

A World Free of Nuclear Weapons: Desirable? Feasible?

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Summary

I will underline the special character of nuclear weapons and will discuss the desirability and the feasibility of a nuclear-weapon-free world. Some past activities promoting nuclear disarmament and the transition to a nuclear-weapon-free world will be reviewed. I will discuss the significant developments initiated by the January 2007 Wall Street Journal op-ed coauthored by Shultz, Perry, Kissinger and Nunn, which culminated in the April 2009 Prague speech by President Obama. Finally, I will outline recent developments and future steps toward a nuclear-weapon-free world.

The *special* character of nuclear weaponry

Just three indications

1. The yield of nuclear (“A bombs”) and especially thermonuclear (“H bombs”) explosions is many orders of magnitudes larger than that of conventional explosions: for instance the largest thermonuclear test explosion, detonated (October 30, 1961) in the high atmosphere by the Soviet Union, released in a fraction of a second an energy well over *50 megatons*, i. e. more than the energy released by the explosion of *50 million tons=50 billion kilograms* of conventional explosive, such as TNT: more than 10 times larger than the estimated total of *all* previous explosions in war throughout history, including the two World Wars with all their carpet bombings (London, Hamburg, Dresden, Tokyo,...), Hiroshima, Nagasaki...

2. Nuclear weapons have never been used in war after their use to obliterate Hiroshima and Nagasaki (6 and 9 August, 1945): not even when nuclear-weapon countries were defeated by a non-nuclear-weapon opponent, as the USA in Vietnam and Russia in Afghanistan.

3. All countries of the world except a few (USA, United Kingdom, Russia, France, China; India, Pakistan, Israel; North Korea) have *voluntarily* renounced the acquisition of nuclear weaponry, by becoming non-nuclear-weapon parties to the Non Proliferation Treaty (NPT) and --- many of them, enough to cover more than half of the Earth, including the entire Southern Hemisphere --- of a Nuclear-Weapon-Free Zone: including many countries having the technological capability to manufacture nuclear weapons.

Desirability and feasibility of the transition to a nuclear-weapon-free world

The **desirability** is far from obvious. In a world of nation states in which only very few of them possess nuclear weapons, it seems clear that it is preferable for them to keep these capabilities. In a world in which some states have a “pariah” connotation (possibly for very good reasons; for instance, because of a dismal “human rights” record), their rulers might feel that the possession of a nuclear-weapon capability provides an essential insurance against external interventions. A country that faces an enemy having superior conventional forces may feel that the possession of a nuclear capability is an “equalizer”. A country encircled by several hostile neighbors that challenge its very right to exist may feel that the possession of a nuclear-weapon capability is the ultimate guarantor of survival. And some thinkers argue that the existence of nuclear weapons, by making war exceedingly destructive, provides an indispensable ingredient to avoid major wars, hence a guarantor of peace.

On the other hand it is obvious that the spread of nuclear weaponry to many countries and possibly even to subnational “terrorist” groups entails, sooner or later, their actual use, with devastating consequences for our civilization, possibly even the disappearance of *Homo sapiens*. And it is indeed well known from world-wide opinion polls --- to the extent these tests are reliable --- that a significant majority of the inhabitants of this planet favor the total elimination of nuclear weaponry; including significant majorities in most, perhaps all, the countries now possessing nuclear weapons. It is also remarkable that so many States have so far voluntarily renounced the acquisition of nuclear weapons; including quite a few States having the technical capability to do so. But this regime of “nuclear-weapon nonproliferation” cannot last indefinitely; indeed it is now in danger of crumbling.

The **feasibility** is, in my opinion, instead rather clear. Nuclear weapons have not been used in war after August 9, 1945; *there probably is no person in this room who was an adult at that time* (I was 10). The total elimination of *chemical* weaponry as a usable military instrument has now been *essentially* achieved: note that these weapons were used much more often in war than nuclear weapons, and that the verification of the universal respect of their abolition is much more cumbersome than it shall be for nuclear weapons, due to the much more extended and pervasive character of chemical, rather than nuclear, peaceful activities. Moreover all countries of the world except 8 or 9 have already *voluntarily* renounced nuclear weapons, by having become full parties to the Non Proliferation Treaty (NPT) and in addition --- many of them -- - having become full parties to Nuclear-Weapon-Free Zones (which cover a large part of our planet, including the totality of its Southern hemisphere). And these treaties have efficient verification regimes.

