



Fig. 1 Hiroshima: Inside the fire prevention water tank they were burned red, outside they were scorched black. Drawn by Sagami Ogawa. Code GE15-44, Courtesy of the Hiroshima Peace Memorial Museum Curatorial Division. Please do not reproduce without permission.

Warning: Some of the graphics and ideas in this document are for mature and thoughtful viewers.

PEACE: A NEW WAY OF THINKING ABOUT ACHIEVING AND PRESERVING IT

An earlier version of this essay appears in Chapter 12 of the book by James C. Warf, **ALL THINGS NUCLEAR**, Figueroa Press (of University of S. CA), 2005.

"We can't solve problems by using the same kind of thinking we used when we created them." — Albert Einstein

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Ideas and opinions expressed here unless otherwise noted are those of the author. (2007)

There is probably no issue in the history of humankind about which more words have been written and argued, over a sixty two year period, than nuclear war/nuclear peace, and with such meager results. Regarding the resolution of the problem of nuclear weapons – the only true weapons of mass destruction – so little has been accomplished it is intellectually infuriating, especially after the unheeded warnings by highly respected individuals such as Einstein and Eisenhower. In their time, when world forces were in opposition, there was little opportunity for anyone to really lead, to point the way to a world in which peace would be truly possible. They warned of the direction we were heading. Others tried to show how that old habitual way could be altered. One perhaps unlikely person was J. Robert Oppenheimer, "father" of the two nuclear bombs which brought about the deaths of well more than 210,000 people in Hiroshima and Nagasaki. Oppenheimer is gone. Where now are the leaders who have the wisdom to show the way?

Part I

1 Why a Solution to the War Problem Is Necessary, and Possible

Most people in the world have no conception of the enormity of the effects of *nuclear war*. Why? It was some 22 to 30 years after 1945 before the United States *would allow* people to see the truth of the nuclear devastation Hiroshima and Nagasaki. This was a human slaughter and the deadly evidence of it, in photographs of the victims, was confiscated by the American occupation forces, and not revealed until 1967, not by the US Government but mainly through the efforts of citizens

of Japan, of Hiroshima and Nagasaki, and by Columbia University Professor Erik Barnouw. Almost nothing of this human catastrophe appears in standard supposedly scholarly textbooks in American education, even though the atomic bomb was selected by journalists as *the* “story of the past century.” Here is one example: In the book, *The Medical Implications of Nuclear War*, by the National Academy of Sciences, Institute of Medicine, 1986, there is not a photograph of a victim of Hiroshima or Nagasaki. Of the 40 contributors, not one is Japanese. You cannot learn if truth of nuclear war is politicized and withheld.

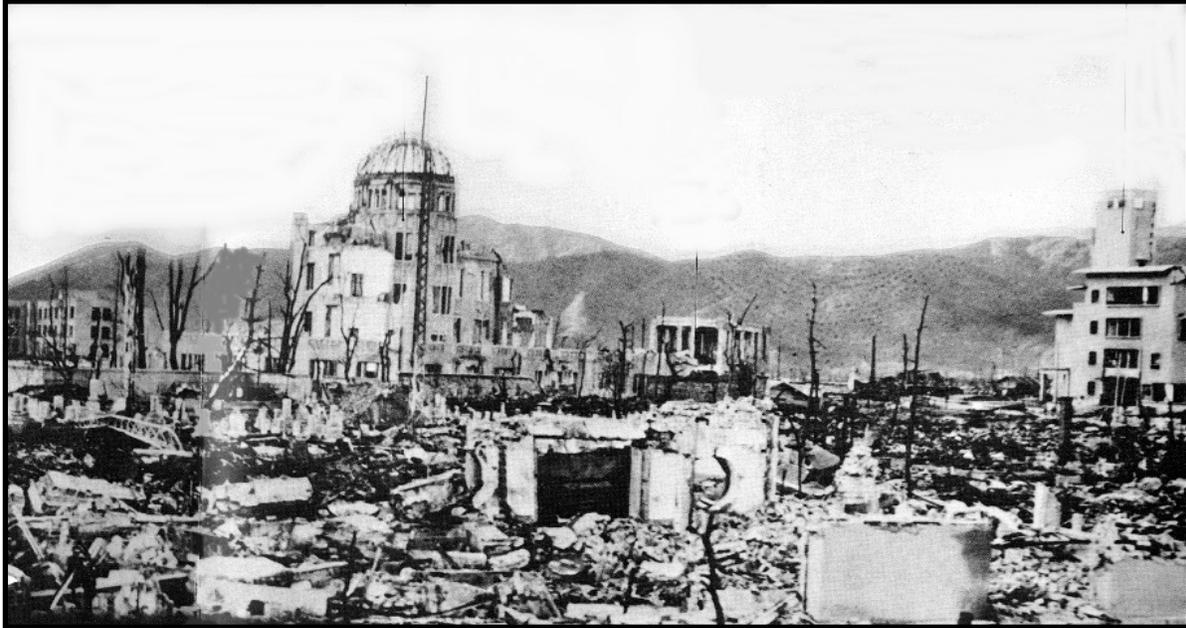
As a teacher this writer greatly resents the fact that the U.S. Government and its WWII Allies have never taken the responsibility to truthfully portray the results of the nuclear war they initiated against a defeated, smaller and militarily exhausted nation, when they knew that Emperor Hirohito was seeking to end the war. Part of this document in a small way will attempt to remediate this deficiency of American education. In this small way, how well is it done?



Fig. 2 A few black and white snapshots were taken in Hiroshima on that day. CNN was not there. The U.S. Government black and white photographs made public revealed only the physical destruction of buildings; they did not show what happened to the people. This illustration by Keiji Nakazawa is of the Funairi, Nakamachi area as he saw it on that day. Multiply this picture 15,000 times to understand what happened to the people of Hiroshima and Nagasaki. The heat radiation, blast, flying glass, and deadly nuclear poison were intense. Permission from Keiji Nakazawa.

Since “the people” have not learned, it is deeply regrettable that they may only learn if nuclear weapons are used again. Most of the world has not yet understood the possible obliteration of many millions of people within twenty-four hours. Our brains are too meager for such immensity.

Consider the following: It must be true that in a peaceful world without the conventional weapons of war, without tanks, missiles, bombers, warships, there would be no need for weapons of mass destruction. *Regrettably, the converse is not true.* In a world without weapons of mass destruction, unless the world changes, there would still be conventional weapons and wars and arms races, eventually leading again to the development of efficient techniques for killing hundreds of thousands of people, so-called, “mass destruction,” treating people like matter.



**Fig. 3 A typical example of what was revealed by the U.S. Government.
But what is under the rubble?**

If it is not a fallacy that our goal truly is nuclear disarmament, ridding the world of the “terror bomb” and the main new tool of a WW III, then the logical imperative would be to put full effort into the simpler but crucially essential problem of eliminating the need for conventional weapons of war: put full effort into solving regional disputes, the Balkans, the Middle East, Africa, South & South East Asia, the Korean peninsula, and elsewhere; put full effort into solving the principal conflict, the one between the *haves* – who want even more, and the *have-nots* – those who are being ripped off, exploited, robbed, and suppressed. Eliminate the “justifiable” causes of international conflict.

There is evidence that world resources necessary to solve these problems are actually available but for more than 60 years have been diverted into the continuous creation of new weapons and weapon systems rather



Fig. 4 The more than sturdy Hiroshima Gas Works wherein no one survived. “You could hear their screams.” U. S. Army photo

than toward the creation of a world at peace.



Fig. 5 Sadako Sasaki. Some visible symptoms of leukemia are present. Permission granted by Masahiro Sasaki.

The single, small and primitive, Hiroshima bomb destroyed a city of over 300,000 and claimed about 140,000 lives by the end of 1945. Nagasaki brought the total deaths to well beyond 210,000. Both Hiroshima and Nagasaki and their people were instantaneously seared, charred, and vaporized.

It was as if a Richter-10 flaming cosmic-quake came down upon them from the gods. And afterwards the nuclear radiation began its dirty, deadly, silent, prolonged and profane massacre. It kept killing for years. In October, 1955, ten years after the bombings, in that year, 12-year old Sadako Sasaki was the 14th death in Hiroshima attributable to the atomic bomb.¹ Folding paper cranes did not save her from the ravages of leukemia induced by the bomb's radiation in 1945.

Averaged over the 50 years following WW II, the world's military industrial complexes created an arsenal *equivalent* to making 70 Hiroshima A-bombs every day of every one of those 50 years. Seventy on each of those 18,250 days.

Just one day's worth of 70 bombs could yield 9,800,000 killed in a new war, $70 \times 140,000$. The World has

been most fortunate in one sense.

The *world* arsenal just referred to is the equivalent of about 1,280,000 Hiroshima A-bombs. Only two were ever used for their intended purpose. Is there anything wrong here? What does this imply about diplomatic leadership over those 50 years? Talk about wasted resources! (Total warheads created, from 1945 to 2000, more than 128,060.²)

The people of the world plead for peace, plead for an end to the killing, destruction, and suffering, and their leaders cannot achieve it; and national governments' insincere offers to reduce nuclear arsenals is not the way.

