Nuclear War'. The USA and USSR promised to make the removal of the threat of nuclear war and the use of nuclear weapons an "objective of their policies," to practice restraint in their relations to one another and toward all countries, and to pursue a policy toward stability and peace.

The Agreement committed both countries to consult one another if they found themselves in a nuclear confrontation, whether brought about by their own policies toward each other or as a result of political developments elsewhere in the world. The Agreement provided that these consultations were to be communicated to the United Nations and to allies and other countries.

International concern over skyrocketing nuclear arsenals finally prompted the United Nations to hold for the first time a special session on disarmament in 1978. Signed by all UN members, the conference called on nuclear weapons nations to focus their efforts on the elimination of nuclear weapons:

"Nuclear weapons pose the greatest danger to mankind and the survival of civilization. It is essential to halt and reverse the nuclear arms race in all its aspects in order to avert the danger of war involving nuclear weapons. The ultimate goal in this context is the complete elimination of nuclear weapons. The most effective guarantee against the danger of nuclear war and the use of nuclear weapons is nuclear disarmament and the complete elimination of nuclear weapons."

An agreement reached by Soviet Premier Gorbachev and U.S. President Reagan in 1987 to regulate intermediate-range nuclear missiles marked the end of the era of East/West confrontation (the Cold War). Lord Zuckerman wrote for *The New York Review of Books* that the agreement was also, "even if unpredictably, the catalyst for the political, nationalist

and economic upheavals of the old USSR and what used to be called *Mittel Europa*" (culminating in savage ethnic genocide in Eastern Europe).

The abrupt end of the Cold War between the two superpowers and the shattering of the Soviet empire that followed precipitated new dangers. The newer threat was a different form of "nuclear shadow" hanging over the world that was not bound by the intricate series of treaties devised over a half century. The nuclear shift was no longer a big power confrontation "that could utterly devastate the contestants and pollute with radiation the whole of the northern hemisphere," Lord Zuckerman wrote in 1993: "What is urgent now is the issue of proliferation -- the danger of nuclear weapons being made by a country unsophisticated enough to use them against a neighbor, and the possibility of nuclear weapons being acquired by a terrorist organization."

Although the Armistice of World War 1 lasted less than a generation, it was a hope that humanity's addiction to warfare might finally end because war had become too horrible to bear. Ironically, that hope accompanied the larger fears of nuclear annihilation during the Cold War: that a balance of terror made warfare itself obsolete. That balance, horrible as it was, is yet regarded preferable to the post-Cold War uncertainty of a wild-card nuclear club that has been released from the restraints of collective oblivion -- newer members to the club Pakistan and India gnash their nuclear teeth over Kashmir.

The half century nuclear arms race created immense fortunes for munitions makers and made the economies of both superpowers hostage to military spending. The American economy in particular produced an interlocking Mafia of thousands of corporations involved in designing and constructing nuclear warheads and developing systems for transporting, arming and launching the weapons. The estimated annual costs for maintaining and as well as expanding the U.S. nuclear arsenal was nearly \$50 billion, with that figure nearly doubled when both nuclear and concomitant conventional military systems are considered. More millions of dollars should be factored in the form of nuclear weapons research grants to hundreds of universities and colleges.

The nuclear arms race was a twofold liability to American society and assuredly Russian society as well -- it held the citizens of both countries hostage to the fears and the oppressive secrecy it invoked, and it diverted hundreds of billions of dollars away from other social needs. The rubric of national defense not only built the private fortunes of munitions makers in the USA and placed them outside public scrutiny and accountability, it also gave them tremendous political power which was generally conservative and anti-democratic in nature.

With the Cold War over and the Soviet Union banished to history's dungheap along with the 20th century it astonished and appalled, the United States as the only remaining superpower is attempting to put in place a millennial form of *Pax Romana* by reinvigorating the Star Wars space satellite-missile and -laser system, which has been called "extravagant, inept, unnecessary and destabilizing."

President George Bush has said "the Cold War is over forever," and he and Russian President Vladimir Putin have agreed to a new round of arms talks to further reduce nuclear stockpiles, although last year Putin changed Russia's military doctrine to a "first strike" mode in response to Star Wars. Yet Bush is adamant about abrogating the 1972 ABM treaty and taking over the "high frontier." Star Wars partisans insist it is a defense system but it is actually the ultimate offensive nuclear weapon which theoretically would be capable of raining laser beams and missiles down upon every place on the planet.

The development and use of atomic bombs on Japan will be disputed long after World War 2 diminishes to history as ancient as Caesar's campaigns in Gaul. The advent of the nuclear age might always be a topic of debate, although a thousand years from now the beginning of atomic power will be as misty as the discovery of fire or the first use of a hammer, two such useful essentials no one can conceive that humanity ever functioned without them, which future generations might think about splitting the atom.

Everybody born since 1945 has lived their entire lives under the shadow of the Mushroom Cloud, which supersedes the Cross as the most relevant of humanity's icons. The world has recently lurched away from the brink of nuclear war, yet its possibility is far from remote.

Most people would rather not be reminded that they live in the age of plutonium, and that wherever they live they are an hour away from a missile that has their address despite current dismantling of arsenals: enough remain to obliterate the planet multiple times. Our troubles did not originate with the gods we invent nor from the cosmos we hardly understand: the nuclear devil is our own, not a bad joke played on us by a malevolent deity nor is it a divine instrument of hurrah for the faithful. For all its awesome power and despite suspicions that it is wildly out of control, nuclear technology is a product of human beings and a problem of human scope that can only be resolved by human beings.

Humanity will either obliterate or preserve itself. An indication that the species might be worth saving will be its courage to try. Nuclear weapons cannot be uninvented. The knowledge of them will last as long as *homo sapiens sapiens* defies its own handicaps and dwells in the galaxy. If we are not smart enough to contain our atomic goblin our ruined cities will leave no trace that we once briefly and suicidally ruled Earth.

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