The transition to a nuclear-weapon-free world: from desirable utopia to political reality

Wall Street Journal (January 4, 2007), op-ed entitled *A world without nuclear weapons: the “coming out” in favor of the transition to a Nuclear-Weapon-Free World*, by a *bipartisan* quartet of *eminent* American statesmen: George Shultz, Bill Perry, Henry Kissinger, Sam Nunn.

QUOTE (final sentence):

“We endorse setting the goal of a world free of nuclear weapons and working energetically on the actions required to achieve that goal, beginning with the measures outlined above.”

*Mr. **Shultz** was **secretary of state** from 1982 to 1989 (Reagan Administration).*

*Mr. **Perry** was **secretary of defense** from 1994 to 1997 (Clinton Administration).*

*Mr. **Kissinger** was **secretary of state** from 1973 to 1977 (Nixon Administration).*

*Mr. **Nunn** is the former **chairman** (for very many years) of the **U. S. Senate Armed Services Committee**.*

This bipartisan op-ed is very significant because of its authors, and even more so because of the avalanche of subsequent endorsements: for instance, in the USA, by the *majority* of the living Americans having served as Secretaries of State, Secretaries of Defense and Special Assistants for International Security to the President; and in the rest of the world by an impressive array of eminent personalities (too many to be reported).

In Italy: Corriere della Sera, 24/07/2008, p. 36 (see also p. 1).

Per un mondo senza armi nucleari

Caro Direttore, un articolo sul Wall Street Journal, intitolato «Un mondo senza armi nucleari», firmato da George Shultz e Henry Kissinger, già segretari di Stato dei presidenti repubblicani Reagan e Nixon, e da Bill Perry e Sam Nunn, il primo già ministro della Difesa con il presidente Clinton, il secondo presidente democratico della Commissione Difesa del Senato statunitense, ha aperto, nel gennaio 2007, una discussione di enorme importanza per il futuro dell' umanità.

In quell' articolo i quattro statisti americani proponevano la totale eliminazione delle armi nucleari. L' argomento, successivamente ripreso in un secondo intervento nel gennaio 2008, è che, se i Paesi che dispongono di armi nucleari - che sono ormai 8 - e soprattutto i due principali, Stati Uniti e Russia, non prendono l' iniziativa di avviare un processo tendente alla loro eliminazione, diventerà sempre più difficile impedirne l' acquisizione da parte di altri Paesi, con il rischio che prima o poi queste armi vengano usate con esiti catastrofici per il mondo.

L' importanza dell' articolo sta nel fatto che, per la prima volta, il tema della completa eliminazione delle armi nucleari veniva affrontato, negli Stati Uniti, da uomini politici che rappresentano il baricentro del pensiero politico-strategico americano e ambedue le forze politiche a sottolineare che si tratta di un obiettivo da perseguire nell' interesse nazionale e del mondo.