In Part II of this document I shall explain how world resources could be used: to



Fig. 6 Hiroshima: The heat of the bomb burned her kimono pattern onto her skin. U. S. Army photo

achieve world peace with justice, fairness, and great benefits for everyone and threats to no one, and to remedy the regional tensions and devastation that permeate much of the developing world. This can be done at no additional cost. Only once before was a similar task attempted, the Marshall Plan, bringing some relief from the devastation of WW II to selected friends of the western Allied world, while creating an economic boom in America.

Rather than the myopic focus mainly on nuclear abolition with its nettlesome concerns of nuclear breakouts and nuclear terrorism, we should develop the courage to aggressively follow a path which circumvents and defuses terrorists' and any nation's continuous regional threats, terrors, and wars. The world initiatives for action need to be taken away from the war mongers

and their dictatorial suicide commands and directed toward peace for all those developing nations which are ready for peace, ready for the promised advances of the 21st century. One country tests a bomb, sends a missile over a neighbor, or develops nuclear technology and the world's developed nations have fits for the next several months, move to increase military spending, and to create a missile defense system which would likely fail, and to consider a pre-emptive attack. Effective *proactive* amelioration on the world scene seems an activity unknown in the developed world; the tendency is always to be militarily *reactive*.

There need be no technical problems to achieve a world without threats. It is only socio-political-ideological problems, in people's minds, which prevent world peace.

Is it true that for some 200 years there has not been a war between truly democratic nations? Is it true that such nations don't even prepare for war with one another?

Hence, is it not understandable, the worrisome situation of nuclear capability in nations without democracy? Is the creation of constitutional democracies the long sought expedient to world peace? Would war be unlikely if there existed democratic Iraq, Iran, North Korea, Pakistan, Palestine, and Rwanda, and indeed, would living conditions in those nations be improved?

2 Background

In the Cold War year of 1981 the U.S. defense budget in total increased to considerably more than US\$300 billion per year. We were led to believe that the U.S. would win this confrontation even if the world detonated all 18,000 MILLION TONS³ of "nuclear TNT," in a WW III thermal and radioactive holocaust. It would have been comparable to the destruction wrought by several thousand WW IIs. What folly! But some people had no fear; the expected "rapture" to heaven would save them. "We should not mistake for laws of God or nature the cultural values of the world's most unstable systems."

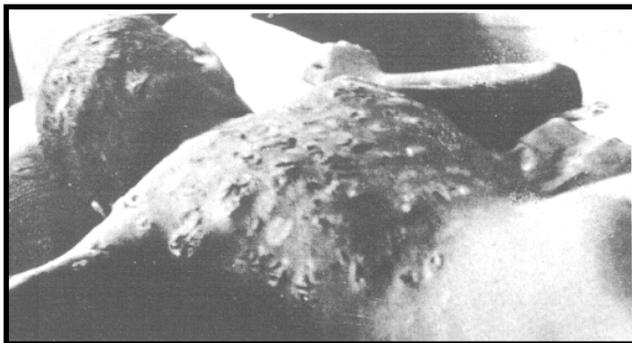


Fig. 8 Hiroshima: Flying glass splinters from the blast of the bomb pierced this body.
Photo: Dr. Nobuo Kusano?



Fig. 7 "Will I even want to live?"
Hiroshima -source unknown.

No nation's leader, and probably very few active U.S. generals, have ever witnessed a nuclear explosion above ground. Still, it is easy for many to consider a nuclear bomb to be a useable weapon of war; after all, in 1945 the Allies had actually used two, which many believe ended that war. Even during the nuclear tests in the South Pacific, congressmen, invited to witness the tests, were located so far away (for their safety) that many came away unimpressed. "Like a giant firecracker," one said. In Nevada, American

G.I.s advanced under the fallout of mushroom clouds to test themselves near radioactive ground zero.

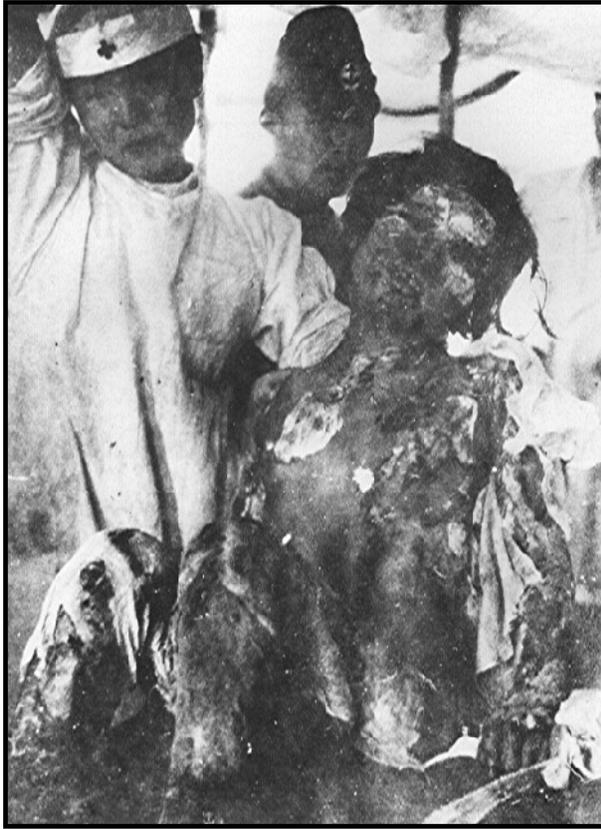


Fig. 9 – Nagasaki: Can you imagine the agony for this burned 14 year old girl, brought to the Omura Naval Hospital, one of the more than 210,000 killed by the two nuclear bombs. Dr. Shiotsuki said, “My first assignment was mercy killing.” Permission from the widow of Dr. Masao Shiotsuki, via Kosei Publishing.

Imagine the hottest clear day of the year. Remember walking out into the sunlight and being amazed, that even at a distance of 93,000,000 miles, how hot the radiation of our sun really was? The surface temperature of the small primitive Hiroshima atomic bomb was 1000 Celsius degrees hotter than the Sun's. It hung in the air only 300 yards, 0.17 mile, above the people of Hiroshima. Were some people vaporized?

Radiant energy of about 7 calories per square centimeter on the skin will cause a 3rd degree burn, total skin scorching and skin death. At the Hiroshima hypocenter it was 100 cal/sq. cm; at Nagasaki it was 229 cal/sq. cm. Do you begin to understand the photographs?

A semi-lethal dose of nuclear radiation (neutrons and gamma rays) is often taken as 450 rads. At the hypocenters it was about 24,000 rads in Hiroshima and about 29,000 rads in Nagasaki. Thus one should not be surprised that regardless of concrete buildings for shelter, the death rate around the hypocenters for both cities was about 95%. Today's average nuclear weapon yield is ten times the Hiroshima bomb; some warhead yields can be 100 times greater or more.

Do American legislators ever confront the question, “Why does the United States have ‘enemies’ in the world?”

Since 9/11/2001 a few United States legislators are asking what went wrong. The solution chosen was to increase the military spending by more than US\$100 billion. It would be fascinating to survey all congressmen: Reasons why you think people hate the United States. Do legislators understand? Are they capable of learning? Do they have the time? Will they ever try? Why would Islamic people hate the United States?

By 2007, well more than 23 million killed by nonnuclear wars since 1945; the United Nations incapable of, or always too late at, ending wars. The world average production rate of nuclear weapons for 50 years the equivalent of 70 Hiroshima bombs per day every day of every year since 1945. Something was terribly wrong with the world! Is time running out?

It became clear to many that nuclear weapons were only a symptom of an all-pervasive cancer of the spirit of the world and of humankind. Some Japanese have an expression for this period of human history in which we find ourselves; they call it “*the era of nuclear madness.*” It's still with us in the 21st century.

More than 400,000 war deaths per year since 1945: Shall the chaos of the world continue to its end?



Fig. 10 The streets around the hypocenter in Hiroshima must have looked like this after the bombing, but this is not Hiroshima. Any such photographs taken there were regrettably and perhaps foolishly destroyed. This is the Asakusa area of Tokyo after an incendiary air raid. Do you think identification of the any of the 90,000 was possible?

From: Haha to Ko de Miru Tokyo Daikuushuu, published by Kusanone Publishing Co.

Although our eyes are open and adults worry about nuclear attacks, a blind side blow may be in our future. There is clear evidence, the rules of biological growth mandate it, that young people are more susceptible to the harmful effects of radiation. And now we know that there is no safe, low-level of radiation. In the recent National Academy of Science, National Research Council report, “The committee concludes that current scientific evidence is consistent with the hypothesis that there is a linear, no-threshold dose-response relationship between exposure to ionizing radiation and the development of cancer in humans.”⁴

Regardless of elected politician’s mistaken beliefs, nuclear radiation is not something to be exposed to or to mess around with. It is extremely subtle; you would not know you had too much until it was too late. Just ask a member of the National Association of Atomic Veterans. Why do dentists shield themselves and parts of you when you get x-rays?

In any size real nuclear conflagration how many of your children and their children and grandchildren would end up with shortened lives,



Fig. 11 This child of Rongelap has no control of its body, its head or eyes. Fallout from a Bikini test is the likely cause. Not before nuclear testing had they seen such disabilities.

Photo-permission, Dennis O’Rourke

perhaps the beginning of the end looking something like these young people whose lives were or will be cut short. If leukemia doesn't do it the other cancers will. Many children's fates were sealed while still in Mother's womb, and many died at a very early age. I, along with Dr. Alice Stewart,⁵ am concerned that with the increased levels of radioactivity in the environment, especially since beginning of the nuclear age with all its careless nuclear tests, that the gene pool of current and subsequent generations will become hopelessly contaminated. We will not know until it is too late. Then will every set of breeders be required to pass DNA egg and sperm screening for mutated genes?



Fig. 12 Berik Syzdykov, from Znamenka, victim of USSR nuclear bomb testing, Semipalatinsk, Kazakhstan. Photo by Yuri Kuidin – Permission sought.



Fig. 13 Renata Izmailva, 16, a high school student, and victim of USSR nuclear bomb testing, Semipalatinsk, Kazakhstan. Photo by Yuri Kuidin – Permission sought.



Fig. 14 Two young people from the Persian Gulf War (1990-1991), one with leukemia, the other with unspecified tumors, something you usually don't see after conventional warfare. Is this caused by depleted uranium? Permission granted by Haruko Moritaki. From the publication, *Hiroshima Appeal for Banning DU Weapons*, available from NO DU Hiroshima Project, <http://www.nodu-hiroshima.org/en/html/publications/publications.html>



Fig. 15 Schoolgirl with burns, Red Cross Hospital, Hiroshima, Aug. 10, 1945 – Asahi photo

If the photo above is missing it can be found at:

http://www.pcf.city.hiroshima.jp/kids/KPSH_E/hiroshima_e/sadako_e/subcontents_e/08higai_2_e.html



Fig. 16 This burn is clearly from the flash of the Hiroshima bomb. His skin where it was covered was not burned. Contrast this with images (page 1) of corpses completely burned; such victims may have been burned by the bomb's flash but afterward they were caught up in the conflagration of the entire city. Photo by Masami Onuka. Code SA002-2, Courtesy of the Hiroshima Peace Memorial Museum Curatorial Division. Please do not reproduce without permission.

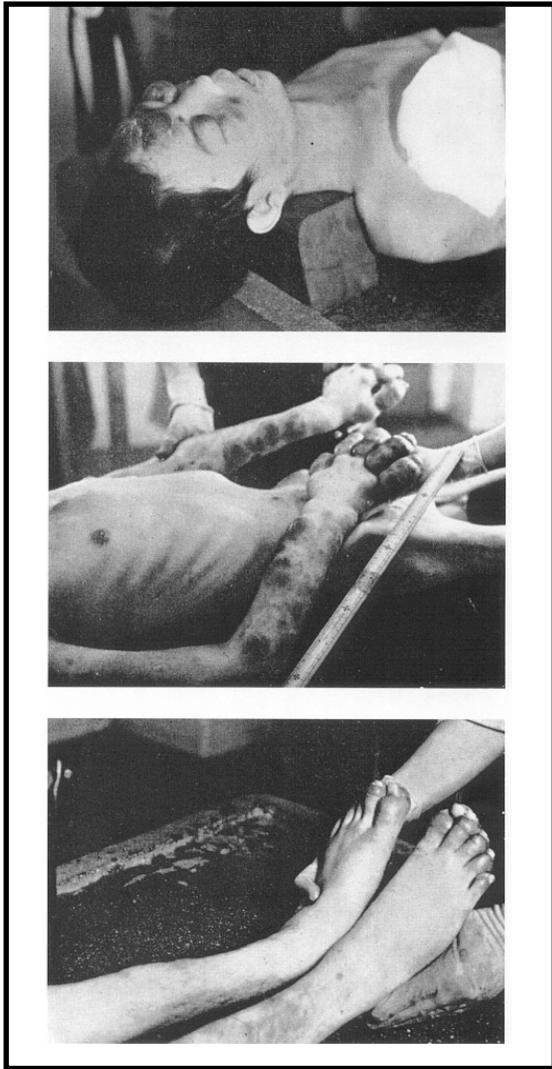


Fig. 17 This soldier was not present at the bomb's explosion but worked in the rescue effort afterwards. He died five years later of leukemia.
Prof. Watanabe, Hiroshima

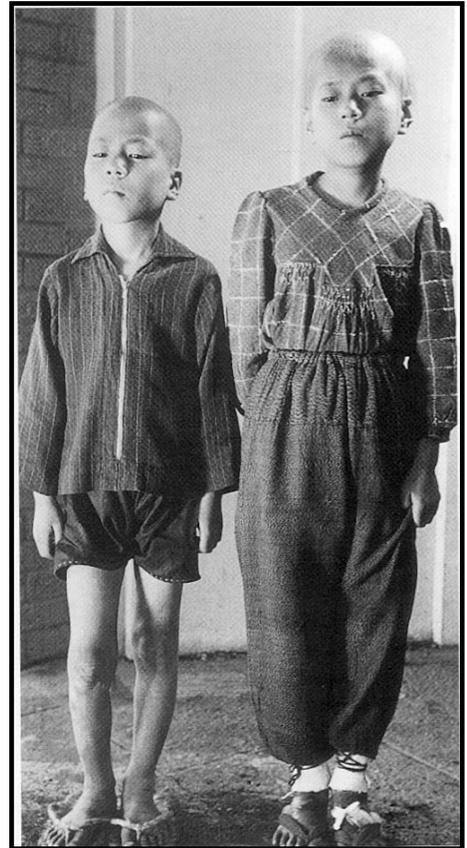
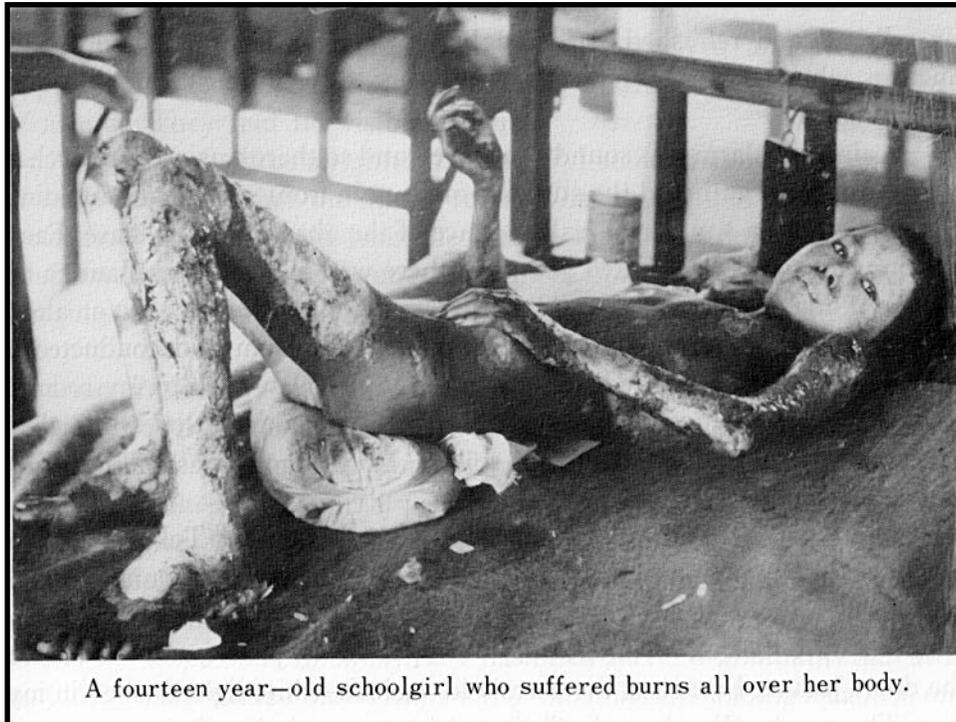


Fig. 18 Ikemoto brother and sister of Hiroshima. Hair loss and shortened lives from A-bomb radiation. Photo by Shunkichi Kikuchi.



A fourteen year-old schoolgirl who suffered burns all over her body.

Fig. 19 Nagasaki victim. Source sought.

Regarding the photographs, please keep in mind that to a greater or lesser degree well more than 210,000 people fell victim to the two small and primitive nuclear bombs of Hiroshima and Nagasaki. Almost all were civilians, many women and children. Shall it happen again, on a grander scale with megaton weapons?

I am struck by the analogy between our early mistakes and failures in radiological health physics and our mistakes and failures in attempting to bring freedom and democracy to other nations.

— Over the past single century many errors and mistakes were made in the new nuclear military-industrial complexes, some of them quite unethical. Part of that history is told by Karl Morgan in his book, *The Angry Genie*,⁵ and by Dr. Alice Stewart in her biography by Gayle Greene, *The Woman Who Knew Too Much: Alice Stewart and the Secrets of Radiation*.⁶ Morgan was director of health physics at the Oak Ridge National Laboratory from the late 1940s until his retirement in 1972. Stewart established the connection between x-rays of pregnant women and childhood cancers in her Oxford Childhood Cancer Survey. Nuclear nations did not reveal the data and truth about radiation effects on the victims of Hiroshima and Nagasaki and upon other downwinders.