A quell' articolo hanno fatto seguito una serie di prese di posizione importanti. I due candidati alla presidenza degli Stati Uniti hanno sostanzialmente convenuto sull' obiettivo e così la maggioranza di coloro che nel passato hanno occupato le massime responsabilità istituzionali negli Stati Uniti in questo campo. In Russia vi è stata una reazione positiva di Gorbaciov e un atteggiamento più cauto, ma non negativo, del Governo. In Inghilterra Gordon Brown si è espresso favorevolmente; il ministro della Difesa ha proposto di ospitare esperti di Stati Uniti, Russia, Inghilterra, Francia e Cina nei laboratori nucleari inglesi, per mettere a punto le metodologie di verifica dell' eliminazione di armi nucleari; nei giorni scorsi sul Times un altro quartetto bipartisan comprendente tre ex ministri degli Esteri ed un ex segretario generale della Nato ha preso posizione a favore. In Francia il Libro bianco della Difesa indica come obiettivo da perseguire l' eliminazione delle armi nucleari. In Australia il governo ha istituito una nuova Commissione internazionale di esperti per tracciare un percorso che conduca all' eliminazione delle armi nucleari. Vi sono state infine innumerevoli prese di posizione favorevoli di gruppi non governativi. Riteniamo importante che anche dall' Italia venga un' indicazione in questo senso e che, come in altri Paesi, le nostre firme testimonino che, in ambedue i principali schieramenti politici e nella comunità scientifica, vi è piena condivisione dell' importanza di questo tema e di questo obiettivo.

Desideriamo indicare i passi principali per muovere in questa direzione. Il primo è l' entrata in vigore del Trattato che mette al bando ogni tipo di esplosioni nucleari sperimentali, comprese quelle sotterranee, sancendo la moratoria di fatto ora vigente. Il secondo è sbloccare la trattativa, nella Conferenza sul disarmo di Ginevra, sull' accordo Fmct (*Fissile material cut-off treaty*) che vieta la produzione dell' uranio

altamente arricchito e del plutonio con opportuna composizione isotopica, necessari per la produzione delle armi nucleari. Anche qui vige già una moratoria di fatto senza però un accordo formale e alcuna verifica. L' entrata in vigore di questi due trattati sarebbe assai apprezzata dai Paesi militarmente non nucleari e faciliterebbe il buon esito della Conferenza periodica prevista per il 2010 dal Trattato di non-proliferazione nucleare, rafforzando il regime mondiale di non proliferazione, compreso il monitoraggio dell' effettivo rispetto - nella lettera e nello spirito - degli impegni previsti nel trattato. Ci rendiamo ben conto che la strada che condurrà all' eliminazione delle armi nucleari è lunga. Essa richiede alcune condizioni politiche. La prima è un miglioramento effettivo dei rapporti fra le superpotenze nucleari, Stati Uniti e Russia, che detengono tuttora - nonostante le recenti riduzioni - oltre i nove decimi di tutte le armi nucleari nel mondo. Questo aiuterebbe gli altri tre Paesi nucleari riconosciuti dal Trattato di non-proliferazione - Inghilterra, Francia e Cina - a fare la loro parte. È necessario inoltre che si allentino le tensioni nelle aree del mondo nelle quali è più forte il rischio che possano essere utilizzate armi o ordigni nucleari, magari a opera di gruppi terroristici. Ci riferiamo al Sud-Est asiatico (India e Pakistan) e al problema israelo-palestinese-arabo in Medio Oriente. In ambedue questi contesti, l' indicazione di una volontà da parte delle potenze nucleari di muovere nella direzione di un mondo libero dalle armi nucleari sicuramente avrebbe una positiva influenza. L' Italia e l' Europa possono e debbono fare la loro parte per favorire il cammino verso la completa eliminazione delle armi nucleari. È chiaro che a tale esito si potrà pervenire

solo con un impegno dei principali protagonisti, in primo luogo Stati Uniti e Russia, e degli altri Paesi militarmente nucleari. **Ma la diffusione di un nuovo modo di pensare - di una nuova «saggezza condivisa» - è un passo fondamentale in questa direzione, cui anche l' Italia deve contribuire. Occorre che su questi temi, fondamentali per la stessa sopravvivenza dell' umanità, nonostante le legittime anzi necessarie contrapposizioni politiche, si riconosca un superiore, comune interesse.**

The diffusion of a new way of thinking---of a new “shared wisdom”---is a fundamental step in this direction, to which also Italy must contribute. It is necessary that on these themes, fundamental for the very survival of humankind, in spite of legitimate indeed necessary political contrapositions, a superior, common interest be recognized.