— Over the past twenty centuries and more, errors and mistakes were made, many quite unethical, in attempts to force people to change their thinking and to force and/or subtly coerce nations to change their way of life, change their social systems, to suit others. Many died from politicians', industrialists', ideologues', and militarists', gross failures to comprehend the manner by which peaceful change can be achieved, if indeed it was peaceful change that was sought. You can eliminate many opponents to your will by killing them. We've had centuries of such methods,

and other methods wrought upon unsuspecting victims of exploitation. One would have thought that centuries of bad examples and lessons would have been sufficient. What was the operational cause of these millions of deaths – the cause that continues today?

It is hoped that everyone can see the dangers inherent in the present policies of many nations and terror groups. Nuclear annihilation of the planet is a possibility and it would be a disastrous affair even for those who thought they were to be raised to the heavens to meet their maker, their God. My cynicism suggests that maybe *there* with guidance the conflicts will be resolved.

But there might be other ways to resolve the conflicts presently confronting us. Do national leaders truly want peace in the world? Or are there other agendas? Believe it or not, J. Robert Oppenheimer thought he knew how wars could be avoided!

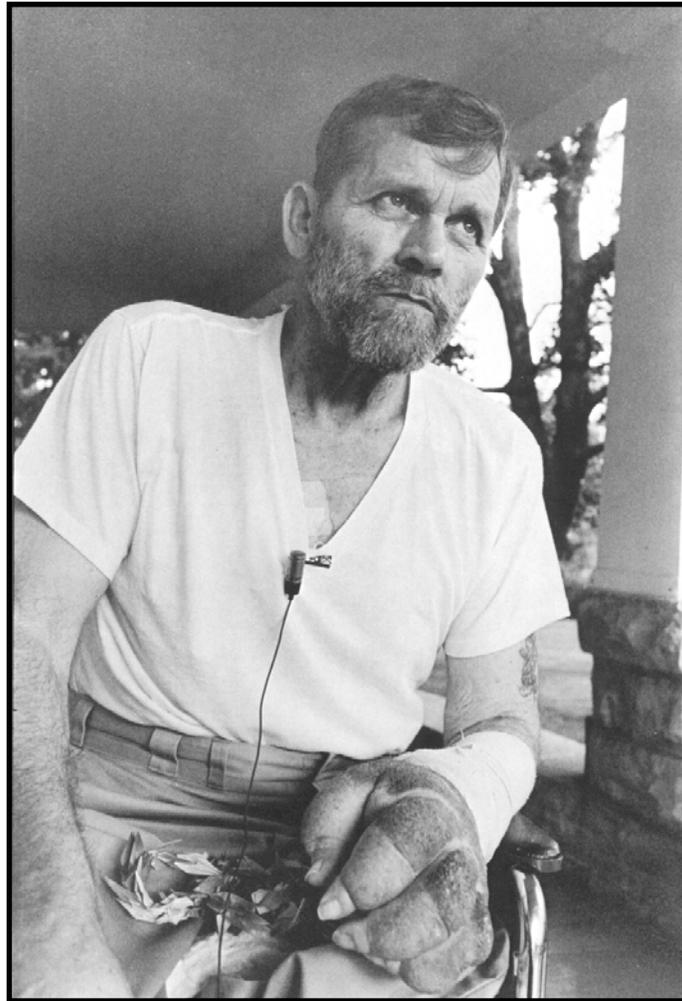


Fig. 20 John Smitherman was exposed to nuclear bomb radiation during the Bikini “Able” and “Baker” tests in 1946. Decades later “radiation sickness” has taken both his legs. On September 11, 1983, he died of cancer of the colon, liver, stomach, lung and spleen. Thousands of others present near U.S., Soviet, and other nuclear tests, were also affected. Photo by Robert Del Tredici, from his excellent book, “*At Work In the Fields of the Bomb,*” with permission.

Part II

3 Oppenheimer's Conjecture on World Peace

J. Robert Oppenheimer, father of the atomic bomb, conjectured⁷ in 1946 that
... *wars might be avoided* by: universal disarmament; limited national
sovereignities; provision for all people of the world: of a rising standard of
living, better education, more contact with and better understanding of others;
and equal access to the technical and raw materials which are needed for
improving life. . . .

Though impossible to implement in 1946 (Stalin had other plans and goals.), most of what
Oppenheimer meant I believe is fully realizable now. There can be peace, justice, prosperity, and
fairness for all nations, as you shall see.

Even after the brutality of three and a half years of WW II imprisonment by the Japanese
Army in Borneo, author Agnes Newton Keith believes a peaceful world could be achieved:

*"I believe that:
While We have more than we need on this continent,
and others die for want of it, there can be no lasting peace.
When We work as hard in peacetime to make this world decent to live in,
as in wartime we work to kill, the world will be decent,
and the causes for which men fight will be gone."*⁸

Let us examine one way it could be done.

At the height of the Cold War America was militarily preparing for a two-hemisphere
WWIII with annual "defense" budgets in excess of \$300 billion. The rest of the World was
spending approximately an equivalent amount, thus totaling \$600 billion; some said more, \$1000
billion. With the end of the Cold War, the end of the Soviet Union, and with an understanding of
the size of the *unused* world nuclear arsenals; a rational proposal in 1990 could have easily been
for the defense budgets of the United States, United Kingdom, France, Russia and China to be cut
in half; with appropriate caution, not abruptly, but promptly. This concept you may not understand
if you do not *comprehend the size of present world arsenals*. But such a cut is not all that is
required. Are there legitimate reasons for mistrust among nations and the multinational controllers
of human destiny?

Current and projected U.S. annual military budgets, of \$400 billion and more⁹ make it
seem that an "arms race" continues. Certainly the taxation for arms will continue. Someone must
pay.

There is a further aspect of military spending that is essential to understand. In the early
1980's the U.S. expenditures for *ALL PHASES* of creating useable new facilities, new weapons,
and new weapons systems was about \$150 billion annually; i.e., using up about (at that time) half
the U.S. military budget.

I have referred to Oppenheimer's conjecture. Here is ours:

After some 45 years studying world affairs, I have come to the firm belief
that in contrast to past policies, if a nation wishes to be at peace,
the most effective use of any nation's "defense" budget is,
not resorting to murderous war, but by some safe and equitable means,
the *proactive conversion* of existent or potential enemies into friends,
all working for a peaceful world with justice and fairness for all.

Today, consider the semi-conversions between Russia and the United States, Egypt and Israel, China and the United States. How much better off could all have been if military spending had been cut in half, if the goals had been peace instead of conflict? Consider what might have been, early on, had a proactive approach to peace been taken in the Middle East and throughout the Islamic World. We ask, could such conversions be done again, and repeatedly, between Israel and Palestine, the United States and Iraq and Iran, between Pakistan and India, the U.N. and the Democratic Peoples' Republic of (North) Korea. In 1945 the United States was engaged in brutal and deadly warfare with Japan. What happened over the intervening years to all but eliminate the bitter hatreds of those earlier years? Can it happen again in today's world? Are there any world leaders who will pursue world peace with fairness and justice for all?

If the aforementioned "conversions" are possible, and historical evidence seems to show it so, then it is implied *that if not threatened by war or terrorism*, the United States and other nations of the Developed World could make available, half their military budgets annually, totaling well more than US\$300 billion, to eliminate war and threats of war throughout the World. *If the Developed World is not threatened AND if no nations are intent upon any form of controlling empire building*. The some 192 members of the U.N. General Assembly need to consider what they wish for their nations in the 21st century, continued strife or amazing improvements in living conditions, in their nations, without war.

We will use US\$300 billion as a baseline and will show that additional sources are also available to raise the total to at least *US\$330 billion annually*, which, if *administered properly* for some 20 to 25 years, could be used to bring about the following for all nations that abide by the U.N. Charter and all Covenants:

1. The virtual elimination of the possibility of nuclear war.
2. Throughout the world: control of illicit drugs and narcotics; immensely improved international trade in peacetime goods; the extreme reduction of: unemployment, budget deficits, and national debts.
3. In the less-developed world: the near elimination of malnutrition, disease, poverty, slavery, illiteracy, rights deprivation, neo-colonialism, and indebtedness.
4. Establish stringent procedures for the elimination of modern conventional warfare between nations and within them.
5. Curtailment of the refugee problem, and likely, immigration problems as well.

If the program here to be described had been implemented when the threats of the Cold War ended we feel that the terrorisms of the past fifteen years would not have occurred. Make no mistake; we will not describe a program that "throws money at problems" and hopes for the best. By now (2007) some US\$5,100 billion (\$300 billion/year \times 17 years) would have been at work on items 1-5 above.

It was some satisfaction to learn that physicists Philip Morrison and Kostas Tsipis had separately come to the same conclusion, that something of the order of US\$300 billion annually could be available to remedy many or most of the world's most pressing problems.¹⁰ US\$300 billion represents some 7 to 10 times what the less developed world receives now in aid. Probably more. Considering how present nation-to-nation aid money is often wasted, our recommendations mean that \$300 billion could in effect be much more than 10 times present aid, especially if world optimism about the future plays a role. This proposal might be considered to contain the honest and objective *peace dividend* for all nations. It does not require "world government" and you will

be able to see that great benefits would accrue to all nations willing and able to participate.

Greater security for all nations can be obtained by worldwide reduction of the weapons of our “enemies,” rather than increasing arsenals everywhere, as we are doing, and as has been done for past centuries. Nations which truly abide by the intentions of the U.N. Charter pose no malicious economic or military threats to their neighbors. Implementing Oppenheimer’s conjecture will make it seem that more than US\$300 billion each year is eliminating military and economic threats, while peace and justice advance throughout the world, *a great bargain*.

We believe the following steps based upon Oppenheimer’s conjecture can bring us to a peaceful world, if nations only have the hindsight, foresight, and courage to try. There will be political nay-sayers but they have not dedicated their last thirty years in the search for true world peace.

4 Steps Which Would Be Required

Step 1. Direct aid from developed world nations to the less developed world must end.

This kind of money is usually tied to undesirable long-term neo-economic/political/military obligations, and, often in the receiving nation, environmental and social abuse, political and financial corruption. This money stays where it was, in the developed world taxpayer’s nation. This is the additional \$30 billion, that becomes available, creating a total resource of about \$330 billion annually.

Lech Walesa, former president of Poland, says that the United States wasted billions of dollars in aid to formerly communist Eastern European nations in the 1990s because there was no procedure in place to distribute the money – money thrown away. Step 1 remedies this immediately.

Other examples of corrupted programs come to mind: *The Alliance for Progress* of the Kennedy administration, and the *Caribbean Basin Initiatives* of the Reagan years.

There are some nations that can maintain efficient and non-political aid programs, Sweden and Japan come to mind but the aid they provide, though valuable, is a single drop in a very large bucket when one understands the immensity of vital world problems to be solved. Hundreds of billions of dollars will be necessary.

We will show that there is a better way.

Step 2. The U.N. aims at obtaining in the less developed, and developing, world, democracy, and in six areas, self-sufficiency: 1) food production, 2) housing, 3) health care, 4) economic means, 5) civilian security, and 6) education and training to support items 1-5.

Annually, US\$330 billion in aid from the developed nations will be distributed by the U.N. using new procedures.

What are these new procedures?

Each Developed Nation annually deposits with the U.N., “*credit chits*” in amount equal to *half their true military budget*; the money actually remains in the Developed Nation’s treasury, until payout is due. There will be great advantages to all nations who make payments into this program, and considerable disadvantages to those who can, but do not. The more chits deposited, the greater value accrues to the depositor, as will become obvious.

Who gets the “chits”? Dictatorships steal a nation’s most valuable resource, its future, embodied in its next generations of young people. Dictators, for their own selfish gain, with lies,

propaganda, and indoctrination in mythological beliefs, often provide death as the fate of the young ones. Dictators never exert honest efforts toward peaceful relationships. They and their nations are disqualified as “chit” recipients.

It is regrettable that, for example, the two democracies type relationship of Canada and the United States does not yet exist in 2007 between India and Pakistan, North and South Korea, China and Taiwan, Iran and Iraq, Israel and its neighbors. Were these pairs all democratic there would be less war danger in the world. *Historical evidence indicates that true democracies do not wage war against each other; true democracies do not even prepare for war with one another.*¹¹

Thus, for nations of the developing world, which are verifiably evolving toward democratic rule by non-discriminatory consensus, the U.N. makes these funds available on the basis of *solicited application of their development proposals, verifiable need, and guarantees against misuse or corruption.* These funds may only be utilized for social and economic development, the six specific U.N. self-sufficiency goals, above.

The development proposals submitted to the U.N. by developing nations are carefully evaluated, in terms of the proposed societal, cultural, economic, and environmental impact, and protection against abuse and corruption. Is the nation verifiably moving toward true but self-defined and equitable *nondiscriminatory constitutional democracy*? Does the proposal truly represent the desires of a great majority of the people? Will minority rights be protected? What proof, what evidence, what tests support the proposal? The U.N. may wish to reject certain proposals or return the proposals for corrective improvement.

When a proposal is accepted and funded, the U.N. awards the amount in “Developed World credit chits” for peacetime goods and services. The chits must make their way back to their origin nation within two years of issue, *and may pass through several nations, all on the approved list of democratic nations which abide by the U.N. Charter and all Covenants.*

Developing nations which abide by the U.N. Charter and all Covenants, and which are funded, can expect constant on-site verification and audit by U.N. inspectors, comptrollers, and visitors who will have the responsibility to see that the credit chits are used exactly as originally proposed.

The U.N. will not make such grants to nations where war is likely or where violations of rights: gender, religious, human, or ethnic are active or likely. Repressive and military governments and martial law governments will not qualify for funding or participation in this program, nor will any nation, *regardless of its size*, including the United States, which is not fully *participating and cooperating in the worldwide elimination of: armaments of war, nuclear weapons, terrorism, and illicit drugs.*

Preference in the allocation of development funds will be given to those nations

- 1) which are able to demonstrate a continuing reduction or lack of “war armament,”
- 2) which are part of a multination cooperative regional development, and
- 3) which have instituted U.N. recommended educational programs designed to lead their nations into the 21st Century, not indoctrinate for the furtherance of international disputes and terrors.

When the chits arrive back in the nation of origin they do not go to the national treasury. They go to the nation’s suppliers of peacetime goods and services, thence cashed in at the treasury, thus enhancing productivity and employment in the original nation of chit origin.

Each nation will keep a trained national militia suitably equipped for national and international disasters, not war, and for maintaining civil order in times of need. The U.N. General Assembly must play a major role in controlling all transfers of war weapons between nations, with

the aim of reducing them to zero, never sponsoring an increase, never supporting new weapons creation and expense. With the military burden gone in the less developed world, great changes could be obtainable in twenty years rather than 200.

Of the 192 U.N. nations, perhaps 42 of them will be depositing credit chits with the U.N. For 150 nations, it means that there is deposited in the U.N. some US\$330 billion, each year for their use, for 20 – 25 years. If one nation does not make use of it, some other nation will. All they need to do is . . .

Step 3. At present, not all nations wish to live in peace with their neighbors. For a temporary period, there must be assembled, trained and integrated, a U.N. multinational armed force, the principle function of which shall be to *immediately* aid any nation which abides by the U.N. Charter and all Covenants when it is physically abused or attacked by another. U.N. Charter Articles 41 and 42 speak to this. The aggressor, clearly violating their signed obligations under the U.N. Charter, will be penalized, shall pay the Multinational Force costs and reparations; and possibly experience an enforced governance change toward democracy. The weapons they lose in warfare will not be allowed to be replaced, a step which should cause great hesitation about even considering armed aggression.

“Henceforth every nation’s foreign policy must be judged at every point by one consideration: does it lead us to a world of law and order or does it lead us back toward anarchy and death?” — Albert Einstein

Step 4. Each developing nation should insist on themselves creating “added value” to their natural resources (with due consideration to the societal and environmental impact) by processing these resources at home, rather than simply shipping only raw and crude materials abroad: phosphates, copper, chromium, aluminum, diamonds, uranium, oil, minerals, etc. By this means considerably greater “wealth” is created in each developing nation, and will allow them much greater economic power for importation of necessary goods from abroad, e.g., exports from developed nations. But each democracy-oriented developing nation shall decide for itself what ultimate relationship with outside agents best fits its needs. They will ask, “Truly, who have been our friends? Who can we trust?”

By this new policy the destiny of the Developing World shall be molded by their own hands, free from exploitation by outsiders. This can be a rewarding challenge. It becomes their responsibility. Can the leaders of nations of the developing world work together to make the 21st century *their* century? They should consider the especially appropriate example of Japan in the period 1945 to 1970, a mountainous nation, poor in natural resources, socially and physically destroyed by war but in many ways recovered in 25 years. Their greatest resource is their people, something that their old military government failed to understand. After 1945 a democratic Japan accomplished a great deal with help from its democratic friends. (Could Japan have become a modern industrialized nation without the Asian war activities of the 1930s and earlier?)

Even the small nation of Rwanda, racked with genocide and chaos in the 1990s, could form a democratic nation at peace with itself, Hutus and Tutsis working together. They would need help from outside sources, and freedom and protection from outside political interference. This is exactly the solution we propose.

Not all nations are ready for the economic changes that would accompany a democracy. They could be duped into errors. The contrasts between North and South Korea stand out. If North Korea had a democratic government, aid from outside would not have been wasted as it has in military spending. Some years after WWII Japan managed to regain control of its

wealth-producing capabilities and did not relinquish it to the victors. In the early 1950s Japan was invited by Joseph Stalin to join with him and the Soviet Union in the great developments that lie ahead. Wisdom prevailed. The knowledge of all the United Nations is available to help the developing world; they need only ask. I have great fears that the people of North Korea may be unknowingly led into a catastrophic disaster while their dictatorial leadership asks to be guaranteed the right to do just as it pleases.

Step 5. To further assure and advance self-determination, development, and confidence for the people of all nations it is necessary to establish government and private international exchange programs involving 10,000 to 50,000 people per year, students, teachers, workers, farmers, artists, government officials, scientists, athletes and upper-bracket bureaucrats; for the purpose of finding creative new approaches to cooperation and development for mutual and world benefit.