Massimo D'Alema, former Prime Minister (1998-2000) and Minister of Foreign Affairs (2006-2008) (center-left);

Gianfranco Fini, former Minister of Foreign Affairs (2004-2006) and then Chairman of Parliament (until December 2012) (center-right);

Giorgio La Malfa, former Minister of European Affairs (2005-2006) (center-right);

Arturo Parisi, former Minister of Defense (2006-2008) (center-left);

Francesco Calogero, physicist, from 1989 to 1997 Secretary General of Pugwash (1995 Nobel Peace Prize)

The Prague speech by President Obama (5 April 2009)

QUOTE

...Today, the Cold War has disappeared but thousands of those weapons have not. In a strange turn of history, the threat of global nuclear war has gone down, but the risk of a nuclear attack has gone up. More nations have acquired these weapons. Testing has continued. Black market trade in nuclear secrets and nuclear materials abound. The technology to build a bomb has spread. Terrorists are determined to buy, build or steal one. Our efforts to contain these dangers are centered on a global non-proliferation regime, but as more people and nations break the rules, we could reach the point where the center cannot hold.

Now, understand, this matters to people everywhere. One nuclear weapon exploded in one city — be it New York or Moscow, Islamabad or Mumbai, Tokyo or Tel Aviv, Paris or Prague — could kill hundreds of thousands of people. And no matter where it happens, there is no end to what the consequences might be — for our global safety, our security, our society, our economy, to our ultimate survival.

Some argue that the spread of these weapons cannot be stopped, cannot be checked — that we are destined to live in a world where more nations and more people possess the ultimate tools of destruction. Such fatalism is a deadly adversary, for if we believe that the spread of nuclear weapons is inevitable, then in some way we are admitting to ourselves that the use of nuclear weapons is inevitable.

Just as we stood for freedom in the 20th century, we must stand together for the right of people everywhere to live free from fear in the 21st century. (Applause.) And as a nuclear power — as the only nuclear power to have used a nuclear weapon — the United States has a moral responsibility to act. We cannot succeed in this endeavor alone, but we can lead it, we can start it.

So today, I state clearly and with conviction America's commitment to seek the peace and security of a world without nuclear weapons. (Applause) I'm not naive. This goal will not be reached quickly -- perhaps not in my lifetime. It will take patience and persistence. But now we, too, must ignore the voices who tell us that the world cannot change. We have to insist, "Yes, we can." (Applause)

UNQUOTE

Another quote from President Obama (March 26, 2012; Hankuk University, Seoul, Republic of Korea)

“Now, American leadership has been essential to progress in a second area -- taking concrete steps towards a world without nuclear weapons. As a party to the Nuclear Nonproliferation Treaty, this is our obligation, and it’s one that I take very seriously. But I believe the United States has a unique responsibility to act -- indeed, we have a moral obligation. I say this as President of the only nation ever to use nuclear weapons. I say it as a Commander-in-Chief who knows that our nuclear codes are never far from my side. Most of all, I say it as a father, who wants my two young daughters to grow up in a world where everything they know and love can’t be instantly wiped out.”

All this advocacy is mainly based on four arguments: (i) the end of the Cold War; (ii) the intrinsic risk of the existence of nuclear weapons --- the actual use of which has been avoided so far due to responsible caution but also thanks to “good luck” (and see in this respect the recent book by Eric Schlosser, *Command and Control*, Penguin Press, September 2013; now also made into a film); (iii) the risk of a breakdown of the worldwide nuclear-weapon nonproliferation regime, leading to the spread of nuclear weapons to more countries and more probably to their actual use, with horrendous consequences; (iv) the need of a common approach to fight (i. e., to prevent) terrorism (including, I would like to emphasize, nuclear terrorism).