The “Sister Cities Program” should be greatly expanded to include the poorer nations of the world. Does Timbuktu (in Mali) have a sister city in the Developed World? Does your town have a sister city in the Developing World? *Important question: Why not?* Shall we soon be able to have sister cities in North Korea? How about P’ungsan in the DPRK (North Korea)?

Step 6. The U.N. needs to decide when and how it can intervene in the internal affairs of a “nation.” The U.N.’s inability to act over past years has sanctioned the deaths of millions. Consider Cambodia and Sudan. The U.N. needs to come to grips with the fact that the U.N. actions, which were possible in 1946, are woefully inadequate and much too late for events of the modern electronic and high speed world. The Cold War has ended; much more U.N. activity without vetoes should be possible. What shall be done about civil wars and “ethnic cleansing”? How many need to be killed, imprisoned, or tortured, before the U.N. shall act? 10,000? 100,000? 1,000,000? What was the 2006 year-end death toll in the Sudan? What shall be the limit before a nation is dismissed from the U.N. until its leadership is replaced, perhaps by the U.N., and the oppressed people are empowered? Clearly, under the world conditions being proposed, modern-day democratic nations, such repression and civil wars are highly unlikely. Where is the voice of the U.N. General Assembly in all this? What is “world opinion” about the possibility of world peace and prosperity?

Developing nations, yielding their military burden in favor of democracy, must have assurances that they will be quickly and adequately protected by the strongest powers of the world. North Korea needs to understand what changes they need to make to receive assurances and protection against attack by a more powerful nation. “Minds more wise,” not pre-programmed bureaucrats, must speak to U.N. Charter revisions. Because all nations are not equal there should be special rules to apply to emerging, developing nations for the protection of their people from corrupt governance and from powerful outside political and exploitive influences.

Former U.N. Secretary-General Kofi Annan is right on target with what Time magazine labeled “Kofi Doctrine,” urging world intervention to stop massive human rights violations, but the doctrine falls far short without the complete and essential ameliorative steps we are proposing here.

5 Implementation

This proposed activation of Oppenheimer’s conjecture is sometimes criticized as being too futuristic and difficult to implement. But there are no *technical* implementation difficulties, only

those difficulties in people's minds. The necessary, minds more wise, must be found.

If the Baruch proposal of 1946 had been accepted, how would it have been implemented? How was the Marshall Plan carried out? The Manhattan Project? Similar implementation procedures could be employed here.

Yes, war is much easier to implement; we're all set up for it. We are not, however, set up to implement world peace.

6 And In Our "Developed" World

Each year this program will see returned to the nonmilitary economies of the developed nations, in total, more than US\$ 330 billion! It is money most of which ordinarily would have been spent for non-wealth-creating new military weapons and systems. It has been remarked that, "Dollar for dollar, nonmilitary spending creates more jobs than military expenditures do, owing to the less capital-intensive nature of civilian products and lower salaries." Worldwatch Institute provides estimates as examples; similar estimates can be found among 1981 data from the New York Council on Economic Priorities. Hence, this program we propose should greatly reduce unemployment in any nation adopting it.

With nations in full peacetime production and without threats of war, national debts should be fairly easily paid off. What effect would a thriving well-managed economy have on social problems? Would it make them solvable?

Oppenheimer's conjecture implied that an exchange could be made:

- With self-sufficiency and self-defined but true democracy in the developing world and the virtual elimination there of poverty, illiteracy, malnutrition, disease, neocolonialism, rights deprivation, indebtedness, exploitation, and slavery;
- The entire world could have full economic recovery, elimination of the possibility for international nuclear catastrophe, and the practical elimination of war. In a world at peace the refugee problem is solved. The killing stops, and *world* problems can be solved.

The basic tool is incentives, not sanctions; benefits, not penalties; advantages for all as Oppenheimer knew it could be.

Consider, compare, what the 3,500,000,000 people of the developing world do not have, and who is capable of supplying it! There are abundant opportunities for all!

Morrison and Tsipis, in their book¹⁰, **Reason Enough to Hope**, explore some of the problems facing the world should the impoverished billions of people be brought online to also benefit as we have from "the good life." **Food and energy needs, and overpopulation** are likely to present many difficulties. Food requirements and overpopulation are of course linked. However, in any nation of fixed area which has made development advances in the last century without going to war, I think you will find that though population has increased, family size has decreased. I might be wrong in this conjecture but I think not. In the Japan of 100 years ago large families would not be uncommon especially in rural areas, families with four to eight and more children. It seems hardly conceivable, doesn't it, in Japan, where now the ideal family will have two children, one girl, one boy? If food, education, health care, and economic opportunity are available, parents in a democratic society should be rather quick to learn that a family of four will probably do better all around in contrast to a family of ten. Consider China also, with its desires for one-child families.

Most impoverished nations, at present, do not have the capability to fully utilize all their

arable land. Implementation of our proposal would change that. Appropriate agriculture with U.N. help can squeeze the maximum benefits annually out of lands considered not fruitful. Ichiro Kawasaki in his book¹², *The Japanese Are Like That*, remarked that the entire nation of Japan has always had less good farm land than all of the mountainous state of Kentucky. And yes, we do recognize that unlike Kentucky Japan does have the world's oceans as a food source also. The oceans and seas are free, and accessible to many less developed nations.

Some less advantaged nations are in dry climates, hindering agriculture. Potential farm areas of India are dry and dusty. Annually, neighboring Bangladesh is flooded with fresh water from monsoons and mountainous run-off. That could be changed. The dry plains of the middle United States and Canada could be fed by a *fresh* water Hudson Bay, if the bay or parts of it could be desalinized. (It was once seriously proposed to dam the north end of Hudson Bay from Southampton Island to Cape Wolstenholme and gradually pump the heavier salt water from the bottom of the Bay out into the Hudson Strait, thus gradually desalinizing Hudson Bay.) What would Canada charge for that fresh water? International foresight and cooperation could make such projects feasible.

Appropriate energy technology can serve the needs of developing nations. Fortunately many such nations are in areas where winter heating needs may be small. Until recently Japanese homes had minimal heating. On the African continent hydroelectric power and solar electricity seem to be rather likely energy sources. The indigenous people supply the labor at a good salary, the developed world supplies the knowledge, teaching, and technology. Nuclear power should not be overlooked; there are safe power reactors. The "hub-spoke" arrangement, sometimes called "nuclear batteries," holds promise and would seem to be a very sensible way for developing nations to quickly meet energy needs.¹³ Radioactive waste remains a solvable problem; this writer's preference is for nuclear incineration to much shorter half-lives. With IAEA oversight reprocessing of spent fuel elements need not be a problem.

Perhaps the greatest danger in our proposition might be the personal avarice of those we are trying to help, just as it has been dangerous among nations and industries. A major component of this proposal is to exactly set in place solutions to all the above problems.

Shortly after WWII Senator Vandenberg told Truman that if he expected American taxpayers to finance a military buildup in the aftermath of the war's sacrifices he would have "to scare the hell out of them." A very good job was done, continuing to the present day.

But Eisenhower warned us in his farewell message, "America's leadership depends, not merely upon our unmatched material progress, riches and military strength, but on how we use our power in the interests of world peace and human betterment..." "...we have been compelled to create a permanent armaments industry of vast proportions..." "...We annually spend on military security more than the net income of all United States corporations..."

Eisenhower saw what was coming, "... In the councils of government, we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex. The potential for the disastrous rise of displaced power exists and will persist." "...We must never let the weight of this combination endanger our liberties or democratic processes."

Gen Nagaoka's father in 1945 Hiroshima understood, "Whenever the military grabs political power, the world becomes a dark, terrifying place."¹⁴

It becomes as simple as this example. There is a choice to be made. Which do you prefer: \$80 billion spent to support U.S.-Japan military activities in Japan, Okinawa, and elsewhere in Asia, in anticipation of conflict which may never occur, and more billions for the U.S. Space Command to achieve 'full spectrum dominance' and superiority in space weapons; or \$80 billion

to *eliminate* the threats of wars in Asia while simultaneously enhancing the lives of destitute, distressed, and sometimes oppressed people, bringing them much better life opportunities, and steering \$80 billion into peacetime production and services from the Developed world, and fruitful cooperation with the people and wisdom of Asia?

7 Justification

Does the Developed World and its people have any responsibility for the conditions of poverty, starvation, slavery, disease, displaced refugees, rights deprivation, and illiteracy, etc., as they now exist in the former colonial and less developed world, in Africa, in Asia, in Latin America? Hence, does the Developed World have any unfulfilled moral obligations to the former colonial world?

Many believe it does. Whether or not you agree, the past half century of Developed World taxation for military defense purposes, in preparation for a Nuclear WWII holocaust, clearly shows that, *if the developed world is not militarily or significantly economically threatened*, then it can afford to meet “obligations” to the less developed world. The proposal is for US\$330 billion per year for 20 to 25 years to meet this obligation, while simultaneously ending wars and alleviating international hostilities and the need for armaments. It is not expected that international or national conflicts will vanish, but that procedures will be in place, early, for rectification without resort to murder on the grand scale. Wiser minds, which we must find, can see to that.

There need be no problem with verification or with guarded conversion of fissionable nuclear material and the chemical, biological and other tools of war; these are solvable human problems, and not problems of technology. *Mankind can make all nuclear weapons unusable easily within a few years if there is a genuine wish to do so.* From the catastrophes at Hiroshima and Nagasaki some of us have learned it is most imperative that the world verifiably rid itself of all nuclear weapons. Though some nuclear disarming is underway there still remain the real fears concerning proliferation, Reliable Replacement Warheads (RRW), nuclear breakouts and terrorism, and our “new enemies.” The danger continues, as Oppenheimer in 1946 recognized it would; “nuclear weapons can be very effective.” There still remain at the start of the 21st century some 30,000 deliverable nuclear warheads.

Oppenheimer’s conjecture represents one certain way for the elimination of international war for all people of the Earth. It is also probably the *only* method, for decades or centuries to come, by which people of the less-developed world, in peace, can become their own masters, can create the sensible path to their own destinies as so many other nations have. This is not a threat to the Developed World. Peace with justice is preferable to war, anytime.

If the “STEPS” we have been proposing would be put in place, then violence and warlike activities throughout the Developing World would only be self-defeating; they would come to an end. When regions and nations are at peace, they advance. Look! See! It is not by mere coincidence that the nation of Japan, after its near total destruction in 1945, has in the past 62 years made astounding advances in all aspects of human activity without killing anyone in a war.

For those Developing nations which repeatedly blame America and international capitalism for all the ills of the world, all the troubles in their nations, here is their chance to successfully move into the future without necessarily being sucked up into commitments and obligations to Developed World Powers, the World Bank, and the International Monetary Fund. How many leaders of developing nations are willing to put their people first, rather than their military? How many will build schools and hospitals, homes and farms, rather than nuclear

fortresses and glorious palaces and monuments? Which leaders of the developed AND developing nations will become immortalized as the ones who led their nation to the “New World,” rather than as the ones who kept them chained to a past of perpetual wars? When will they awaken to a “new way of thinking”?

"If a country develops an economic system that is based on how to pay for the war, and if the amounts of fixed capital investment that are apparent are tied up in armaments, and if that country is a major exporter of arms, and its industrial fabric is dependent on them, then it would be in that country's interests to ensure that it always had a market. It is not an exaggeration to say that it is clearly in the interests of the world's leading arms exporters to make sure that there is always a war going on somewhere." — Marilyn Waring¹⁵

But there can be a peaceful world with justice for all if both Developed and Developing nations have the hindsight, foresight and courage to view the world in new ways.

8 Conclusion: World Peace is Possible Now

Nowhere in this essay has World Government been proposed, but perhaps every ten years all nations should formally renew their pledge to all the world peace goals of the United Nations. One should reread the first articles of the U.N. Charter. What are its goals to which all have freely given their signature of obligation?

Oppenheimer's conjecture leading to this solution of the war problem does not incorporate revenge, penalties, or punishments for past deeds. But then who is not guilty for some past actions? What nation has not killed in war, in some questionable wars? What nation has not enslaved or tortured in times past? Instead of dwelling there, all people start from now and move forward. For the past 70 years some might refer to this kind of proposal as futuristic. It does direct the World's fate toward a future of peace, and suddenly, that future is now.

Oppenheimer's conjecture: It was impossible to implement in 1946 but is fully realizable now. I am led to believe that,

The most effective use of military budgets is, not resorting to murderous war,
but the *proactive* conversion of extant or potential enemies into equal and
cooperative friends, all working for a peaceful world
with justice and fairness for all people and all nations.

We have shown how this can be done.

Our problem is the destiny of humanity on Earth. Understand, our “STEPS” comprise a “complete procedural package.” Sixty-seven years of small half-hearted efforts perhaps insincere and self-serving have obviously not worked. Our recommended “STEPS,” with all their safeguards and assurances, will work; they will withstand any tests, if all the procedures of the “package” are understood. Checking with the principal authorities who deal with questions of the fate of humanity will provide assurance that these “STEPS” will work.

The people of the world, especially people of regional conflicts, plead for peace, plead for an end to the killing, destruction, suffering, and contamination of their lands. Their leaders, because of greed, ideology, isolated ignorance, and misinterpreted mythology, will not achieve it. We have shown how it could be done. True peace with justice is not something to be bargained for over or under the table.

Indeed, in 2001, the World Bank and the United Nations have stated the reasonableness of our suggested plan:

“Afghanistan needs about \$9 billion during the next five years to rebuild after 20 years of war, the United Nations and World Bank have calculated.”¹⁶

That is only \$1.8 billion per year, only 0.45% of a U.S. Annual \$400 billion Military budget. And half of this cost is to be contributed by all other developed nations. Why was the \$9 billion not used first instead of destruction? By April, 2004, donors had already pledged \$8.2 billion. (You see how easy it might be to get the resources if it means peace. How much will be wasted or stolen by corruption and greed? Some Afghan regional lords were asking for about \$25 billion. Guess how it would have been spent.)

Should there be any doubts in the minds of people of the earth as to the desires of the United States for world peace with justice and fairness for all nations, proposal of this plan by the United States government to the United Nations would put such doubts to rest. It would renew the faith of many Americans that their own government was not imperialistic.

How altruistic and honest about peace are nations willing to be? For 200 years there has not been a war between truly democratic nations.

"...man will occasionally stumble over the truth, but usually manages to pick himself up, walk over or around it, and carry on." — Winston S. Churchill

"Traveler, there is no path; paths are made by walking." — Antonio Machado

"He that will not apply new remedies must expect new evils; for time is the greatest innovator." — Francis Bacon

"Some people see things as they are and ask why; I dream things that never were and ask why not?" — Robert Kennedy

"You see things, and you say 'Why?' But I dream things that never were, and I say 'Why not?'" — George Bernard Shaw

"The laughter of fools has always been the reward of any man who comes up with a new thought." — Stephen Lister¹⁷

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Opinions expressed in this document are those of only R. G. Wilson, though others may agree.

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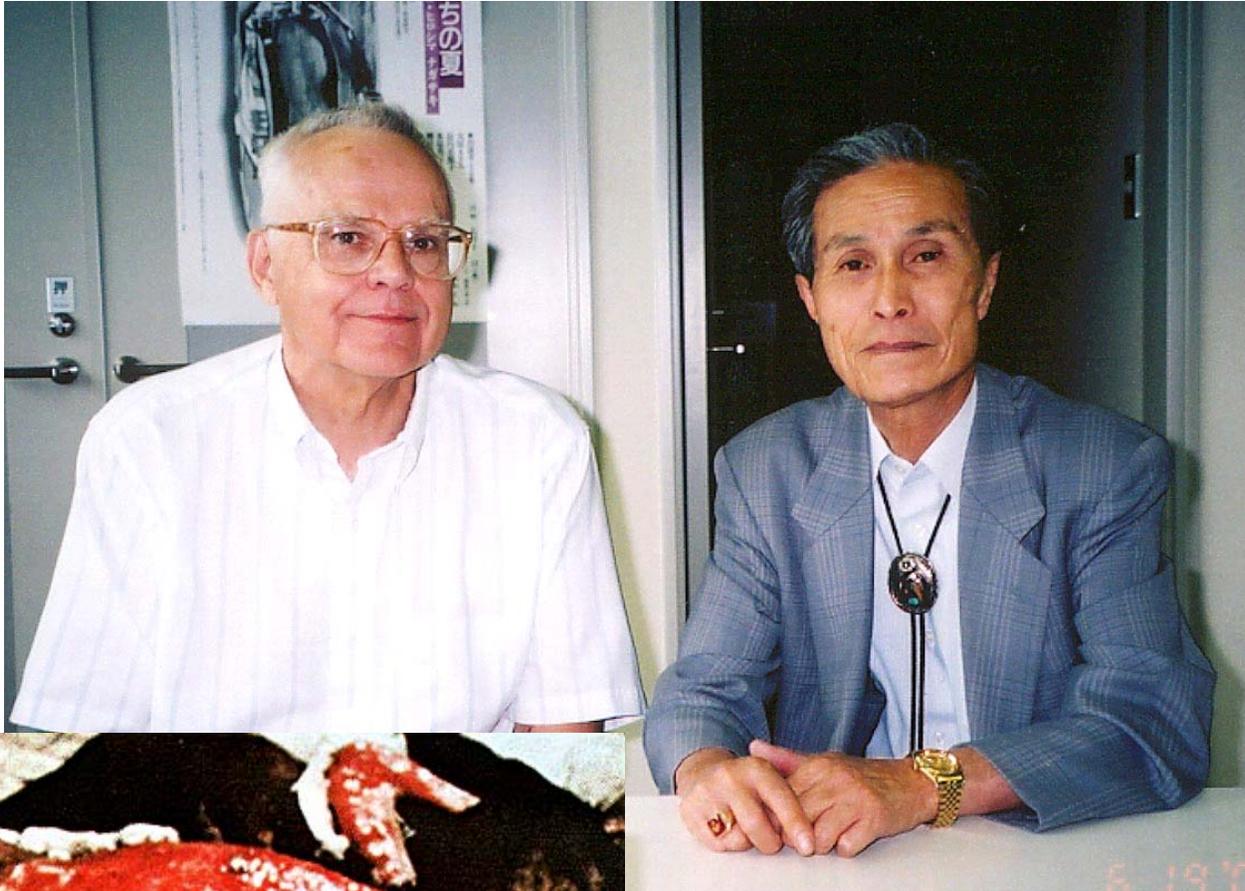


Fig. 21 above: Nagasaki 2001: R. G. Wilson, and Sumiteru Taniguchi who understands the importance of eliminating nuclear weapons. He was caught by the Nagasaki bomb at age 16. Three years in hospitals, 21 months in this position. How many times he pleaded with the doctors, “Kill me! Kill me!”