Future steps towards a Nuclear-Weapon-Free World (NWFW)

- * Progress in the *reset* of relations among USA and Russia: from conflict to partnership (“common security”). Involvement of China.
- * Further progress in nuclear disarmament: bilateral USA-Russia (strategic nuclear weapons, tactical nuclear weapons; warheads besides delivery vehicles; space; conventional weapons); involvement of *all* nuclear weapon countries; a *universal* convention, with adequate verification (perhaps on the model of the Chemical Weapon Convention, perhaps backed by additional Nuclear-Weapon-Free Zones, for instance in the extended Middle East).
- * The notion of NWFW: (i) “global zero”: no nuclear weapons exist; (ii) “*asymptotic*”: a very long delay (an “*infinite*” time) is technologically required for any reconstitution of nuclear arsenals.

Possible (unilateral/reciprocal) steps

* **Ratification** by the USA Senate of the Comprehensive Test Ban Treaty; and hopeful subsequent entry into force of this Treaty. **Quite unlikely with a Senate dominated by the Republican Party.**

* Nuclear posture change: the **sole** role of nuclear weapons is to deter an attack **with nuclear weapons**. The transition to a NFWW becomes then a **logical** consequence.

* Nuclear strategy: *no first use* of nuclear weapons.

* **Termination** of the quick alert of nuclear-armed missiles, now envisaging their launch *within minutes*: a very dangerous posture, still adopted by USA and Russia (“I believe that we avoided nuclear catastrophe as much by good luck as by good management”; Bill Perry, USA Secretary of Defence 1994-1997; Second Annual Robert McNamara Lecture on War and Peace, at Harvard, Feb. 24, 2011).

Let me end with the mention of two positive developments, and some final personal considerations.

The establishment of a nuclear fuel bank in Kazakhstan

On August 27, 2015, the government of Kazakhstan signed an agreement with the International Atomic Energy Agency (IAEA) to establish an international low-enriched uranium fuel bank in the country. This bank, to be located at the Ulba Metallurgical Plant in the northeastern city of Ust-Kamenogorsk, will be owned and managed by the IAEA. It will give members access to enriched nuclear fuel in cases of disruption to their own supply, thus removing the need for countries to build their own enrichment facilities, which pose a proliferation risk. ***The bank has been inaugurated on August 29, 2017, in Astana.*** [I was there: it was the last day of the 2017 Pugwash Conference].

The launching and progress of the Humanitarian Impact of Nuclear Weapons Initiative (HINWI)

"The Treaty on the Prohibition of Nuclear Weapons leading to their elimination will be open for signature on September 20, 2017, at the United Nations Headquarters in New York. This instrument was adopted last July 7, 2017, by 122 States after intense negotiations. It is obviously consistent with the Treaty on the Non-proliferation of Nuclear Weapons and in fact provides a path toward nuclear disarmament and the abolition of nuclear weapons as requested by Article VI of the NPT, in fulfilment of a longstanding aspiration of the international community. The very first Resolution of the General Assembly, in 1946, already called for the elimination of all weapons of mass destruction, particularly nuclear weapons. The other two categories of weapons of mass destruction – biological and chemical – have already been outlawed by multilateral treaties. The time to step up efforts on nuclear disarmament is now.

Pugwash calls on all States to take this important step toward the achievement of peace and security for all nations and peoples by signing the Prohibition Treaty and working for its ratification and early entry into force."

Sergio Duarte, President of Pugwash

Paolo Cotta-Ramusino, Secretary General of Pugwash

If asked I will tell you my own opinion on this development in the Q&A period.

A final personal note

It is known that public opinions worldwide favour --- by significant majorities --- the transition to a Nuclear-Weapon-Free World (NWFW). But there are some sceptics, especially among the so-called nuclear-weapon experts (especially among those with a civilian background, who make a living by pontificating on these matters). From these quarters it is often stated that “it is impossible to disinvent nuclear weapons”. But many social institutions have been “disinvented” over time: anthropophagi of enemy prisoners; slavery; in democratic countries, restrictions by social status (land property), by gender, by race, to the universal right to vote; chemical weaponry (after these weapons had been repeatedly used, during the last century; entailing verification of the world chemical industry, a more daunting task than verifying peaceful nuclear activities in a NWFW). Even war itself has now become *unthinkable* in certain contexts such as Western Europe where the two World Wars took place during the last century.