Additional Illustration Credits

Fig. 1 Hiroshima: Inside the fire prevention water tank they were burned red, outside they were scorched black. Drawn by Sagami Ogawa. Code GE15-44, Courtesy of the Hiroshima Peace Memorial Museum Curatorial Division. Please do not reproduce without permission.

Fig. 2 From Barefoot Gen. Used by permission from Keiji Nakazawa.

Figs. 3 & 4 Typical examples of what was revealed by the U.S. Government.

Fig. 5 Sadako Sasaki. Some swelling from leukemia is present. Permission from Masahiro Sasaki.

Fig. 6 Hiroshima: The heat of the bomb burned her kimono... Photo: Gon-ichi Kimura, U. S. Army

Fig. 7 “Will I even want to live?” Source unknown; probably Nagasaki.

Fig. 8 Hiroshima: Flying glass splinters...

- Fig. 9 Nagasaki, 14 year old girl, Permission granted by the widow of Dr. Masao Shiotsuki, via Kosei Publishing Co., Tokyo. From, *Doctor at Nagasaki: "My First Assignment Was Mercy Killing,"* Kosei Pub. Co., 1987. ISBN 4-333-01250-3
- Fig. 10 Tokyo-Asakusa, *Haha to Ko de Miru Tokyo Daikuushuu*, publ. by Kusanone Publishing Co., 3-4-13 Otsuka Bunkyo-ku, Tokyo, Japan 112-0012. (1983 & 1986) ISBN 4-7945-0043-2.
- Fig. 11 This child of Rongelap has no control of its body, its head or eyes. Fallout from a Bikini test is the likely cause. Not before nuclear testing had they seen such disabilities. Photo-permission, Dennis O'Rourke. Adapted from his remarkable film, "Half Life."
- Fig. 12 Berik Syzdykov, from Znamenka, victim of USSR nuclear bomb testing, Semipalatinsk, Kazakhstan. Photo by Yuri Kuidin – Permission sought from his daughter.
- Fig. 13 Renata Izmailva, 16, a high school student, and victim of USSR nuclear bomb testing, Semipalatinsk, Kazakhstan. Photo by Yuri Kuidin – Permission sought from his daughter. Figs. 12 & 13 from "LIVING AT GROUND ZERO," By Allan Thompson, Toronto Star Staff Reporter, <http://www.peace.ca/nucleararticle.htm> © 1998. Acknowledgment is made to: The Canadian Centres for Teaching Peace
- Fig. 14 Two young people from the Persian Gulf war (1990-1991), one with leukemia, the other with unspecified tumors, something you usually don't see after conventional warfare. Is this caused by depleted uranium? Permission granted by Haruko Moritaki. From the publication, *Hiroshima Appeal for Banning DU Weapons*, available from "NO DU Hiroshima Project," <http://www.nodu-hiroshima.org/en/html/publications/publications.html>
- Fig. 15 Schoolgirl with burns, Red Cross Hospital, Aug. 10, 1945 – Asahi photo
- Fig. 16 This burn is clearly from the flash of the Hiroshima bomb. His skin where it was covered was not burned. Contrast this with images (page 1) of corpses completely burned; such victims may have been burned by the bomb's flash but afterward they were caught up in the conflagration of the entire city. Photo by Masami Onuka. Code SA002-2, Courtesy of the Hiroshima Peace Memorial Museum Curatorial Division. Please do not reproduce without permission.
- Fig. 17 This soldier was not present at the bomb's explosion but worked in the rescue effort afterwards. He died five years later of leukemia. Prof. Watanabe, Hiroshima.
- Fig. 18 Ikemoto brother and sister of Hiroshima. Hair loss and shortened lives from A-bomb radiation. Photo by Shunkichi Kikuchi. Permission granted by Mrs. Kikuchi.
- Fig. 19 A fourteen-year old school girl who suffered burns all over her body, Nagasaki. Source unknown.
- Fig. 20 John Smitherman was exposed to nuclear bomb radiation during the Bikini "Able" and "Baker" tests in 1946. Decades later "radiation sickness" has taken both his legs. On September 11, 1983, he died of cancer of the colon, liver, stomach, lung and spleen. Thousands of others present near U.S., Soviet, and other nuclear tests, were also affected. Photo by Robert Del Tredici, from his excellent book, *At Work In the Fields of the Bomb*, with permission.
- Fig. 21 Nagasaki 2001: R. G. Wilson, and Sumiteru Taniguchi who understands the importance of eliminating nuclear weapons. He was caught by the Nagasaki bomb at age 16. Three years in hospitals, 21 months in this position. How many times he pleaded with the doctors, "Kill me! Kill me!" Photo: R. G. Wilson. Inset: Sumiteru Taniguchi, Jan. 31, 1946, Photo: U. S. Army.
- Fig. 22 Four panels from *Barefoot Gen*, by Keiji Nakazawa, Volume 1 of 10, Last Gasp, San Francisco, CA. 2004. ISBN 0867196025 Used by permission from Keiji Nakazawa

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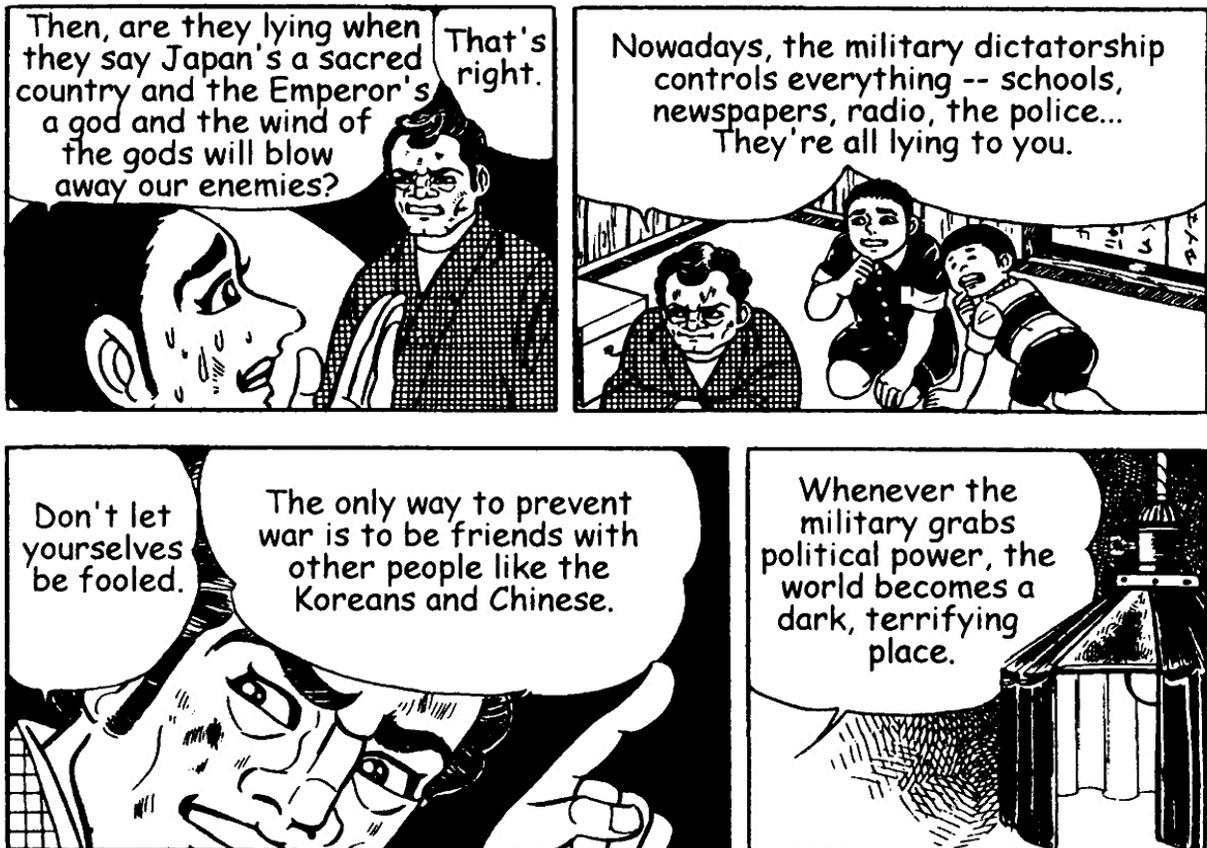


Fig. 22 “Barefoot Gen” and his brother, Shinji, learning from their father, in Hiroshima, mid-1945. Permission from Keiji Nakazawa, author of the *Barefoot Gen* books and movie.