As previously emphasized, nuclear weapons have been employed in war only twice, 6 and 9 August 1945, Hiroshima and Nagasaki. They have never been used afterwards, even when States possessing enormous nuclear arsenal were defeated in war by States without nuclear weapons, for instance the USA in Vietnam and the Soviet Union in Afghanistan. This is the first time in human history that something of the kind happened. It is an indication that, in some quite significant sense, we already live in a Nuclear-Weapon-Free World: a world where nuclear weapons are --- *de facto* if not yet *de iure* --- unusable. Were it not so, how to explain the fact that --- by becoming parties to the NPT and possibly in addition to a NWFZ --- almost all world States have voluntarily given up the option to acquire a nuclear-weapons arsenal; including several States for whom acquiring such a capability would be technologically quite easy? But this consensus is now at risk, unless the nuclear-weapon countries (*in primis*, USA and Russia) make progress towards a Nuclear Weapon Free World.

This also shows that a political/strategic development considered unfeasible can indeed happen. After the Cuban Nuclear Missiles Crisis, that brought the world close to a nuclear catastrophe in autumn 1962, President Kennedy, and other world leaders, pushed strongly for the establishment of a world-wide nuclear-weapon nonproliferation regime. The Non Proliferation Treaty (NPT) entered into force in 1970. But --- as emphasized by those who opposed the NPT (also in Italy) --- its success was at that time quite doubtful. Many nuclear-weapon pundits predicted that within one-two decades 20-30 States would have acquired nuclear weapons. Indeed, in the 1960s many States had initiated programs aimed at developing nuclear weapons, and several of them were quite opposed to the NPT. And two of the 5 Nuclear-Weapon-States (as defined by the NPT) were strongly opposed to the NPT: the France of De Gaulle and the China of Mao. And several other countries were strongly opposed to it: for instance, Argentina and Brazil. Yet the NPT turned out to be a great success. More than four decades later *all* countries of the world are full parties, except for only 3 or 4: India, Pakistan and Israel, who never signed it and acquired nuclear weapons, and North Korea, who became a party but then opted out. **But this large consensus is now at risk.**

The (relatively) recent, quite significant surge of pronouncements --- by political leaders worldwide --- in favor of a transition to a Nuclear-Weapon-Free World brings to mind the famous dictum attributed to Victor Hugo: “nothing can stop an idea whose time has come”. This is why I am confident that such a transition is *in fieri*. Obama said in Prague that this goal, “perhaps”, will not be reached in his lifetime. I am much older than he is, yet I entertain the hope that it might, ***perhaps***, be achieved in my lifetime.

But, *perhaps*, only after some catastrophic nuclear explosion: accidental, or engineered by terrorists, or possibly even in a warlike contest. And after the widespread revulsion against nuclear weaponry caused in world-wide public opinions by such a major major tragedy.

A final (wishful) thought. Ronald Reagan was not, neither temperamentally nor in his political career, a peace enthusiast, yet when --- as an outsider from the nuclear-weapon fraternity --- he was confronted with his responsibility as USA President to decide the eventual use of nuclear weapons, he realized the craziness of the nuclear-weapon theology; and presumably the same ideological trajectory was followed by Gorbachev. This led to their joint assertion that “**a nuclear war cannot be won and therefore should not be fought**”. They were then dissuaded by the nuclear theologians advising them from making the bold, major progress towards a Nuclear-Weapon-Free World that they perhaps had therefore identified as desirable.

Might it be that Donald Trump ---who is certainly ideologically more similar to Ronald Reagan than to Barack Obama---might suffer a similar shock when presented with the responsibility to have possibly to decide within minutes the use of nuclear weapons---hopefully with a detailed illustration of the consequences? Might it be that in his innocence about nuclear theology he will have the analogous reasonable reaction to recognize its crazy aspects and to therefore take bold actions towards the goal of excluding forever the use of these instruments capable to destroy our world?

Likely? NO. Possible? MAYBE...

THANKS FOR LISTENING, QUESTIONS ARE WELCOME!